

POSSIBILITIES OF AGRICULTURAL COLONIZATION IN  
PERU WITH REFERENCE TO PERSONS OF  
EUROPEAN ORIGIN

By

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## ACKNOWLEDGMENT

It was Charles P. Loomis, under whose guidance this dissertation was written, who foresaw the desirability of incorporating scientific social research procedures into high-level diplomatic negotiations aimed at settling displaced persons in South America. As head of the mission to Peru, he provided the much-needed balance between the diplomatic and highly technical aspects of the mission. But, above all, he saw in long perspective the need for carefully laying the proper groundwork upon which a sound plan for agricultural colonization in Peru must necessarily be built.

Many individuals both in the United States and Peru have contributed materially to this study and their contributions have been duly credited at appropriate places in the chapters that follow. Much of the cost incurred in securing the material upon which this thesis is based was financed by the Intergovernmental Committee on Refugees and its inheritor, the International Refugee Organization of the United Nations. In consequence, acknowledgment should be made of the firm support of our mission by General T. J. Davis and Miss Martha H. Biehle of the Washington office of the I.G.C.

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## CHAPTER I

### INTRODUCTION

Upwards of 15 million Europeans have been uprooted from<sup>1</sup> their homelands. Most of them are victims of religious and political persecution during the interwar years and flight born of World War II. It is a sad commentary that at the end of a war fought against persecution people still are forced to flee or are driven forcibly from their homelands, or are denied entrance into countries, because of race, religion, or political belief.

In general there are four main categories of recognized refugees. A specific individual may fall into one or more of these categories. There are:

I. Refugees who entered the refugee state prior to World War II:

- (a) Statutory refugees (White Russians, Saarlanders, Germans, Austrians and Czechoslovaks including those of Jewish race who fled from Hitler persecutions);
- (b) Spanish Republican refugees (not covered by any existing convention).

II. Displaced persons. Persons formerly possessing the citizenship of a member government of the United Nations, brought into Germany as slave laborers during World War II, who have refused repatriation for valid reasons

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<sup>1</sup> Jane Perry Clark Corey, The Role of Uprooted People in European Recovery, National Planning Association Pamphlet No. 64, October, 1948, p. vii.

(Poles, Latvians, Lithuanians, Estonians, White Russians, Ukrainians and Yugoslavs).

III. Neo-refugees. These are political refugees from the Eastern European countries who left those countries after the cessation of hostilities in World War II (Poles, Czechoslovaks, Ukrainians, Hungarians, Rumanians, Bulgarians, Yugoslavs).

IV. Stateless. Those who have lost citizenship through any cause such as marriage, divorce, or failure to opt for citizenship in the proper time, following a change of boundaries. Many of Categories I, II and III are stateless de jure or de facto.

The task of resettling these uprooted people is a continuing one and may be with us for many years to come.

Two years or more after the war there were still some 850,000 people living in detention camps in Germany, Austria and Italy. These "displaced persons" were religious, racial or political refugees from their countries. The composition of this group of DP's has changed little since 1946. The DP's are primarily Europeans from Poland, Estonia, Latvia, Lithuania and Yugoslavia. The Baltic group are refugees who refuse for many reasons to return to countries annexed by the Soviet Union at the beginning of World War II. Many Poles have returned home but a hard core remains of those who strongly oppose return. Yugoslav DP's are mostly

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A displaced person may be defined technically as anyone forced by Nazis or Fascists to leave his country to work for the German war effort in World War II, or anyone deported and held away from home for religious, racial, or political reasons.



Royalists who fought with the British, and Chetniks who were a part of the Mihailovitch forces.

In addition to the above peoples, there were those groups who fled their homelands prior to World War II. The so-called "Nansen refugees" fled from Russia during or after the 1917 revolution and it is estimated that in the spring of 1946 there were <sup>1</sup> 150,000 in Europe and 50,000 in the Far East. There were also large numbers of Armenian and Assyrian refugees scattered over the globe. Even after almost a generation, these peoples are still not settled. Probably 150,000 Jewish refugees from Hitler's Germany are still not truly resettled. Another 200,000 or so homeless refugees are residing in France and North Africa, remnants of the Spanish Republicans who fled with Franco's victory in 1939.

These million or so DP's were being cared for up until July 1, 1947, by the Intergovernmental Committee on Refugees. This Committee was established, on the initiative of the United States Government, at Evian, France, in 1938, to deal internationally with the refugee problems. A reorganization of the Committee was effected in 1944 including the following rules for constitution and procedure:

- (1) The mandate of the Committee extends to all persons, wherever they may be, who, as a result of events in Europe, have had to leave, or may have to leave, their countries of residence because of the danger to their lives or liberties on account of their race, religion or political beliefs.
- (2) The functions of the Committee are to preserve, maintain, and transport persons within this mandate, so far as this may be necessary and practicable.
- (3) For the purpose of carrying out its functions, the Committee may:

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<sup>1</sup> The Role of Uprooted People in European Recovery, op. cit. pp. 24-5.

- (a) undertake negotiations with Governments, whether Members of the Committee or not, cooperate with the United Nations Relief and Rehabilitation Administration, the High Commissioner for Refugees under the League of Nations, the International Labour Office and other international organizations as well as with voluntary organizations concerned with the interests and welfare of refugees;
  - (b) receive funds both from Governments and from private sources and disburse such funds in accordance with its financial regulations; and
  - (c) appoint a Director and engage such staff and secure such offices as may be required and conclude such contracts as are necessary for this purpose.
- (4) The Committee shall carry out its functions through an Executive Committee which, subject to the control of the Committee, shall be empowered to perform all the functions of the Committee.

The Intergovernmental Committee was discontinued on July 1, 1947, and was followed immediately by the Preparatory Commission for the International Refugee Organization (PCIRO) under the United Nations. PCIRO in turn was succeeded on August 28, 1948, by the International Refugee Organization (IRO).

The ultimate problem in regard to displaced persons is their permanent settlement. Briefly, there are four methods for bringing this about:

- (1) The gradual return of individuals to their own countries of origin or of settled residence;
- (2) absorption in the countries of temporary asylum;
- (3) migration of individuals by infiltration; and
- (4) group settlement.

Europe is slightly more than half the size of South America but contains more than a half billion people compared with about a hundred million in all of South America. Europe has a population

density approaching 150 persons per square mile compared with less than 15 persons per square mile in South America.

Brazil alone is about the size of the United States including Alaska but has only about a third the population of the United States and Alaska. Peru is about the size of Texas, Arizona, Utah, and Nevada. But Peru contains three-fourths million fewer people than these four states.

Besides these simple demographic facts the outstanding feature of the economy of most of Latin America is its semi-colonial character. This has tended to hamper the development of economic life. Foreign enterprises and ideas which might have created new lines of production were excluded as far as possible. On the other hand, wealth, education, and political power remained limited for a long time to a small minority of prominent families with large land holdings, the church, and professional politicians.<sup>1</sup> As a result, most of the people could not become independent farmers or businessmen because they were lacking in education, capital, and training. Finally, of particular significance to economic development, immigration from Europe to South America was relatively small. This was in sharp contrast to the United States, and as a consequence the labor supply came almost entirely from the indigenous population. The numerically small population means insufficient skilled labor supply for industrial development and a low standard of living.

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Richard F. Behrendt, Inter-American Economic Relations, The Committee on International Economic Policy, February, 1948, pp. 1-2.

The Amazon basin of South America is considered by many persons as probably the largest and potentially one of the most promising underdeveloped regions in the world. The Food and Agricultural Organization of the United Nations, in a report on the world food situation in 1947,<sup>1</sup> pointed to Latin America and Africa as two safety-valves for relieving the growing pressure of world population upon the world food supply. Both continents are sparsely populated with great undeveloped or partially developed land resources. Both could produce food far in excess of their own needs. The possibilities are as yet unexplored and uncomprehended.

For the reason here stated and many other minor ones resettlement activities were started by the Intergovernmental Committee on Refugees in 1946. Missions were sent to most of the South American countries who were members of the Intergovernmental Committee.<sup>2</sup>

#### Peruvian Negotiations

The Mission to Peru was headed by Charles P. Loomis of Michigan State College. Arthur F. Loveday was the British Representative. T. Wilson Longmore served as technical member of the

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1.

The State of Food and Agriculture: 1947, Prepared for the Third Session of the Conference of the Food and Agricultural Organization of the United Nations, Geneva, August 25, 1947, p. 18 et passim.

2

These included: Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Haiti, Honduras, Mexico, Nicaragua, Paraguay, Peru, and Venezuela.

1.  
Mission. Negotiations were begun on November 25, 1946, in Lima, immediately following the Italian Vatican Immigration Mission whose members made a reconnaissance of the potential areas of colonization and came to definite conclusions about immigration. However, the Vatican Mission was exploratory and did not result in any concrete proposals by the Peruvian Government.

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It was inevitable that members of the Mission should have personal problems of adjustment which played a great part in the day-to-day functioning of the Mission. But there were interpersonal relations between members of the Mission and individuals within and without the Peruvian Government that had considerable bearing on the outcome of negotiations.

The two objectives of the Mission — one diplomatic in character, the other technical — served to divide the sets of interpersonal relations which tended to revolve around members. The objectives of the Mission soon came to be personified in Loveday and Longmore, the latter being alter ego for Loomis.

Loveday and Longmore found it convenient and expedient quite early in the game to divide functions — the former assuming major responsibility for the diplomatic phase and the latter assuming major responsibility for the technical aspects surrounding immigration and colonization. This seemed a natural *modus operandi*. As a result of this consciously agreed upon division of labor, the Mission's set of interpersonal relations tended to polarize around Loveday and Longmore.

Loveday, perfectly conditioned by 30 years of diplomatic service to interact with persons of the Ministerio de Relaciones Exteriores y Culto, the Roman Catholic Hierarchy, and industrialists and hacendados, was unable to interact satisfactorily with technicians and scientists of the Ministerio de Agricultura or the Direccion Nacional de Estadistica; while Longmore conditioned to interact with technicians and specialists, felt certain frustrations when dealing diplomatically. These individuals served then as focal points for two sets of relationships or two lines of communication through which the purposes of the Mission were served. With minor exceptions the individuals composing these two sets were entirely different persons and what is more important, as later events proved, these persons had very little understanding or communication with each other.

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A translation of the preliminary report of the Vatican Mission is presented as Annex 1. Also added is a translation of the statement made by Professor Ronchi of the Vatican Mission before the Peruvian Council of Immigration and Foreign Matters.

On November 25 and days following conversations were carried on with Sr. Jorge Bailey Lembcke, Coordinator de Politica Imigratoria (Coordinator of Peruvian Immigration Policy).<sup>1</sup>

Sr. Bailey declared that the Peruvian Government was not at that time in a position to discuss any large colonization schemes because Peru was determined not to risk any further failure at large scale immigration and colonization such as had occurred at Oxapampa (German), Perene (British), and Chanchamayo (Italian).

The adverse report by the Vatican Mission on immediate colonization had a profound effect on the position taken by the Government in regard to large scale immigration.

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Sr. Bailey speaks English exceedingly well having been educated at Harrow. In furtherance of the diplomatic objective the personal relationship between Loveday and Bailey was most important. Their relations were long standing going back to Loveday's operations in Peru during the nitrate era and also in Spain where Bailey was Peruvian Ambassador during the Spanish Civil War. The latter's sympathies were pro-Franco as were Loveday's and there were many mutual acquaintances between them. Loveday, for that matter, had spent many years in Spain and had written a book entitled World War in Spain, extolling the virtues of Franco.

Both were zealous in their desire to extend Catholic or Fascist thought and influence. Loveday had just completed a series of articles on Franco Spain and the Mission served conveniently as a means of circulating these articles and of exchanging ideas with the hierarchy of Peru. Loveday confided early in the negotiations that he conceived his role to be that of tying together Roman Catholic thought in South America at the university level. Informal discussions at the Club Nacional with members of the hierarchy advanced this cause.

Many instances could be cited to illustrate how the attitudes and values of Loveday and Bailey obviously conflicted with any scientific approach to the problems of immigration and colonization. A few may be referred to here.

Loveday was emphatic on the point that the Mission was dealing not with the people of Peru but with the Government. Thus, when the Mission attempted to poll public opinion, Loveday opposed it vehemently as being against the best interests of the Mission. He constantly feared that immigration and colonization might become a public issue, reasoning that if it did, the negotiations might be jeopardized.

Sr. Bailey stated that his government preferred skilled laborers, teachers and technicians, alone or in family groups. Manual laborers for both industrial and agricultural work were also desired. The Peruvian Government already had an immigration scheme which had been in operation for two months. Sr. Palmiro Machiavello, a diplomat de carriere residing in Rome, was head of this organization. The scheme worked as follows: Printed forms were filled in by employers who desired immigrant employees, stating their requirements, salaries and conditions of employment. In some cases the employer advanced the costs of transport and establishment of immigrants which were to be repaid later by the employee. These forms were then sent to the Peruvian consular and diplomatic representatives in Europe who were receiving applications for emigration to Peru. These applicants filled out forms stating their professions, trades and other qualifications which were then sent to the prospective employers in Peru. Final selection of the immigrant was left to the employer. The Peruvian Government did not otherwise intervene in the contract, which was made between the parties themselves.

On November 29 our Mission began preliminary discussions with Sr. Pedro Recavarren, Director de Colonizacion y Tierras de Montana, asking that he reply to a memorandum-questionnaire outlining information that was needed by the Mission in appraising  
<sup>1</sup>  
immigration possibilities.

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<sup>1</sup>  
See Annex 2 for a copy of this memorandum. This memorandum also was given to the Minister of Foreign Affairs and its contents discussed with Sr. Bailey and Dr. Arca Parro.

These preliminary conversations established the following points:

- (1) The Mission was an exploratory one.
- (2) It was hoped that the Peruvian Government might present some concrete plan for receiving displaced persons.
- (3) Such a plan should include provisions for assuring reasonable security to the immigrant in regard to such aspects as health, housing, wages and maintenance.
- (4) Cost of transport from Europe to Peruvian ports would be paid by the Intergovernmental Committee on Refugees.
- (5) The Peruvian Government's representatives would select the immigrants in the European centers.
- (6) The Committee would wish to have a representative in Peru of Peruvian nationality to watch over the interests of immigrants.

Sr. Raul Rey y Lama, Director de Extranjeria (Director of Alien Matters), conferred with a member of the Mission on December 4, 1946, and promised to prepare a memorandum for the information of the Mission covering the principal features of Peru's immigration legislation and problems associated with obtaining citizenship. Later this day Sr. Enrique Alvarez Calderon, manager of the Sociedad Nacional Agraria (National Agrarian Society), was interviewed and he promised to supply a memorandum covering the principal features of land legislation and mortgage loans.

The Consejo Nacional de Inmigracion y Estranjeria (National Council for Immigration and Aliens) met December 9 at which time



the objectives of the Mission were presented. It was decided at this session that the Consejo Nacional would develop a concrete plan of immigration for presentation to the Mission at a later time.

The Consejo Nacional de Inmigracion y Estranjeria was created by Supreme Decrees of June 26, 1936 and May 15, 1937, with one of its objects being the study of the immigration problem in Peru and the presentation of information and suggestions. The Consejo, in its original form, scarcely functioned nor did it carry out the objects for which it was formed. Mainly for this reason it was necessary for the Government to reconstitute this entity on May 10, 1946.<sup>1</sup>

#### Peruvian Immigration and Colonization Policy

An official publication dated July 13, 1946, of the Consejo Nacional set forth the following features of Peruvian immigration policy:

- (1) Immigration is essential for the development of Peru but the country is not ready to accept large-scale immigration either on the coast or in the interior owing to shortage of cleared arable land.
- (2) The jungle regions are unsuitable for European people owing to tropical diseases and lack of communication.
- (3) The zones at the edge of the bush or jungle are suitable for immigration but they must be adequately prepared.

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<sup>1</sup>  
Annex 3 is a translation of the decree of May 10, 1946, which provided for the reconstitution of the Consejo Nacional de Inmigracion y Estranjeria.

- (4) It recommended the immigration of specialists, teachers, skilled workers, fruit growers, market gardeners, fishermen, dairy farmers, etc., with preference to be given to the more assimilable "races."

Throughout the preliminary discussions it was clear that the Peruvian Government felt it inadvisable at this time to carry out any large-scale immigration. Furthermore, the Intergovernmental Committee itself had no policy which would allow any large financial contributions after the arrival of the immigrant in Peru. Thus the Committee's hands were tied in underwriting any large-scale immigration and colonization scheme.

The areas in which the IGC could make financial contributions to the costs of immigration and resettlement of refugees in Latin America were defined informally by Mr. Patrick Malin, Vice Director of the Intergovernmental Committee, as follows:

- (1) Transportation - The IGC will meet transportation costs from the Displaced Persons Camps to the port of reception in the immigration country.
- (2) Pocket money - The IGC is prepared to provide a small amount of pocket money for each refugee before or on his arrival in the country of reception.
- (3) After arrival in the reception country -
  - (a) With respect to anything that comes under the heading of normal, slow, small-scale resettlement of the sort the country has regularly had, the IGC will give no financial assistance.

(b) With respect to any program which could be called abnormal, large-scale, and swift immigration, the IGC is ready to help generally speaking with cash grants for the development of extra facilities (e.g. training centers, reception center facilities, etc.) and with partial guarantees toward the cost of basic settlement of groups on the land. Such guarantee could be in the form of guarantee on loans available to the immigrants through the normal banking facilities of the country or through special facilities provided by the Government. The IGC could not commit itself for any long investments, although it may make guarantees that could not be tested in fewer than 10 or 15 years. All commitments by the IGC were to be covered by actual cash assets available at the time to the IGC so that funds could be earmarked and reserved and so that the IGC did not make any commitments that the IRO would be required to meet out of its new resources.

This policy was modified somewhat on December 9 when instructions came from the Intergovernmental Committee in London as follows:

"If the Peruvian Government should present a scheme acceptable to the I.G.C. for a large-scale and rapid immigration, the I.G.C. would be prepared to study making some cash contribution to the centres of reception and instruction and also some contribution in the form of a partial guarantee towards the basic and initial expenses of agricultural colonization. Such a partial guarantee should take the form of a guarantee on amortizable loans to the immigrants through the normal Peruvian banking facilities or through facilities given by the Peruvian Government itself."

This instruction opened up the entire field of agricultural colonization and its significance was passed on to the Peruvian

Government for study. It is perhaps unfortunate that these instructions arrived too late for presentation to the session of the Consejo Nacional on December 9.

The Mission consulted with Senator Arca Parro of the Peruvian Legislature who had taken part in discussions in the United Nations for the purpose of setting up a permanent international refugee organization. He had reported on December 9 directly to the Consejo Nacional in regards to the setting up of the International Refugee Organization.

The Mission discussed colonization at considerable length with Dr. Sven Ericsson, Jefe Director del Centro de Colonizacion de Tingo Maria, on December 11 and 12 in the Hotel Bolivar in Lima. Discussion centered around Dr. Ericsson's memorandum to the Director de Colonizacion y Asuntos Orientales and his answers dated October, 1946, to a questionnaire submitted by the Ministro de Relaciones Exteriores in reference to the problem of immigration to Peru.<sup>1</sup>

These discussions with Dr. Ericsson were extremely helpful in orienting the Mission to many of the overall problems of colonization in the country. At the same time they provided the necessary information of a more specific nature by which it was possible to arrive at a tentative priority as to areas of potential colonization. It was Dr. Ericsson who put us on the track of such outstanding authorities on immigration as Pesce and Raimondi. But

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<sup>1</sup>  
The memorandum referred to here and Dr. Ericsson's answers to the Minister's questionnaire are Annexes 4 and 5, respectively.

Dr. Ericsson is an explorer and pioneer in his own right having spent more than 40 years in the eastern jungle areas of Peru.

Also during the second week of December, discussions were held with Mr. Hixon and Mr. Harrison of the Peruvian Corporation. This British-owned company operates most of the Peruvian Railways and has a large land concession on the Perene River which it has been attempting to develop. Mr. Hixon presented the Mission with a memorandum on colonization in the Corporation's land concession known as the Perene Colony.

The Mission made it clear that any plan for immigration to the Perene Colony must be negotiated through the Peruvian Government as it would be inexpedient for the Mission to carry on independent and parallel negotiations with the Government and any private concern. Officials of the Peruvian Corporation arranged for an actual field appraisal of the Perene Colony by the Mission between December 23 and 29.

Prior to the trip to the Perene, the Peruvian Government arranged for the Mission to visit Tingo Maria and there to inspect the Centro de Colonizacion. This area was given top priority as a potential site for future colonization early in the conversations.

A great deal of help was given to members of the Mission by Dr. George McCutchen McBride who was serving as a member of the Commission on the border dispute between Peru and Ecuador. His library in the American Embassy was an accessible source of the most pertinent information about Peru and his helpful guidance in meeting the "right people" saved many hours of the Mission's time.

On December 16, Sr. Bailey reported briefly to us that the Consejo Nacional had named a subcommittee to formulate the Government's plan. As regards large-scale government agricultural

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It was obvious that Loveday and Bailey were teamed up, not particularly to stop any scheme of immigration, but to see to it that it was carefully controlled and directed along the lines of their overall strategic objectives which were, broadly speaking, Pro-Catholic and Pro-Franco. Both encouraged anti-semitic tendencies and discouraged any attempts to consider the Indian problem within the context of broad immigration and colonization plans.

In respect to Loveday's Pro-Catholic tendencies a reading of his Memorandum concerning the Comision Pontificia de Asistencia a Emigrantes is particularly illuminating on this point.

After describing this Comision somewhat in detail he then says:

"I find that the Vatican's objects and scheme of protection of immigrants are very similar to those of the I.G.C.R. and that it is categorically specified that there is no discrimination as regards race, nationality or religion. The Committee appears to have no money funds but they have what is as important -- that is, organization and workers. We (the Mission) are invited to have further conversations with the Peruvian Committee and I would suggest that (the) following bases for discussion, with which Monsenor De Santis agrees, be observed:

- (1) Would the Archbishop's Committee be prepared to watch over the spiritual and material interests of any immigrants arriving in Peru?
- (2) The I.G.C. should establish contact with the Vatican Committee in Rome and that the Archbishop Committee in Lima should communicate with Rome the result of our conversations.
- (3) That in the event of some agreement I.G.C. should provide the Vatican Committee details, names and destinations of the immigrants."

Two observations are in order here. Loveday's explicit statement concerning no discrimination as regards race, nationality or religion has little meaning when pains are taken to stipulate in any agreement that only certain individuals will be selected, meaning individuals with Pro-Catholic and Anti-Semitic biases.

In fact, Loveday's Pro-Catholic and Anti-Semitic biases carried right through to the final day of negotiations. In his final Memorandum to Sir Herbert Emerson he wrote as follows:

"I have told the Committee (this is the Archbishop's) that I will propose to you that lists of the names and destinations of immigrants sent by your Committee to Peru should be given to the Vatican Commission for attention and transmission to Peru"

Also:

"Both in Chile and Peru I have come across the expressed opinion that they do not desire more Jews, of whom a great many immigrated into these countries after 1939/40, with unsatisfactory results. The Peruvian Minister of F.A. was emphatic on this point."

colonization, the Consejo decided that this should be restricted to the Tingo Maria region. The Peruvian Government considered that the other colonization regions were not yet in a condition to receive immigrants. The complete Government scheme included only plans to cover Tingo Maria and the Perene Colony plus the Government's scheme for individual immigration. It was stated that the machinery for carrying out the scheme might consist of the formation of an independent corporation with Government representatives on the Board, which would have full control of immigration and colonization and would absorb functions that at the time were shared by so many Departments.

#### Process of Negotiations

About the middle of December, the Mission conducted a poll of public opinion by telephone in Lima and by personal interview in Tingo Maria. This polling procedure was done in cooperation with Dr. Ricardo Luna Vegas, Jefe de la Oficina Central de Estadística.

Immediately following the tours of inspection to the Perene Colony and the Tingo Maria area, and after careful analysis of the public opinion polls<sup>1</sup> it was clear that the latter region offered the best opportunities for colonization within the near future. Consequently the Mission began to set in motion the necessary machinery to make a scientific analysis of the Tingo Maria region.

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<sup>1</sup> Charles P. Loomis, "Trial Use of Public Opinion Survey Procedures in Determining Immigration and Colonization Policies for Bolivia, Ecuador, and Peru," Social Forces, Vol. 26, No. 1, October, 1947.

During the two weeks from January 4 to 18, the Mission secured the technical collaboration of specialists of the Oficina Central de Estadística in the construction of a family schedule to be used in selected communities of the Tingo Maria region.<sup>1</sup> This tentative schedule form was then revised in consultation with Ingeniero Oscar Garibaldi, Estacion Experimental Agricola de Tingo Maria, and his technical staff.

Members of the Mission discussed immigration and colonization informally with Presidente J. L. Bustamante y Rivero in the Palacio del Gobierno on January 3, 1947. He showed himself to be well-informed as to negotiations with the Intergovernmental Committee recognizing that the immigration possibilities were a unique opportunity for Peru to solve one of her most important problems — underdevelopment.<sup>2</sup>

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<sup>1</sup> Besides Dr. Luna Vegas, mention also should be made of the contribution of Dr. Leoncio M. Palacios, Jefe del Departamento de Estadísticas Sociales y Culturales.

<sup>2</sup> The Mission had as its primary objective the reaching of an agreement whereby considerable numbers of refugee immigrants might be transported from Europe to Peru. At no time was there any indication on the part of the Peruvian representatives that it was not disposed to carry out some kind of immigration plan for refugees. The question always was how many could be absorbed and by what means. The secondary objective of the Mission was obviously the preparation of a plan for agricultural colonization in selected areas. This phase of negotiations was always less certain; in fact neither the Peruvian Government nor the Intergovernmental Committee were in a position to make long-term commitments in furtherance of agricultural development. The political situation in Peru persisted in a state of flux as a result of the crucial struggle for power between the Apristas and the Conservatives. Although, as has been pointed out, immigration and colonization seemed to have the support of all political groups, Pres. Bustamante's administration was not able to bring out the legislation needed for carrying on a large-scale immigration project.

At times, colonization seemed hopelessly tangled in a maze of public and private agencies. The following may be cited as



However, uncertainty in the Mission's negotiations was heightened about the middle of January by the resignation of the Peruvian Cabinet and their replacement by men with closer military ties. The Aprista Party was frustrated in its attempt to give an oil concession in the Suchura region to the International Petroleum Company (Standard Oil). Strikes were reported in many of the northern ports and on January 1 the copper mine workers struck in Cerro de Pasco. A railroad strike also was threatened. However, the negotiations of the Mission to Peru were not materially affected inasmuch as all Peruvian political parties seemed agreed on the desirability of immigration.

The Mission was obliged to notify the Peruvian Government on January 18, 1947, that the Intergovernmental Committee could only undertake to assist with grants for ocean transportation, initial pocket money, and reception and training centers for refugee immigrants destined for individual employment in commerce, industry, or agriculture and that no contractual contributions could be expected. This limitation served to modify the Mission's earlier negotiations with the Peruvian Government in respect to large-scale immigration.

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having some influence in public policy:

(1) Consejo Nacional de Inmigracion y Extranjeria, (2) Ministerio de Relaciones Exteriores y Culto, (3) Direccion de Colonizacion y Asuntos Orientales, (4) the Cardinal Archbishop Primate's Committee for Assistance of Immigration, (5) the Peruvian Corporation, (6) Sociedad Geografica de Lima, (7) Ministerio de Trabajo, (8) Sociedad Nacional Agraria, (9) Ministerio de Hacienda, and (10) Sociedad Nacional Industria.

The Mission was faced throughout the entire period of negotiations with uncertainties associated with discussions in the United Nations concerning the establishment of the International Refugee Organization to take over the work of the Intergovernmental Committee on Refugees after June 30, 1947. These discussions were given considerable publicity in Lima's newspapers.

The technical member of the Mission conferred at length with Dr. Antonelli Gerbi, Chief Economist for Banco de Credito del Peru, during a field trip to Tingo Maria which was arranged by Mr. John J. Haggerty, Agricultural Attache of the American Embassy. Later Dr. Gerbi provided the Mission with the results of a poll of all the branch banks scattered throughout the country concerning the possibilities of immigration.

It was during the second tour to Tingo Maria, about January 20, that the family schedule was revised by technicians of the Estacion Experimental Agricola and pretested in the community of Tingo Maria.

It was clear by the middle of January that public interest was growing in the area downstream from Tingo Maria as a potential area for agricultural colonization. No doubt the Mission was responsible in part for the concentrated attention upon the Huallaga River Valley. But in addition, Mr. Arthur Semple, Director del Estacion Experimental Agricola de Tingo Maria, discussed the possibilities of agricultural development on the basis of reconnoitering expeditions downstream from Tingo Maria by technicians of the Estacion. For example, Dr. Hans Platenius, American collaborator with the Estacion, and Ingeniero Agronomo Jose del C. Muro Castro of the Departamento de Quimica y Suelos, made a brief survey of the economy, land use and soils of the Huallaga Valley during January 1947 and wrote a report entitled "La Hoya Central del Huallaga" which was mimeographed by the Ministerio de Agricultura.

During World War II a survey of the soils of the Huallaga River Valley had been made by Eilif Miller for the United States Government and certain of his findings and observations were

becoming generally known. Although Miller's report had not yet been published, the Mission was shown copies of the type-written report and some study of it was made upon the return of the Mission to the United States.

The technical member of the Mission was fortunate in making the acquaintance of Dr. Pallister, Entomologist of the American Museum of Natural History, who was studying insects of the Central Huallaga and who had spent some time in the more isolated sections of the region. His opinion, however, was not as optimistic as most other people about the potentialities of settlement in the middle valley of the Huallaga River.

But these important developments presented the Mission with the opportunity, in fact, the necessity of making an intensive survey of the Huallaga River Valley. No time was lost therefore in reconnoitering the Valley with the view of a more systematic analysis of its possibilities through statistical surveys. Between January 20 and February 7, the technical member traveled the Huallaga River Valley from its source near Cerro de Pasco (Elev. 14,200 ft.) to Yurimaguas (Elev. 600 ft.), a distance of 370 miles by crow's flight.

#### The Agreement

On January 27, the Mission was presented with a statement from the Ministerio de Relaciones Exteriores y Culto outlining the Peruvian Government's policies in respect to immigration and suggesting that the Government would be willing to proceed with agricultural colonization if the Intergovernmental Committee was

disposed to advance funds for long-term investments.<sup>1</sup> These investments would be made in roads, housing, initial maintenance of settlers, livestock, tools, etc. The Ministerio indicated that it was preparing a Legislative Bill for the purpose of creating an organization for colonization purposes, which would possess funds of its own to carry out an immigration and colonization scheme on a large-scale and over a long period of time. This statement expressed a desire to make some sort of agreement with the Committee and suggested the lines on which such an agreement should be based.

In discussion with Sr. Bailey, the Mission drew up a draft agreement which was submitted to the Ministro on January 29 for his approval. The Mission was notified on February 3 that the Ministro agreed with the conditions of the draft and that he was giving instructions to the Peruvian Ambassador in Great Britain to sign it with the Director of the Intergovernmental Committee on Refugees.

The Agreement as signed on March 7, 1947, contained three separate parts, each of which could have been the subject of a complete arrangement.<sup>2</sup> The first dealt with individual immigration for technicians, specialized workmen, domestic servants and other persons. The second part considered immigration to zones of colonization at Tingo Maria and the Perene Colony. Finally, the third part involved immigration on a large-scale to other colonization zones.

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<sup>1</sup>  
Annex 6.

<sup>2</sup>  
Annexes 7 and 8.

In furtherance of Part II of the Agreement the intensive study of the Huallaga Valley developed rapidly during February, and the field party of interviewers began work on March 5 in Tingo Maria, proceeding thereafter to surrounding rural localities. The families in the other communities selected for analysis (Juanjui and Panao) were interviewed during March and April.

Returning to the United States in late March, the Mission prepared a preliminary report setting forth some of the potentialities of the Huallaga Valley and presenting therein a concrete plan for agricultural colonization in Peru.<sup>1</sup> This document was aimed at the need for having a fairly concrete and sound colonization plan which could be turned over to the International Refugee Organization if and when it came into existence. Later a preliminary statistical report was prepared in March,<sup>2</sup> 1948, based on the results of the community surveys.

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<sup>1</sup>  
T. Wilson Longmore and Charles P. Loomis, A Plan for Agricultural Colonization in Peru, Intergovernmental Committee on Refugees, East Lansing, Michigan, April 21, 1947 (mimeographed).

<sup>2</sup>  
T. Wilson Longmore, A Sociological Study of the Middle Huallaga Valley of Peru, March, 1948 (Typewritten).

## CHAPTER II

### POTENTIALITIES OF AGRICULTURAL COLONIZATION IN PERU

Mario E. del Rio, authority on Peruvian immigration, has pointed out the tendency to confuse immigration and colonization by considering them as a single process. He attributes much of the failure of Peruvian immigration attempts to lack of study of the different social and economic processes peculiar to immigration<sup>1</sup> and colonization.

The Peruvian Agreement recognized fundamental differences inherent in problems of immigration and colonization, clearly distinguishing between the two problems. Part I deals specifically with "individual immigration" and Parts II and III deal with agricultural colonization. Little preparation need be made for those who will enter industrial employment, because they will become hired workers under direction of well-established entrepreneurs. But there does need to be some planning for immigrants desiring to become individual farm operators because in most cases they will be developing new land and will have to learn new techniques of agriculture. Furthermore, they require capital to maintain them for the first few years.

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<sup>1</sup>  
He says: "Se ha confundido la inmigracion y la colonizacion, no obstante de diferir, si bien en determinandos aspectos, - caracteristico en todo fenomeno social, - tienen conexiones y puntos de relacion mas o menos estrechos y sensibles, que en ciertas circunstancias, conviene coordinar para la mejor consecucion de un fin dado. Sin embargo, nosotros no involucraremos el estudio de ambos problemas dentro de un solo tema, refierendonos especialmente a la inmigracion y su desarrollos en el Peru. . . " Mario E. del Rio, La Inmigracion y su Desarrollo en el Peru, Sanmarti y Cia., Lima, 1929, p. 23.

Most of the immigrants who enter agriculture aspire to become farm owners and the issues in their case are those involved in the problem of successful agricultural colonization. Peru has had considerable experience with colonization during the last century. A review of this history should provide some lessons which should be used to guide the settlement of future immigrants.

It is quite true that colonization may be accomplished with or without immigration; that is, agricultural zones may be settled with nationals of the country rather than with immigrants. Furthermore, immigration may be accomplished without colonization simply by migration of individuals by infiltration.

This study will confine itself to the possibilities of agricultural colonization in Peru by both nationals and displaced persons from Europe. It will not deal exhaustively with the problems of immigration except as Europeans are considered as potential colonists and therefore must of necessity migrate to Peru. However, immigration and colonization policies have always been inseparably tied together in the history of the Republic. The law of November, 1832, creating the Department of Loreto said:

"To each alien admitted to citizenship in the new reductions, the subprefect of the province will assign lands that can be worked, and enjoy the privileges and advantages that the laws give to holders of uncultivated lands." <sup>1</sup>

In conformity with the above law, a decree was passed January 25, 1845, ordering the civil, military and ecclesiastical authorities of the Department of Junin to develop roads from Pozuzo

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<sup>1</sup>

Mario E. del Rio, op. cit., p. 41 (translation mine).

to Pasco and from Mayro to Pozuzo, assigning landholdings to both aliens and Indians, and providing working tools and domestic utensils. This decree was followed in May by a law voting money for road construction and repairs.

Central European immigrants were attracted by these possibilities and in 1857 the Pozuzo colony was settled. Colonization during the period 1835 to 1857 was consigned principally to immigrants needed by the large farms on the coast, the Pozuzo colony being the first attempt to colonize new lands in the interior.

#### Pozuzo Colony and Related Areas

The first colonists of Pozuzo arrived under an arrangement between the Government of Mariscal Castilla and a German count by the name of Schultz-Holzhausen. It is possible that the Gran Mariscal was inspired by the idea of building a direct road from the Pacific to the Atlantic by way of the Amazon and believed Europeans were needed to settle the lands along the route. At any rate Count Schultz-Holzhausen first surveyed the possibilities and characteristics of the region along the Pozuzo and Pachitea Rivers and reached the conclusion that European peasants could successfully colonize the area. Localizing the area to a point between two hostile Indian tribes, the Amueshas on the Upper Huancabamba River and the Lorenzos on the Pozuzo River, he chose an area for colonization which was settled by Indians recently escaped from the haciendas of Huanuco. He returned to Europe for recruiting future colonists and there decided that because of the climatic conditions existing in the particular region of the Amazon he had selected for colonization, he would choose colonists from a part of Central



Europe which was similar in topography to the montana of Peru.

Going from town to town in the Tyrol inhabited by Austrians, Italians, Swiss, Bavarians, and also Renanians, he selected the most robust and vigorous peasants. He investigated their qualities, aptitudes and habits anticipating that they would have to confront many dangers and great hardships. A short time thereafter, a group of some 300 persons -- men, women and children -- arrived on the coast of Peru, a new band of peaceful conquerors. They came with no plan of subjugation for native peoples, but as common peasants with a zeal to conquer the jungle and thus to contribute to the development of the Republic.

They left the coast traveling by way of Cerro de Pasco, Huanuco, Pano, and opened their own road to Santa Cruz. The odyssey of the first Pozuzo colonists occupied 18 months, a period full of sacrifice and heartbreak that has never been adequately described. A few of the problems were the hostile Indians, the molestation by mosquitoes, snakes, and diseases of the jungle. But the trials and tribulations forced them to develop an intense sense of community solidarity without delay.

They learned to cut and saw logs for their houses, to tan hides, to weave their own clothes from cotton, and to domesticate the wild birds of the forest which took the place of chickens. At the end of the year 1857, more than 300 persons had arrived at Pozuzo. Once established, they constructed a small church using local products. They then commenced to explore the neighboring jungle and to settle other small colonies.

Nevertheless, the population of these colonies, abandoned by the State and without means of communications, were completely

isolated from the outside world. Owing to the lack of contact with other centers of population, they did not prosper. It cannot be said that this first attempt at colonization was a success.

However, after several expeditions into the Huancabamba Valley by settlers from Pozuzo several families decided to settle in the valley of Oxapampa. The first families left Pozuzo in August 1891, numbering 46 persons. But the largest contingent left the following year and by 1896 the new colony contained 82<sup>1</sup> farms with a total area of 5,650 hectares.

The colonists were menaced constantly by hostile Indians and eventually were forced to organize a local guard in self-protection. The lack of roads or means of communication handicapped the settlers but new families continued to arrive from time to time.

The distribution of lands among the colonists was effected from time to time by the Government only to be annulled later by decree. But finally the lands were regularized by decree in 1928 and so we might say that the colony was definitely established 30 years after the first alienation of lands.

Roads were begun as early as 1910. Although many attempts have been made to construct an adequate system of roads into the area, the colony remains to this day without all-weather road connections with either La Merced or Cerro de Pasco.

A Roman Catholic church was established as early as 1896, and in 1903, a public mall and the Quillazu Convent were constructed.

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<sup>1</sup> Most of the information on Oxapampa is taken from an article by Dr. Alberto Schlaefli (see annex 9), colonist of Oxapampa, dated August 30, 1941, and secured by Charles P. Loomis and Oscar Garibaldi.

It was not until 1937 that the central school was built, financed in part by the Sociedad "Santa Teresita," a religious society made up of local men and women. The community life was disrupted by an earthquake in 1937, resulting in 17 deaths and 70 persons injured.

In 1926 the descendants of the early colonists of Pozuzo were ravaged by an epidemic of malaria which was aggravated by the lack of drugs and medical assistance. By 1928 a large number of the people of Pozuzo had emigrated to the upper valley of the Intaz River where they established the colony of Villa Rica.<sup>1</sup> The 16 families who settled Villa Rica selected the site because of its relatively high altitude and better sanitary conditions. Villa Rica is connected with San Luis by a lateral road.

At about the same time a small group left Pozuzo and settled on the Palcazu River, calling their community, Chuchuras. This colony of small farms has prospered considerably with the development of a breed of cattle well adapted to the jungle. They also have experimented successfully with the cultivation of rubber. Chuchuras is served only by trail to Huancabamba and Puerto Bermudez. It also enjoys access by river navigation on the Pozuzo River to the Pachitea River and thence to the lower Amazon.

It is true that in the face of great natural barriers and the hard struggle for existence, many of the descendants of these first colonists have had some success in conquering the jungle, even without the advantages of modern medicine and agricultural technology. They have reforested many of the poorer slopes by

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<sup>1</sup> Annex 10 is the Author's translation of a paper by Arturo Brill, colonist of Villa Rica.

carrying water up to the small trees. They have cleared many parts of the jungle completely for cultivation and pasture land. The grazing of one milk cow often required the clearing of an enormous area of trees. Their harvests of corn, wheat and potatoes were many times destroyed by summer drought, by frequent torrential rains, or even by earthquakes that dislodged soil and rocks from the hills and altered the course of rivers, washing away all crops, houses, and cattle.

Few of the 300 original colonists lived to see the success of their efforts, and many of their descendants disappeared into the jungle by mating with the Indians. One observer commented, however, that this small group of pioneers had won the tremendous battle against the jungle, confirming a phrase of Alexander von Humboldt, who said about 130 years ago: "This country some day will be the center of a new civilization and a new people."<sup>1</sup>

The efforts at colonizing Pozuzo, Oxapampa, and Villa Rica merit a more intensive study because of their great sociological interest. Some of the topics which might be covered are: The effects of an excessively hostile environment on Europeans; the influence of a tropical climate on Europeans; the acculturation of Indians and Europeans; the assimilation processes of European colonists in an entirely different physical and social environment; and the conflict of different cultures.

#### Settlement of the Chanchamayo Valley

Tarma and the Chanchamayo Valley were settled by Italian immigrants in 1866. The region is hot and humid, very appropriate

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<sup>1</sup>  
Alfredo Kraessel, Immigracion y Colonizacion en el Peru, Doctoral Dissertation, Universidad Mayor de San Marcos, Lima, 1948, p. 56.

for tropical products. The virgin lands are cut by a network of navigable rivers. Many Italians worked for a time in the construction of the railroad from Lima to Oroya, but were replaced later by natives and Chinese.

By decree of September 17, 1872, the Sociedad de Inmigracion Europea was created and financed with an annual subsidy of 100,000 soles. The Sociedad de Inmigracion administered the funds provided by the Government for immigration, negotiated contracts for immigration, and provided passage, subsistence, and housing for immigrants. But in addition it attempted to provide the agricultural colonists with livestock and seeds.

Following up this energetic immigration policy, the Government of Manuel Pardo passed the law of April 28, 1873, which provided 100,000 soles to be spent for bringing colonists to Peru. The original intent was to build irrigation works on the coast and buy land from nationals for resale to immigrants. Actually most of the money spent during Pardo's administration was used to settle about 2,600 immigrants in the Chanchamayo Valley. This was the second attempt to settle the region following the unsuccessful venture of 1866. The deflection of immigration from the coast to the montana was effected because the Government was unable to secure lands or irrigation works where independent farm operators might be settled, day labor status being not too attractive to immigrants.

The Sociedad de Inmigracion gave authorization to the Prefect of Junin to issue provisional land permits to prospective colonists of the Chanchamayo Valley. At the end of a six-month

period, the settler sacrificed his rights to the land if he had not begun working it. However, in case the settler had complied with the provision to work his land he was given complete possession. But the colonist could not transfer his land without permission from the colonization officials. The Sociedad de Inmigrantes aided the immigrant by paying his passage to the Chanchamayo and providing him with tools. Each colonist was obliged to work four days each month for the community and also to maintain the roads passing his lands.

A competent observer visited the Chanchamayo Colony in May, 1875, and wrote a detailed report of his trip which later was published.<sup>1</sup> (See Annex 11 for an abstract of this report.) He came to the following significant conclusions about the future of the Chanchamayo Colony:

- (1) The supervision of the colonization must be energetic and continuous;
- (2) the Government must provide protection against the hostile Indian tribes;
- (3) a preliminary economic and geographic study should be conducted and a map of the potentially cultivable land prepared;
- (4) communications should be improved and made more secure; and
- (5) capital should be provided to the colonists and a cheap labor supply assured.

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<sup>1</sup>  
Felix Giordano, La Colonia del Chanchamayo, Imprenta del Estado, Lima, 1875.

A report on the work done during 1875 by the Sociedad de Inmigracion was made by its President, Aurelio Denegri, in 1876. He comments that the Colony of Chanchamayo was hindered by lack of adequate laws for distributing lands and suggests that a good law for the distribution of lands ought always to precede actual<sup>1</sup> exploration. He says that free lands were scarce because much of the land was claimed by owners in even the remotest parts.<sup>2</sup> He concluded that the Government ought to protect the colonists through adequate land legislation.

Denegri comments on the difficulty of organizing the colonists so as to increase their effectiveness. He believed the flow of immigrants into the colony should be continuous and those who did not wish to remain should be encouraged to leave voluntarily. Concluding his report, Denegri comments that the results obtained cannot be measured by the number of immigrants settled, considering the various obstacles, physical, political, social and economic that hinder rapid placement of immigrants.

In 1883, following the four-year period of the War with Chile, the Chanchamayo Colony again took on new life because of the

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<sup>1</sup> Annex 12 is an abstract of Memoria de los Trabajos de la Sociedad de Inmigracion Europea en el Ano de 1875 by Aurelio Denegri, Imprenta de "La Opinion Nacional," Lima, 1876.

<sup>2</sup> Denegri, op. cit. He writes: "nos hemos encontrado repentinamente, en lo desconocido, en lo inexplorado, en lo salvaje, con propietarios de las tierras. Apenas el hacha del colono hechaba al suelo un arbol, que los celebres propietarios, a pesar de su pretendida ocupacion no habian sido capaces de cortar."

high prices of agricultural commodities, especially coffee. About 2,000 Italian immigrants went into the Chanchamayo Colony. A price collapse followed and this, plus additional delays in the completion of the railroad to Oroya, made things difficult for the colonists.

The Peruvian Corporation, formed in London in 1889 to take over, among other things, the railroads of Peru, obtained a grant of 1,200,000 hectares of land in the montana of the Chanchamayo for the purpose of colonizing it.

This land concession is situated on the Perene River at a distance of 349 kilometers from Lima (209 kilometers by rail and 140 by auto road). The land extends along both sides of the river for a distance of 130 kilometers and is bounded at the western end by the Paucartambo and Chanchamayo Rivers.

The first colonists to the Perene consisted of 100 Italian immigrants who arrived in 1892 to clear land, build roads, and construct their homes. They received in return wages and maintenance, tools, seeds, lands and other materials. But the credits and facilities soon ran short and the administration imposed higher quotas of public work which caused great dissatisfaction among the colonists. Finally, the Corporation refused to sell the lands to the colonists after they had cleared them and an exodus of the original immigrants in search of work around La Merced and Tarma soon began. The colony completely collapsed in 1897, only five years after its formation.

#### Recent Colonization Efforts

From 1821, the year in which Peruvian Independence was proclaimed, until 1847 the major emphasis was always on immigration



and little was achieved at settling the country. It was a period of fairly liberal legislation, such as the law of 1832 authorizing immigration into the Amazon region and the decree issued in 1835 making it easy for any individual from any part of the globe to become a citizen of the Republic. About the only requirement was that the immigrant show some evidence of being industrious. Little thought was given to colonization during this period.

Beginning about 1848, the large farms on the coast seemed unable to attract immigrants from Europe because of low returns for farm employment. This was the period of large Asiatic immigration which was temporarily terminated in 1853 only to be opened again in 1861.

It was not until about 1857 that Peru began to give serious consideration to an active program of colonization. This was the period of Pozuzo, Chanchamayo, and Perene colonies and their offshoots. But not until after 1900 did the State begin to regularize colonization and to provide for the systematic distribution and development of zones of colonization.

Colonization in the montana was given due consideration by a decree of 1911, ceding free land of 10 hectares to each colonist. Of particular importance to land policy was the regulation of distribution of land among relatives so as to hinder the creation of large farms.

In spite of liberal immigration policy, European immigrants did not come in the desired numbers and the worldwide depression of 1930-35 put a stop to even the small flow of population.

According to official sources, Peru had about 100,000<sup>1</sup> acres of land in full colonization in 1928 by both nationals and immigrants. The Government began at this time to build houses for colonists, to provide articles of prime necessity, and to finance administrative services. Activity along this line was begun in the regions of Satipo, Oxapampa and Pozuzo.

To the end that the rights of buyers of land might be protected, a decree established the Direccion de Inmigracion, Colonizacion y Terrenos de Montana and set up controls over land companies, enterprises, and individual owners that deal in the sale for cash of holdings in the montana. Concern for the health of colonists caused the Government to provide the services of a doctor and pharmacist at Satipo. In May, 1927, a head of colonization was appointed for Satipo to distribute lands, increase production, and control public money dispensed to settlers.

As has been said, the period 1930-45 was one of restrictive immigration, owing largely to effects of the worldwide economic depression. This restrictive policy took various forms: Decrees of 1930 and 1931 actually prohibited immigration, or required an immigrant to deposit S/.2,000. To the end of protecting nationals, the Government also dictated that a certain percentage of workers in certain industries must be Peruvians and a certain proportion of total salaries should be paid to Peruvians; also in 1934, a decree was passed prohibiting the transfer of lands to foreigners. However, most of this restrictive legislation was directed at immigrants going into the cities, while agricultural immigrants were unmolested.

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<sup>1</sup>  
Mario E. del Rio, op. cit., p. 131.

It can be said that planned colonization in Peru commenced about 1927 but did not become fully operative until 1938. In the latter year, legislation was passed, creating the Centro de Colonizacion Oficial de Tingo Maria, and providing for the expropriation of lands along the Huanuco-Pucallpa highway for colonizing with native people. This opened up the era of conjoining plans for roadbuilding and agricultural colonization to settle and develop the jungle region.

The first object lesson of experience with colonists is that the majority of immigrants arrive without capital. Their first contribution to their adopted country is not the money they bring with them but consists mainly of their competent hands and willing spirits. This is not unfortunate for Peru because colonists are seeking economic opportunities and are willing and anxious to work. Their assets must be joined with the economic and social opportunities of the Republic in order to develop the economy.

The second lesson is that most immigrants are not good pioneers in the new environment of Peru. They do not initiate new agricultural or industrial enterprises unless they are wealthy. Such initiative must be taken by or under the leadership of established citizens, the children and grandchildren of former immigrants.

The third lesson is that colonists must experience a degree of progress quickly. They will often suffer many hardships to begin with if they have the faith that the hardships will not last too long. They will not retain this faith on mere promises. Success of other immigrants and fairly quick progress for themselves is the basis of their continued zeal and aspirations. This fortifying evidence is lacking if the colonists are located in isolated areas.

The fourth lesson is that the process of assimilation must begin at once during the early years of colonization and be pressed constantly, to ward off the building of cultural islands without national solidarity. Such cultural islands seldom produce for the market and tend to be self-sufficient to the detriment of colonist and native.

The fifth lesson is that few colonists become farm entrepreneurs during the first years of settlement. Ordinarily it is expected that new immigrants will work for wages for other farmers in the zones where they expect to settle permanently. They do this primarily to learn how to farm in the montana and to accumulate capital. Unfortunately for Peru many immigrants have gone through this initial period of apprenticeship only to find the purchase of land in the immediate vicinity denied them.

### CHAPTER III

#### DELIMITATION OF AREAS OF AGRICULTURAL COLONIZATION

Some refinement is necessary of the potential areas of agricultural development in Peru as they relate to European immigrants. Historically, seldom have coastal valleys been considered seriously as areas of agricultural colonization by Europeans. Such development, involving considerable capital investment for irrigation works, is considered generally to be for internal development and it is thought by many people that this should benefit nationals only. Nor does the plan for agricultural colonization with Europeans include the further settling of the highlands which are already well populated with indigenous people. It reduces finally to an expanse of almost virgin territory lying on the eastern slopes of the Andean range which is referred to variously as montana, selva, jungle, oriente, interior, or simply Amazonia.

From the vantage point of Lima the area is often described by resorting to expressions of vague grandeur and a general effusiveness on the part of narrator which precludes any possibility of reducing the region to concrete terms, that is of cultivable acres which are describable in metes and bounds. In fact, most coastal Peruvians have only a broadly impressionistic picture of the area resulting from its remoteness and isolation from those individuals not imbued with a spirit of exploration. Rarely indeed is it possible for one to get a clear and coherent picture of the climate, soils, and general living conditions of the jungle from respondents in Lima. This must be attributed to a lack of first-hand information about an area that has defied intensive settlement

for at least 400 years. When most respondents are pressed for answers as to why this or that area has never been intensively settled, they usually answer: Lack of roads and railways; poor health facilities, lack of people with the necessary industriousness for hacking out a living under pioneer conditions. Unfortunately, the problem is much more involved than is belied by these simple truths.

Underdevelopment of Eastern Peru is due in large part to the simple fact that "It just doesn't pay to settle the jungle." Time was, during the war, when rubber and barbasco (cube) were so essential to the waging of war that steps were taken by the Government to develop many parts of the tropical jungle at great expense and with tremendous human effort. But few persons believed that war-induced shortages and demands would continue indefinitely; so prices were expected to decline and force marginal producers out of business.

The jungle regions are not at all uniform in vegetation, climate or topography and the attempts of many writers to describe the geography of Peru by three parallel topographical belts running northwest-southeast through the country is actually an oversimplification which confounds the problem. In fact, the jungle of Peru is not a broad unbroken belt but rather a series of scattered patches of cultivable land and river valleys loosely disposed in beltlike form just beyond the present eastern terminal points for rail and auto transportation. The area in question contains less than 10 percent of the total population of the country and some parts of it are still unexplored. Furthermore, it is wrong to think of this vast area as being unpopulated as so many persons on the

coast take for granted. Part of this erroneous belief is due in large measure to the fact that the settlers in the jungle lack lines of communication between themselves and the centers of population on the coast. An additional fact that has tended to keep general knowledge and awareness of the interior from coastal people is the tendency of settlers in the interior to look eastward for cultural and economic orientation, to Iquitos and the lower cities on the Amazon, rather than westward to Lima, the Capital.

#### Highways of Penetration

Two distinct culture areas--the Pacific slope and the highlands (sierra)--depend upon auto roads and railways, and to a lesser extent upon the sea, for transportation. The Amazon region depends only upon foot trails and river navigation.

However, auto and truck highways are playing a major role in tying the Republic together, politically and economically. Eight so-called "penetration" highways are in construction to connect coast and highland with the eastern hinterland on the slopes of the Andes. Only one of these projected arterial highways has pushed through the jungle to link up with steam navigation on the Amazon river system. This is the road from Lima through Huanuco and Tingo Maria to Pucallpa, a fluvial point on the upper Ucayali River. Even so, this route is impassable during approximately half the year. Nevertheless, it can be said that the Pacific coast of Peru is now connected with the Atlantic by a combination road and waterway which presages the full development of the Amazon river basin of Peru.

By far the most significant happening in transportation in Peru is the extension of automobile roads eastward from the well-developed coastal regions into the selva. The automobile and motor truck have come of age here so that Peruvian pioneers are moving forward by means of the combustion engine in distinction to either the covered wagon or railway train of the American pioneer epoch. It may be the means by which most of the interior will be brought into eventual production and settlement. Like many countries of the world, Peru has turned its interests from railroads to highways and the major interest is to link the waterways of the east with the landways of the west.

Thus, road building and colonization have moved along together and the strategic end of tying the country together politically provides colonists with an opportunity to turn to agriculture. These avenues of penetration are the spearheads of settlement just as the railheads were in early pioneer days in the United States. Those settlers who are out beyond the roadhead use it as their base of operations and are forever looking to the time when the road catches up with them. At the present moment there are at least eight important roads of penetration into the jungle of Peru. (See Fig. 1.)

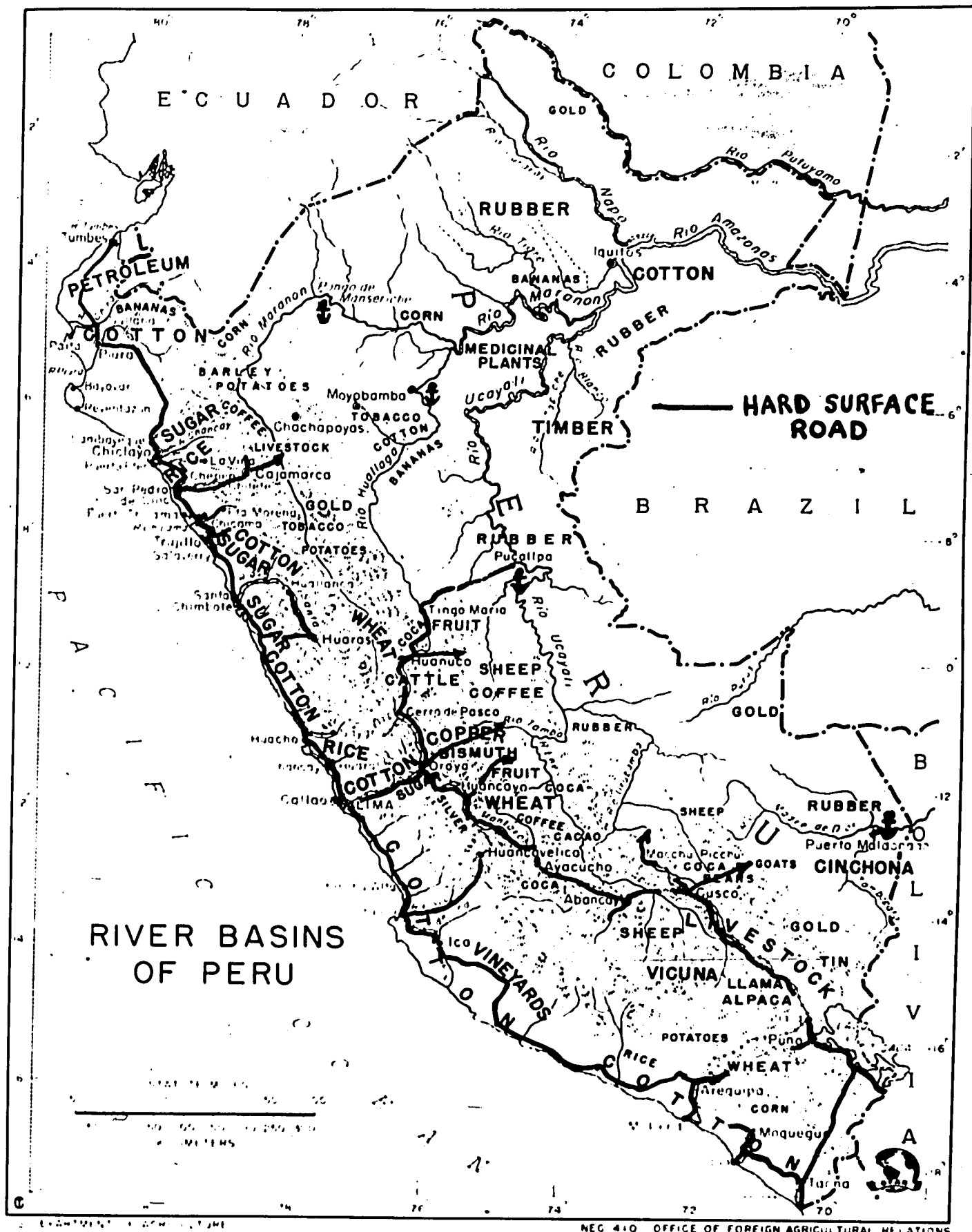
The most important of these strategic roads of penetration is the one which runs from Lima through Oroya, Cerro de Pasco,<sup>1</sup> Huanuco, and Tingo Maria to Pucallpa on the Ucayali River. The

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<sup>1</sup>  
For a detailed description of this route, consult George McCutcheon McBride and Merle A. McBride, "Peruvian Avenues of Penetration into Amazonia," The Geographical Review, Vol. XXXIV, Jan. 1944, No. 1, pp. 4-16.



FIGURE 1. ROUTES OF PENETRATION TO EASTERN PERU.



famous Oroya railroad parallels this highway from Lima to Oroya and the Cerro de Pasco railroad continues on to the famous copper-mining town of Cerro de Pasco. At Tingo Maria the Government has set up one of its centers of colonization and in cooperation with the United States has built an agricultural experiment station devoted primarily to tropical agriculture.

Steamers of a thousand tons come to Pucallpa all the year round, and during the dry season (May to October) Pucallpa is three days by auto from Lima. From Pucallpa it is only three days downstream by river steamer to Iquitos.

One of the oldest routes into the eastern part of Peru is the auto road from Lima through Oroya, Tarma, San Ramon, and La Merced to the Perene Colony or Oxapampa. San Ramon was founded in 1847 as a fort to protect Tarma and the Chanchamayo Valley from raids by Indians. La Merced was founded a little more than forty years later than San Ramon as a result of the early colonization efforts in that region.

In 1902, the Peruvian explorer, Manuel Antonio Mesones Muro, discovered the Porculla Pass in northern Peru, by which it is possible to cross the Andean Range at only 7,072 feet. A road from Chiclayo on the coast to Bella Vista on the Marañon River takes advantage of this low pass to cross the Continental Divide and begin penetration of the jungle. The road at present extends to Bella Vista which is about 24 hours by balsa raft or small launch to the little ports of San Borja and Melendez, from which there is regular steamship service to Iquitos.

The Government has established the Jaen-Bella Vista area as a colonization area and is in process of developing it. It is estimated that 120,000 hectares of land can be brought into production if the proper irrigation works are built. Climate here is semi-arid and topography is characterized as a slightly undulating plain. The land is a natural pasture at present providing sustenance to about 20,000 head of cattle. It is at Bella Vista that the Marañon valley opens out into an extensive plain which allows easy access to the lowlands and appears to be advantageous for the development of a livestock industry.

Instead of following the Marañon valley down to Melendez, it is also planned to build a road from Bella Vista up the Utcubamba River to Chachapoyas linking up there with the highway being constructed from Trujillo on the coast. This latter route is known as the Cajamarca route, and is the oldest avenue of penetration of the highland and jungle regions dating back to colonial times. Chachapoyas and Moyobamba, important towns along this route, were both founded before 1540 but still do not have adequate road facilities. The Government has not set up any colonization centers on this route due, no doubt, to the fact that there is a rather large number of people already living there. Moyobamba, a town of 7,500 population, is the center of an agricultural region supporting some 25,000 inhabitants. This region occupies a broad alluvial plain, partly forested, of the Moyo River. It connects with the coast by mule trail (camino de herradura) and likewise with the communities of San Martín (Tarapoto), Bella Vista, Lamas, and Yurimaguas. The latter center is the upper limit of steam navigation on the Huallaga River from whence it is only two days by river

launch to Iquitos. Commercial contact has been easier with the Amazon downstream than with the coast. Its principal industry, shared with Rioja five hours by mule trail to the west, is the fabrication of high-grade Panama hats.

Another important route of penetration extends from Lima through Oroya, Jauja, and Concepcion to Satipo on the Satipo River. Government colonization development at Satipo is second only to Tingo Maria. The lands of colonization are located along the Satipo, Masamari and Sonomoro Rivers, and it is estimated that 16,000 hectares are capable of being brought into agricultural production. The climate is tropical ranging from 15°C. to 31°C. with an annual rainfall of about 1,500 mm. About 11,500 hectares of this land is already being colonized by approximately 1,000 settlers of Hungarian, Slavic, Italian, and Peruvian nationalities. However, only about 4,000 hectares have been cleared and are actually in use for crop production. Farms are of the small-owner type on which most of the labor is supplied by the farmer and members of his family.

Two southern routes serve mainly to penetrate the upper valleys of the Madre de Dios River. One descends from the highlands around Cuzco into the valley of the Paucartambo, and finally to the Alto Madre de Dios region through the canyon of the Yanamayo River. This route taps a rich rubber region, and also the district is thought to contain petroleum. The second route serves a rich gold-bearing region of the Marcapata River. A scheme to colonize this latter area by resorting to both mining and agriculture has not been successful because farmers tended to desert farming for gold-panning.

The road has been extended over 200 kilometers into the lowland region and will eventually connect with the navigable waters of the Madre de Dios at Puerto Maldonado which has an active all-year downstream traffic.

Mention should also be made of the route from Cuzco through Urubamba, Machu Picchu and Quillabamba to the lower Urubamba Valley. This route attracts travelers from all parts of the world because of its archeological interest. In fact Machu Picchu, for centuries a hidden city unknown to the Spaniards, was discovered by modern archeologists in 1911. This route combines both railway and auto road but has little strategic importance as an avenue of penetration. Several minor auto roads have been pushed through from Juliaca to Sandia and Agualani in the gold-bearing region of the upper Inambari which also gives access to a rubber-producing area.

It is evident that colonization and the construction of ways of transportation must be combined if the colonizable areas are to be exploited. Government policy tends to conform to this principle, that is, any road of penetration is likely to have one or more centers of colonization, either in operation or contemplated. For example, the Peruvian Government has colonization zones at Tingo Maria, Satipo, Jaen, and Villa Rica. In addition there is the Perene Colony under private control with some importance as a potential colonization area. All of these colonization zones are located in the eastern border valleys of the Andes and adjacent lowlands in fairly close proximity to roads of penetration. This narrow foothill region constitutes the frontier of Peru and, in general, is the region above the navigable waters of the great

tributary rivers of the Amazon—the Marañon, the Huallaga, the Ucayali, the Madre de Dios—but below most of the terminal points of the roads of penetration into the jungle region. It is a zone of relatively heavy rainfall (at least 1,500 mm. annually), where rain and high temperatures have made possible the growth of a heavy forest. If it is to be delineated by altitude alone, it is that part of the jungle region situated between approximately 200 and 1,800 (or even 2,000) meters above sea level. Three outstanding things describe it: (1) It borders the highland; (2) its rivers, or rather its rapids are not navigable by boat and are confined in fixed courses; (3) its lands are not normally subject to inundation.<sup>1</sup> To distinguish this frontier region from the jungle region under 200 meters altitude the term high jungle may be used. The low jungle is characterized by conditions in sharp contrast to the high jungle: (1) It is a region far from the highland Cordilleras; (2) its rivers, with sufficient volume of water, are navigable, but are not generally confined to definite water courses at all times; (3) its lands are subject to constant overflow.

Climatic conditions in the high jungle are tempered considerably by altitude and the deeply eroded nature of the country assures good drainage. For these two reasons, as well as many others, it is believed that the region is better adapted to settlement by Europeans.

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<sup>1</sup>  
Cf. Censo Nacional de Poblacion y Ocupacion, 1940, vol. I, Ministerio de Hacienda y Comercio, pp. cxxi-cxxvii.

Strong arguments can be sustained against the tropics as a home for Europeans. It is generally claimed that people raised in a temperate climate, such as prevails in most of Europe, prefer a cool climate to a hot one; and the attitude man has toward his environment, of which climate is an important part, determines to a large extent how successful are any of his undertakings. Peru has concentrated agricultural colonization efforts, either planned or unplanned, in those areas which provide climate and altitude more nearly comparable to the temperate zones of Europe.

#### The Meaning of Agricultural Colonization.

Peru has experimented enough over the last century or more to know some of the "do's and don't's" of colonizing a virgin land. Government policy has evolved slowly and perforce, hesitantly, in a country that is beset with many obstacles to extensive settlement. In the first place, "government" has always felt obliged to take an active hand in stimulating and supporting immigration; in other words, it has felt constrained to strengthen the appeal of the land. But immigration policy has been ineffective in attracting large numbers of immigrants.

The most intensive attempts to colonize were made during the last three quarters of the 19th Century. Successes have been meagre and far between. Attempts have been made to colonize practically all parts of the eastern jungle regions—Chanchamayo, Perene, Ene, Huallaga, Ucayali, Madre de Dios, Huancabamba, Urubamba, Tulumayo, Intaz, Utcubamba, Maranon, Palcazu, Mayo, Pozuzo, Oxapampa, etc. Most of the efforts, however, never got beyond the planning

or negotiating stage and the first fifty years of intensive preoccupation with agricultural colonization by Europeans left only a handful of surviving colonies by 1900. It is of particular significance to note just where these surviving colonies were located. All were within three days' mule travel of the projected rail head at Oroya; in fact, the era of railroad development in Peru coincides fairly closely with the period of intensive colonizing activities.

It should also be noted that the colonies that persisted were oriented economically within the inner orbit of the Capital city, Lima. It was the railroad and mining activity that early spurred agricultural development of the Chanchamayo region and later the Satipo region. Railroad construction, beginning slowly in 1851, reached a peak of construction from 1870 to 1873. Construction thereafter was small and sporadic until another period of railroad building took place from 1906 to 1910.

Historically it has been demonstrated that European colonists cannot be turned loose in the jungle without roads and modern health facilities; the colony of Pozuzo bears ample testimony to this fact. In the first place, the colony failed to grow in numbers. New immigrants never were attracted to Peru by letters written home to Europe as was so often the case in the settling of the United States. What is better evidence as to the conditions for settlement than the voluntary testimonial of the immigrant himself?

As for the present, Peru no longer relies upon normal economic and social forces to settle its undeveloped lands. Increasingly, the tendency has been to take positive steps to provide the



minimum of engineering facilities and tools, and to assure some social organization at the outset of settlement. This planning phase serves to turn the edge of isolation which has contributed so much to the failures of the past.

For example, in Tingo Maria from the beginning the Government set up, under direction of the Centro de Colonizacion, civil authorities, ecclesiastics, and public service personnel in health, education, recreation and sports. The budget of the Centro included costs of constructing buildings for medical dispensaries, schools, commissaries, post offices, telegraph office, cooperative store, a chapel, house of local government, a public theatre, and public playgrounds. It is apparent that Government policy now is based on a theory that pioneering is not only a farming venture or a movement of population into a new area but must incorporate a thrust of at least some of the conveniences and techniques of modern civilization, that is, the assurance of a minimum standard of living. But more important perhaps than even assuring a minimum standard of life is the policy of fortifying the colonists with facilities of a scientific agricultural experiment station.

Motor vehicles entered the picture after 1925 with rapid expansion of auto roads and increase in number of vehicles. The building of railways, on the other hand, came almost to a standstill. There is no doubt that the combustion engine has been the main force of recent years in tying eastern and western Peru together. Some indication of the significance of auto transportation may be seen in the fact that the number of motor vehicles increased from 10,727 in 1927 to 32,935 in 1946.

Present Agricultural Colonization Zones.

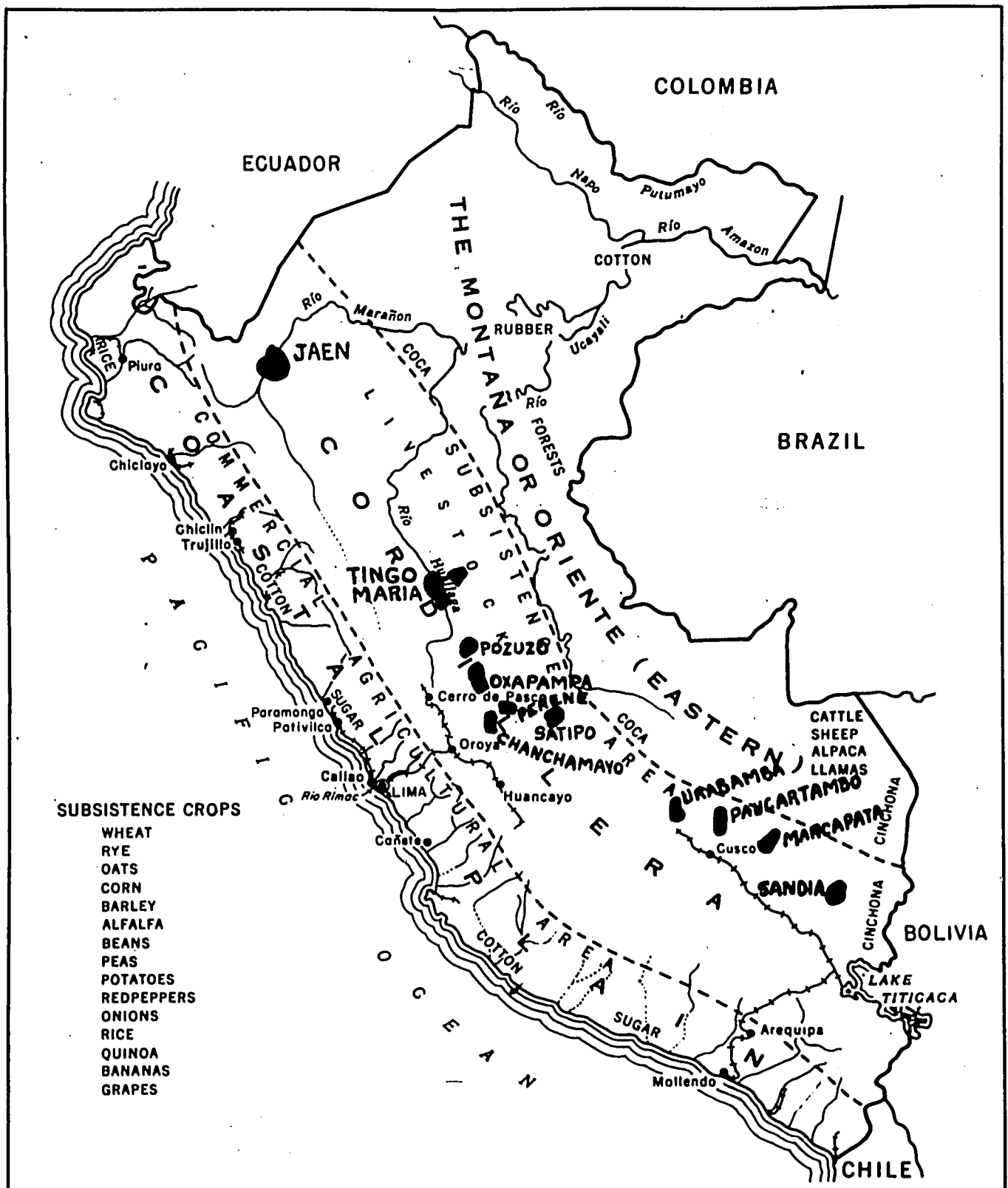
It was possible to get the most competent technicians in Peru to analyze present colonization schemes and thereby to set some priority as to present potentialities for displaced persons (Annex 13). The vast land areas that seemed at first glance to be available for settlement soon reduced themselves to relatively limited areas in the eastern slopes of the Andes. (See Fig. 2.)

Jaen-Bella Vista Zone.---In northern Peru, the Jaen-Bella Vista zone, located in the departments of Cajamarca and Amazonas, contains about 3,000 hectares that might be utilized for agriculture. Irrigation would be required because the climate is semi-arid. There are two definitely marked seasons; one rainy, from December to April; the other dry, during the remainder of the year. The land is a natural pasture characterized topographically as a slightly undulating plain. Present population of the area must not exceed 200 families on 1,000 hectares of land. Various estimates, ranging from 400 to 3,000 families, have been made as to potential settlement possibilities of this area.

Livestock is the principal agricultural activity with approximately 20,000 head of cattle now being carried. But the following crops are raised: Rice, yuca, corn, oranges, avocados, pineapples, coffee, cocoa, beans, and bananas. Proposed commercial crops that seem adapted to the area include: Cotton, sugar cane, tobacco, and coca.

This zone is in communication with the port of Pimental and with Chiclayo, capital of the department of Lambayeque, by a road, 345 kilometers in length, that rises only 7,072 feet above sea level

FIGURE 2.- COLONIZATION ZONES IN PERU.



through Porculla Pass. Transport is wholly motorized and canoe navigation begins at the end of the road of penetration on the Marañon River.

Oxapampa and Villa Rica Zones.—Oxapampa and Villa Rica are located in central Peru and have been described in some detail in the preceding chapter. The principal product is timber but the Government is interested at present in developing the zebu breed of cattle in the area. Estimates of the number of settlers that might be absorbed in these zones were difficult to arrive at but one reliable informant indicated that 8,000 hectares might be made available in the Villa Rica zone alone.

Satipo Zone.—The Satipo colonization zone is located in the Department of Junin, some 510 kilometers from Lima on the Satipo, Masamari and Sonomoro Rivers. One estimate places the area feasible for cultivation at 16,000 hectares, which might absorb 400 families.

The climate is tropical with a temperature range of from 26°C. to 32°C. and annual rainfall of about 2,000 mm. However, the undulating character of the land contributes to good drainage.

About 11,500 hectares are already in agriculture, operated by 1,000 colonists of Peruvian, Hungarian, Slavic, and Italian nationality. Present holdings average about 12 hectares per farm. Only 4,000 hectares (approximately) have been cleared for crops and 300 hectares for pasture.

Farms of five hectares are given free to the settler while other lands are sold at 15 soles per hectare without interest. The settler is required to cultivate at least 50 percent of his land but he does not have to live on it. The State reserves mineral rights.

Credit is available through the Banco Agricola and the Government has sponsored cooperatives for the settlers. Fruits and rice are marketed in the highlands while wood and barbasco are shipped to the coast. Subsistence crops consist of rice, fruits, corn, yuca, and bananas. Commercial crops of the future are likely to include coffee, cocoa, tea, barbasco, and tropical fruits. The zone now carries about 500 head of cattle and 700 hogs.

Perene Colony.—The land owned by the Peruvian Corporation is situated 349 kilometers from Lima which is 209 kilometers by rail and 140 kilometers by auto road. The Colony includes about 500,000 hectares situated on the banks of the Perene River for a distance of 130 kilometers and a width of 20 kilometers on each side of the river.

The property is bounded at the western end by the Paucartambo and Chanchamayo rivers and the cultivated area of the Colony, totalling about 1,200 hectares, is situated at the confluence of these two rivers at an altitude of about 670 meters. The greater part of the Colony is virgin forest although there are some areas known as "pajonales," or open country, which are eminently suitable for cultivation. These districts, however, lie at some distance from the present settlements and there are as yet no roads and communication beyond those settlements within the Colony property.

The climate is tropical with annual rainfall ranging from 80 to 100 inches. (See Table 1.) There is little or no defined line between wet and dry seasons. Rains commence in November and end in May, although there may be heavy rains in any month of the year. Usual tropical diseases such as malaria, typhoid and hookworm

TABLE 1

RAINFALL IN INCHES AT PAMPA WHALEY, PERENE COLONY,  
1940 - '46\*

|           | : 1940 :       | 1941 :       | 1942 :       | 1943 :       | 1944 :       | 1945 :        | 1946 : |
|-----------|----------------|--------------|--------------|--------------|--------------|---------------|--------|
| January   | : 7.17:        | 5.26:        | 8. :         | 5.72:        | 6.83:        | 10.24:        | 6.63   |
| February  | : 6.9 :        | 11.07:       | 6.62:        | 13.72:       | 7.38:        | 7.55:         | 11.5   |
| March     | : 7.43:        | 9.00:        | 11.80:       | 11.74:       | 7.81:        | 7.81:         | 11.52  |
| April     | : 6.45:        | 13.30:       | 12.75:       | 6.53:        | 5.43:        | 5.20:         | 5.33   |
| May       | : 3.93:        | 8.32:        | 5.29:        | 6.45:        | 5.95:        | .98:          | 7.19   |
| June      | : 4.80:        | 3.86:        | 6.35:        | 3.50:        | 2.92:        | 1.67:         | 7.53   |
| July      | : 1.16:        | 3.37:        | 1.67:        | 2.4 :        | .48:         | 1.73:         | 1.5    |
| August    | : 1.40:        | 1.90:        | 6.40:        | 1.4 :        | 1.24:        | .56:          | 1.11   |
| September | : 8.58:        | 1.26:        | 4.50:        | 2.6 :        | 2.33:        | .88:          | 3.65   |
| October   | : 7.12:        | 1.36:        | 6. :         | 5.2 :        | 6.39:        | 7.10:         | 4.48   |
| November  | : 4.63:        | 5.25:        | 4.52:        | 3.6 :        | 4.77:        | 2.73:         | 6.57   |
| December  | : <u>5.88:</u> | <u>9.62:</u> | <u>7.22:</u> | <u>6.1 :</u> | <u>2.37:</u> | <u>10.45:</u> | - -    |
| Total     | : 65.45:       | 73.57:       | 81.12:       | 68.96:       | 53.90:       | 56.90:        | - -    |

\* Source: Local records supervised by N. Sillars, Manager of the Perene Colony.

are prevalent, but with ordinary precautions can be controlled.

The climate generally is suitable for Europeans.

The administration building is a well-constructed brick building of two stories. A large open market place operates on Saturdays and Sundays. The Colony has a well-stocked wholesale commissary, also a retail store of limited size.

The coffee drying machinery is impressive and appears in good condition. Coffee is brought from the hills to the plant by pipelines.

An interesting side operation is the distilling of oil of lemon from a native grass. The oil is sold for perfume in Lima.

The "Cinema," a big open-sided building, was being used in December, 1946, as a brick-making establishment. But the resident manager said regular shows were presented. There is no church but one is contemplated.

The school at Pampa Whaley is well constructed, consisting of one classroom and toilets for boys and girls. The teacher lives in a small house attached to the school. There is another school on one of the farms. Enrollment in the two schools was 56 pupils in 1946. There are about 1,300 people on the five farms.

The hospital building is in disrepair and lacks modern facilities. It has a long central hallway entered through a screen door, front and rear. On the right is a large rectangular ward for female patients on the left a similar ward for male patients. It was reported that there were 70 beds in the hospital. Just inside the front door is a small waiting room and on the left the doctor's office. In it is a desk for writing, a metal wall case with a few medical instruments, and shelves of drugs. On the right of the waiting room is the "topica," or "curing room." Furniture consists of a crude table for examinations and a charcoal burner for heating water for sterilization. A few medical instruments were scattered around.

At the back of the hospital is the obviously unclean kitchen, operated with the same cooking techniques employed by the native population.

The personnel on duty at time of visit in December, 1946, consisted of one male nurse and cook. The Government paid the male nurse 150 soles per month, amounting to less than \$25.00. At the time of visit there were five patients (four males and one female) as follows: Three cases of malaria, one of infected eyes, and one waiting childbirth. The nurse on duty ranked the important diseases in the Colony as follows: (1) Malaria, (2) anemia, (3) dysentery, (4) conjunctivitis, (5) rheumatism, and (6) pneumonia. A medical doctor from La Merced held clinic at the hospital on Monday and Friday which was usually attended by about 25 individuals.

The main produce of the Perene Colony is coffee of which the average annual crop is 10,000 quintals (about 450 tons). It is a high grade coffee and in normal times finds a ready market abroad at premium prices. In December, 1946, the cost of transportation from the Perene Colony to Lima was about 60 soles per ton (50 soles for trucking from the Colony to Oroya and 10 soles by rail from Oroya to Lima). Export of coffee was prohibited by the government as the supply was insufficient to meet national demands. In past years inferior Ecuadorean coffee was imported and partly met local requirements. But Ecuador found more lucrative markets elsewhere and none was being imported into Peru with the result that all the Peruvian crop and more was required for local consumption. The Peruvian Government fixed ceiling prices on coffee for local sales at a maximum of 83 soles per quintal.

The quality of the coffee grown is excellent. About 70 percent is composed of superior grades that can in normal times be exported to the United States and Europe while the balance (30 percent) sells readily at good prices in the local market.



Other products of the district are fresh fruit, cube (barbasco), lemon grass oil, and ginger. They are sent to Lima for local consumption or export. The cultivation of tea also holds out prospects as it is successfully grown in the Tingo Maria area which has a climate similar to that of the Perene Colony. Yuca, maize, vegetables, arrowroot, beans, rice, sweet potatoes, etc., are also grown for local consumption. The heavy cost of freighting prevents such produce from competing successfully in the Lima market with that grown on the coast.

The area of the Perene Colony that has been considered to be the most suitable for the settlement of perhaps 200 Europeans with their families is known as the Anashorini Valley, which lies on the far side of the Perene River directly opposite the Corporation's established settlements. It is new country and to open up the district, it will be necessary to lay a road of about eight kilometers and to construct a two-span bridge over the river which is about 130 meters wide. This area has the advantage that it would be a short distance from the Perene Colony's plant for the processing of coffee and the stores, school, hospital, cinema, etc. The climate of this district is the same as prevails in all the Chanchamayo Valley, the altitude being some 2,000 to 3,000 feet above sea level.

The first step to be taken for the settlement of this district will be to bring out a certain number of adult settlers in March to inspect the land and let them decide whether it is suitable. If they decide to remain, then their first task would be to burn and clear the forest. The family dependents should arrive

in July or August of the following year. By that time the settlers will have planted arrowroot, maize, sweet potatoes, bananas (cooking), sugar cane, beans (including soya beans), and vegetables. One hectare for each family would provide sufficient food for one year after arrival. The planting should be completed by September so that in August of the year following the crop would be ready for harvesting.

It would be necessary to provide each immigrant with a minimum of S/.2,000 during the first year. This would be used for maintenance while the farms are being prepared and might be advanced in cash or goods. At the end of this period the immigrant should have sufficient food to be self-supporting and even a surplus for sale. Dwellings, seeds, and tools would, of course, have to be provided.

If properly cultivated, 25 hectares of land per family planted with coffee should be sufficient after the first five-year period to provide food and income sufficient to repay any cash advanced and the cost of the land, etc. Within ten years the immigrant may reasonably expect to attain complete economic independence.

If need be, the immigrant would be able to find other means of subsistence during the first five years that it takes the coffee plant to produce. He could turn to pig breeding and working as a laborer in the coffee harvest on the established farms of the Perene Colony.

The immigrants themselves would have to do all their own manual labor on their farms as there is a scarcity of native labor.

A considerable quantity of valuable coffee is lost yearly owing to difficulties in securing an adequate labor supply for the harvest. Further development of the property is limited, therefore, by the supply of labor available. The immigrants will have ample opportunity during the coffee-picking season from March to August to add to their incomes. Payment is made by "tarea" or the quantity picked.

It is expected that colonists would take up coffee cultivation, but as the trees do not enter into bearing until five years after planting, the settlers would not be financially independent for a rather long period of time. The settlement of immigrants in the montana on a large scale, therefore, would involve expenditure of large sums of money for which they would be liable.

Tingo Maria Zone.---Careful study of the most important zones of colonization eventually leads to the conclusion that the Tingo Maria area is the most desirable for European colonists.<sup>1</sup> The basic assumptions underlying this conclusion are as follows:

- (1) Growth at the fringe of settlement offers the best chance for success of colonization;
- (2) science of settlement must have caught up with the present fringe of settlement or, preferably, should have passed it;
- (3) the base of operations for the push into the new land must provide sufficient resources of power, technology, raw materials and manpower;

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<sup>1</sup>  
Cf. Memorandum signed by Pedro Recavarren C., Director de Asuntos Orientales, Colonizacion y Terrenos de Oriente del Peru, Annex 13.

- (4) the base also must have sufficient "social density" to provide necessary health facilities, local government, schools, business establishments, recreational facilities, churches, and other social organizations; and
- (5) finally, transportation and communication facilities must be available.

The colonization zone at Tingo Maria extends from Las Palmas (km. 544 from Lima) northward to Tingo Maria (km. 570), then eastward to Pucallpa (km. 863), or a total length of 319 kilometers with an extension of land 20 kilometers wide on each side of the highway. The area is further subdivided into urban and rural zones. The urban zone, including the Hotel de Turistas, has grown since 1938 into a thriving frontier town.

Tingo Maria, at an altitude of 670 meters, possesses the advantages of a modified tropical climate. Rainfall averages 137 inches annually with monthly variation between five inches in August to 19 inches in January. The so-called "dry season" occurs during the months of May through September. Temperatures are relatively uniform throughout the entire year from an average maximum of about 88°F. to an average minimum of 64°F.

All the lands on the east bank of the Huallaga River were<sup>1</sup> expropriated by the Government for colonization. The west bank lands still belong to the Durand family of Huanuco and are undeveloped with the exception of the airport. The crossing of the river at Tingo Maria was accomplished by a canoe attached to a suspension

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<sup>1</sup> Formerly owned by one H. Nashi, a Japanese.

cable. A small suspension bridge for foot travel was built in 1947.

The actual colonization area consists of land two kilometers wide on each side of the highway to Pucallpa. Table 2 summarizes the properties administered in 1944 through the Official Center of Colonization at Tingo Maria. Small properties vary from 15 to 30 hectares in size, medium-size properties approximate 100 hectares, and extensive properties approximate 1,000 hectares. The colony consisted in 1944 of 266 properties in operation, being only 55 percent of all the properties disposed of by the government. The lowest rates of operation are to be found in the Class "C" type property and those of medium-size. This is due in large part to the fact that many of these classes of property, especially in the medium-size group, have been taken up by individuals in Lima as speculative ventures. One of the most successful farms is Hacienda "Delicias" owned and operated by Sr. Federico Tong. This hacienda is valued now at one million soles with a capital investment of 250,000 soles more or less. Sr. Tong was able to bring under his management 370 hectares of land by combining four medium-size properties. This was done by having various members of the family make applications for donations of land. About 150 hectares were in cultivation in 1945, the principal crops being cube, coca, various fruits and sugar cane. The hacienda requires 40 permanent workers and about 200 in the peak work period.

This large and successful farm may be compared for purposes of contrast with Lote N<sup>o</sup> 13 (Class "B"). This colonist has only 3.5 hectares cleared and raises principally corn, platanos, yucas and fruits. Yet this farm requires three peons for one or two

TABLE 2

PROPERTIES IN THE TINGO MARIA COLONIZATION ZONE  
CLASSIFIED BY SIZE AND BY STATE OF  
OPERATION IN 1944

| Size of farm                        | : All        |          | : Adjudicated |          | : Properties |          |
|-------------------------------------|--------------|----------|---------------|----------|--------------|----------|
|                                     | : properties |          | : properties  |          | : being      |          |
|                                     | :            |          | :             |          | : worked     |          |
|                                     | :No.         | Hectares | :No.          | Hectares | :No.         | Hectares |
| Small properties                    | :225         | 3,551    | :211          | 3,239    | :146         | 2,666    |
| Class "A" *                         | : 98         | 1,323    | : 98          | 1,323    | : 81         | 1,138    |
| Class "B" <sup>a</sup>              | : 55         | 718      | : 52          | 675      | : 42         | 546      |
| Class "C" <sup>b</sup>              | : 72         | 1,510    | : 61          | 1,241    | : 23         | 982      |
| Medium-size properties <sup>c</sup> | :248         | 21,888   | :211          | 18,325   | :114         | 9,408    |
| Extensive properties <sup>d</sup>   | : 12         | 8,120    | : 12          | 8,120    | : 6          | 6,400    |
| Total properties                    | :485         | 33,559   | :434          | 29,684   | :266         | 18,474   |

\* Class "A" type colonists received gratuitously: (1) transport to Tingo Maria, (2) a house, (3) tools and seeds, (4) 2 soles daily for the first six months, (5) credits of 500 soles for farm development and 200 soles for animals, and (6) 15 hectares of land.

<sup>a</sup> Class "B" type colonists received gratuitously: (1) transport, (2) a house, (3) tools and seeds, (4) 15 hectares of land of which one was cleared for cultivation. The government to be recompensed through daily work at the Granja de Colonizacion de Tingo Maria and also through harvest of crops.

<sup>b</sup> Class "C" type colonists received gratuitously: (1) transport, (2) a house, (3) tools and seeds, (4) at least 30 hectares of land of which one hectare was cleared. However, the colonist was required to have at least 1,000 soles capital at time of settlement.

<sup>c</sup> Colonists of the medium-size properties received 100 hectares of land, the value of which they repaid to the government.

<sup>d</sup> Colonists of the extensive properties received up to 3,000 hectares of land, the value of which they repaid to the government.

months during the year.

Tropical fruits, primarily bananas, oranges, pineapples, lemons, and mangos, are the main crop in the colonization zone

followed by cube (barbasco), pan-llevar (subsistence crops), coca, tea, and coffee. (See Table 3.)

TABLE 3  
NUMBER OF HECTARES IN PRINCIPAL CROPS GROWN BY THE  
COLONISTS OF THE TINGO MARIA COLONIZATION  
ZONE IN 1946\*

| <u>Name of crop</u>     | <u>Number of hectares</u> |
|-------------------------|---------------------------|
| Fruits <sup>a</sup>     | 702                       |
| Cube (barbasco)         | 408                       |
| Pan-llevar <sup>b</sup> | 368                       |
| Coca                    | 346                       |
| Tea                     | 292                       |
| Coffee                  | 163                       |

<sup>a</sup> Principal fruits are bananas, pineapples, oranges, avocados, lemons, and mangos.

<sup>b</sup> Includes all subsistence crops such as corn, beans, yuca, etc.

\* Source: Estacion Experimental Agricola de Tingo Maria, Departamento de Extension y Educacion.

Fruits and tea are marketed in Huanuco and Lima. Cube is sent to Huanuco by auto truck or shipped by balsa raft down river to Iquitos. Most of the time it is cheaper to bring in rice or maize from Lima than produce it in the area.

Labor requirements for the different crops grown vary greatly, corn or yuca (pan-llevar) requiring roughly one man per hectare compared to three men per hectare of tea. High labor requirements in general explain to a large extent the shortage of labor in the colonization zone resulting in only 14 percent of the available land actually being cultivated.

It is almost impossible to arrive at any exact figure of the amount of money that has been invested in the Tingo Maria project but it is known to be considerable. Taking the figures budgeted under the various government agencies working in the area it is possible to estimate a possible annual cost of the colonization effort in Tingo Maria. (See Table 4.)

TABLE 4  
AMOUNTS BUDGETED BY THE PERUVIAN GOVERNMENT IN  
DEVELOPING TINGO MARIA IN 1946

| <u>Item</u>   | <u>Thousands of soles</u> |
|---|---------------------------|
| Centro de Tingo Maria   | 19.2                      |
| Colonizacion Tingo Maria  | 168.0                     |
| Estacion Experimental   | 1,301.5                   |
| Centro de Colonizacion  | 411.6                     |
| Ley Forestal de los Colonos   | 400.0                     |
| Saneamiento de Tingo Maria  | 150.0                     |
| Cultivos Tropicales   | 84.0                      |
| Fundo "Cinchona"  | 250.0                     |
| Canaderia en el Oriente   | 100.0                     |
| Centro de Proteccion<br>Materno-Infantil  | 98.4                      |
| Saneamiento de Tingo Maria<br>(This is the Part 438 of the<br>proposal of the Salud Publica,<br>equal in amount and title to<br>Part 221 of the proposal of<br>Agricultura, but is distinct<br>from this item.) | 150.0                     |
| Total   | 3,132.7                   |



This figure indicates that Tingo Maria has cost the Peruvian Government about 20 to 25 million soles during the eight years, 1938-46, in developing the colonization zone. This is equivalent to over \$3,000,000.00 United States money. It does not include considerable investments made by the United States Government in the agricultural experiment station, estimated at 700,000 to 800,000 soles annually. Nor does it include the costs of road building or the private investment.

These costs seem unduly high when considered against the fact that no more than 500 farm units have been developed involving slightly more than 2,500 people. But the actual colonization program is only a relatively small part of the total economy of the area. There is considerable private agricultural activity; tourists are an ever-growing business; the agricultural experiment station has a widely expanding program of tropical crop production; the community is increasing in importance as a transportation center; finally, Tingo Maria is becoming an important agricultural center for a wide area of the selva.

It is further estimated that it costs about 15,000 soles, or \$2,500, to settle a new colonist at Tingo Maria. According to technical calculations the government's cost of settling a family on 30 hectares of land would be approximately:

|                                    |              |           |
|------------------------------------|--------------|-----------|
| Roads . . . . .                    | S/. 3,000    |           |
| Clearing and cultivating . . . . . | 4,000        | (first 5  |
| Constructions . . . . .            | 3,000        | hectares) |
| Cattle and implements . . . . .    | 1,000        |           |
| Maintenance for 8 months . . . . . | <u>2,400</u> |           |
|                                    | S/.13,400    |           |

These figures taken together allow about 2,600 soles for the cost of civil protection, public health, education, local government, and

upkeep on roads, which seems to be a reasonable charge for such services.

In summary it should be pointed out that no pioneering is done without a certain amount of experimentation and what may be called "trial and error" method. Even with the accessibility to the agricultural experiment station at Tingo Maria it is clear that the majority of farmers rely most of all on themselves and the folk knowledge passed on to them through their families and neighbors. Most of the land around Tingo Maria is at least partially settled. Thus, there exists a great body of knowledge and experience in the hands of the present pioneers who constitute the first wave of settlement. In a sense Tingo Maria is an experiment which can be analyzed in order to guide future colonists.

## CHAPTER IV

### PLANNING THE STUDY OF THE HUALLAGA RIVER VALLEY

As described in Chapter I, I spent most of my time between December 8, 1946, and March 31, 1947, in discussions with officials of the Peruvian Government over the possibilities of settling displaced persons in Peru. After considerable analysis of the situation with technical people assigned by the Government for the purpose, certain priorities were agreed upon as to the most favorable areas for agricultural colonization. Clearly, the area encompassed in the Huallaga Valley, especially downstream from Tingo Maria, was most favorable from a number of standpoints. The potentialities of this area were analyzed at some length and a document prepared immediately upon my return to the United States<sup>1</sup> in April 1947.

During the Mission's stay in Peru, the possibilities of settling the Chanchamayo Valley in and around the British-owned Perene Colony were explored. The latter colonization effort under private supervision has languished badly since the grant of land was given to the Corporation in 1890.

Most of the reconnaissance explorations and appraisals of the Huallaga region were confined to the area between Huanuco and Pano on the upper part of the Huallaga Valley, down the middle valley from Tingo Maria to Juanjui, and finally, the lower valley

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See T. Wilson Longmore and Charles P. Loomis, A Plan for Agricultural Colonization in Peru, (mimeo.) Intergovernmental Committee on Refugees, East Lansing, Michigan, April 21, 1947.

around the upper-steamer point of Yurimaguas. The potential colonization area around Jaen-Bellavista and Moyobamba was reconnoitered by air. Considerable time was spent in looking over the area adjacent to Tingo Maria, including the Tulumayo River which runs into the Huallaga just below Tingo Maria, and the Monson River. The Uchiza, Juanjui, and San Martin areas, and the countryside around Yurimaguas were also appraised.

But such explorations at best could be little more than subjective reactions to a vast geographic region and consequently a new approach was made. A survey was projected of the region most likely to yield to agricultural colonization in the near future. Early in the course of the Mission's negotiations it was clear that an agreement with the Peruvian Government to admit displaced persons to fill jobs already open in industry and agriculture was only a matter of time and patience. But for the long pull ahead, when there would be great need for expanded governmental programs for developing new agricultural opportunities, it seemed most desirable to secure considerable basic information on the areas of potential settlement. Peruvian administrators were convinced of the soundness of such an approach and as a result contributed technical personnel and money for the job.

#### General Description of the Valley

Turkey dinner with all the trimmings is a common bill of fare at the American Hotel in Cerro de Pasco, the world-famous Peruvian mining camp. Northward less than 250 miles at Juanjui in the Middle Huallaga River Valley excellent turkeys are raised but none ever find their way to Cerro because no adequate means of

transporting them exists. Juanjui needs and the people there want electricity. Copper is mined at Cerro in great quantities and shipped around the world while none ever goes to Juanjui. Still, the likelihood of Juanjui ever getting copper from Cerro is less perhaps than Cerro getting turkeys from Juanjui.

The Huallaga River Valley, from its head at Cerro de Pasco at an elevation of 14,297 feet above sea level, to Yurimaguas where it breaks forth into the Amazon Plain at an elevation of only 597 feet, is potentially one interdependent valley community. As it is, however, the valley is cut up into isolated and relatively self-sufficient communities in the absence of an effective system of communication and transportation.

Five great rivers have their origin in the vicinity of Cerro de Pasco: The Marañon and Huallaga that flow north-northwest; the Perene and the Pachitea to the east; and the Montara to the south. All eventually spill into the Amazon and flow thence to the Atlantic Ocean. Cerro de Pasco is a scant 95 miles from the Pacific Ocean in a direct line, or 195 miles by rail or auto road from Lima's Pacific port of Callao. But from Cerro de Pasco down the Huallaga to the Atlantic Ocean the distance is over 3,000 miles.

The Andean Range forms a geological knot (nudo) at Cerro de Pasco from which runs three mountain chains (cordilleras) that by their relative positions are designated Western, Central, and Eastern. The first chain follows a course north-northwest, parallel to the coast, but at some 62 miles from its source divides into two chains called the Negra and the Blanca. Between these chains runs the Santa River. The Central chain, a short distance from the knot of Pasco runs northwest, forming an angle with the

Western chain and divides the river basins of the Marañon and the Huallaga; it continues in a northwesterly direction more or less parallel to the Western chain, and eventually unites with it in Ecuadorean territory at the knot of Loja. As for the Eastern chain, its altitude constantly diminishes in its northward course, finally cutting across the Huallaga River Valley at Pongo de Aguirre. Here it takes a northwesterly direction, connecting again with the Central chain near the northern boundary of Peru. The valley of the Marañon and its adjacent highlands is one of the most densely settled areas in Peru, whereas the Huallaga Valley is sparsely settled.

It is the valley of the Huallaga River that has come to be the focus for agricultural colonization in Peru as well as a route of penetration to the head of navigation on the Amazon. As late as 1938, the Huallaga was the subject of a travel book by the English botanist, Cristopher Sandemann, entitled A Forgotten River, although it had been explored by Lt. William Lewis Herndon of the United States Navy as early as 1851. Concentration on the Huallaga as a site for colonization and penetration constitutes a reorientation of Peru's former plans for settlement of its Amazon territory. Until the beginning of World War II, most efforts at colonization were directed mainly into the Tarma-La Merced region and the Chanchamayo Valley east of Cerro de Pasco, as has been pointed out. Plans were made also for a route of penetration running from Cerro de Pasco to Pozuzo, and from Pozuzo to Mairo at the head of navigation on the Pachitea. But the linkage of the coastal and highland regions of Peru with the water system of the Amazon (except for balsa raft, canoe, or trail) defied fulfillment until World War II

when the Lima-Huanuco-Pucallpa Highway was completed.

About 1932, undoubtedly with strategic war ends in mind, the government of General Sanchez Cerro gave its support to a plan which would push through an auto road from Huanuco to Pucallpa, the head of navigation on the Ucayali. This scheme was followed in 1938 by a plan, under the administration of General Benavides, for colonizing along the route of the newly constructed road. As a result of these efforts, passengers and freight can go now from Lima to Pucallpa by auto or truck and thence down the Ucayali by river steamer to the Atlantic Ocean. This route follows, more or less, the Huallaga River from Cerro de Pasco to Tingo Maria. It leaves the Huallaga at this point and turns eastward across the Pampa del Sacramento to Pucallpa on the Ucayali River. Thus, the Huallaga Valley, from Tingo Maria in the south to Yurimaguas in the north, is still without adequate land transportation, having only trail, balsa raft, or canoe transportation and, more recently, a limited air service.

In more specific terms, the Huallaga Valley comprehends a region lying between latitude  $10^{\circ} 55'$  and  $5^{\circ} 54'$ . The most westerly point reached must be near longitude  $76^{\circ} 31'$ , the most easterly  $75^{\circ} 32'$ . For the most part it is encompassed in two departments--Huanuco and San Martin.

Every traveler, be he tourist or trained observer, who visits the Huallaga may be expected to contribute a measure of understanding providing his observations are properly recorded. Unfortunately, little systematic gathering of material about the Huallaga Valley has ever been attempted. The Census of Peru for 1940 provides us with a basic core of general information about the region but this

has lost much of its meaning as a result of the swift march of events since the Census was taken, culminating in the agricultural colonization at Tingo Maria and the opening of the Central Highway. This has brought tremendous economic and social developments to the upper Huallaga Valley between Cerro de Pasco and Tingo Maria of which the Census of 1940 gives no hint.

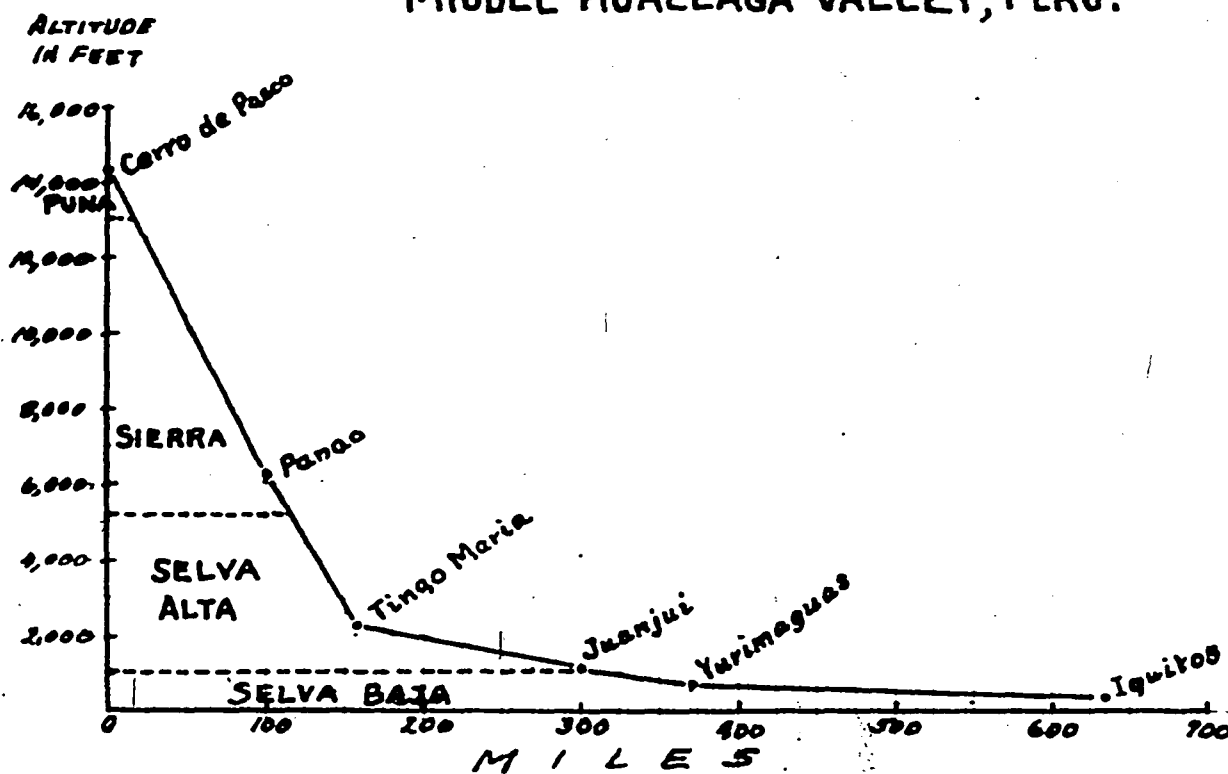
The problem is: To describe the Huallaga Valley in such detail as to allow some prediction in regard to its potentialities as a site for agricultural colonization by Europeans. The problem may be restated: "To what extent is the Huallaga Valley suitable for European families to settle in?" Or again: "How effective has the Peruvian been in satisfying his needs in the Huallaga?" In addition, a final question might be asked, either: "How may Europeans adapt themselves to life in the Huallaga Valley?" or "How might conditions in the Huallaga Valley be changed to accommodate European settlers?"

The ordinary flat map of the geographer is completely inadequate to describe the topography of Peru. The gigantic barrier of the Andes and the way in which it transects the country from northwest to southeast constitutes the most important geographic accident for the country, influencing thereby its entire social organization. Figure 3 serves to present the altitude factor in relation to the Huallaga Valley.

The Huallaga Valley can be described by four altitude zones. The first zone, called Puna, commences at over 14,000 feet above sea level (Cerro de Pasco) and descends steeply following a narrow, rocky gorge. At about 13,000 feet, the second zone, or Sierra, begins and the bleakness of the Puna gives way gradually



FIGURE 3. LONGITUDINAL PROFILE OF THE  
MIDDLE HUALLAGA VALLEY, PERU.



• Auto Road • Canoe and Balsa • River Steamer → To Atlantic Ocean

to more vegetation. The valley, descending quickly, begins to widen and offers more opportunity for such crops as barley, corn, alfalfa, vegetables, and flowers. After leaving San Rafael, the valley narrows to rocky walls but soon opens to allow planting of extensive fields of sugar cane and alfalfa. Huanuco, elevation 6,271 feet, is a Sierra city of 12,877 population and is an important trade center for the Selva as well as the surrounding highlands. The Huallaga Valley within the Sierra zone is heavily populated in relation to available cultivated land and is said to offer little opportunity for colonization. In fact, for Peru as a whole, approximately two-thirds of the population live in a region comparable to this, that is, between 5,750 and 13,120 feet elevation.

The Huallaga turns eastward after passing Huanuco and at about 3,500 feet enters the zone denominated "selva Alta." The gradient is less steep than in the Sierra and offers opportunity for balsa raft and canoe transportation. Between Cerro de Pasco and Tingo Maria the river falls on the average of 79 feet per mile, but between Tingo Maria and Juanjui only eight feet per mile, roughly one-tenth. The steep hillsides of the Selva Alta are covered with trees, many of great commercial value. The upper reaches of the Selva Alta, generally narrow, widen where tributaries enter. Land for cultivation is relatively scarce but the density of population is low and with proper land use might support a larger population. The river course is beset with rapids (mal pasos) at various points, making balsa raft and canoa methods of transport dangerous and expensive. After passing Juanjui, 145 miles north-northwest of Tingo Maria, the valley widens considerably and the density of population increases. At Pongo de Aguirre the Huallaga

River passes quickly into the Selva Baja at an altitude of about 800 feet above sea level. From this point it is not more than 150 miles to the confluence of the Huallaga with the Marañon, and then only another 225 miles farther on to Iquitos. The Huallaga flows in great ox-bows through the Selva Baja and is navigable for small steamers throughout its length in this zone. The surrounding lands are easily inundated when the river rises and this makes permanent settlement difficult, resulting in a low density of population.

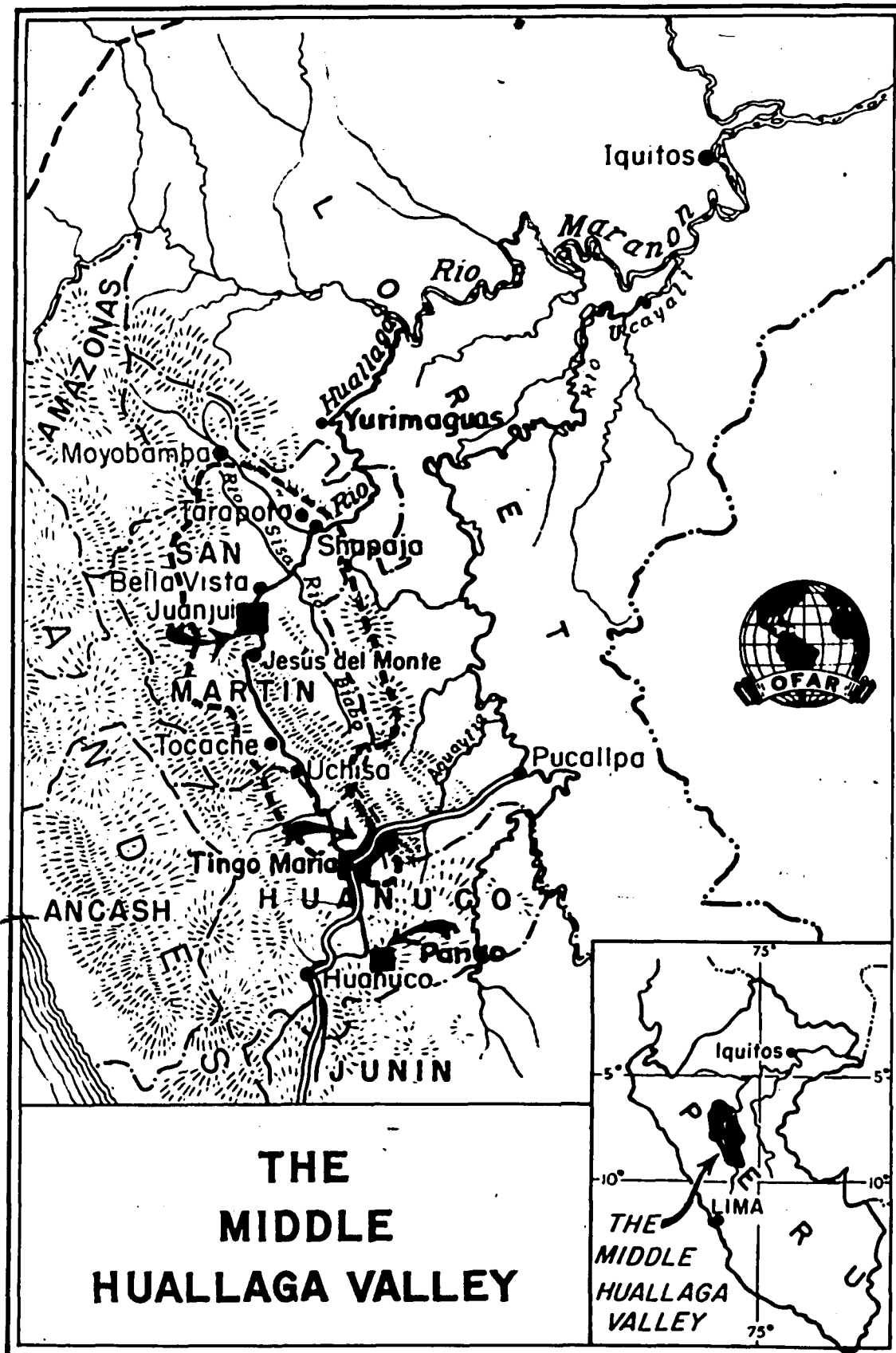
The Selva Baja has resisted modern-man's conquest and for the foreseeable future will continue to maintain a relatively small population. Certainly, it presents the European colonist with the greatest problems of adaptation just as does the high Puna. To cite only one thing, the soil is not adapted to the construction of firm road beds.

Geography.—The valley of the Huallaga is limited, insofar as colonization is concerned, to a territory of 20 kilometers wide more or less on each side of the river, from the upper limit of balsa and canoe transportation to the upper limit of transport by river steamer. (See Fig. 4.) The zone runs from Las Palmas, at an altitude of 700 meters, to Yurimaguas, altitude 182 meters.

At Juanjui, about 250 kilometers from Las Palmas, the valley descends to 320 meters. Juanjui is also the most westerly point reached in the valley. From Juanjui the valley turns eastward in a great arc and soon passes through a small range of mountains into the lower Amazon plain at Shapaja.

The valley is bounded on the west by the Andean range and on the east by the Cordillera Azul. The most important tributary in the upper valley is the Tulumayo which enters immediately below

FIGURE 4.



Tingo Maria. The most important tributary in the lower valley is the Mayo near San Martin.

After passing the hills around Tingo Maria, the valley opens at the confluence of the Tulumayo to form an extensive plain called Guangana Pampa. Farther to the north, the valley widens out as much as 40 to 50 kilometers, offering extensive areas for agriculture. In only a few places are the elevations so pronounced as to impede utilization for agriculture. The most extensive cultivable land area extends 40 kilometers from Verdun (about 100 kilometers north of Tingo Maria) to Pizana.

Climate.---The ranges of mountains that cross the northward course of the Huallaga tend to divide the valley into two distinct climatic zones characterized by distinctive vegetational types: (1) The upland rain-forest area (lluviosa boscosa), between Tingo Maria and Sion or Cayumba; (2) the wet-dry (humeda seca) or dry-hardwood-forest area from Sion to Shapaja or Chasuta. Above these two climatic zones is the mountain-forest region and below them is the tropical lowland rain-forest region.

The average length of the dry season is about 3.5 months at Tingo Maria in the rain-forest zone and six months at Juanjui in the wet-dry zone. The average rainfall in the upland rain-forest at Tingo Maria is 135 inches. No data are available for the wet-dry zone.

Geology.---Geologically, the upland rain-forest may be considered as an extension of the limestone formation observed in the vicinity of Tingo Maria. However, the wet-dry zone is composed principally of sandstones and shales. Salt deposits at Piyana on the right bank of the river are being exploited by the government.

Vegetation.—As pointed out before, vegetational types are climatically determined. From Tingo Maria the tall hardwoods gradually give way to shorter hardwoods and palms as the climate becomes drier. Palms and valley bushwoods soon appear as a result of the sub-humid climate beyond Cayumba and within the wet-dry zone. (See Fig. 5.)

Population.—The middle valley of the Huallaga River is roughly coterminous with the two departments of San Martin and Huanuco. Thus, it is possible to study certain statistical facts taken from the 1940 Census of Peru and analyze them from the standpoint of the potential area of future agricultural colonization.

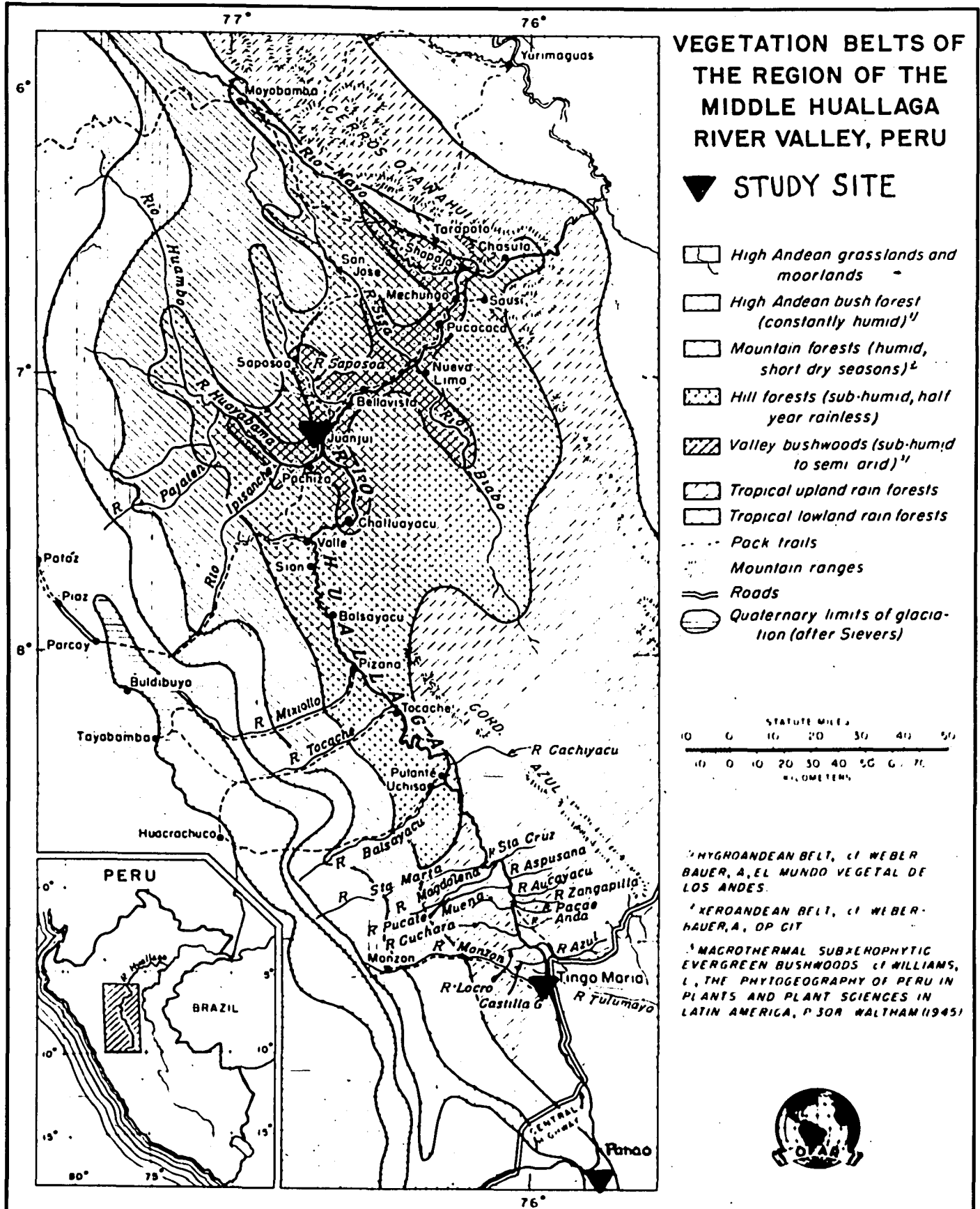
The total population of the valley may be estimated at about 400,000 in 1940, being 120,913 in the department of San Martin plus 276,833 in the department of Huanuco. Included in these figures is an estimated jungle population of 20,000 in San Martin and 25,000 in Huanuco.

The principal centers of population (1940) in each province were:

| <u>San Martin Province</u> |                   | <u>Huanuco Province</u> |                   |
|----------------------------|-------------------|-------------------------|-------------------|
|                            | <u>Population</u> |                         | <u>Population</u> |
| 1. San Martin              | 8,693             | Huanuco                 | 11,966            |
| 2. Moyobamba               | 7,046             | Llata                   | 1,741             |
| 3. Lamas                   | 5,287             | La Union                | 1,672             |
| 4. Saposoa                 | 3,243             | Ambo                    | 1,243             |
| 5. Rioja                   | 3,694             | Panao                   | 954               |
| 6. Juanjui                 | 2,118             | Huacrachuco             | 723               |

Highest authority in each department is vested in a Prefect (Prefecto) who is appointed by the Executive branch of the government. The Prefects reside in the respective departmental capitals (Moyobamba and Huanuco). Each of the 12 provincial governments is

FIGURE 5.



headed by a Subprefect (Subprefecto) residing in the provincial capitals. Finally, districts within the provinces are headed by Governors (Gobernadores), and major population centers by Lieutenant Governors (Tenientes Gobernadores).

Municipal affairs are administered by Provincial and District councils, and in population centers of more than 300 population by their Agents (Agentes Municipales).

Location of the population in relation to land area can be analyzed, using the 1940 Census calculations of the population density of each district in the two departments. Table 5 shows this data and ranks the districts from high to low population density.

TABLE 5

POPULATION PER SQUARE KILOMETER, BY DISTRICT IN THE  
DEPARTMENTS OF SAN MARTIN AND HUANUCO, 1940

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|                                |       |
|--------------------------------|-------|
| 1. Ambo                        | 16.78 |
| 2. Iamas                       | 16.62 |
| 3. San Martin                  | 13.32 |
| 4. Huamallies                  | 12.79 |
| 5. Dos de Mayo                 | 10.97 |
| 6. Huanuco                     | 7.27  |
| 7. Rioja                       | 6.67  |
| 8. Maranon                     | 5.03  |
| 9. Pachitea (Panao)            | 2.84  |
| 10. Moyobamba                  | 2.74  |
| 11. Huallaga                   | 1.16  |
| 12. Mariscal Caceres (Juanjui) | .54   |

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The most sparsely settled areas of the Huallaga Valley in 1940 were located in the provinces of Mariscal Caceres and Huallaga, which are themselves contiguous. Their respective capitals are Juanjui and Saposoa.



Ferrero estimated in 1938 the cultivated areas of the departments of San Martin and Huanuco at only 0.1 percent and 0.6 percent, respectively, of their total land areas.<sup>1</sup> This amounts to only 0.074 hectares of cultivated land per capita in San Martin and 0.128 in Huanuco.<sup>2</sup> These figures may be compared with 0.238 hectares per capita for the country as a whole. Such figures establish the fact that the Huallaga Valley is greatly underdeveloped agriculturally. Since 1940 the Tingo Maria zone of colonization has increased considerably the amount of cultivated land in the department of Huanuco.

#### Point of Departure.

Present knowledge about the people of the Huallaga Valley and the lands which they inhabit is entirely inadequate. Such obvious deficiency was met by the application of modern statistical methods.

The point of departure in this area study is geographic in nature but this needs clarification. The area, defined geographically, is a single river valley with its tributary streams. But the fact that the valley may be delimited geographically does not automatically describe the multiplicity of interrelated factors that characterize its social organization. In fact, what at first appears to be a "whole" may turn out to be a number of different sub-regions with little or no association between them.

This study aims at an areal division of the valley into its major parts, each of these to be studied under the aspect of wholeness

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<sup>1</sup> Romulo A. Ferrero, Tierra y Poblacion en el Peru, Banco Agricola del Peru, Lima, 1938, p. 4.

<sup>2</sup> Ibid. p. 5.

and uniqueness. Such study should show that the location and association of the specific area is one of its most important inherent characteristics which may modify other inherent characteristics<sup>1</sup> to a considerable degree.

The valley and its major areas are to be described in a local focus. Such a study is in sharp distinction to ecological studies that investigate the areal distribution of one selected factor only, such as studies of delinquency areas or voting behavior.

Not only is this study concerned with the spatial associations in specific areas but it must consider the element of time or historical experience as it relates to space. Accordingly, what may appear to be an area in a static sense is actually marked by changing and shifting frontiers. For example, the push of colonizers into the Tingo Maria area has extended the frontier and raised the social density in what was formerly almost virgin land. Beyond Tingo Maria, down the middle valley, is the area of future frontier and present institutional equilibrium; behind Tingo Maria, in the upper reaches of the valley, is the frontier area of the past which is also characterized by institutional equilibrium.

The frontier is an area in disequilibrium and with changing boundary lines. "Frontier" may be put down as the spatial aspect and "change" as the social aspect which is implied by the term transition.<sup>2</sup> Thus, Frederick J. Turner described himself "not as a student of region but of a process."<sup>3</sup>

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<sup>1</sup> For a theoretical discussion of this point see: Werner J. Cahnman, "Outline of a Theory of Area Studies," Annals of the Association of American Geographers, Vol. XXXVIII, December 1948, No. 4, pp. 233-43.

<sup>2</sup> Ibid. p. 239.

<sup>3</sup> Frederick J. Turner, The Significance of Sections in American History, New York, 1932, Introduction.

By conceptualizing the valley as made up of areas in different stages of social development and change, it is possible to delineate at least three sub-areas of great importance: First, there is the area of frontier, highly mobile and lacking institutional equilibrium. Second, there is the area out beyond the frontier push into which the frontier may eventually advance, characterized by institutional equilibrium and little social mobility. And third, there is the area situated geographically to the rear of the present frontier but like the forward area it is characterized by low social mobility and relative equilibrium in institutional adjustment. This study is a comparative analysis of these three sociologically significant areas of the Huallaga River Valley.

#### Methodology.

The methods by which the Huallaga Valley is to be studied are adaptations of those used generally in rural sociological research in the United States. They consist essentially of intensive statistical surveys of the social organization of carefully selected communities. The community serves as the basis of study because it tends to be self-contained and to cohere as a locality group in a sociological sense.

Local communities in many important aspects epitomize the total society and in fact are the society in microcosm. An analysis of communities serves much the same purpose in social research as does the microscope in biology.

But the basic unit of observation is the family unit through which community structure and function is made manifest. Consequently,

an effort was made to interview each family residing within the boundaries of the community and to secure thereby factual data concerning individual family members, the household, and the community.

A schedule was carefully prepared which served as a means of recording the results of each family interview and was the basis for bringing the results of many interviews together in standardized form.

#### Scope of the Study

The study includes a comparative analysis of three selected study sites representing the major sociological sub-areas within the valley. Subject matter content of the analysis includes data on the composition and characteristics of the population, health status, levels and standards of living, educational attainment, farm information, and social organization.

#### Selection of Study Sites

Tingo Maria, the center of colonization in the Huallaga Valley, was easily first choice to represent the area of "frontier." It was used as a base of operations for the entire field study with active cooperation of personnel attached to the agricultural experiment station.

Discussions with Peruvian technicians suggested two possible communities to represent the other two sub-areas: (1) Juanjui, to represent the "forward area" in the lower valley; (2) Pano, to represent the "back area" in the upper valley.

Between January 19 and February 7 the investigator made a reconnaissance trip throughout the length of the Huallaga Valley

from Cerro de Pasco to Yurimaguas. Observations were made particularly in the three communities proposed for comparative analysis. Careful appraisal of their representativeness was the main purpose of the visits. On the basis of this series of observations and after lengthy discussions with the technicians of the agricultural experiment station final selections of Tingo Maria, Juanjui, and Pano were agreed upon.

#### Construction of the Schedule.

As early as the first week in January I carried on preliminary discussions about a proposed family schedule with Dr. Ricardo Luna Vegas of the Direccion Nacional de Estadistica. Using as a basis for discussion the schedules used by Dr. T. Lynn Smith in Colombia and by Dr. Glen Leonard in Bolivia, a tentative schedule was constructed by January 18. This schedule was taken then to Tingo Maria and revised with the assistance of Ing<sup>o</sup> Oscar Garibaldi, Director de Extension Agricola, and Sr. Noe Alva.

A field pretest of this schedule form was run in Tingo Maria between January 27 and 31. Mimeographing of the schedule followed thereafter. (A copy of the schedule form and accompanying field instructions are included as Annexes 14 and 15.)

Due consideration was given to the physical aspects of the schedule as well as the arrangement of items. It should be noted that the opening section, entitled General, sets the tone for the interview on an informal plane and leads logically question to question. This arrangement proved to be very satisfactory for the interviewer. An additional feature is the arrangement of the questions dealing with Census Data, wherein each individual in the

household is provided with a separate column and questions are arranged in lines.

### Training Interviewers.

With the assistance of Dr. Alfredo Kraessel, Profesor de San Marcoa, field interviewers were schooled in the purposes of the study and given some elements of scientific method through a series of lectures conducted at Tingo Maria. (See annex 16 for a statement of the purpose of the study as presented to local interviewers.)

Sr. For Alva, who headed the field party, carefully supervised the schedule taking in the field and edited all schedules. Supervision was particularly important since most of the interviewers were not privileged to receive extended formal education. However, the field party was fortunate in securing conscientious, hardworking persons with much native intelligence and broad knowledge about the families and communities so that a good job of field interviewing resulted.

Interviewers were furnished with writing materials, transportation, and food.

### Procedure.

First, authorities of the community were contacted. In Tingo Maria these included Dr. Sven Ericsson, Jefe-Director del Centro de Colonizacion Oficial de Tingo Maria, and Arthur Semple, Director of the Agricultural Station. Dr. Ericsson caused notices of the study to be placed in conspicuous places to advise the community generally. (See Annex 17.) This facilitated entre to the family and speeded the survey considerably. The Director de

Colonizacion y Asuntos Orientales authorized station personnel to assist in the survey and placed limited transportation facilities at the disposal of field parties. (See Annexes 18 and 19.)

In Juanjui and Panao, more typical Peruvian communities, primary contacts were made with political leaders and the local priest of the Roman Catholic Church. Undoubtedly, the successful conclusion of field interviewing was due in large part to the level-headedness of the Peruvian supervisor, Sr. Noe Alva, who knew the "ropes" and moved purposively and efficiently in executing field operations. Without his practical help and knowledge of the "folk" culture, this study would have been impossible. Table 6 summarizes the time schedules, work-period data, and costs as "planned" and as they turned out in the actual course of the study.

#### Costs of Field Work.

The total outlay for field interviewing was S/.6,555.30 of which the major share was for salaries of interviewers. Converted to dollars at the legal rate prevailing at time of survey, this is equivalent to about \$1,000.00. Table 7 shows the cost of each community survey and summarizes costs by type of expenditure.

The average cost per schedule was 5.7 soles which at the time of the survey was equal to about 85 cents United States money. This figure does not include coding, tabulating and final analysis.

#### Tabulating.

After schedules were edited by the field supervisor, they were sent to Michigan State College for analysis, arriving about July 12, 1947.

TABLE 6

## STUDIES OF RURAL SOCIAL ORGANIZATION IN PERU, 1947

|                                   | <u>Planned</u>    | <u>Actual</u>   |
|-----------------------------------|-------------------|-----------------|
| I. <u>Tingo Maria</u>             |                   |                 |
| Begin field work                  | March 8, 1947     | March 6, 1947   |
| Complete " "                      | April 1, 1947     | March 26, 1947  |
| No. of work days                  | 24                | 21              |
| No. of man days                   | 192               | 179             |
| 192 man days at S/o. 15           | S/o. 2,980        |                 |
| 96 man days at S/o. 2             | S/o. <u>192</u>   |                 |
| T o t a l                         | 3,172             | 3,207.60        |
| II. <u>Juanjui</u>                |                   |                 |
| Begin field work                  | April 5, 1947     | April 13, 1947  |
| Complete " "                      | April 19, 1947    | May 1, 1947     |
| No. of work days                  | 15                | 19              |
| No. of man days                   | 45                | 80              |
| 45 man days at S/o. 15            | S/o. 675          |                 |
| Per diem at S/o. 20               |                   |                 |
| for 60 days                       | S/o. 1,200        |                 |
| Air transportation for            |                   |                 |
| 4 workers                         | S/o. <u>750</u>   |                 |
| T o t a l                         | 2,625             | 2,068.50        |
| III. <u>Panao</u>                 |                   |                 |
| Begin field work                  | April 20, 1947    | May 10, 1947    |
| Complete " "                      | May 5, 1947       | May 26, 1947    |
| No. of work days                  | 15                | 17              |
| No. of man days                   | 30                | 40              |
| 30 man days at S/o. 15            | S/o. 450          |                 |
| Per diem at S/o. 20               |                   |                 |
| for 45 days                       | S/o. 900          |                 |
| Auto transportation               |                   |                 |
| for 3 workers                     | S/o. <u>100</u>   |                 |
|                                   | 1,450             |                 |
|                                   |                   | 1,279.22        |
| Grand Total Cost of Three Studies | <u>S/o. 7,247</u> | <u>6,555.30</u> |



TABLE 7  
COST SUMMARY OF FIELD WORK

|                |                    |                 |              |               |
|----------------|--------------------|-----------------|--------------|---------------|
| <hr/>          |                    |                 |              |               |
| I.             | Tingo Maria        | S/. 3,207.60    |              |               |
|                | Juanjui            | 2,068.50        |              |               |
|                | Panao              | <u>1,279.22</u> |              |               |
|                | Total              | S/. 6,555.32    |              |               |
| <hr/>          |                    |                 |              |               |
| II.            | <u>Tingo Maria</u> | <u>Juanjui</u>  | <u>Panao</u> | <u>Total</u>  |
| Salaries       | S/. 2,936.00       | S/. 1,056.00    | S/. 800.00   | S/. 4,792.00  |
| Subsistence    | 52.00              | 255.00          | —            | 307.00        |
| Transportation | 45.00              | 561.30          | 479.22       | 1,085.52      |
| Supplies       | 80.40              | 150.00          | —            | 230.40        |
| Other          | <u>94.20</u>       | <u>46.20</u>    | <u>—</u>     | <u>140.40</u> |
|                | S/. 3,207.60       | S/. 2,068.50    | S/. 1,279.22 | S/. 6,555.32  |
| <hr/>          |                    |                 |              |               |

The schedules were coded during the latter part of 1947 for machine-card punching. Tabulations were run for statistical presentation about January 1948. These tabulations were dittoed and described in a report dated March 1948 for the International Refugee Organization.<sup>1</sup>

#### Concepts Used in the Study

Society.--Society exists "where social beings conduct themselves, or 'behave' towards one another in ways determined by their recognition of one another."<sup>2</sup> Such relationships of mutual awareness

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<sup>1</sup>  
T. Wilson Longmore, The Huallaga River Valley of Peru, Intergovernmental Committee on Refugees, Washington, March, 1948, Typewritten.

<sup>2</sup>  
Robert M. MacIver, Society, Farrar and Rinehart, Inc., New York, 1937, p. 6.

may be defined broadly as social. Society is the organized system of human interaction.

But the relationships "which are central to sociology are those which involve, in addition to mutual recognition, the sense of something held or shared in common."<sup>1</sup>

Society involves both likeness and difference. Without likeness and the sense of likeness there could be no mutual recognition of "belonging together." Society rests upon resemblances among human beings, in body and in mind, who are near enough or intelligent enough to appreciate that fact. This sense of likeness may be focused in many ways--kinship, common cultural heritage, like interests, sense of belonging to the same locality, or common association in group life.

But differences also contribute to social relations. It is out of individual differences in sex, aptitude, capacity and interest that the division of labor in society arises and out of such reciprocal relationships is built a society of interdependent complementary beings. Thus, as MacIver points out, the division of labor is cooperation before it is division.<sup>2</sup>

Society, then, in the system of social relationships which involves mutual awareness and recognition plus the sense of something held or shared in common. Cooley's concept of "feeling of belonging" sums up in succinct fashion the social psychological basis of society.

Community.--Community is where one's life is lived; that

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<sup>1</sup>  
Ibid. p. 6.

<sup>2</sup>  
MacIver, op. cit., p. 8

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<sup>1</sup>  
Ibid. p. 6.

<sup>2</sup>  
MacIver, op. cit., p. 8

is, all one's social relationships (or social interaction) may be found within it.<sup>1</sup> This does not mean that every community is completely self-contained, that all of life may be lived within it. Rather there are different circles of community and their diameters depend primarily on the breadth of the individual's interests. MacIver describes this as follows: "We may live in a metropolis and yet be members of a very small community because our interests are circumscribed within a narrow area. We may live in a village and yet belong to a community as wide as the whole area of our civilization or even wider. No civilized community has walls around it to cut it off from a larger one."<sup>2</sup>

Community, being both a territorial as well as a psychological concept, reveals the relation between social solidarity and the geographical area. The external aspect of community is an area within which its members live together more or less by themselves, though not necessarily without contacts over wider areas. Community is that area within which the web of social relationships is incessantly spun and the "feeling of belonging" is present.

Social class.--Community is divided into groups with different grades of social status, either "high" or "low." These divisions are parts of what is generally called the social class system. When some mutual recognition of differences in status between groups of individuals of a community exists, social stratification appears. The class system is based upon "horizontal" divisions of community which are marked off from one another primarily

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<sup>1</sup> Carl C. Taylor, "Techniques of Community Study and Analysis as Applied to Modern Civilized Societies," (p. 416) in The Science of Man in the World Crisis, edited by Ralph Linton, Columbia University, N. Y. 1945.

<sup>2</sup> MacIver, op. cit., p. 9.

by social status. Communities, on the other hand, are "vertical" delineations of the social structure on the basis of territoriality.

Social Organization.—A group of interacting individuals is organized when they recognize and act upon the principles of "community" and "social class." By "community" is meant a mutual recognition of ~~common~~ means and common ends. By "social class" is meant the mutual acceptance of each individual's rights and duties, his entitlements and his obligations to behave in a specified way, and the role and function he is required to assume.<sup>1</sup>

Most organized groups develop an official law and government which together with custom indicate what social relations or forms of interaction to expect between individuals. These are what Sorokin refers to as "law-norms" and he says:

"Through their definition of the rights-duties, function and status of every member and through that of the obligatory, prohibited, and recommended relationships the law-norms make a group of interacting individuals into a clearly differentiated and stratified body in which each member performs a specific task in the total functions of the group and in which each occupies a certain rank in its hierarchy of authorities."<sup>2</sup>

In addition it should be noted that most social groups have an economic complex based upon property or possessions by which the group subsists. Ordinarily, too, an organized group assumes an identifying name plus other symbolic means of identification.

Association.—Within a community groups organize for the pursuit of a specific interest, such as education, religion, to make a living, politics, etc. Such organizations are associations.

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<sup>1</sup> Pitirim A. Sorokin, Society, Culture and Personality, Harper and Brothers, New York, 1947, pp. 70-1.

<sup>2</sup> Sorokin, op. cit., p. 71

People belong to associations because they meet specific needs but their interests are limited. Modern communities tend to abound in associations because they are composed of persons with a great variety of interests. Associations are expressly organized and the object can be important or trivial, wide or narrow, but it is never as inclusive as community. MacIver says: "We are born into communities, but we create or are elected into associations."<sup>1</sup>

#### Selection and Delineation of Study Sites.

The guiding principles underlying the selection of sites for intensive survey were:

- (1) That the territorial base be contiguous;
- (2) that the population of the center be an organized municipality;
- (3) that the population of the municipality be under 2,500 population but large enough to be a significant center of social organization in the sub-area it is presumed to represent; and
- (4) that the area of common life be fairly self-sufficient.

Delineation of the area was accomplished by interviewing all families living within the population center plus all families living adjacent to the municipality who identified themselves with it.

The area of study thus delineated was known to be inclusive of a number of social groups all having common bonds of territorial proximity and identification. The fact of living in close proximity

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<sup>1</sup>  
MacIver, op. cit., p. 12.

with other people imposes a certain degree of social interaction and sharing of common problems and ideals. Sorokin says:

"Exposed to the same natural and social environment to which they have to adapt in order to live individuals develop a community of interests imposed by their territorial adjacency."<sup>1</sup>

Thus, territoriality serves as a simple but indispensable sociological coordinate for location of an individual or group in the social universe.

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<sup>1</sup> Sorokin, op. cit., p. 197.

## CHAPTER V

### LOCALITY-GROUP STRUCTURE

#### Historical Background

All three sites are ancient centers of Indian population having historical roots in the pre-colonial and colonial periods of Peruvian history. In the 17th and 18th Centuries, the Franciscans of Huanuco and Ocopa and the Jesuits of the Missions of the Marañon made Pano a principal base for converting the people of Mairó, Palcazu, Pachitea, Tapiche, Cujar (Alto Purus), and Ucayali. Pano grew in importance as a frontier town for conquest and conversion of the jungle lands to the east and north. Tingo María and Juanjui during this period were still little more than Indian tambos (overnight trail stops) on the lower Huallaga.

From earliest epochs Pano has held an important position as a center of political, religious, and military organization, becoming the capital of both the district of Pano in 1826 and the province of Pachitea formed in 1918. Given the denomination of "villa" by law of 1891 the title has since been changed to "ciudad" (city). The period after 1891 was one of increased economic and social development for Pano, of consolidating its Republican institutions, intensifying its industry, and of expanding its commercial importance.

Prior to 1891, Pano was a town of about 2,000 population, mostly mestizos descended from the Spanish and the families of Huanuco. The Indians called them all "whites" (blancos) and looked upon them with hostility and unfriendliness. Because of this the



people of the town to this day have remained in certain ways separated from the life of the surrounding farm people.

Maurtua comments on this period as follows:

In that epoch, notwithstanding its political situation and size . . . social life was reduced to simple visits between families, get-togethers in private homes, cock fights, bull fights, etc. (Translation mine.) <sup>1</sup>

Juanjui was described by an explorer of the Huallaga Valley in 1852 as follows:

It is a large village of five hundred inhabitants; it is situated in a plain, a great part of which is overflowed by the river at the full; and much rice is cultivated there. I have met with the rice of Juan Juy everywhere on the river. <sup>2</sup>

But Juanjui had little political importance until after 1900, culminating in the formation of the province of Mariscal Caceres in 1940 with Juanjui as its capital. It also became capital of the district of Juanjui. Thus it is similar to Pano in that it is both the capital of province and district. Juanjui, on the other hand, has had little economic and social development and has remained a static river community for most of a century. Furthermore, it has never served as a center for colonization of the jungle lands roundabout.

Tingo Maria was a small, primitive village as late as 1938 when a number of explorations were made into the area. The village at that time consisted of perhaps a dozen native huts with palm-

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<sup>1</sup> Onibal Maurtua, La Provincia de Pachitea, Imp. "Artistica," Lima, 1919, p. 19.

<sup>2</sup> William Lewis Herndon and Lardner Gibbon, Exploration of the Valley of the Amazon, Part I, Robert Armstrong, Public Printer; Washington, 1853, p. 157.

thatched roofs, two small hotels where canned goods were sold,  
 and a crudely built church.<sup>1</sup> It had no political status until the  
 district of Rupa Rupa was created in 1944, at which time it became  
 the district's first capital. However, since 1938 Tingo Maria  
 has grown into a center of some importance.

### Climate

All three communities are situated within 10 degrees of  
 the Equator and thus have a tropical climate. Any variations in  
 climate are due primarily to differences in altitude, which serves  
 as the crucial factor influencing temperature and rainfall. This  
 may be seen in Table 8.

Juanjui is perhaps three to four degrees warmer than Tingo  
 Maria but the climate is characterized by a more distinct dry  
 season, even drouth, during the months from May to September or  
 October. Pano is perhaps 20 to 25 degrees (Fahrenheit) cooler  
 than either Tingo Maria or Juanjui. The climate of Pano is  
 temperate and dry in contrast to the humid and hot conditions in  
 Tingo Maria and Juanjui.

Pano is located on the moderately steep slopes of a  
 mountainside over-looking the valley of the Pano River, a small  
 tributary of the Huallaga. The surrounding hillsides are almost  
 barren of trees or other large growth, and the native vegetation  
 is composed largely of grasses and shrubs. But a few tropical  
 fruit trees are found in the alluvial plain of the Pano River.

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<sup>1</sup>

W. Hugh Stickler, "Rafting Down the Huallaga River,"  
Peruvian Times, February, 1942, p. 67.

TABLE 8

## CLIMATIC DATA BY SURVEY SITE, HUALLAGA VALLEY OF PERU \*

| Site        | Latitude | Longitude<br>W. of<br>Greenwich | Altitude<br>in<br>feet | Rainfall<br>in<br>inches | Temperature   |                                       |
|-------------|----------|---------------------------------|------------------------|--------------------------|---|---------------------------------------|
|             |          |                                 |                        |                          | High  | Low                                   |
| Juanjui     | 7°05'    | 76°30'                          | 1,080                  | 80 Aprx.                 | 90°F  | -                                     |
| Panao       | 9°51'    | 75°55'                          | 6,210                  | 40 "                     | Summer 60° to 72°F<br>Winter 54° to 65°F<br>Average 65°F. | 50° to 60°F.<br>40° to 50°F.<br>45°F. |
| Tingo Maria | 9°09'    | 75°53'                          | 2,268                  | 137                      | Average 86.8°F.   | 62.6°F.                               |

- \*Source: (a) Location and altitude from Anuario Estadístico del Perú, 1946.  
 (b) Rainfall and temperature for Tingo Maria from official records of Estacion Agricola Experimental de Tingo Maria, 1940-46. Data for Juanjui and Panao estimated in absence of official records. Temperatures for Panao based on data included in Maurtua, op. cit., p. 26.

Juanjui is situated in a small plain covered with heavy jungle growth on the west bank of the Huallaga River. The landscape is semi-savanna in character as the tall hardwoods of the upper valley here give way to palms and shorter hardwoods. Early morning fogs so characteristic of the rain-forest around Tingo Maria are not so prevalent in Juanjui and humidity is lower.

Tingo Maria is typical rain-forest, with rainfall throughout the year and a luxuriant growth of large hardwood trees on the surrounding hills and in the valleys. The pueblo is located on the east bank of the Huallaga in a narrow valley surrounded by imposing hills. The river, 50 yards wide at this point, is held within its banks during most of the year and the current is swift and treacherous for canoe or balsa raft navigation. Drainage is good and the area is generally free of the annual inundations that characterize the valley around Juanjui.

#### Transportation.

Panao and Tingo Maria were linked by a narrow road (camino de herradura) as early as 1915 and the road has constantly been improved so that it is now a good one-way auto road. Juanjui has only foot trails leading through the forest to the highland or to Tingo Maria.

Beyond Panao the road to Pozuzo is poor and impassable during most of the year. The Central Highway from Tingo Maria to Pucallpa is open to auto and truck travel only during the six months of the dry season, that is, from April to October.

Juanjui and Tingo Maria have long been linked by balsa raft and canoe navigation but no steam launches are possible because of

the rapids (mal pasos) at Sion. Since about 1942, Juanjui and Tingo Maria have had airplane transportation. Prior to the airplane, it took 25 to 30 days to travel from Juanjui to Tingo Maria by foot. But the trip can now be made in an hour-and-half by airplane.

#### Patterns of Settlement.

The pueblos of Pano and Juanjui are typical Peruvian settlements built around a central plaza on which is situated the Roman Catholic Church and principal business houses. Tingo Maria diverges from this pattern somewhat because of its more recent planning. Consequently, it is best described as a main-street type of settlement with school, hospital, market, and civil buildings located on a half-circle parkway at one end of the town. Business establishments are located along the Central Highway. Features of the different settlement patterns typified by the three pueblos are illustrated in Figure 6.

A total of 300 families were interviewed in Juanjui covering a population of 1,844. (See Table 9.) In Pano, a total of 161 families were interviewed covering 871 population. Each pueblo is composed of a number of geographic areas readily identifiable by most families as their locality of residence. (See Table 10.) Thus, Juanjui contains 11 barrios and a suburban area. Pano includes seven barrios and a suburban area. Barrios are identified by both Indian and Spanish names.

More modern Tingo Maria has not developed the barrio system but is territorially divided into sections denominated "residential," "worker" (obrero), and "tourist," and the settlement at the

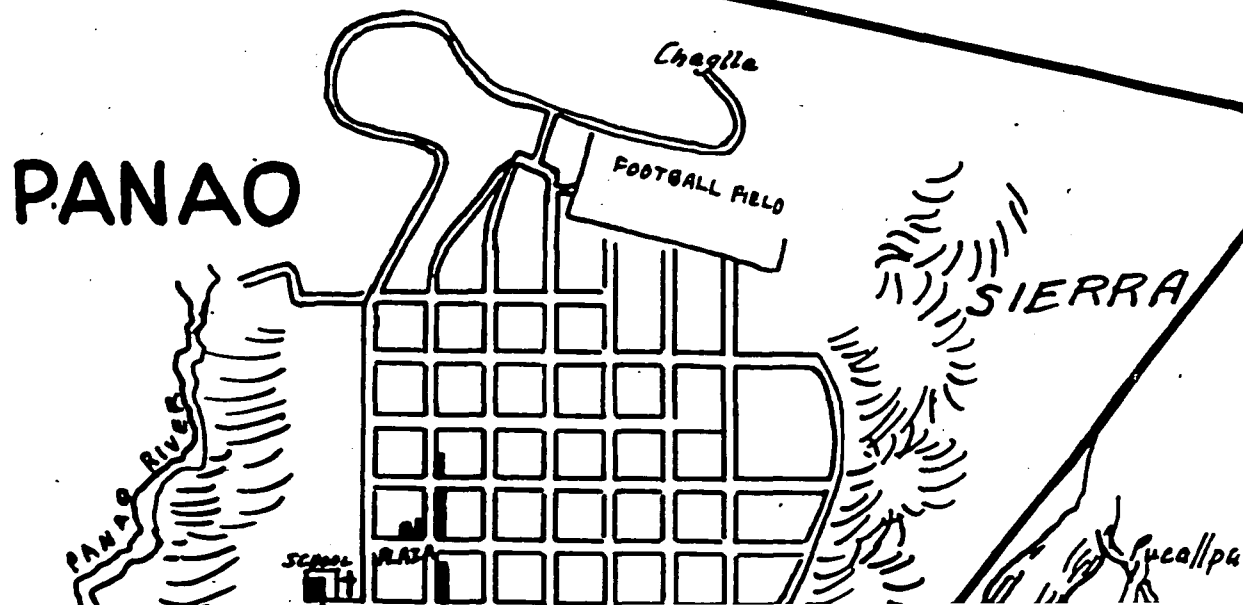
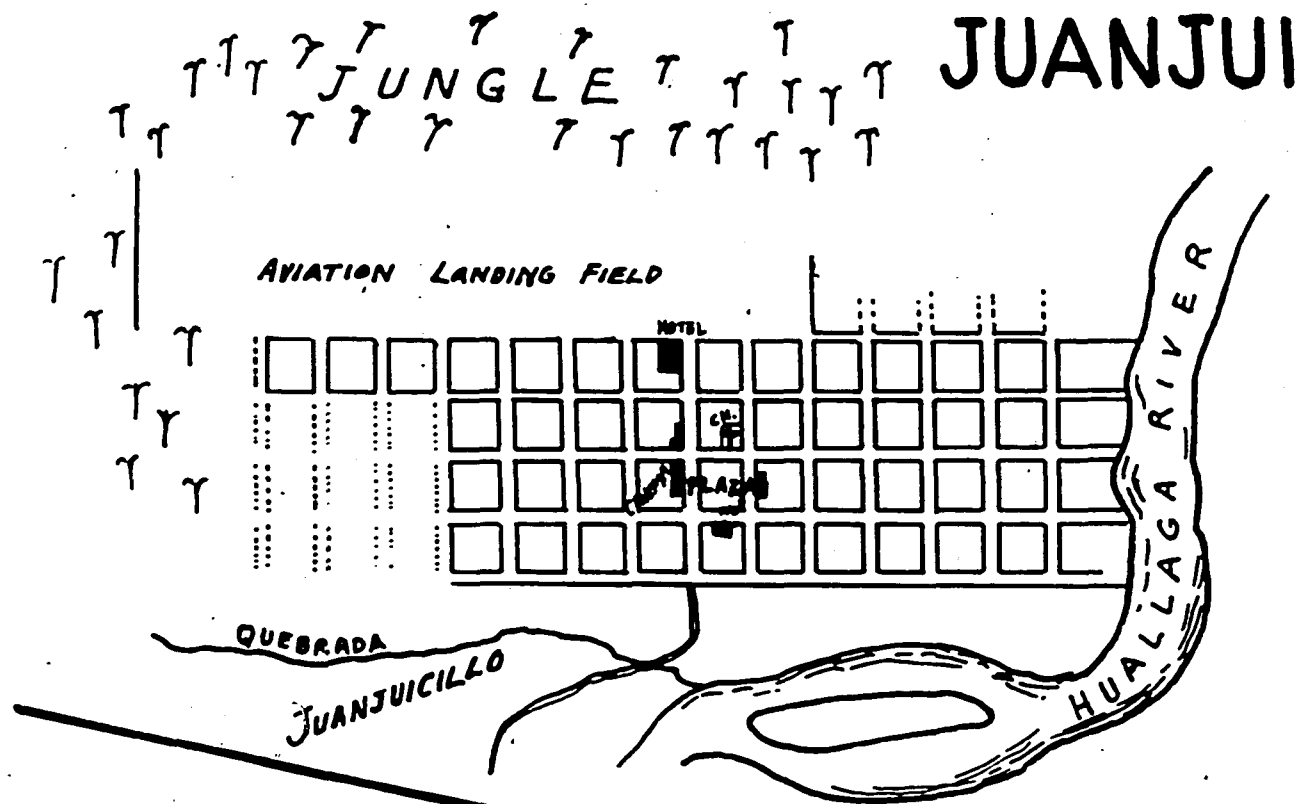
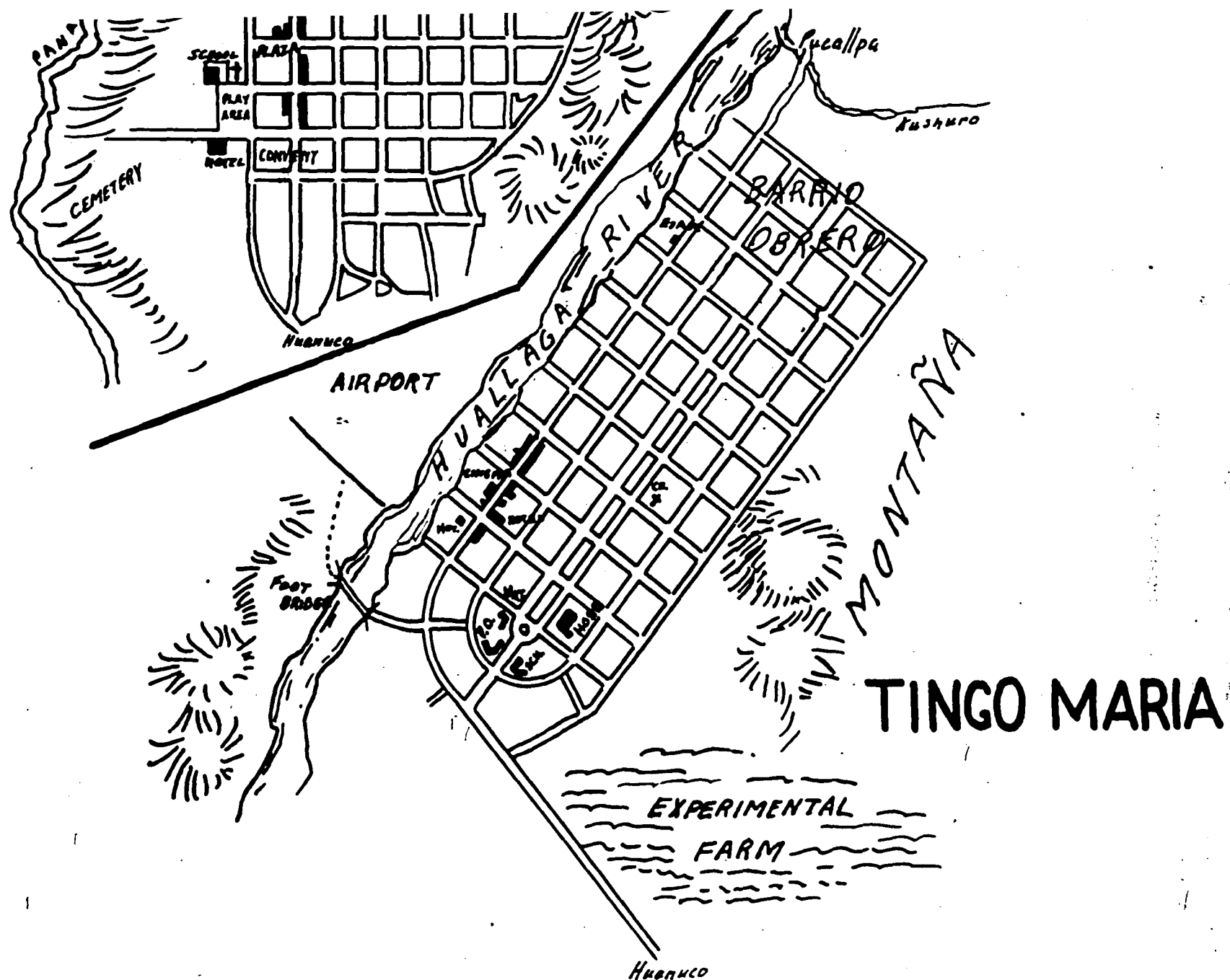


FIGURE 6.  
MAPS OF PUEBLOS



Agricultural Experiment Station. A total of 682 families were interviewed in the Tingo Maria site of which 352 were residing in the pueblo and 330 outside.

TABLE 9  
POPULATION DISTRIBUTED ACCORDING TO STUDY SITES

| Study site  | Number of<br>schedules | Total population<br>in study site | Average number<br>of persons<br>per schedule |
|-------------|------------------------|-----------------------------------|--|
| Juanjui     | 300                    | 1,844                             | 6.15   |
| Panao       | 161                    | 871                               | 5.41   |
| Tingo Maria | <u>682</u>             | <u>3,226</u>                      | <u>4.73</u>                                  |
| Total       | 1,143                  | 5,941                             | 5.19   |

Barrios have little significance beyond the fact that they serve as a means of locating a family's place of residence within the general area. More significant, perhaps, as a means of locating families is the street (calle) name. Juanjui has 20 streets identified by Spanish and Indian names, while Panao has 16 streets. Tingo Maria, without traditional street names, relies simply on a system of 48 numbered blocks to locate residences. (See Table 11.)

A single plaza is customarily the geographic center of small Peruvian pueblos. Larger cities may have a number of plazas but cities comparable to Juanjui, Panao, and Tingo Maria usually have only one. The plaza is more than a geographical center of community life; it is symbolic of the social relations of the families and serves as the arena for social, religious, business, and recreational activities of the people.



TABLE 10

FAMILIES DISTRIBUTED ACCORDING TO NAME OF WARD (BARRIO) IN WHICH THEY SAY THEY LIVE,  
BY PUEBLO, 1947

| Ward         | <u>Juanjui</u> |       | Ward         | <u>Panao</u> |       | Ward or zone      | <u>Tingo Maria</u> |       |
|--------------|----------------|-------|--------------|--------------|-------|-------------------|--------------------|-------|
|              | No.            | Pct.  |              | No.          | Pct.  |                   | No.                | Pct.  |
| All wards    | 300            | 100.0 | All wards    | 161          | 100.0 | All wards         | 352                | 100.0 |
| Huaico       | 63             | 21.0  | Chuncacuna   | 30           | 18.6  | Barrio Obrero     | 88                 | 25.0  |
| Juanjuicillo | 33             | 11.0  | Central      | 23           | 14.3  | Residential zone  | 228                | 64.8  |
| Alto         | 32             | 10.7  | Huinchaspata | 19           | 11.8  | Experimental Sta. | 35                 | 9.9   |
| Sahuino      | 31             | 10.3  | San Juan     | 4            | 2.5   | Tourist zone      | 1                  | .3    |
| Bajo         | 25             | 8.3   | Shirahuacta  | 4            | 2.5   |                   |                    |       |
| Cocha Pampa  | 10             | 3.3   | Puca Puca    | 1            | .6    |                   |                    |       |
| San Juan     | 6              | 2.0   | Macorgoto    | 1            | .6    |                   |                    |       |
| Arriba       | 6              | 2.0   | Surburban    | 15           | 9.3   |                   |                    |       |
| Huallaga     | 3              | 1.0   |              |              |       |                   |                    |       |
| Leticia      | 2              | .7    |              |              |       |                   |                    |       |
| San Martin   | 2              | .7    |              |              |       |                   |                    |       |
| Surburban    | 31             | 10.3  |              |              |       |                   |                    |       |
| No answer    | 56             | 18.7  | No answer    | 64           | 39.8  |                   |                    |       |

TABLE 11

### FAMILIES DISTRIBUTED BY STREET OR BLOCK OF RESIDENCE

| Street            | No. | <u>Juanjui</u> | Pct.  | Street         |
|-------------------|-----|----------------|-------|----------------|
| All Streets       | 300 |                | 100.0 | All Streets    |
| Malecon           | 56  |                | 18.7  | Lima           |
| El Triunfo        | 31  |                | 10.3  | Mairo          |
| Huallaga          | 24  |                | 8.0   | Ucayali        |
| Mariscal Castilla | 26  |                | 8.7   | Miguel Grau    |
| La Merced         | 18  |                | 6.0   | Pachitea       |
| Gorge Chaves      | 14  |                | 4.7   | Bolognesi      |
| San Martin        | 11  |                | 3.7   | Arica          |
| Dos de Mayo       | 9   |                | 3.0   | Tacma          |
| La Libertad       | 9   |                | 3.0   | Alfonso Ugarte |
| Alfonso Ugarte    | 9   |                | 3.0   | Consuelo       |
| Manco Capac       | 10  |                | 3.3   | Espinar        |
| La Punta          | 8   |                | 2.7   | Lagarto        |
| Progreso          | 7   |                | 2.3   | Progreso       |
| Loveto            | 7   |                | 2.3   | San Juan       |
| Miguel Gran       | 10  |                | 3.3   | Pilar          |
| Mariscal Caceres  | 3   |                | 1.0   | Libertad       |
| Leticia           | 2   |                | .7    |                |
| San Miguel        | 1   |                | .3    |                |
| Bullongal         | 1   |                | .3    |                |
| Sargento Loves    | 1   |                | .3    |                |
| No answer         | 43  |                | 14.4  | No answer      |

TABLE 11 - continued

| Panao |       | : | Number of blocks | : | Tingo Maria |       |
|-------|-------|---|------------------|---|-------------|-------|
| No.   | Pct.  |   |                  |   | No.         | Pct.  |
| 161   | 100.0 | : | All blocks       | : | 352         | 100.0 |
| 28    | 17.4  | : | 1                | : | 6           | 1.7   |
| 28    | 17.4  | : | 2                | : | 10          | 2.9   |
| 19    | 11.8  | : | 3                | : | 20          | 5.7   |
| 13    | 8.1   | : | 4                | : | 4           | 1.1   |
| 12    | 7.4   | : | 5                | : | 5           | 1.4   |
| 9     | 5.6   | : | 6                | : | 5           | 1.4   |
| 7     | 4.3   | : | 7                | : | 7           | 2.0   |
| 6     | 3.7   | : | 8                | : | 9           | 2.6   |
| 5     | 3.1   | : | 9                | : | 4           | 1.1   |
| 4     | 2.5   | : | 10               | : | 6           | 1.7   |
| 4     | 2.5   | : | 11               | : | 9           | 2.6   |
| 4     | 2.5   | : | 12               | : | 13          | 3.7   |
| 3     | 1.9   | : | 13               | : | 17          | 4.8   |
| 3     | 1.9   | : | 14               | : | 3           | .9    |
| 2     | 1.2   | : | 15               | : | 18          | 5.1   |
| 1     | .6    | : | 16               | : | 10          | 2.8   |
|       |       | : | 17               | : | 11          | 3.1   |
|       |       | : | 18               | : | 18          | 5.1   |
|       |       | : | 19               | : | 18          | 5.1   |
|       |       | : | 20               | : | 4           | 1.1   |
|       |       | : | 21               | : | 0           | ---   |
|       |       | : | 22               | : | 6           | 1.7   |
|       |       | : | 23               | : | 8           | 2.3   |
|       |       | : | 24               | : | 7           | 2.0   |
|       |       | : | 25               | : | 5           | 1.4   |
|       |       | : | 26               | : | 2           | .6    |
|       |       | : | 27               | : | 4           | 1.1   |
|       |       | : | 28               | : | 7           | 2.0   |
|       |       | : | 29               | : | 10          | 2.8   |
|       |       | : | 30               | : | 6           | 1.7   |
|       |       | : | 31               | : | 2           | .6    |
|       |       | : | 32               | : | 1           | .3    |
|       |       | : | 33               | : | 0           | ---   |
|       |       | : | 34               | : | 1           | .3    |
|       |       | : | 35               | : | 0           | ---   |
|       |       | : | 36               | : | 5           | 1.4   |
|       |       | : | 37               | : | 4           | 1.1   |
|       |       | : | 38               | : | 0           | ---   |
|       |       | : | 39               | : | 0           | ---   |
|       |       | : | 40               | : | 0           | ---   |
|       |       | : | 41               | : | 8           | 2.3   |
|       |       | : | 42               | : | 0           | ---   |
|       |       | : | 43               | : | 2           | .6    |
|       |       | : | 44               | : | 1           | .3    |
|       |       | : | 45               | : | 0           | ---   |
| 13    | 8.1   | : | 46               | : | 5           | 1.4   |
|       |       | : | 47               | : | 2           | .6    |
|       |       | : | 48               | : | 0           | ---   |
|       |       | : | No answer        | : | 69          | 19.6  |

The pueblo of Juanjui is situated on the left bank of the Huallaga River. Five streets (jirones) run to the river's edge and are called: Malecon, Huallaga, El Triunfo, Mariscal Castilla, and Jorge Chaves. These five streets are transversed by 18 others, called "Cruceros" by the townspeople. The airfield (Campo de Aviacion) is located between Jiron Jorge Chavez and the jungle.

The plaza at Juanjui seems neglected but contains a number of wooden benches for convenience of citizens as they pass the evenings socializing in the plaza. Coconut palms adorn the plaza making up somewhat for the general air of abandonment, especially noticeable after heavy rains that make the streets impassable.

The main thoroughfare through Panao is called Calle Pachitea, paralleling six other streets. These seven streets are transversed by seven streets. The plaza is small and contains four small gardens (jardines) divided diagonally by concrete walks. A plentiful supply of benches are placed in the plaza for convenience of Panacos.

The Central Highway for the most part parallels the Huallaga River through the pueblo of Tingo Maria and has become in truth a "Main Street." Strictly speaking, Tingo Maria has no plaza but most people look upon the half circle where the governmental buildings and monument are located as a substitute. However, this civic center has no park benches nor attractive walks and flowers. Furthermore, in Tingo Maria, the church is located in an out-of-the-way place. In Panao and Juanjui the church is located conspicuously on the plaza proper.

The compact settlement pattern of both Juanjui and Panao are shown by Table 12. Twenty-eight percent of all families in Juanjui and Panao live within 150 meters (roughly three blocks) of the plaza compared with only eight percent in Tingo Maria. About 40 percent of families in Tingo Maria live 500 meters or more from the plaza or civic center, compared with under two percent in Panao and under 12 percent in Juanjui.

TABLE 12

FAMILIES DISTRIBUTED ACCORDING TO DISTANCE FROM  
THE PLAZA, BY PUEBLO, 1947

|                     | : All |       | : communities: |       | : Juanjui |       | : Panao |       | : Tingo Maria |      |
|---------------------|-------|-------|----------------|-------|-----------|-------|---------|-------|---------------|------|
| Distance in meters: | No.   | Pct.  | No.            | Pct.  | No.       | Pct.  | No.     | Pct.  | No.           | Pct. |
| All groups          | 813   | 100.0 | 300            | 100.0 | 161       | 100.0 | 352     | 100.0 |               |      |
| Under 50            | 19    | 2.3   | 5              | 1.7   | 12        | 7.5   | 2       | .6    |               |      |
| 50 - 99             | 55    | 6.8   | 31             | 10.3  | 22        | 13.7  | 2       | .6    |               |      |
| 100 - 149           | 83    | 10.2  | 48             | 16.0  | 11        | 6.8   | 24      | 6.8   |               |      |
| 150 - 199           | 100   | 12.3  | 51             | 17.0  | 19        | 11.8  | 30      | 8.5   |               |      |
| 200 - 249           | 95    | 11.7  | 29             | 9.7   | 21        | 13.0  | 45      | 12.8  |               |      |
| 250 - 499           | 210   | 25.8  | 68             | 22.6  | 39        | 24.3  | 103     | 29.2  |               |      |
| 500 - 999           | 103   | 12.7  | 17             | 5.7   | 2         | 1.2   | 84      | 23.9  |               |      |
| 1,000 - 1,999       | 65    | 8.0   | 18             | 6.0   | 1         | .6    | 46      | 13.1  |               |      |
| 2,000 - 2,999       | 10    | 1.2   | 0              | .0    | 0         | .0    | 10      | 2.8   |               |      |
| 3,000 - 3,999       | 0     | .0    | 0              | .0    | 0         | .0    | 0       | .0    |               |      |
| 4,000 and over      | 1     | .1    | 1              | .3    | 0         | .0    | 0       | .0    |               |      |
| No answer           | 72    | 8.9   | 32             | 10.7  | 34        | 21.1  | 6       | 1.7   |               |      |

Life in Tingo Maria is business-centered. Thus, the pueblo has tended to grow up around a "main street" rather than around the "civic center" which was originally planned. Juanjui and Panao, on the other hand, are both plaza-centered with community life focussed upon church and sociability activities.

Indian peasants walk from their farms in the surrounding hills about Panao to buy their few necessities and to do a little marketing in Panao. On Sunday morning some of them can be seen on their way to church and later to fraternize over a glass of native liquor (aguardiente), or beer (chicha) at one of the numerous grog shops (chinganas). But for the most part the peasants, most of whom are Indians, are isolated socially from the townspeople of the pueblo. It is doubtful that many consider themselves a part of the community of Panao. Townspeople are essentially specialists and tradesmen and find little in common with the rural peasant other than trade relations. However, many families in the pueblo have small plots of ground, little more than gardens, which they cultivate for home use. Little produce is sold commercially.

Juanjui presents a somewhat different picture. A majority of the families have small farms (chacras) in the countryside surrounding the pueblo. Here they farm during part of the year, living for a short time on the farm, but make their home in the pueblo. Few, if any, live on their farm during the entire year. The farm house is usually makeshift and rebuilt from time to time out of native jungle materials. Tradesmen and some classes of specialists are less numerous in Juanjui due to the meagre economic activity. The pueblo is essentially an "agricultural village", Juanjui being the place of residence for the farmers cultivating the adjacent lands.

Tingo Maria differs markedly from either Panao or Juanjui, growing largely as a result of agricultural colonization. It serves as a residential center for the professional men who projected

the colonization scheme. Later it became the residence place of technicians and professionals connected with the Agricultural Experiment Station and of the large number of farm laborers who performed the manual labor on the experimental farms. The "tourist zone" around Hotel Turista began to develop because of numerous official and unofficial visitors.

Thus, Tingo Maria presents a much more complicated social structure than Juanjui or Panao. In fact, there are a number of Tingo Marias. For example, at the time of field survey it had become apparent to many native people that the settlement of United States and Peruvian personnel around the Agricultural Experiment Station had become isolated more or less from the pueblo of Tingo Maria. This was evidenced in the fact that local people were referring to it as "Tingo Mary" to indicate the United States counterpart of the Peruvian pueblo. The Hotel Turista and swimming pool served the professional and technical personnel as a community center. Here, out of sight of the local population, the "elite" of Tingo Maria carry on their social life and here it is that important visitors from Lima or the United States are made to feel at home without ever really seeing the real Tingo Maria and her people.

But Tingo Maria is much more than the pueblo proper, the Agricultural Center, the tourist zone, and the workers' section. Because agricultural colonization was planned mainly for small farms a number of small localities have tended to grow up around Tingo Maria. (See Figure 7.) These localities have taken on identifying names and the farm families, most of whom live full-time

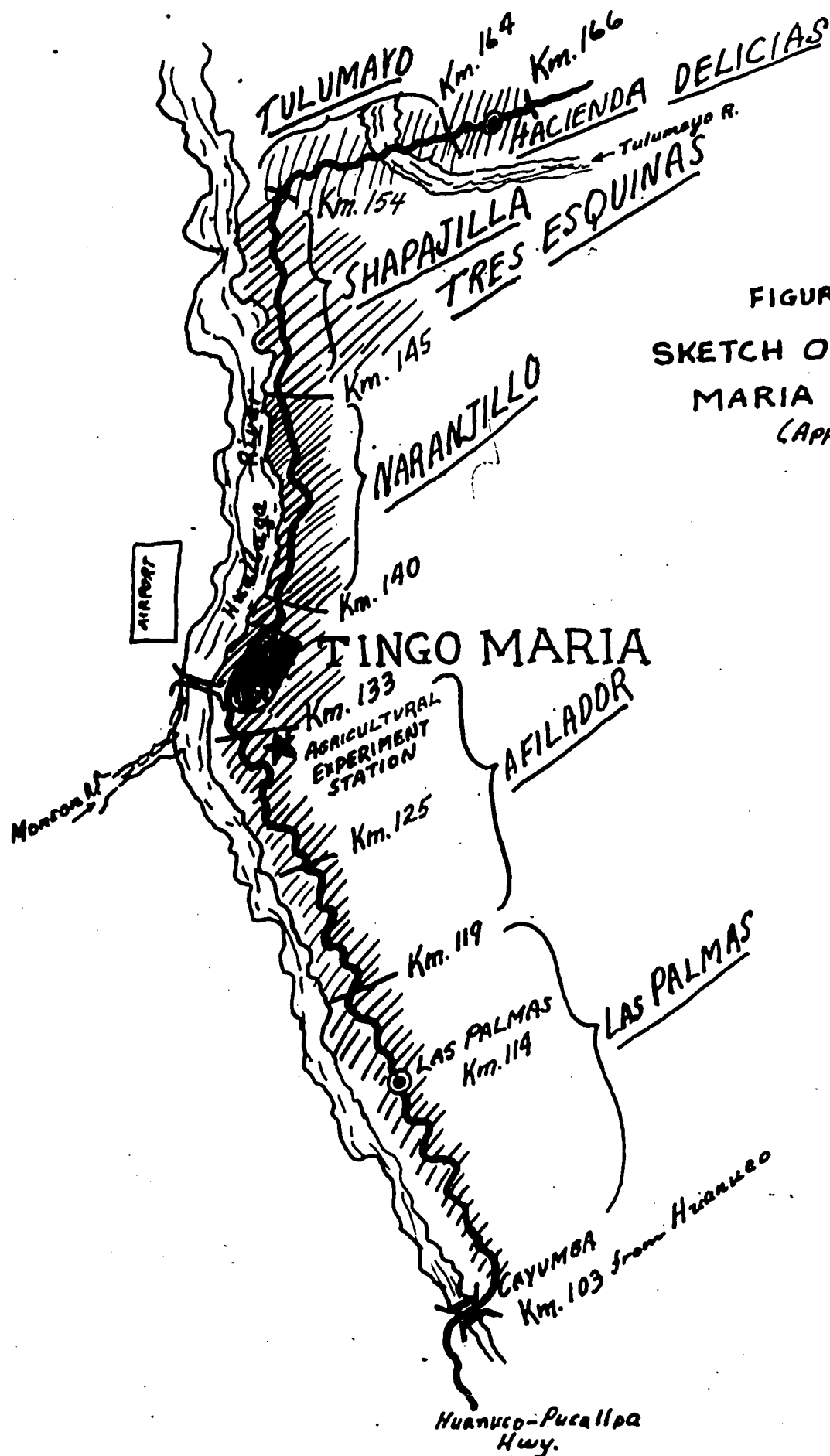


FIGURE 7.  
SKETCH OF TINGO  
MARIA STUDY SITE  
(Approximate)



on their farms, associate themselves with these smaller locality groups although in some ways they tie in closely with the pueblo. Tingo Maria serves as more than a trade center to farm families because it is here that they turn for credit and scientific help in farming. Furthermore, they can travel by road to and from town so that Tingo Maria becomes their principal social center as well. Larger farm incomes that accompany small-farm development makes it possible to support commercial recreation such as a well-patronized theatre, active social clubs and hotels in Tingo Maria.

As contemplated under the Supreme Decree creating the Centro de Colonizacion Oficial de Tingo Maria in 1938 the area of agricultural colonization extends from Las Palmas (Kilometer 109) to Pucallpa (Kilometer 428), with a width of 20 kilometers on each side of the Central Highway. For all practical purposes, by May 1947, the development comprised an area extending from Kilometer 103 at Cayumba Puente, where the road crosses the Huallaga River after passing Rio Chinchao, to Kilometer 165 at Hacienda Delicias. It is along this 62 kilometers of the Central Highway that the most intensive agricultural development is in progress. Farther on, of course, is the state-developed and operated tea and cinchona (quinine) plantations; but they have little immediate social or economic importance to the community of Tingo Maria.

The people of Tingo Maria recognize these farming localities as possessing a certain degree of distinct common life although they consider them as sub-areas of the Tingo Maria community. Their locality names are: (1) Afilador, (2) Hacienda Delicias, (3) Las Palmas, (4) Naranjillo, (5) Shapajilla, (6) Tres Esquinas,

(7) Tulumayo, and (8) Clase "C". These areas vary widely in their social structures from small-farms individually owned, as in Naranjillo, Afilador, and Tres Esquinas, to large-farms (haciendas) and their complementary workers' barracks as in Shapajilla, Las Palmas and Tulumayo. Hacienda Delicias is a single hacienda under supervision of a resident-owner. Although adjacent to Tulumayo, the hacienda is not identified with it. Clase "C" is a relatively small area adjacent to the pueblo of Tingo Maria and is composed of small part-time farms.

Public elementary schools are located at Naranjillo, Las Palmas, and Afilador. The owner of Hacienda Delicias, Mr. Tong, was building a cement school structure on the hacienda in 1947. Tres Esquinas, Shapajilla, Tulumayo and Clase "C" were without school facilities in 1947.

The plan of colonization included the setting aside of two hectares in Naranjillo as an "urban zone" for development as a center. However, all that had materialized by 1947 were two small stores (cantinas), a sawmill (Compania Maderera Tulumayo, S.A.) and a Roman Catholic shrine (capilla). The Estanco de Tabaco (tobacco farm) is also located in Naranjillo.

Afilador, Tres Esquinas, Shapajilla, and Tulumayo lack any semblance of an urban zone. Las Palmas, however, boasts of a small restaurant (restauran), two stores (tiendas) at which liquor is sold along with canned goods, and articles of prime necessity. A large state-owned sawmill located in Las Palmas was not operating in March, 1947.

Hacienda Delicias illustrates very well the hacienda type of locality. The hacendado lives in a large brick house around which

is clustered the coca-drying beds, the hydraulic press for compressing coca leaves, the carpentry shop, the commissary, storage houses, a partially constructed school room, a medical dispensary, and the quarters (cauchones) for the peons. The central headquarters serves as residence for both hacendado and peons and is the center of all the social and economic activities in the area.

Haciendas comprise a large part of the localities of Shapajilla, Tulumayo, and Tres Esquinas. Thus, Shapajilla contains four haciendas as follows: "Shapajilla" (size unknown), "Ahacasita" (106 has.), "Danubio" (225 has.), and "Santa Rita" (90 has.); Tulumayo contains "La Victoria" and "El Triunfo"; Tres Esquinas contains "Buenos Aires."

Table 13 summarizes information relating to the general locality-group structure found in the three study sites in the Huallaga Valley. Starting with the largest subdivision of the Republic, it is seen that Pano and Tingo Maria have a common bond of both being under the political jurisdiction of the Department of Huanuco. None of the political bonds below that of department, that is, provincial, district and municipal jurisdictions, are common to the populations of all three study sites.

#### Rural and Urban Parts.

Each site may be divided into urban and rural parts and each has a distinguishing locality structure. On the basis of analysis of locality-group structure the three communities may be classified as follows:

- (1) The local community of Juanjui consists of the pueblo, or municipality, and adjacent agricultural

TABLE 13

## LOCALITY GROUP STRUCTURE OF THE THREE STUDY SITES

|             |            |          |           | Urban        |   |        |          | Rural  |
|-------------|------------|----------|-----------|--------------|---|--------|----------|--|
| Study Sites | Department | Province | District  | Municipality | Barrios   | Calles | Manzanas | Agricultural lands (chacras)   |
| Juanjui     | San Martin | Mariscal | Juanjui   | 1            | 11  | 20     | 40       | worked by Juanjui residents who live seasonally on the (Approx.) farm.   |
| Panao       | Huanuco    | Pachitea | Panao     | 1            | 7   | 16     | 40       | Indian peasant communities with little feeling of community with the pueblo of Panao.  |
| Tingo Maria | Huanuco    | Huanuco  | Rupa Rupa | 1            | None (Zones Residencial: Obrero: Tourist: zone: Agri. Expt. Sta.) | 14     | 48       | Eight farming communities closely associated with the pueblo of Tingo Maria. Each community composed of a number of farms varying in size from less than 5 hectares to more than 200 hectares. |

lands which are cultivated by farmers making their principal home in the pueblo.

- (2) The local community of Panao consists only of the pueblo, or municipality.
- (3) The local community of Tingo Maria consists of the pueblo, or municipality, and seven contiguous farm localities extending a distance of approximately 30 kilometers south and 30 kilometers east.

The Census of Peru defines "urban population" as all persons residing in the capital of a Department, Province, or District regardless of size, and other populated centers (centros poblados) whose number of inhabitants exceeds the average population of the capitals and which do not have typical rural characteristics such as haciendas, fundos, comunidades, etc. The remaining population is defined as rural. The Census definition yields essentially the same classification of population as that employed in this study.

"Centro poblado" is a generic term used by the Peruvian Census to denominate any place, or site, where a few or large number of persons--either related or unrelated--permanently establish homes or other abodes and live habitually in them and dedicate themselves to agriculture, livestock, fishing, mining, commerce, manu-<sup>1</sup>facturing, or any other occupation.

It is not necessary that the place or site have schools, churches or its own authorities; only that it have a particular name by which it is known currently, or is distinct from any other place

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<sup>1</sup>

Censo Nacional, Vol. IV, p. XXIV.

or site roundabout. Furthermore, it is not important that the houses or living places of the inhabitants be separated from their respective farm lands, mines, fishing, etc. The essential point is that the agglomeration, or group of people, is joined together by common interests of a social and economic character.

In taking the Census of 1940 considerable difficulty was encountered in getting a uniform interpretation by the schedule takers of what was meant by "centro poblado." Furthermore, analysis of the material was hindered by the fact that many names were of Quechua and Aymara derivation and at times considerable uncertainty prevailed as to district boundaries, which made it difficult to allocate many of the centers.

The determination of categories, especially in rural areas, was particularly difficult. As a general rule the law specifies "categories" of ciudad, villa, or pueblo as designations for capitals of Department, Province, and District. Otherwise the laws on territorial limits of population units is deficient or confused in setting apart the "centros poblados" from rural zones. The most difficult to determine definitely are the haciendas or fundos whose significance varies according to latitude and altitude.

Students of the 1940 Census of Peru have come to the conclusion that regional differences in classification of population and a lack of a statute clearly delimiting areas and population centers in Peru have impeded the classification of population by "centros poblados."<sup>1</sup>

Table 14 shows the distribution of localities in the districts

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<sup>1</sup>  
Censo Nacional, Vol. IV, p. XXV.

of Juanjui, Chinchao, and Panao classified according to Census categories. Tingo Maria was included in the district of Chinchao when the Census of 1940 was taken. Since then, however, it has been accorded separate status within the district of Rupa Rupa. Panao is the capital of the district of Panao. Juanjui is the capital of the district of Juanjui.

TABLE 14

KINDS OF LOCALITIES (CENTROS POBLADOS) IN THE DISTRICTS  
OF JUANJUI, CHINCHAO, AND PANAO, 1940\*

| Kind            | : Juanjui |       | : Chinchao |       | : Panao |       | : Total |       |
|-----------------|-----------|-------|------------|-------|---------|-------|---------|-------|
|                 | :No.      | Pct.  | :No.       | Pct.  | :No.    | Pct.  | :No.    | Pct.  |
| Ciudad          | : 1       | 1.3   | : 0        |       | : 1     | 2.2   | : 2     | .6    |
| Pueblo or aldea | : 2       | 2.5   | : 11       | 5.2   | : 11    | 23.9  | : 24    | 7.1   |
| Caserio         | : 12      | 15.2  | : 43       | 20.4  | : 14    | 30.4  | : 69    | 20.5  |
| Hacienda        | : 0       | .0    | : 88       | 41.7  | : 5     | 10.9  | : 93    | 27.7  |
| Fundo or chacra | : 52      | 65.8  | : 41       | 19.4  | : 1     | 2.2   | : 94    | 28.0  |
| Estancia        | : 0       | .0    | : 5        | 2.4   | : 8     | 17.6  | : 13    | 3.9   |
| Other           | : 12      | 15.2  | : 23       | 10.9  | : 6     | 12.8  | : 41    | 12.2  |
| Total           | : 79      | 100.0 | : 211      | 100.0 | : 46    | 100.0 | : 336   | 100.0 |

\*

Source: Censo Nacional de Poblacion de 1940, Republica del Peru, Volumens IV y IX, Cuadro No 34, p. 64.

Population size alone does not serve to classify types of population centers. As Table 15 shows "pueblos" range in size from populations under 50 to over 2,000; "caseros" and "haciendas" from populations of under 26 to over 201. However, pueblos tend to have a larger population than caserios, haciendas, fundos, and estancias.

By far the most numerous kinds of locality groups in both areas are agricultural units—haciendas, fundos, and estancias. "Caserio" also may be considered to be an agricultural unit since

TABLE 15

LOCALITIES (CENTROS POBLADOS) IN THE DISTRICTS OF JUANJUI,  
CHINCHAO, AND PANAÓ CLASSIFIED ACCORDING TO POPULATION  
1940

| Population     | D i s t r i c t |       |          |       |       |       |       |       |
|----------------|-----------------|-------|----------|-------|-------|-------|-------|-------|
|                | Juanjui         |       | Chinchao |       | Panao |       | Total |       |
|                | No.             | Pct.  | No.      | Pct.  | No.   | Pct.  | No.   | Pct.  |
| Under 26       | 57              | 72.1  | 101      | 47.9  | 7     | 15.2  | 165   | 49.1  |
| 26 - 50        | 11              | 13.9  | 54       | 25.6  | 7     | 15.2  | 72    | 21.4  |
| 51 - 100       | 6               | 7.6   | 30       | 14.2  | 6     | 13.0  | 42    | 12.5  |
| 101 - 200      | 3               | 3.8   | 17       | 8.0   | 14    | 30.4  | 34    | 10.1  |
| 201 - 300      | 1               | 1.3   | 4        | 1.9   | 9     | 19.6  | 14    | 4.2   |
| 301 - 400      | --              | --    | --       | --    | 1     | 2.2   | 1     | 0.3   |
| 401            | --              | --    | 3        | 1.4   | --    | --    | 3     | 0.9   |
| 501            | --              | --    | --       | --    | 1     | 2.2   | 1     | 0.3   |
| 601            | --              | --    | 1        | 0.5   | --    | --    | 1     | 0.3   |
| 701            | --              | --    | --       | --    | --    | --    | --    | --    |
| 801            | --              | --    | --       | --    | --    | --    | --    | --    |
| 901            | --              | --    | --       | --    | 1     | 2.2   | 1     | 0.3   |
| 1,001          | --              | --    | --       | --    | --    | --    | --    | --    |
| 1,501          | --              | --    | --       | --    | --    | --    | --    | --    |
| 2,000 and over | 1               | 1.3   | 1        | 0.5   | --    | --    | 2     | 0.6   |
| Total          | 79              | 100.0 | 211      | 100.0 | 46    | 100.0 | 336   | 100.0 |

it generally refers to the cluster of farm houses on a large farm. Thus, if all agricultural units are grouped together, more than three-fourths of the locality groups classified by the Census are agricultural units.

The most distinguishing features of haciendas, fundos, estancias, and caserios on the one hand and ciudades, villas, and pueblos on the other may be pointed out: The former are characterized by a concentration of land in one ownership and all houses are in the hands of the owner; services are contracted for by the owner and only permissive residence on the property is allowed; and the individual is bound by the division of labor prevailing on the farm.



The commissary monopolizes internal trade while external trade is controlled by the owner. Education is often under supervision of the owner, as are religion, recreation, and medical services. In contrast, the municipalities (ciudades, villas, pueblos) contain many individual owners, a wider choice of occupations, competitive trade, and more public control of education.

In this study, "urban population" is defined as those persons residing in the pueblo regardless of occupation and who express a feeling of belonging to it. "Rural population" is defined as all persons residing in dispersed fashion in localities outside the pueblo proper. Rural localities have little or no nucleus, or piling up of population in a center.

Using the above definitions, the population of Juanjui and Pano can be classified as entirely "urban," while Tingo Maria is 51 percent "urban" and 49 percent "rural" (Table 16). It should be noted that this residence classification does not coincide with the rural-urban categories employed in the United States, where the Bureau of Census defines rural as all persons residing in places under 2,500 population, and urban as all persons residing in places of 2,500 and over. For various reasons such a definition is not applicable to Peru where actual farm residence by the operator's family is the exception rather than the rule.

Table 17 gives the actual number of households interviewed in each study site, by rural-urban classification and by locality groups.

TABLE 16

## POPULATION DISTRIBUTED BY URBAN AND RURAL RESIDENCE

| Study site           | Urban |       | Rural |      | Total |       |
|----------------------|-------|-------|-------|------|-------|-------|
|                      | No.   | Pct.  | No.   | Pct. | No.   | Pct.  |
| Juanjui <sup>a</sup> | 1,844 | 100.0 | -     | -    | 1,844 | 100.0 |
| Panao <sup>b</sup>   | 811   | 100.0 | -     | -    | 871   | 100.0 |
| Tingo Maria          | 1,643 | 50.9  | 1,583 | 49.1 | 3,226 | 100.0 |

<sup>a</sup>

Farmers of the surrounding agricultural lands are included in the urban population because they reside most of the time in the pueblo.

<sup>b</sup>

Most farmers of surrounding agricultural lands are not included in the urban population because most of them do not reside in the pueblo and have little or no feeling of belonging to the pueblo.

Community Cohesion

Community is a relative term and communities can range in scope from a few families to the entire world population. But in the sense that community is used in this analysis it is in essence actually two things: (1) A fairly adequate set of local institutions, agencies and services catering to the basic needs of local people; (2) a certain degree of social cohesion based upon a set of common interests and social interaction plus recognition of a common leadership. Local institutions, agencies and services sustain more or less the interests of people living in the locality by satisfying their needs. Participation in a common life provides a matrix within which the sense of community ("feeling of belonging") has a chance to grow. Conversely, without such social relationships the sense of community has little chance for development.

TABLE 17

HOUSEHOLDS DISTRIBUTED ACCORDING TO RURAL-URBAN  
CLASSIFICATION, BY STUDY SITE

| Juanjui - Urban |    | Number            |     |
|-----------------|----|-------------------|-----|
| Barrio          |    |                   |     |
| Huaico          | 64 | Calle             | 300 |
| Juanjuicillo    | 33 | Malecon           | 56  |
| Alto            | 32 | El Triunfo        | 31  |
| Sahunio         | 31 | Ramon Castilla    | 26  |
| Bajo            | 25 | Huallaga          | 24  |
| Arriba          | 6  | La Merced         | 18  |
| San Juan        | 6  | Jorge Chavez      | 14  |
| Huallaga        | 3  | San Martin        | 11  |
| Leticia         | 2  | Miguel Grau       | 10  |
| San Martin      | 2  | Manco Cogsac      | 10  |
| Other           | 97 | Alfonzo Ugarte    | 9   |
| Plaza           | 1  | Dos de Mayo       | 9   |
| Near airstrip   | 20 | La Libertad       | 9   |
| Near river      | 6  | Gran La Punta     | 8   |
| Suburban        | 6  | Progreso          | 7   |
| No answer       | 64 | Loveto            | 7   |
|                 |    | Mariscal Caceres  | 3   |
|                 |    | Leticia           | 2   |
|                 |    | S. Largente Lovez | 1   |
|                 |    | San Miguel        | 1   |
|                 |    | Bologna           | 1   |
|                 |    | No answer         | 43  |
| Panao - Urban   |    | Number            |     |
| Barrio          |    |                   |     |
| Chuncacuna      | 30 | Calle             | 161 |
| Central         | 23 | Lima              | 28  |
| Huinchaspata    | 19 | Mairo             | 28  |
| San Juan        | 4  | Ucayali           | 19  |
| Shirahuacta     | 4  | Miguel Grau       | 13  |
| Puca Puca       | 1  | Pachitea          | 12  |
| Macorgoto       | 1  | Bolognesi         | 9   |
| Other           | 79 | Arica             | 7   |
| Suburban        | 15 | Tacna             | 6   |
| Hotel           | 1  | Alfonso Ugarte    | 5   |
| No answer       | 63 | Consuelo          | 4   |
|                 |    | Espinar           | 4   |
|                 |    | Lagarto           | 4   |
|                 |    | Progreso          | 3   |
|                 |    | San Juan          | 3   |
|                 |    | Pilar             | 2   |
|                 |    | Libertad          | 1   |
|                 |    | No answer         | 13  |

TABLE 17 (continued)

|                     | : Number : |                   | : Number : |
|---------------------|------------|-------------------|------------|
| Tingo Maria - Urban | :          |                   | :          |
| part (pueblo):      | 352        | Rural part        | 330        |
| Zone                | :          | Afilador          | 67         |
| Residential:        | 212        | Hacienda Delicias | 19         |
| Olvero              | 80         | Las Palmas        | 38         |
| Experimental:       | :          | Naranjillo        | 81         |
| Sta.                | 38         | Shapajilla        | 51         |
| Near bridge:        | :          | Tres Esquinas     | 28         |
| site                | 19         | Tulumayo          | 41         |
| Hospital            | 3          | Clase "C"         | 5          |
| :                   | :          | :                 | :          |
| :                   | :          | :                 | :          |

But how can this community cohesion be measured? At least three items of information gathered in the survey are applicable to the problem of measuring the degree of "feeling of belonging": (1) Family visiting behavior (social interaction); (2) expressions of interfamily confidence (social solidarity); (3) leadership recognition (role-status). These three indicators of cohesion can be combined into an index to show the variations existing in the ten localities.

An indication of the service function of each locality is easily derived from the information on the number of retail establishments, specialists, professionals, institutions, and agencies. Table 18 is an inventory of the kinds of institutions and agencies found in each locality. Thus in Tingo Maria there are at least 31 different kinds of services ranging from "general stores" (tiendas de abarrotes y articulos) to a movie theatre. The scope of services is slightly narrower in Panao where 25 kinds were reported, from lowly dram shops (chinganas) to hotels. Still more limited

TABLE 18

## INSTITUTIONS, RETAIL ESTABLISHMENTS, SPECIALISTS, AND PROFESSIONS, BY LOCALITY

|                              | : Juan-<br>: jui | : Panao | :Tingo<br>: Maria | :Afil-<br>: ador | : Hda.<br>: Deli-<br>: cias | : Las<br>: Pal-<br>: mas | : Nar-<br>: an-<br>: jillo | : Sha-<br>: pa-<br>: jilla | : Tres<br>: Esqui-<br>: nas | : Tulum-<br>: ayo |
|------------------------------|------------------|---------|-------------------|------------------|-----------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|-------------------|
| <u>Institutions</u>          |                  |         |                   |                  |                             |                          |                            |                            |                             |                   |
| Hotels                       | : —              | : 2     | : 3               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Boarding houses              | : 3              | : 2     | : 2               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| School                       | : 5              | : 4     | : 3               | : 1              | : 1                         | : 1                      | : 1                        | : :                        | : :                         | : :               |
| Church                       | : 1              | : 1     | : 2               | : :              | : :                         | : :                      | : 1                        | : :                        | : :                         | : :               |
| Hospital                     | : :              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Post office                  | : 1              | : 1     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Civil Guard post             | : 1              | : 1     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Bank                         | : :              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| <u>Retail Establishments</u> |                  |         |                   |                  |                             |                          |                            |                            |                             |                   |
| General stores               | : 11             | : 18    | : 38              | : 1              | : 1                         | : 2                      | : 2                        | : 1                        | : 1                         | : 1               |
| Chinganas                    | : :              | : 19    | : :               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Bazares                      | : :              | : 4     | : 6               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Bares                        | : 1              | : :     | : :               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Almacenes                    | : 3              | : :     | : 4               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Bakery shops                 | : :              | : 5     | : 4               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Jewelry shops                | : :              | : 1     | : :               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Filling station              | : :              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Drug store                   | : :              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Restaurants                  | : :              | : :     | : 3               | : :              | : :                         | : 1                      | : :                        | : :                        | : :                         | : :               |
| <u>Specialist services</u>   |                  |         |                   |                  |                             |                          |                            |                            |                             |                   |
| Carpenters                   | : 5              | : 7     | : 38              | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Shoemakers                   | : 1              | : 2     | : 9               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Blacksmiths                  | : 1              | : 3     | : :               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Mechanics                    | : 1              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Barbers                      | : :              | : 1     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Tailors                      | : :              | : :     | : 3               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Travel agents                | : :              | : 1     | : 2               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Photographers                | : :              | : :     | : 3               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Movie                        | : :              | : :     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Midwives                     | : 2              | : :     | : :               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |
| Telegraph office             | : 1              | : 1     | : 1               | : :              | : :                         | : :                      | : :                        | : :                        | : :                         | : :               |

TABLE 18 (continued)

|                              | Juan-<br>juí | Panao | Tingo<br>Maria | Afil-<br>ador | Hda.<br>Deli-<br>cias | Las<br>Pal-<br>mas | Nar-<br>an-<br>jillo | Sha-<br>pa-<br>jilla | Tres<br>Esqui-<br>nas | Tulum-<br>ayo |
|------------------------------|--------------|-------|----------------|---------------|-----------------------|--------------------|----------------------|----------------------|-----------------------|---------------|
| <u>Professional services</u> |              |       |                |               |                       |                    |                      |                      |                       |               |
| Lawyers                      | 2            | 1     |                |               |                       |                    |                      |                      |                       |               |
| Physicians                   |              |       | 2              |               |                       |                    |                      |                      |                       |               |
| Dentists                     | 1            |       |                |               |                       |                    |                      |                      |                       |               |
| Judges                       | 4            | 3     | 3              |               |                       |                    |                      |                      |                       |               |
| Priests                      | 1            | 1     | 1              |               |                       |                    |                      |                      |                       |               |
| Typists                      | 1            | 1     | 3              |               |                       |                    |                      |                      |                       |               |
| Notaries                     |              | 1     | 1              |               |                       |                    |                      |                      |                       |               |
| Nurses                       |              | 1     | 6              |               |                       |                    |                      |                      |                       |               |
| Pharmacists                  |              | 1     | 1              |               |                       |                    |                      |                      |                       |               |
| Agricultural engineers       |              | 3     |                |               |                       |                    |                      |                      |                       |               |
| Total                        | 46           | 85    | 147            | 2             | 2                     | 4                  | 4                    | 1                    | 1                     | 1             |
| Number per family            | .15          | .53   | .42            | .03           | .10                   | .10                | .05                  | .02                  | .04                   | .02           |

was the scope of services in Juanjui where only 19 were reported, from general store to dentist.

However, in sharp contrast with the three pueblos, which are fairly well developed service centers, the scope of services in the seven rural localities is limited largely to general stores and, in four cases, schools.

A crude measure of the service function of each locality is the number of institutions, establishments, services, and agencies per family that are found there. On this basis Pano and Tingo Maria with 53 and 42 services per 100 families, respectively, are the most important service centers, followed by Juanjui with 15 services per 100 families. None of the seven rural localities had more than 10 services per 100 families.

Rates of services by locality may be scaled as follows:

|       |   |                                   |   |
|-------|---|-----------------------------------|---|
| $S^4$ | = | Over 25 services per 100 families | Pano, Tingo Maria   |
| $S^3$ | = | 15--25                            | " " " " Juanjui   |
| $S^2$ | = | 5--15                             | " " " " Hda. Delicias,<br>Las Palmas,<br>Naranjillo         |
| $S^1$ | = | Under 5                           | " " " " Afilador, Shapajilla,<br>Tres Esquinas,<br>Tulumayo |

In a similar way each locality may be ranked on a scale of community cohesion by computing the rates of interfamily visiting, expressions of interfamily solidarity, and leadership acceptance. Group cohesion may be measured in part by actual visiting behavior. A group with a high interaction rate when in equilibrium should evidence greater community consciousness than a group with low rate of interaction. Thus, the interaction rate in Juanjui,

averaging 1.93 interfamily visiting selections per family, was almost four times as great as in Hda. Delicias, .53 per family (see Table 19). Rate of interfamily expressions of confidence varied

TABLE 19

MEASURES OF COMMUNITY COHESION OR GROUP  
CONSCIOUSNESS

|               | R a t e s O f  |                |                |           |
|---------------|----------------|----------------|----------------|-----------|
|               | Interaction    | Solidarity     | Role-status    | Composite |
|               | I <sup>*</sup> | S <sup>a</sup> | R <sup>b</sup> | I + S + R |
| Juanjui       | 1.93           | 1.80           | 1.69           | 5.42      |
| Panao         | 1.78           | 2.34           | 2.23           | 6.35      |
| Tingo Maria   | 1.60           | 2.20           | 2.04           | 5.84      |
| Afilador      | 1.45           | 2.01           | 1.03           | 4.49      |
| Hda. Delicias | .53            | 1.00           | .16            | 1.69      |
| Las Palmas    | 1.29           | 1.50           | .97            | 3.76      |
| Naranjillo    | .85            | 1.33           | .86            | 3.04      |
| Shapajilla    | 1.20           | 1.76           | .69            | 3.65      |
| Tres Esquinas | 1.04           | 1.75           | .50            | 3.29      |
| Tulumayo      | .83            | 1.51           | .41            | 2.75      |

\*I =  $\frac{\text{Number of visiting selections}}{\text{Number of families}}$

<sup>a</sup>S =  $\frac{\text{Number of expressions of interfamily confidence}}{\text{Number of families}}$

<sup>b</sup>R =  $\frac{\text{Number of leadership acceptances}}{\text{Number of families}}$

from an average of 1.00 per family in Hda. Delicias to 2.34 in Panao. The latter indicator is based on the assumption that confidence in one's neighbors is one evidence of group solidarity.

Finally, the families' answers to the question on leadership was assumed to measure each family's recognition and acceptance of the role and status of leadership in the local situation. The rate of role-status reactions ranged from an average of only .16 per family in Hda. Delicias to 2.23 in Panao.



Families were asked to name up to three persons in the community considered by them to be important leaders. Answers to this question provides the basis for describing the formal leadership structure of each community.

Furthermore, the extent to which community leaders were known by local people provides some measure of social solidarity out of which the sense of community arises. Leadership is the ability to get a group of individuals to respond to the leader's status and role. One evidence of such response is the extent to which a leader is recognized by the group. Table 20 shows how the families in each locality made their leadership selections.

The most widely recognized leader in both Juanjui and Panao was the local mayor (alcalde). He is head of the municipality and is an appointive official of the prefect of the department. In Tingo Maria, he took second place to the justice of peace (juez de paz). The justice of peace is the most important local judicial authority and it is not surprising that he was chosen among the top three leaders in each of the communities.

The subprefect received the third largest number of selections in Juanjui and Panao but none of the families in Tingo Maria chose the subprefect. This variation is due to Tingo Maria not being the seat of provincial government as are both Juanjui and Panao. The third spot in Tingo Maria was taken by the governor (gobernador). He is the official who is vested with authority over the district and is an important official in Juanjui and Panao as well.

It seems clear from the above that local leadership is generally assumed to be tied in with the political organization

TABLE 20

## SELECTED LEADERS, BY LOCALITY

| Leaders                   | : Juanjui  |       | : Panao    |       | : Tingo    |       | : Afila-   |       | : Hda.     |       | : Las      |       | : Naran-   |       | : Shapa-   |       | : Tres     |       | : Tulum-   |       |
|---------------------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                           | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       |
|                           | :300       | 100.0 | :161       | 100.0 | :352       | 100.0 | :67        | 100.0 | :19        | 100.0 | :38        | 100.0 | :81        | 100.0 | :51        | 100.0 | :24        | 100.0 | :41        | 100.0 |
| 1. Mayor                  | :126       | 42.0  | :93        | 57.8  | :203       | 57.7  | :10        | 14.9  | :1         | 5.3   | :11        | 28.9  | :19        | 23.5  | :6         | 11.8  | :1         | 4.2   | :4         | 9.8   |
| 2. Justice of the peace   | :72        | 24.0  | :68        | 42.2  | :217       | 61.6  | :37        | 55.2  | :1         | 5.3   | :13        | 34.2  | :27        | 33.3  | :24        | 47.1  | :6         | 25.0  | :8         | 19.5  |
| 3. Subprefect             | :61        | 20.3  | :78        | 48.4  | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 4. Governor               | :28        | 9.3   | :27        | 16.8  | :184       | 52.3  | :9         | 13.4  | ---        | ---   | :9         | 23.7  | :16        | 19.8  | :2         | 3.9   | ---        | ---   | :4         | 9.8   |
| 5. Head of colonization   | ---        | ---   | ---        | ---   | :60        | 17.0  | :13        | 19.4  | :1         | 5.3   | :4         | 10.5  | :8         | 9.9   | :3         | 5.9   | :5         | 20.8  | :1         | 2.4   |
| 6. Judge in-structor      | :59        | 19.7  | :13        | 8.1   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 7. Priest                 | :22        | 7.3   | :10        | 6.2   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 8. Judge of 1st Instancia | :27        | 9.0   | :39        | 24.2  | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 9. Commandant             | :11        | 3.7   | :8         | 5.0   | :4         | 1.1   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 10. Civil Guard           | ---        | ---   | :9         | 5.6   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 11. Fiscal agent          | :33        | 11.0  | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 12. Head of transport     | :55        | 18.3  | ---        | ---   | :26        | 7.4   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| 13. Other                 | :14        | 4.7   | :14        | 8.7   | :26        | 7.4   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   | ---        | ---   |
| Total                     | :508       |       | :359       |       | :359       |       | :69        |       | :3         |       | :37        |       | :70        |       | :35        |       | :12        |       | :17        |       |
| Non-reporting families    | :98        | 32.7  | :16        | 9.9   | :58        | 16.5  | :21        | 31.3  | :17        | 89.5  | :17        | 44.7  | :43        | 53.1  | :26        | 51.0  | :11        | 45.8  | :32        | 78.0  |
| Rate per family           | :1.69      |       | :2.23      |       | :2.04      |       | :1.03      |       | :.16       |       | :.97       |       | :.86       |       | :.69       |       | :.50       |       | :.41       |       |

of the Republic, at least according to local appraisal. The most important political leaders are all appointive officers of the central government. They are: (1) Mayor; (2) justice of the peace; (3) subprefect; and (4) governor.

The unique character of Tingo Maria as a site of colonization modifies this typical pattern of leadership somewhat. Here the head of the center of colonizacion (jefe del centro de colonizacion) was selected by about 170 percent of all families, placing him among the first four leaders.

The seven rural localities in the Tingo Maria study site indicate their functional solidarity with the pueblo in responding to this question by selecting the justice of peace, mayor, and head of colonization as their three most important leaders. Each of these individuals lives in Tingo Maria and serves the population of the neighboring rural areas.

If rates of interaction, solidarity, and role-status are combined into a single index designed to measure community cohesion it is possible to rank the ten localities on this characteristic. The fourth column in Table 19 shows the index of community cohesion for each locality. Relatively high rates are found in the urban pueblos and relatively low rates in the rural communities.

Panao, on the basis of this index, has the highest cohesiveness of any locality, followed closely by Tingo Maria. But any explanation of the significance of these indexes should note the comparative differences in the patterns of settlement and scope of services between the urban pueblos and rural localities. Panao and Tingo Maria, and in slightly lesser degree, Juanjui, reinforce

the sense of community by a combination of both service functions and group cohesiveness which the more rural communities have not been able to do.

The seven rural localities are adjacent to the pueblo of Tingo Maria and for that reason are definitely a part of the larger Tingo Maria community. Evidence of this relationship is given by the wide acceptance of common leadership, interfamily visiting, and expressions of confidence or solidarity with families of the pueblo. It is interesting to note that the more remote localities from the pueblo, notably Tulumayo and Hda. Delicias, have the lowest scores on the index of community cohesion, indicating that community consciousness is somewhat a function of distance.

The communities may be scaled on community solidarity thus:

|  |   |
|--|---|
| C <sup>5</sup> - A composite score 5.00 and over | Panao, Tingo Maria, Juanjui                       |
| C <sup>4</sup> - 4.00 to 5.00                    | Afilador  |
| C <sup>3</sup> - 3.00 to 4.00                    | Las Palmas, Naranjillo, Shapajilla, Tres Esquinas |
| C <sup>2</sup> - 2.00 to 3.00                    | Tulumayo  |
| C <sup>1</sup> - Under 2.00                      | Hda. Delicias                                     |

Combining the scores on both the S and C scales, the localities may be ranked as follows:

|                                 |                        |
|---------------------------------|------------------------|
| S <sup>4</sup> C <sup>5</sup> - | Panao, Tingo Maria     |
| S <sup>3</sup> C <sup>5</sup> - | Juanjui                |
| S <sup>2</sup> C <sup>3</sup> - | Las Palmas, Naranjillo |
| S <sup>1</sup> C <sup>4</sup> - | Afilador               |

|          |   |                           |
|----------|---|---------------------------|
| $S^1C^3$ | - | Shapajilla, Tres Esquinas |
| $S^1C^2$ | - | Tulumayo                  |
| $S^2C^1$ | - | Hda. Delicias             |

Summing up:

Group cohesiveness (feeling of belonging) is clearly associated with the pueblo-type settlement pattern as shown by the combined S and C scores. Thus, Pano, Tingo Maria (Pueblo), and Juanjui are demonstrated to have more intense social interaction, greater social solidarity, and more general acceptance of the role-status positions.

Finally, the range in group cohesiveness among the rural localities of Tingo Maria is generally associated with distance from the plaza of Tingo Maria and relative isolation of the locality. Thus, adjacent localities of Naranjillo and Afilador plus the easily accessible locality of Las Palmas show the most intense group cohesion of any of the rural areas while Hda. Delicias and Tulumayo show the least intense cohesion.

## CHAPTER VI

### BIOSOCIAL GROUPS

Having delineated the study cites into their respective locality groups, the analysis may logically turn to a consideration of groups in the population based upon what appear to be purely biological traits, such as age, sex and race. Actually, of course, most communities are divided into age, sex and race groups with different rights and duties, statuses and roles not directly resulting from biological factors.<sup>1</sup> These biosocial groups are of primary interest in the analysis that follows.

In Peruvian culture old age (ancianidad) is accorded special respect and commands certain rights. Both these characteristics place persons of this age group in positions of power in the community. On the other hand, young children (ninez and adolescencia) are usually accorded subordinate roles and their rights are restricted. These tendencies of a population to divide into socially significant groups along age lines has been given statistical meaning in the Census of Peru, 1940.<sup>2</sup>

Childhood (la ninez) is considered to be the most dependent age group and includes both the pre-school and school populations. Both of these segments require preferential attention by the State, one for protection and the other for education.

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<sup>1</sup>

Sorokin, op. cit. p. 181.

<sup>2</sup>

Censo Nacional de Poblacion of Ocupacion de 1940, Vol. I, Republica del Peru, p. CLXXIII, Ministerio de Hacienda y Comercio, Direccion Nacional de Estadistica, Lima, 1944.

Adolescence (la adolescencia) is the age of transition from childhood to maturity.

Adulthood (la madurez y edad adulta) is the age of greatest productive capacity and consequently is most important in any consideration of the labor force and consequent economic development. It is this segment of the population which sustains in large measure the other segments. Knowledge about its numbers, capacities and health serves as a general indication of economic productivity and social welfare.

Old age (la ancianidad) represents that sector of the population which is gradually losing its productive capacity. As many old people become inactive, adequate programs of social assistance are required for their benefit.

The effect of social organization on the age composition is clearly shown in Table 21. Localities, such as Shapajilla and Hacienda Delicias, where the hacienda system is the dominant economic organization have relatively few children under 15 years old but many adolescents between 15 and 19. A part of the working force on large haciendas is composed of young manual laborers.

Rural localities without exception have much large proportions of persons in adulthood than urban localities. Over half the total population of Afilador, Hacienda Delicias, Naranjillo, Shapajilla, and Tulumayo is between 20 and 59 years old compared with less than 38 percent in Juanjui and Pano.

Persons 60 years old and over comprise less than three percent of the total population of all localities, excepting in the pueblo of Pano (6.2 percent). Old age is a particularly

TABLE 21

## PERCENTAGE OF POPULATION IN SPECIFIED PERIODS OF LIFE BY LOCALITY, 1947

| Periods<br>of<br>Life | Urban Population |              |        |                  |               | Rural Population      |                |                  |                  |                       |               |      |      | Clase<br>"C" | Total<br>Rural |
|-----------------------|------------------|--------------|--------|------------------|---------------|-----------------------|----------------|------------------|------------------|-----------------------|---------------|------|------|--------------|----------------|
|                       | Peru<br>1940     | Juan-<br>jui | Panao: | Tingo:<br>Maria: | Afila-<br>dor | Hda.<br>Deli-<br>cias | Las<br>Palmas: | Naran-<br>jillo: | Shapa-<br>jilla: | Tres<br>Esqui-<br>nas | Tulum-<br>ayo |      |      |              |                |
| <u>Ninez</u>          |                  |              |        |                  |               |                       |                |                  |                  |                       |               |      |      |              |                |
| Hasta 14 anos         | 42.1             | 47.6         | 46.2   | 41.3             | 39.9          | 33.4                  | 41.3           | 34.8             | 26.9             | 39.8                  | 32.4          | 50.0 | 35.2 |              |                |
| <u>Adolescencia</u>   |                  |              |        |                  |               |                       |                |                  |                  |                       |               |      |      |              |                |
| 15 a' 19 anos         | 9.5              | 12.8         | 10.0   | 11.9             | 8.5           | 14.1                  | 10.3           | 12.1             | 14.3             | 9.7                   | 13.0          | 0    | 11.6 |              |                |
| <u>Edad adulta</u>    |                  |              |        |                  |               |                       |                |                  |                  |                       |               |      |      |              |                |
| 20 a' 59 anos         | 42.0             | 37.1         | 37.6   | 45.2             | 50.3          | 51.5                  | 46.8           | 51.3             | 57.3             | 47.8                  | 52.8          | 50.0 | 51.6 |              |                |
| <u>Ancianidad</u>     |                  |              |        |                  |               |                       |                |                  |                  |                       |               |      |      |              |                |
| 60 y mas anos         | 6.4              | 2.5          | 6.2    | 1.6              | 1.3           | 1.0                   | 1.6            | 1.8              | 1.5              | 2.7                   | 1.8           | 0    | 1.6  |              |                |
| <u>No declarada</u>   | .03              | .0           | .0     | .0               | .0            | .0                    | .0             | .0               | .0               | .0                    | .0            | .0   | .0   |              |                |
| Total                 | :100             | :100         | :100   | :100             | :100          | :100                  | :100           | :100             | :100             | :100                  | :100          | :100 | :100 |              |                |



significant age group in Panao and imposes many limitations upon the social and economic life of that community.

The age groups which undoubtedly place the greatest burden upon a community are the young and old. Combining these two age groups, it is clearly shown that the most unfavorable ratios of dependents to adults of productive age are found in Juanjui (50 dependents to 37 adults) and Panao (52 to 38). These may be compared with a ratio of only 28 dependents to 57 adults in Shapajilla.

It may very well be that some productive adults in the hacienda localities are supporting young children and old persons who live elsewhere. However, it is also true that the population census on which these figures are based does not include the transient laboring population (peones, enganchados) who make up a significant part of the labor force of haciendas. It is reasonable to conclude therefore that the hacienda system commands the labor of relatively more persons in adolescent and adult stages in life and supports fewer children and old people.

Sex differences serve to differentiate the population into sex groups with different rights, duties, functions, roles and statuses. The female sex is regarded as subordinate to the male sex in Peruvian culture generally. The female's role is to raise children, preside over the household, and attend to church affairs. The male, on the other hand, is a man of the world, and moves daily in a world of other males, in the club, in the street, and in his chosen occupation. The male travels more frequently and some migrate to the city, while females seldom do. It is the male who deserts the family, hardly ever the female.

Males predominate in all rural localities and the pueblo of Tingo Maria; while females predominate in Juanjui and Pano. (See Table 22.) Males generally make up most of the labor force and this accounts for the large number in Tingo Maria and rural localities. Shapajilla, with the most males, is composed principally of haciendas with their large labor requirements.

TABLE 22  
PERCENTAGE OF POPULATION MALE AND FEMALE,  
BY LOCALITY, 1947

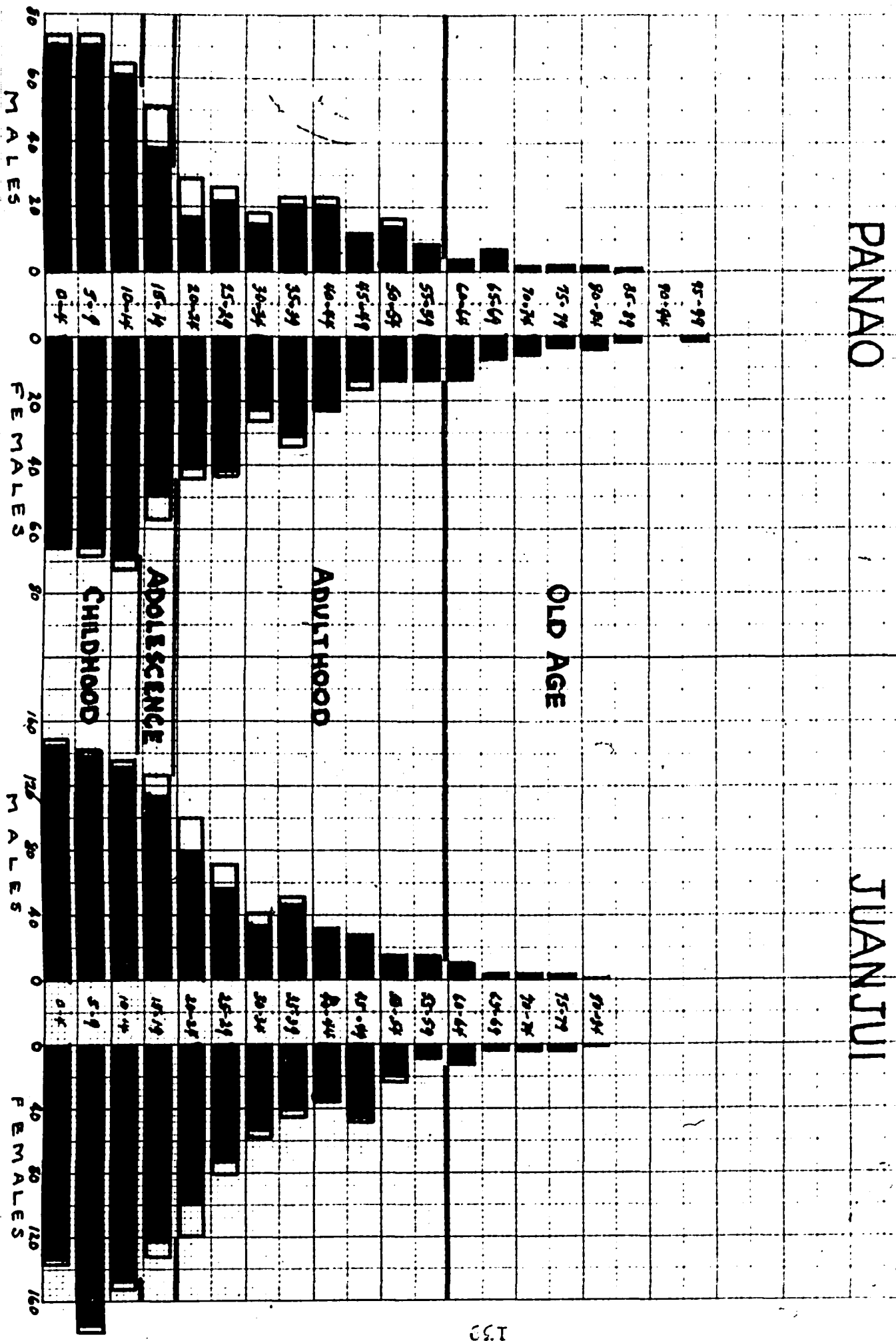
| Locality          | Males | Females | Total |
|-------------------|-------|---------|-------|
| Juanjui           | 46.5  | 53.5    | 100.0 |
| Pano              | 44.6  | 55.4    | 100.0 |
| Tingo Maria       | 51.8  | 48.2    | 100.0 |
| Afilador          | 58.5  | 41.5    | 100.0 |
| Hacienda Delicias | 58.6  | 41.4    | 100.0 |
| Las Palmas        | 51.6  | 48.4    | 100.0 |
| Naranjillo        | 60.0  | 40.0    | 100.0 |
| Shapajilla        | 66.9  | 33.1    | 100.0 |
| Tres Esquinas     | 62.8  | 37.2    | 100.0 |
| Tulumayo          | 56.0  | 44.0    | 100.0 |
| Clase "C"         | 71.4  | 28.6    | 100.0 |

#### Age-sex pyramids

Age-sex pyramids are tools of demographic analysis that provide clues to (1) reproductive processes, (2) expectation of life, (3) migration, and (4) manpower. The age composition of a population without migration and barring catastrophe or epidemic would tend to be fairly continuous from birth to senility and eventually death. Sexes would be distributed evenly at most ages.

Pano's population pyramid shows clearly the dominance of females at all age levels above 15 years old. (See Fig. 8.) On

FIGURE 8.



Males predominate in all rural localities and the pueblo of Tingo Maria; while females predominate in Juanjui and Panao. (See Table 22.) Males generally make up most of the labor force and this accounts for the large number in Tingo Maria and rural localities. Shapajilla, with the most males, is composed principally of haciendas with their large labor requirements.

TABLE 22  
PERCENTAGE OF POPULATION MALE AND FEMALE,  
BY LOCALITY, 1947

| Locality          | Males | Females | Total |
|-------------------|-------|---------|-------|
| Juanjui           | 46.5  | 53.5    | 100.0 |
| Panao             | 44.6  | 55.4    | 100.0 |
| Tingo Maria       | 51.8  | 48.2    | 100.0 |
| Afilador          | 58.5  | 41.5    | 100.0 |
| Hacienda Delicias | 58.6  | 41.4    | 100.0 |
| Las Palmas        | 51.6  | 48.4    | 100.0 |
| Naranjillo        | 60.0  | 40.0    | 100.0 |
| Shapajilla        | 66.9  | 33.1    | 100.0 |
| Tres Esquinas     | 62.8  | 37.2    | 100.0 |
| Tulumayo          | 56.0  | 44.0    | 100.0 |
| Clase "C"         | 71.4  | 28.6    | 100.0 |

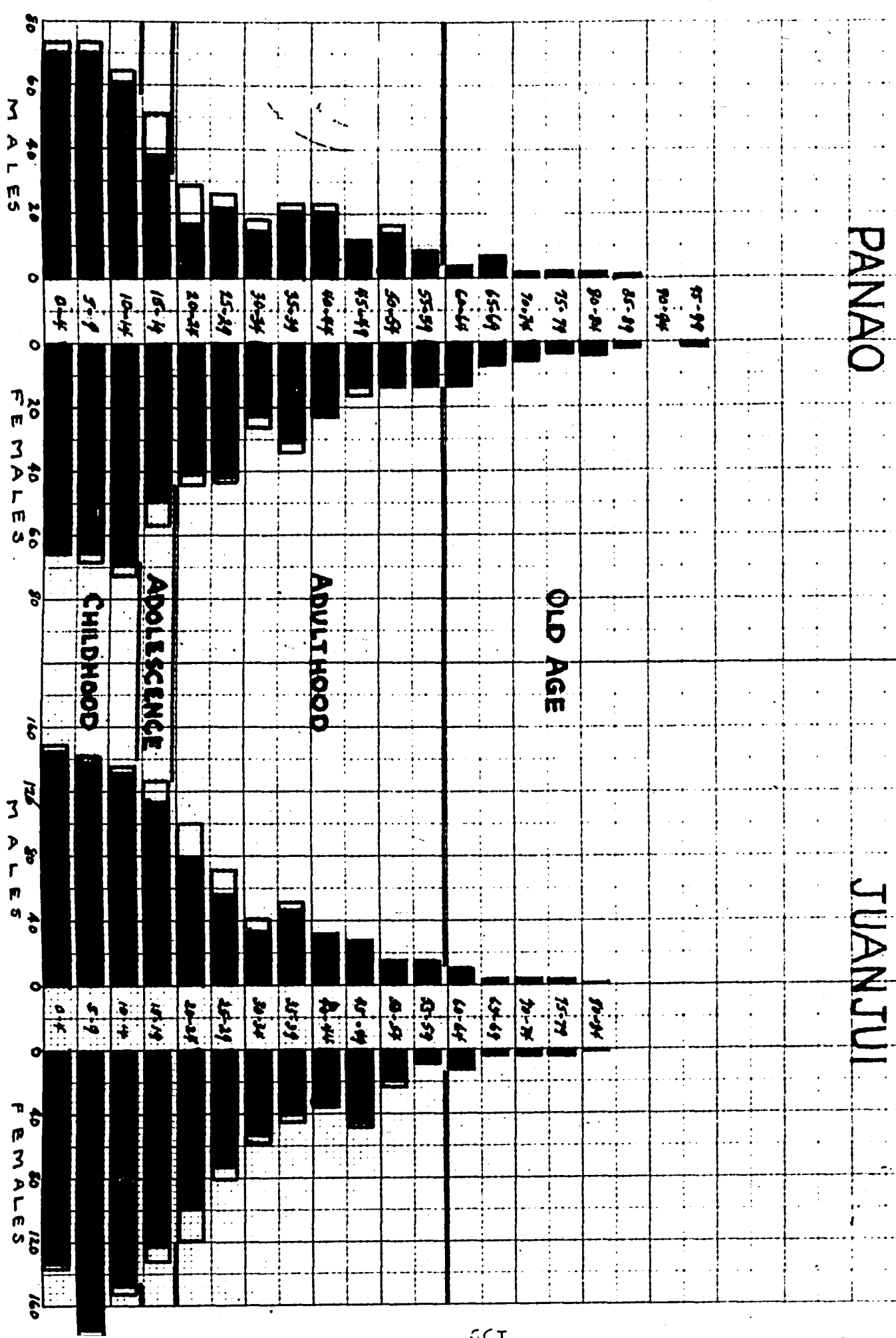
#### Age-sex pyramids

Age-sex pyramids are tools of demographic analysis that provide clues to (1) reproductive processes, (2) expectation of life, (3) migration, and (4) manpower. The age composition of a population without migration and barring catastrophe or epidemic would tend to be fairly continuous from birth to senility and eventually death. Sexes would be distributed evenly at most ages.

Panao's population pyramid shows clearly the dominance of females at all age levels above 15 years old. (See Fig. 8.) On

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FIGURE 8.



the other hand, the population of Tingo Maria has a dominance of males 20 years of age and over. (See Fig. 9.) Shapajilla has the most extreme male-adult dominance and also contains few children.

Recent migration from Pano and Juanjui accounts largely for the extremely feminine character and high average age of the population, out-migrants being mostly adult males.

In addition to providing information on the age of members of the family at home, the respondent was asked to give age and sex information for members of the family away from home. The pyramids have been constructed so as to show the age and sex of family members away from home, represented by the white portions of the horizontal bars. (See Figs. 8 through 13.) Inspection of the pyramids by locality bears out the hypothesis that males are more mobile than females. In Pano, for example, the sex ratio of the family members away from home is 47 males to 30 females; in Juanjui it is 70 males to 57 females.

Although Tingo Maria has about twice the population of Pano, the latter reported 77 absent family members compared with only 51 in Tingo Maria (Table 23). Furthermore, the absent population in Tingo Maria was almost equally divided between males and females, 25 males to 26 females.

Tres Esquinas departs from the general pattern of the absentee population and some comment should be made of its overwhelming number of females. The age-sex pyramid reveals that almost three-fourths of the absentee population of Tres Esquinas was under 20 years old. This is due largely to the fact that families have very recently settled in the locality and many have not as yet brought their entire families with them.

FIGURE 9.

# TINGO MARIA (PUEBLO)

# RURAL PARIS

## OLD AGE

## ADULTHOOD

## ADOLESCENCE

## CHILDHOOD

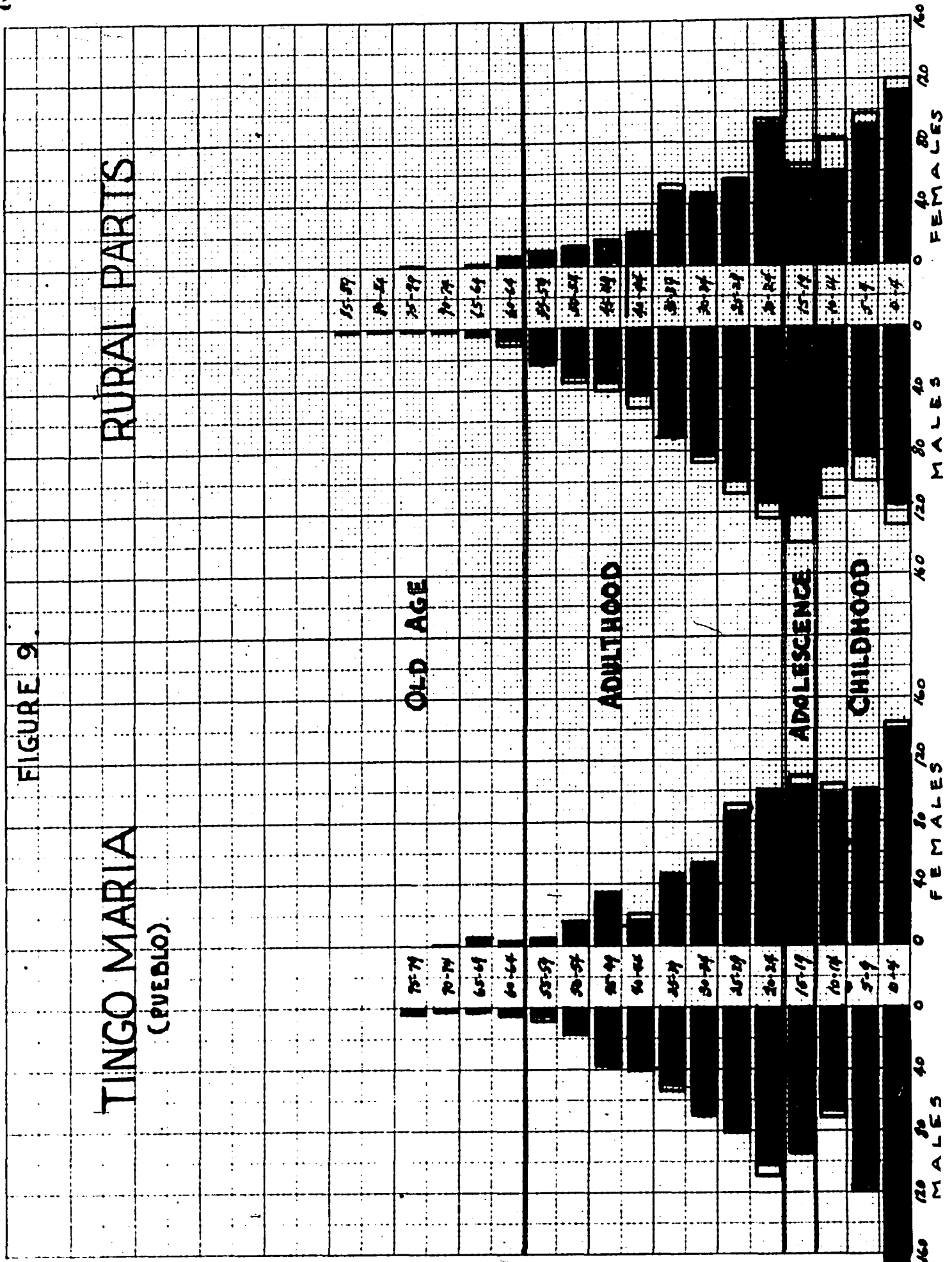


FIGURE 10.

AFILADOR

HACIENDA DELICIAS

OLD AGE

ADULTHOOD

ADOLESCENCE

CHILDHOOD

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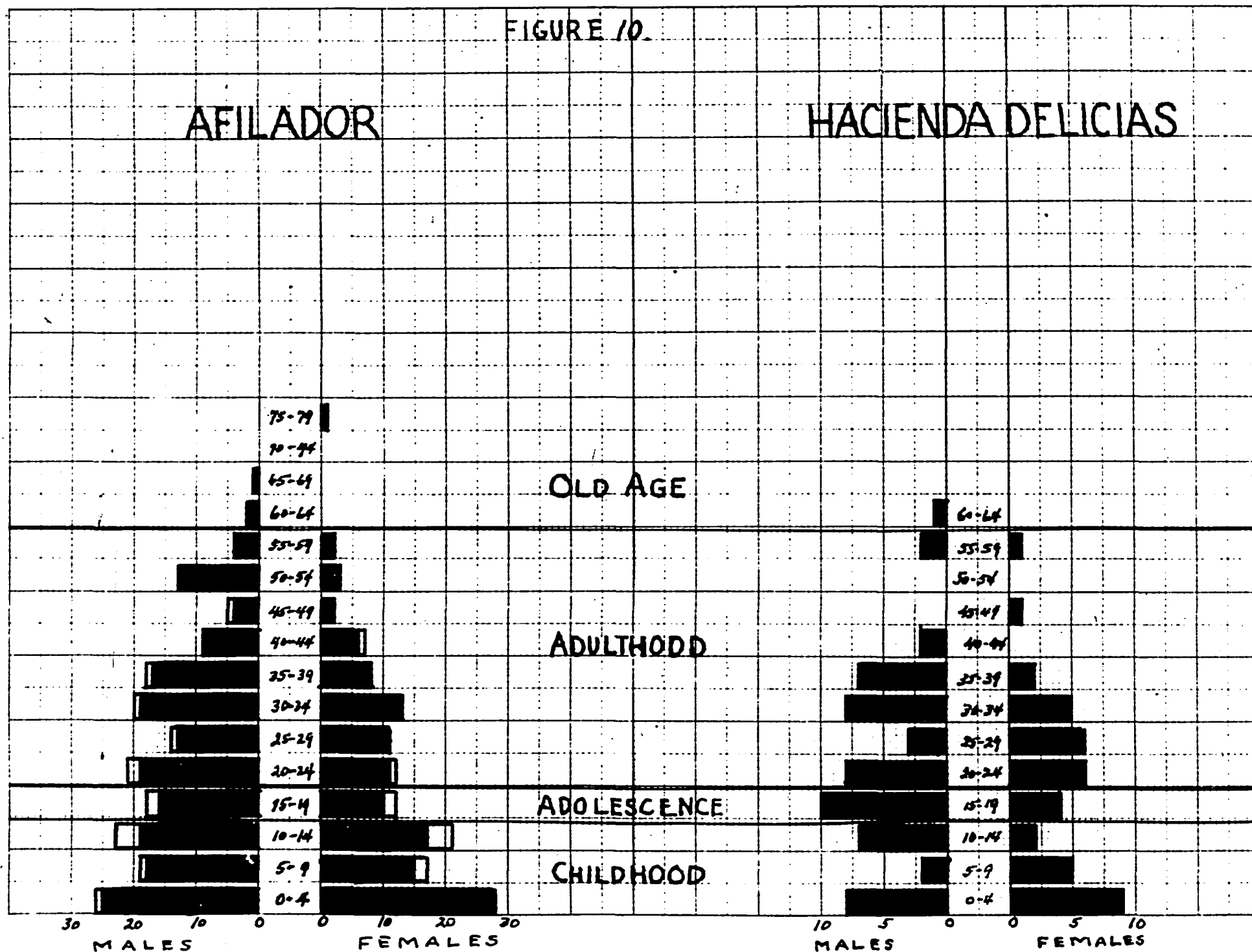




FIGURE 11.

LAS PALMAS

NARANJILLO

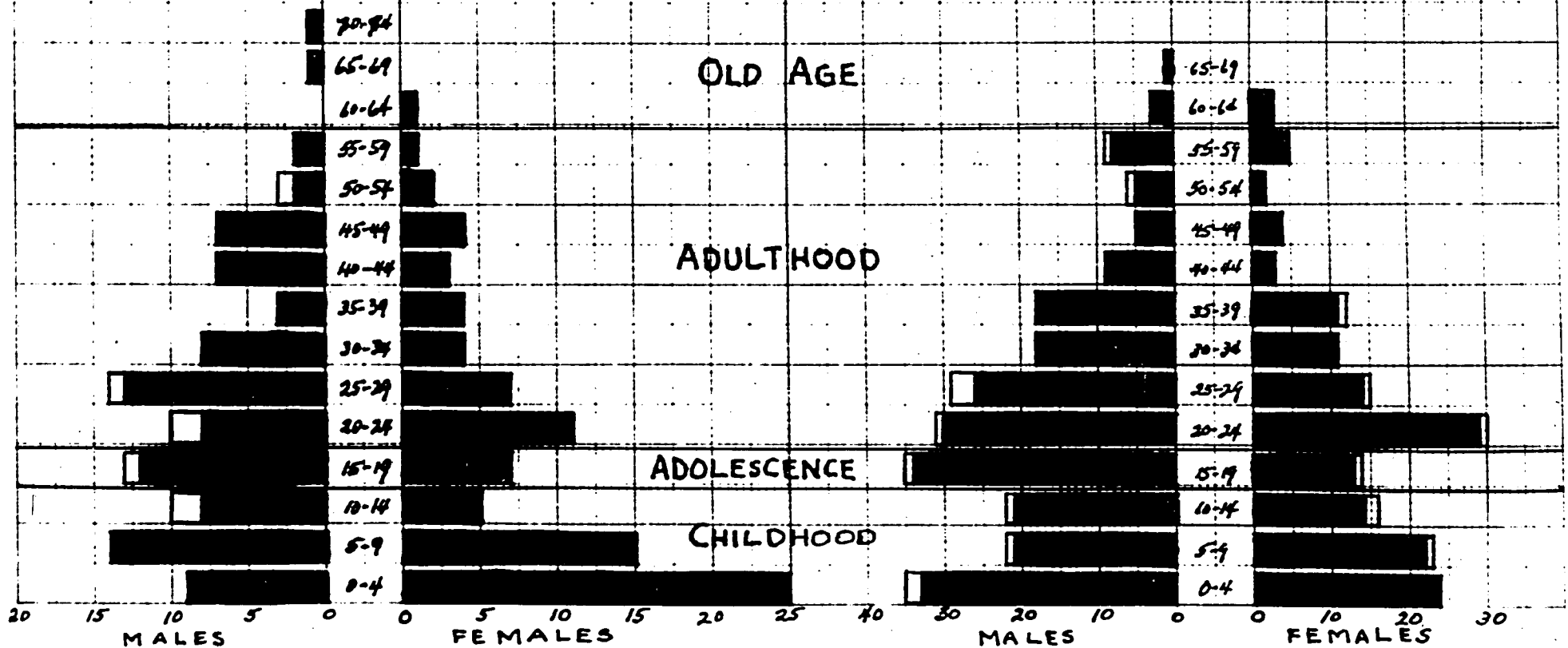


FIGURE 12.

SHAPATILLA

TRES ESQUINAS

OLD AGE

ADULTHOOD

ADOLESCENCE

CHILDHOOD

30 20 10 0 10 20 30 10 0 10 0 FEMALES MALES FEMALES MALES

70-74

65-69

60-64

55-59

50-54

45-49

40-44

35-39

30-34

25-29

20-24

15-19

10-14

5-9

0-4

70-74

65-69

60-64

55-59

50-54

45-49

40-44

35-39

30-34

25-29

20-24

15-19

10-14

5-9

0-4

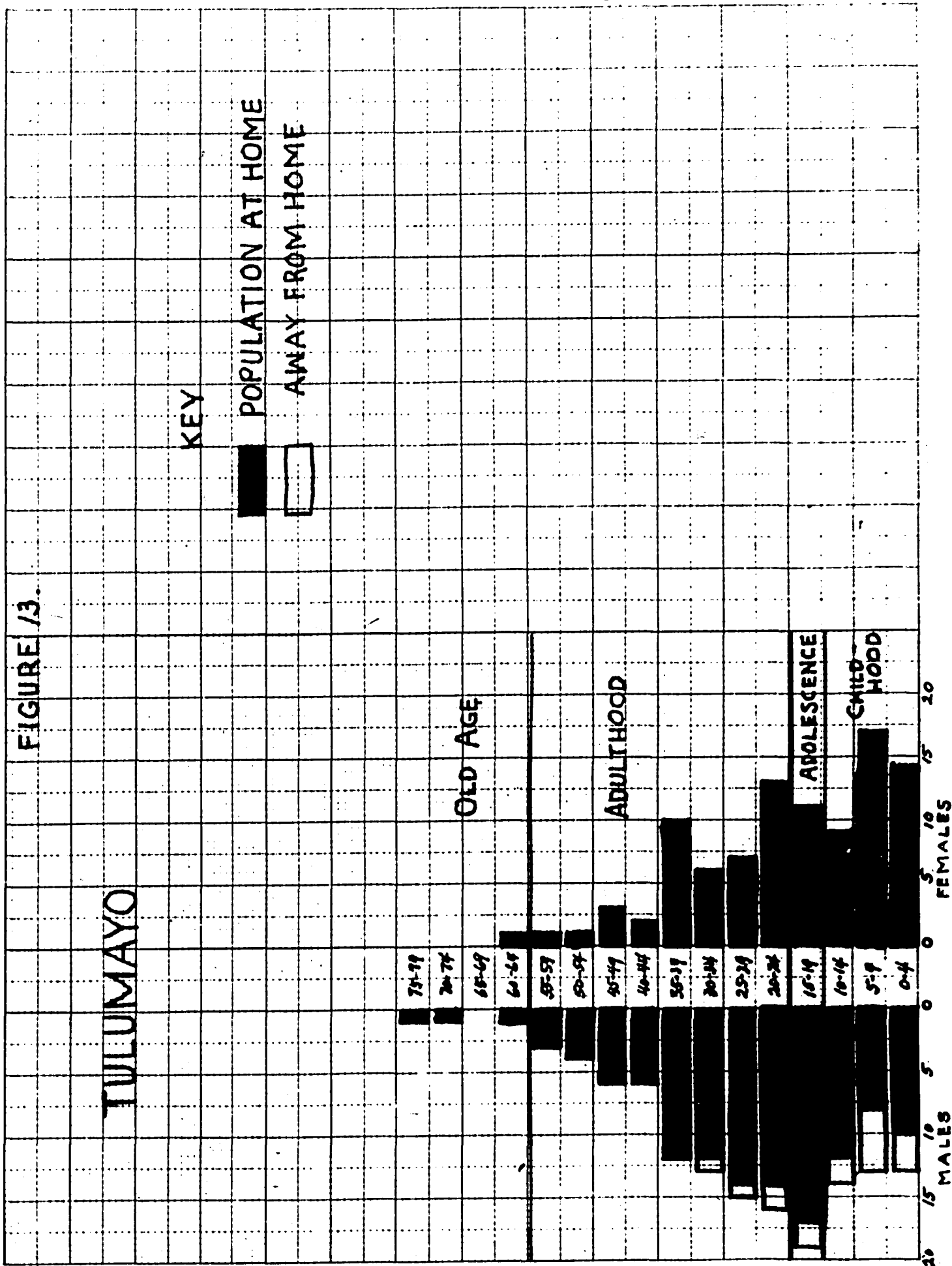


TABLE 23

ABSENT FAMILY MEMBERS DISTRIBUTED ACCORDING TO SEX,  
BY LOCALITY

| Locality          | Absent family members at time<br>of interview |       |         |
|-------------------|---|-------|---------|
|                   | Total   | Males | Females |
| Juanjui           | 127   | 70    | 57      |
| Panao             | 77  | 47    | 30      |
| Tingo Maria       | 51  | 25    | 26      |
| Afilador          | 24  | 14    | 10      |
| Hacienda Delicias | 0   | 0     | 0       |
| Las Palmas        | 7   | 6     | 1       |
| Naranjillo        | 26  | 17    | 9       |
| Shapajilla        | 3   | 2     | 1       |
| Tres Esquinas     | 19  | 6     | 13      |
| Tulumayo          | 16  | 16    | 0       |
| Clase "C"         | 1   | 0     | 1       |

#### Racial Characteristics

So-called "visible" racial traits, such as skin pigmentation, structure of the hair, anatomical features, etc., have little meaning in setting off one "race" from another in Peru. Indigenous people descending from the Incas are easily distinguishable not because of their color or other distinguishing physical features but by socio-cultural characteristics that are superimposed upon the obvious anatomical details. Living semi-isolated in their highland comunidades, they are readily distinguished from the remainder of the population. But with the process of intermarriage of Spanish and Indian, which has proceeded rapidly since the Conquest, the socio-cultural characteristics of the Indian are either lost or blurred and only the physical features of race are left.

Peru has gradually become a country of mestizos (hybrids), and in the process "visible" racial traits have become less

significant criteria while the socio-cultural traits have taken on additional significance.

The casual observer in the streets may observe tendencies for manual jobs to be performed by persons of darker skin, shorter stature, and Indian hair structure. Lower echelons of the Army are obviously made up of a large number of Indians. But what is most important, every group seems to run the gamut of skin pigmentation, stature, and hair structure from dark to light, short to tall, straight to kinky. Although privileged occupations are generally held by "white" persons, an increasing number of "mixed" persons are assuming high positions. There seems to be little "color-line", and if there is such a phenomenon it is best described as a wide blurred zone of demarcation composed of mestizos. Of Peru's total population of 7,023,111 in 1940, 3,283,360, or 60 percent of the population, were classified as mestizos.<sup>1</sup> But the Census did not attempt a refined delineation of the races. Instead it used only common-sense judgments. Any cultural criteria that might have been used were left to the discretion of each individual census taker.

The same individual may be considered Indian from one point of view or be classified as a mestizo from another. The precise number of Indians and mestizos in the communities is difficult to ascertain but even if it were possible to do so this fact alone would be of minor importance.

Of all the cultural criteria that might be used to distinguish Indian from European population, language is perhaps the simplest.

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Julian Steward, Handbook of South American Indians, Vol. 2, The Andean Civilizations, Bul. 143, Bureau of American Ethnology, 1946, p. 411.

The schedule taker ascertained the mother tongue (lengua materna), that is the language first learned, of each head of family. Using information on this item the families may be distributed by locality according to mother tongue of the head as shown in Table 24.

Quechua-speaking Indian population constitutes a majority in only one locality, that is Tres Esquinas with 62.5 percent of the family heads reporting Quechua. At the other extreme, only one percent of the family heads in Juanjui reported Quechua as their mother tongue.

A distinguishing feature of the Indian population is its tendency to concentrate in rural localities rather than in urban centers. Other languages reported include: Japanese, especially in Tres Esquinas and Naranjillo; Chinese, especially in Tingo Maria and Hacienda Delicias; English, especially in Tingo Maria Agricultural Experiment Station. (All United States families refused to be interviewed so data on them are not included in these tables.)

With the assistance of Dr. Luna Vegas of the Peruvian Census four traits of Indian culture were selected to assist in classifying the population into Indian and European. Table 25 presents information concerning four distinguishing features of dress--ojotas, poncho, chullo, shoes. These are items by which Indian families may be set apart from families of European culture.

Chullos are common headgear among Quechua men and boys, as are the brightly designed wool ponchos. Although the majority of the Indian population may go barefooted, many wear ojotas (sandals) of leather, or the more modern rubber tires. Shoes are not found generally among the Indians except on special occasions or Sunday

TABLE 24

## MOTHER TONGUE OF THE HEAD OF THE FAMILY, BY LOCALITY

| Locality          | <u>Spanish</u> |      | <u>Quechua</u> |      | <u>Other</u> |      | <u>Total</u> |       |
|-------------------|----------------|------|----------------|------|--------------|------|--------------|-------|
|                   | No.            | Pct. | No.            | Pct. | No.          | Pct. | No.          | Pct.  |
| Juanjui           | 292            | 97.4 | 3              | 1.0  | 4            | 1.6  | 300          | 100.0 |
| Panao             | 140            | 86.9 | 19             | 11.9 | 2            | 1.2  | 161          | 100.0 |
| Tingo Maria       | 312            | 88.5 | 33             | 9.4  | 7            | 2.1  | 352          | 100.0 |
| Afilador          | 42             | 62.7 | 25             | 37.3 | 0            | .0   | 67           | 100.0 |
| Hacienda Delicias | 10             | 52.6 | 8              | 42.1 | 1            | 5.3  | 19           | 100.0 |
| Las Palmas        | 31             | 81.6 | 7              | 18.4 | 0            | .0   | 38           | 100.0 |
| Naranjillo        | 58             | 70.7 | 18             | 22.0 | 6            | 7.3  | 82           | 100.0 |
| Shapajilla        | 40             | 78.4 | 10             | 19.6 | 1            | 2.0  | 51           | 100.0 |
| Tres Esquinas     | 7              | 29.2 | 15             | 62.5 | 2            | 8.3  | 24           | 100.0 |
| Tulumayo          | 26             | 63.4 | 13             | 31.7 | 2            | 4.9  | 41           | 100.0 |
| Clase "C"         | 4              | 80.0 | 1              | 20.0 | 0            | .0   | 5            | 100.0 |

TABLE 25

RANK ORDER OF LOCALITIES ON CULTURAL TRAITS ACCORDING TO PERCENT OF ALL FAMILIES  
REPORTING SPECIFIED TRAIT

| Locality          | R a n k |                   |             |          |                       | Average<br>rank | Mean<br>devi-<br>ation |
|-------------------|---------|-------------------|-------------|----------|-----------------------|-----------------|------------------------|
|                   | Ojotas  | Poncho-<br>chullo | No<br>shoes | Barefoot | Sleep<br>on<br>Ground |                 |                        |
|                   | (1)     | (2)               | (3)         | (4)      | (5)                   | (6)             | (7)                    |
| Juanjui           | 9       | 10                | 3           | 1        | 2                     | 5.0             | 3.6                    |
| Panao             | 5       | 3                 | 7           | 6        | 4                     | 5.0             | 1.2                    |
| Tingo Maria       | 10      | 9                 | 10          | 10       | 9                     | 9.6             | .5                     |
| Afilador          | 3       | 4                 | 4           | 5        | 3                     | 3.8             | .6                     |
| Hacienda Delicias | 2       | 5                 | 6           | 3        | 1                     | 3.4             | 1.7                    |
| Las Palmas        | 6       | 6                 | 2           | 8        | 6                     | 5.6             | 1.4                    |
| Naranjillo        | 8       | 8                 | 8           | 9        | 10                    | 8.6             | .7                     |
| Shapajilla        | 4       | 2                 | 5           | 4        | 5                     | 4.0             | .8                     |
| Tres Esquinas     | 1       | 1                 | 1           | 2        | 7                     | 2.4             | 1.8                    |
| Tulumayo          | 7       | 7                 | 9           | 7        | 8                     | 7.6             | .7                     |

Locality ranked number 1 in each case has the highest percentage of families reporting that specified culture trait.



mass. In addition to the above trait items selected from the many distinguishing features of clothing the customary habit of sleeping on the ground was included since it was believed to be indicative of Indian people.

An analysis of the data in Table 25 was made by ranking the localities according to the proportion of all families with each characteristic and then computing the intercorrelations.

The matrix of intercorrelations is as follows:

|                 | <u>Ojotas</u> | <u>Poncho-<br/>chullo</u> | <u>No<br/>shoes</u> | <u>Bare-<br/>foot</u> | <u>Sleep on<br/>ground</u> |
|-----------------|---------------|---------------------------|---------------------|-----------------------|----------------------------|
| Ojotas          | —             | .88                       | .53                 | .54                   | .43                        |
| Poncho-chullo   | .88           | —                         | .42                 | .36                   | .20                        |
| No shoes        | .53           | .42                       | —                   | .65                   | .43                        |
| Barefoot        | .54           | .36                       | .65                 | —                     | .72                        |
| Sleep on ground | .43           | .20                       | .43                 | .72                   | —                          |

$$\text{Rank correlation coefficient} = \frac{6 \sum D^2}{N(N^2-1)}$$

Although there appears to be a rather high association between the prevalence of ojotas and ponchos-chullos ( $r = .88$ ), it is clear that association is not so marked between these obviously Indian items and other habitual traits, particularly "sleeping on the ground." Sleeping on the ground is influenced greatly by other than cultural factors such as climate or economic status. Thus, Juanjui and Hacienda Delicias had the largest percentages of families habitually sleeping on the ground and Tingo Maria, Naranjillo, and Tulumayo the smallest.

As a technique for rating the localities in respect to relative Indian versus European culture, a cultural index was computed by adding up the ranks of each locality on the five

cultural items and striking a simple average (Col. 6, Table 25). Thus the average rank of Tingo Maria is 9.6, being the lowest of all localities on three items--ojotas, no shoes, barefoot--and next to the lowest on two--poncho-chullo and sleep on the ground. This would give Tingo Maria the lowest ranking on Indian characteristics while Tres Esquinas and Hacienda Delicias would be rated first and second, respectively.

By using the mean deviation from the average rank (Col. 7, Table 25) as a measure of the variation within localities an important point is brought out. The mean deviation of 3.6 for Juanjui, highest of all localities, shows high inconsistency on the five traits. Although ranking low on ojotas and poncho-chullo it ranks high on the three other traits. Least deviation is observed in Tingo Maria, Afilador, Naranjillo, Tulumayo, and Shapajilla.

Juanjui, a jungle community, lacks the definite Indian traits but has other characteristics that are generally assumed to be associated with Indianism. Thus, it seems clear that not all of the five selected criteria by which Indian and European culture were differentiated are actually capable of delineating the two culture groups. In order that this point may be clarified, correlation coefficients (rank) of the relationship existing between percentage of families in each community reporting Quechua as mother tongue of the head and each cultural item was computed. The association was highly significant between the percentage of Quechua-speaking families and percentage habitually using ojotas ( $r = .80$ ), and reasonably significant between Quechua-speaking and percentage

habitually using poncho and chullo ( $r = .58$ ). But little association was shown between percentage Quechua-speaking and "no shoes," "barefoot," and "sleep on ground" ( $r = .23, .26, \text{ and } .03$ , respectively).

The conclusion that follows is: On the basis of the facts relating to the ten localities being studied, of the five cultural trait items that were thought to be highly correlated with Indian family life, only two—ojotas and poncho-chullo—were definitive of Indianism and of the five, habitual use of ojotas appeared to be most closely associated with Indianism. Thus in classifying the localities according to degree of Indianism, only the percentages of heads of families reporting (1) Quechua as their maternal language, (2) who habitually use ojotas, and (3) who habitually use poncho and chullo should be used. On this basis the most Indian locality is clearly Tres Esquinas and the least Indian is Juanjui. (See Table 26.)

TABLE 26

## REAL RANK ON INDIANISM

| Locality      | :<br>: Quechua-<br>: speaking<br>: | :<br>: <u>Ojotas</u><br>: Col. 1,<br>: Table 25)<br>: | :<br>: <u>Poncho-</u><br>: <u>chullo</u><br>: (Col. 2,<br>: Table 25)<br>: | :<br>: Average<br>: rank<br>: |
|---------------|------------------------------------|---|--|-------------------------------|
| Juanjui       | : 10                               | : 9   | : 10   | : 9.7                         |
| Panao         | : 8                                | : 5   | : 3  | : 5.3                         |
| Tingo Maria   | : 9                                | : 10  | : 9  | : 9.3                         |
| Afilador      | : 3                                | : 3   | : 4  | : 3.3                         |
| Hda. Delicias | : 2                                | : 2   | : 5  | : 3.0                         |
| Las Palmas    | : 7                                | : 6   | : 6  | : 6.0                         |
| Naranjillo    | : 5                                | : 8   | : 8  | : 7.0                         |
| Shapajilla    | : 6                                | : 4   | : 2  | : 4.0                         |
| Tres Esquinas | : 1                                | : 1   | : 1  | : 1.0                         |
| Tulumayo      | : 4                                | : 7   | : 7  | : 6.0                         |

## CHAPTER VII

### SOCIAL CLASSES AND OCCUPATIONAL DIFFERENTIATION

From the community viewed as a territoriality composed of biosocial groupings of the population the analysis turns to the divisions within it. These divisions are primarily social classes, the horizontal strata of society. They affect profoundly the life and attitudes of the people as does the sense of community. But whereas community tends to unite, the class system tends to divide. MacIver defines social class as "any portion of a community which is marked off from the rest, not by limitations arising out of language, locality, function, or specialization, but primarily by social status."<sup>1</sup>

Social class is not merely a statistical category of the population with more or less the same income levels, occupational distinctions, distinctions of birth, race, culture, and levels and standards of living, although all these objective differences are, as a rule, involved in social stratification. It is, however, the recognition by individuals of status which sets class apart from class and in the general awareness of a common status gives cohesion to each class. It is the feeling of unity or separation that either unites or separates people into classes.

Mendieta y Nunez quotes Aristotle as follows: "existen en cada Estado tres clases de ciudadanos: los riquisimos, los pobrisimos y los que no son ni muy pobres ni muy ricos."<sup>2</sup> This classification

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<sup>1</sup> Society, op. cit., p. 166-7.

<sup>2</sup>In "Las Clases Sociales" Revista Mexicana de Sociologia, Ano VI, Vol. VI, No. 1, p. 72.

corresponds to what is generally accepted as fact, according to which society may be divided into: upper class, middle class, and lower class.

Can it be shown that the population of Peru is hierarchically arranged into a stratified society so that each stratum or class has its own special place in a kind of "peck" order? Furthermore, can it be shown that the individuals composing each class<sup>1</sup> "originate action" only to those below, and respond only to those above? This is the central problem in describing the social class structure.

To understand the workings of a national social class system it is almost necessary to observe it as it functions in a local setting for it is there and there only that it has any real meaning for the individual. It is difficult to see how the mid-afternoon teas in the Hotel Bolivar, or in the Club Nacional, attended by Lima's elite, have any significance to the Indian agriculturalist on his mountainside, unless it be through some specific institutional framework such as government bureaucracy, a mining corporation, a hacienda, or the army, etc. But if it can be demonstrated that Lima's elite do actually originate action indirectly to the remotest highland or jungle village, then the class structure can be conceived as a pyramid with the elite class perched on top.

It is easily demonstrated that a definite "peck" order persists within specific economic, political, and religious institutions, but that each class of "peckers" forms a distinct system is not so easily shown. To have the latter, the members within

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Chapple & Coon's term used to explain the sequence of human interaction; "origin of action" is the first in a series of actions.

any class must interact with a high frequency and interaction between classes must be low.

Furthermore, the upper class must always originate action to the lower, in set events, and the lower only respond in all institutions in which they interact.

In Peru, the most extensive hierarchically organized institutions are the National Government and the Roman Catholic Church. The lines of authority for both the political and the religious institutions stem directly from the same geographical center, the Plaza de Armas in Lima. Here are located both the Government Palace and the Palace of the Archbishop. The juxtaposition of these two institutional centers on Lima's main plaza symbolizes the parallel relationships of church and state which have their historical roots going back as far as the Conquest.

It is in the institutions of Government and Church that the dominant culture pattern of Peru manifests itself most intensely and conspicuously, conspicuousness meaning the extensivity and obviousness of the social relationships.

Peru is composed of a number of political divisions, referred to as departments, provinces, and districts. Their respective political officers are appointed by the Central Government and they constitute a small supervisory group in each local area who carry out orders of the Central Administration. Thus, there is little

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Some may question this observation pointing to the hacienda system of agriculture as a possible third institution. But it must be remembered that most of the highlands of Peru are in small holdings of communal lands.

opportunity for local self-government.<sup>1</sup>

Evidence of the supervisory nature of the political hierarchy may be cited. The traveler by auto, in almost any part of Peru, is immediately made aware of the importance attached to the word "Control" by the number of times he must check in at control stations along routes of travel. In a single day's auto travel, between Oroya and the Perene Colony in the Chanchamayo Valley, it is necessary to present one's identification papers and be checked by no less than half a dozen control officials.

The ramifications of the Army hierarchy are fully demonstrated by the fact that new recruits for the Peruvian armed forces are conscripted from time to time at remote jungle towns. Many Peruvian soldiers come from homes located deep in the tropical forests of Eastern Peru.

Furthermore, the various ministries of the Central Government have functionaries scattered widely over the country. These include public health officers, the judiciary, school teachers, agricultural specialists, highway engineers, colonization officers, radio and telegraph technicians, postal workers, and many others. The important thing, insofar as social class structure is concerned, centers in the fact that all these functionaries serve simply as representatives of the political administration in Lima. They constitute an alter ego of the ruling class who make up the top

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For a description of the type of community which results when the people do organize for self-government, see Harry Tschopik, Jr., Highland Communities of Central Peru, Smithsonian Institution, Institute of Social Anthropology, Pub. 5, Washington, 1947, p. 46-8.

class of the political hierarchy. They take orders and respond to the origins of the ruling group and originate to the rest of the people. To this extent, they constitute an intermediate class which might be defined as "middle class."

The parallel set of relationships associated with the institution of the Roman Catholic Church may be seen by pointing out the mutual dependence between political and religious institutions. First of all, it is important to note that the President of Peru is given the official blessing of the Church which is a strong point in his favor when dealing with the people at large. Even the Apra political party, which at the time was accused of being critical of the Catholic Church and its role in government, never denied openly the Church's right to pass upon secular matters. On the other hand, the State supports the Catholic Church with public funds and protects extensively owned Church lands. Schools generally are under the supervision of the Church and public funds are spent on Church-owned hospitals.

Effectiveness of Catholic staff-line organization is illustrated by the following personal experience. While stranded nine days due to tropical storms at one of the small river towns on the upper Amazon, I was surprised one morning to hear an airplane come in for a landing in the jungle clearing which served as an airport. With considerable anticipation that my extended vigil might be ended, I rushed down to the clearing. A local merchant with whom I had become fairly well acquainted passed on to me a pamphlet printed in Madrid (Spain) and dated only the previous month. This document was a reply to the State Department's White



Paper on Spain and copies were being distributed by two priests who had arrived on the incoming plane.

In addition to the extensive hierarchies that are clearly evident in the political and religious institutions, mention should be made of the agricultural system and its associated social structure. Outside of those areas populated by indigenous people the land is held in large haciendas. Particularly in the coastal valleys, the farms are organized into complex economic institutions with varying degrees of hierarchical structure. The landowner (patron) commands the top position and under him may be several layers of supervisors (mayordomos, capitans) who originate action to the lower class made up of peons (peones and yanaconas) and classes of workers with only slight rights in the land they work (mejoreros, partidarios). Many of the lower class farm workers still operate under the system whereby they pay tribute (mita) in money or in kind to the patron that they might work as a peon, farmworker, or yanacona on the large farm.

The owner requires the yanacona to sow a specific crop, let us say cotton, on 90 to 95 percent of the land allotted to him, to pay the owner a determined proportion of the harvest per fanegada (1.59 acres) and to sell him the rest. The patron advances the laborer his subsistence and supplies him with the necessary tools, which shall be deducted from the value of the returns of the harvest. In the families of the farm workers, the children are servants (pongos) in the houses of the owners for periods of a week or a fortnight and receive only their food or occasionally a little money. When a farm is bought, the buyer

asks how many workers it has on it and on the basis of the number of men, the number of workdays they owe collectively, what they are able to produce annually, and the amount of livestock they possess, the buyer determines the price he is willing to pay.

Thus, each hacienda or fundo is similar to an industrial plant made up of sets of relations in which one person originates action and others respond. There are several classes of individuals but by far the largest number of persons comprise the lower class who terminate action to all above.

However, it should not be overlooked that many of the indigenous population who now occupy the highland areas of Peru live in communities (comunidades) which stem from the ancient ayllu of the Inca. These communities constitute an economic institution of agriculture and herding. Each community is a separate entity with a complex division of labor and system of internal social controls. Their public works, roads, schools, bridges, irrigation ditches, and dams are constructed cooperatively with no remuneration except food and drink. The community is a true economic institution and Peru has thousands of them in the highlands.

Some concreteness may be introduced at this point in the analysis by citing pertinent statistical facts bearing on the problem. In the Census of Peru of 1940 it was ascertained to what occupational class individuals belonged. If data on the population classified as (1) "patronos y dueños," (2) "empleados," and (3) "obreros y campesinos" are analyzed, certain comparisons can be made between different regions of Peru and broad occupational groups. Patronos y dueños may be defined broadly as that occupational class which includes persons who own land or who have some

capital from which they get returns. Empleados are individuals who sell their services to others for wages and salaries and who take orders and may also give them. Obreros y campesinos are manual laborers in industry and on large farms who take orders most of the time. The data for the above three occupational classes taken from the Census of Peru of 1940 is presented in Table 27.

Turning first to agriculture, in the area of large land holdings represented by the Department of Lima, the ratio of farm laborers to owners is relatively high (roughly 2 obrerros: 1 patron). The figures for the Department of Cusco, which is representative of the highland Indian area, shows a relatively large number of farm owners and few farm laborers (1:1). This observation might be made also about the Department of San Martin, which is representative of the jungle. But in any case in all three areas the number of employees is comparatively small.

It should be noted that wherever the modern Peruvian population has settled, the coastal, plantation type of agriculture prevails. Thus, a large land concession in the jungle region of Eastern Peru developed by the Peruvian Corporation, an English-owned Company, follows along these lines. The 1,200 square kilometers (30,000 acres) in cultivation, mainly coffee, is supervised by a Scotsman with the assistance of one Englishman. Under this top administration are five Peruvian farm managers over five distinct farm units. The Administration Building is a modern, brick building of two stories. The Corporation runs a well-stocked wholesale and retail commissary. Coffee is transported from the surrounding hills by pipe and dried in modern machinery.

TABLE 27

NUMBER OF PERSONS CLASSIFIED BY THE CENSUS OF 1940, AS PATRONOS, EMPLEADOS, AND OBREROS, BY  
BROAD ECONOMIC GROUPS, FOR SPECIFIED AREAS OF PERU \*

| Occupational<br>class | A g r i c u l t u r e |                |                   | : Extractive<br>: industries |                | : Pub.<br>: Admin. | : Transp. and<br>: Comm. | : Commerce and<br>: Banking | : Mfg.    | : Construc-<br>: tion |
|-----------------------|-----------------------|----------------|-------------------|------------------------------|----------------|--------------------|--------------------------|-----------------------------|-----------|-----------------------|
|                       | : Dept.               | : Dept.        | : Dept.           | : Dept.                      | : Dept.        |                    |                          |                             |           |                       |
|                       | : of                  | : of           | : of              | : of                         | : of           |                    |                          |                             |           |                       |
|                       | : <u>Lima</u>         | : <u>Cusco</u> | : <u>San Mar-</u> | : <u>Junin</u>               | : <u>Piura</u> | All of Peru        |                          |                             |           |                       |
|                       | : <u>Highland</u>     | : <u>tin</u>   | : <u>Incl.</u>    | : <u>Incl.</u>               |                |                    |                          |                             |           |                       |
|                       | : Large               | : communi-     |                   | : copper                     | : oil          |                    |                          |                             |           |                       |
|                       | : farms               | : ties         | : Jungle          | : mines                      | : fields       |                    |                          |                             |           |                       |
| Patronos              | :27,676               | : 38,656       | : 10,475          | : 63                         | : 3            | : 398              | : 4,035                  | : 31,649                    | : 47,400  | : 425                 |
| Empleados             | : 1,036               | : 231          | : 723             | : 534                        | : 1,011        | : 68,626           | : 9,100                  | : 28,513                    | : 8,842   | : 1,821               |
| Obreros               | :45,944               | : 24,535       | : 5,171           | : 12,887                     | : 5,572        | : 11,585           | : 27,329                 | : 8,196                     | : 113,016 | : 40,770              |
|                       | :                     | :              | :                 | :                            | :              | :                  | :                        | :                           | :         | :                     |
|                       | :                     | :              | :                 | :                            | :              | :                  | :                        | :                           | :         | :                     |

\*

Source: Republica del Peru, Censo Nacional de Poblacion y Ocupacion de 1940, Vol. 1,  
Direccion Nacional de Estadistica, Ministerio de Hacienda y Comercio, 1944.

Labor on the farm is performed by about 1,300 Chuncho Indians, most of whom still live in jungle villages. They wear their picturesque native clothes of brown sack cloth, beads, and a hat that looks to all intents and purposes like an inverted straw katy. Additional farm laborers needed at peak times in the coffee harvest are transported by truck from the highlands around Oroya.

Nationals of the United States control most of the mining industry through high administrative and supervisory positions. Typical of these mining industries are the great copper mines of Cerro de Pasco and Oroya which are located in the Department of Junin. Persons occupied in the three selected classes are shown in Table 27. A small number of high administrative and supervisory personnel are classified as "patronos" and "empleados" while a large number of the manual laborers are Peruvians. A somewhat smaller occupational classification is found in the Department of Piura which includes the oil fields of Talara, under development by United States oil companies.

Of particular interest to our study of social structure are the figures showing the relative number of persons occupied in public administration and related services. These "empleados" are the functionaries of the National Government who carry out the varied processes of public administration. They, undoubtedly, constitute a large corps of a growing "middle" class.

The structure of such complex organizations as railroads and bus lines are indicated in the data on transportation and communication. As Table 27 shows, there are relatively large

numbers of middle class employees and, of course, large numbers of manual laborers. The railroads of Peru are owned by British capitalists and the upper administrative and supervisory positions are filled, primarily, by Englishmen with some Nationals of the United States. All of the unskilled work is done by Peruvians, but a growing number of skilled and semi-skilled workmen are being recruited from the laboring class for higher jobs.

Banking and commerce are distinguished by their large number of patronos, with relatively few manual laborers. The "empleado" class is about as large as the "patrono" class and represents the white-collar workers, technicians, and professionals.

The center of the textile industry is located in Lima; but there are many smaller textile industries located in the highland areas, many on a family basis. Other manufacturing industries of significance besides clothing are wood, foods, metals, ceramics, bottling and distilleries, printing, hides, chemicals, jewelry, paper, and tobacco. The large majority of persons occupied in manufacturing are manual laborers; the employee class being relatively small.

Finally, Table 27 presents the number of persons employed in construction industries by occupational class. The pyramidal structure of this industry is clearly demonstrated. There is a small class of patronos, an intermediate number of employees, and a large number of manual laborers.

The analysis so far has shown that there are numerous institutions--governmental, religious, and economic--made up of sets of social relations in which one person originates action and

others respond, such as employer-employees, patrono-peones, general-privates, archbishop-priests, cabinet minister-engineers, etc. But it has not yet been shown whether or not persons who are at the bottom of one institutional set in one organization are also at the bottom of a similar set in another, and on the other hand, that persons on top in one are on top in the others. Furthermore, do these individuals in originating or terminating classes actually interact with one another more than they do with individuals in other classes?

Membership in the upper class (sociedad) is clearly defined and precisely known. It is made up of those with close ties to European culture, light pigmentation, possessing conspicuous wealth, and an old and honored family name. The children of this class are sent to the select schools in Lima, such as Lasalle (Italian), Recoleta, Santa Maria, Via Maria, Jesuitas, and the Colegio. The men of this elite class comprise the membership of the National Club (Club Nacional). The hacendados of this group who control the rich lands are organized into the National Agrarian Society (Sociedad Nacional Agraria).

Special mention should be made of the Nacional Club which occupies an elegant building located on the Plaza San Martin in Lima, and is the daily congregating place for high government officials, members of the church hierarchy, and influential businessmen. Here groups of friends (cliques) exchange ideas and discuss matters of National importance over tea and crackers, or the more potent pisco.

Thus, the upper class is relatively easy to define on the basis of clique and institutional behavior. That is, the members

of the upper class interact with a high frequency with each other and their associations are closed to members of the middle and lower classes.

There are a few other closed class systems that should be commented upon. Nationals of the United States and Great Britain, most of whom are employees of mining, oil, and railroad companies, maintain a social life apart from that of the remainder of the population. The English-American Club and the Country Club in Lima are social organizations representing the North American-British class. In the local mining and oil centers, this class maintains hotels and eating places that are not open to the general public and which are debarred to Peruvians. Traveling in the company of a young Peruvian medical doctor, we found ourselves late one night at the American Hotel in Oroya. The Peruvian physician was denied lodging and had to seek out one of the less desirable pensions.

The conspicuousness of the middle class (clase media) is less obvious. This class includes the growing number of government officials and specialists and many of the salaried group. Its members are representatives of the upper class and constitute an extension of their authority. Their middle class status is much more secure when it is augmented by the attributes of a good family name, wealth, education, and connections, but these factors are not absolutely necessary for attaining membership in this particular social class. A part of the middle class are the newly rich (nuevo rico) who constitute a parvenu group of social "climbers." They are mainly a product of rapid industrialization and commercialization and the gradual introduction of capitalistic institutions.



They try to assume the values and attitudes of the elite and strive to move in upper class sets.

One of the characteristics of the middle class is its tendency to imitate the forms of life of the upper class: in clothes, furniture, housing, entertainment, etc. The difference being that the quality is undoubtedly lower, and the degree of satisfaction less. Evidences of this emulation of the upper class include the almost universal practice of maintaining domestic servants and nurses, the existence of many men's social clubs in every community of Peru, and quite simply, the universal use of formal coats in the plazas of Lima.

Nothing illustrates the social pressure to raise the status of middle class families through emulation of the upper class better than the following story: The young Peruvian clerk whom I hired to supervise the collection of family schedules in Peru sent me a letter at the end of the field work giving a detailed accounting of all the money spent, and attaching the following postscript: "As you see, there is a small balance in my favor. If it would not be too much of an inconvenience to you, would you please secure a copy of the Montgomery Ward catalog and use this balance which is due me to transmit the same to me." It is, of course, pertinent to point out that this young man had just been married and that he and his wife were setting up house-keeping--there in the jungle of Peru.

I talked to the local Montgomery Ward manager, thinking he would be pleased to hear of his Company's fame. He seemed not at all surprised, but said, "Why, the best people in South America use

our catalog and make many purchases. We have a large business in South America."

It may be said that the middle class sets a great importance on science, technology, education (culture), and the professions as a means of achieving status. The middle class is not preoccupied with accumulating large amounts of money, but gets its satisfaction out of the services and work that it renders. Because of its great reliance upon education and science this class will sacrifice much for a family's education. It undoubtedly should include those who live on fixed incomes--small capitalists (rentistas), government employees, the smaller industrialists, artisans, small farm owners (but not the peasant-farmers), professionals, and employees of private corporations.

The lower class or common people (pueblo) lack conspicuousness as to social system. However, it is by far the largest class and in many ways the most complex to analyze. Occupationally, it is easily distinguished from the middle class and the upper class by characteristically menial tasks and low pay. It is the terminal class of individuals under most institutional arrangements and its work is performed under sets of relationships that include close supervision.

Turning now to evidence of internal organization of the lower class, it seems clear that the growing labor movement in Peru is diagnostic of a growing class consciousness among lower class workers. Labor unions are found principally in the mining industries, oil industries, manufacturing, and construction. The recently outlawed Aprista movement is undoubtedly based on the common interests and aspirations of lower class families (and possibly many middle

class as well) associated through their growing sense of class consciousness.

Distinction should be carefully drawn between those areas of the country where the peasant-farmer lives in a community-type of economy, and areas of large-scale commercial agriculture. Indigenous people living in semi-closed communities cannot be considered as a true class according to our definition. Their organization is almost cell-like in structure and constitutes a more or less organic whole within itself. When an individual leaves the Indian community, for example, to work as a peon or laborer on some hacienda, or in some factory, he leaves his self-contained, well-ordered society to enter a strange world that prescribes its lowest status to him. He enters the bottom of the social pyramid and his social mobility upward is slow.

Many Peruvians say that the Indians are loathe to leave their highland communities to work in the jungle or coastal areas. Because they do not move readily into manual jobs, for these are all that are open to them, they are berated by the landowners for being lazy and dour. It is hard to see how they could be otherwise when it becomes clear to them that when they leave their home community they are leaving a system in which they have definite status and security and are entering a system within which they become an inferior class.

We have observed, in general, the occupational basis for social classes in Peru, and have noted that individuals who are similar in occupational status tend to organize into associations to reenforce and maintain their class position. Furthermore, we

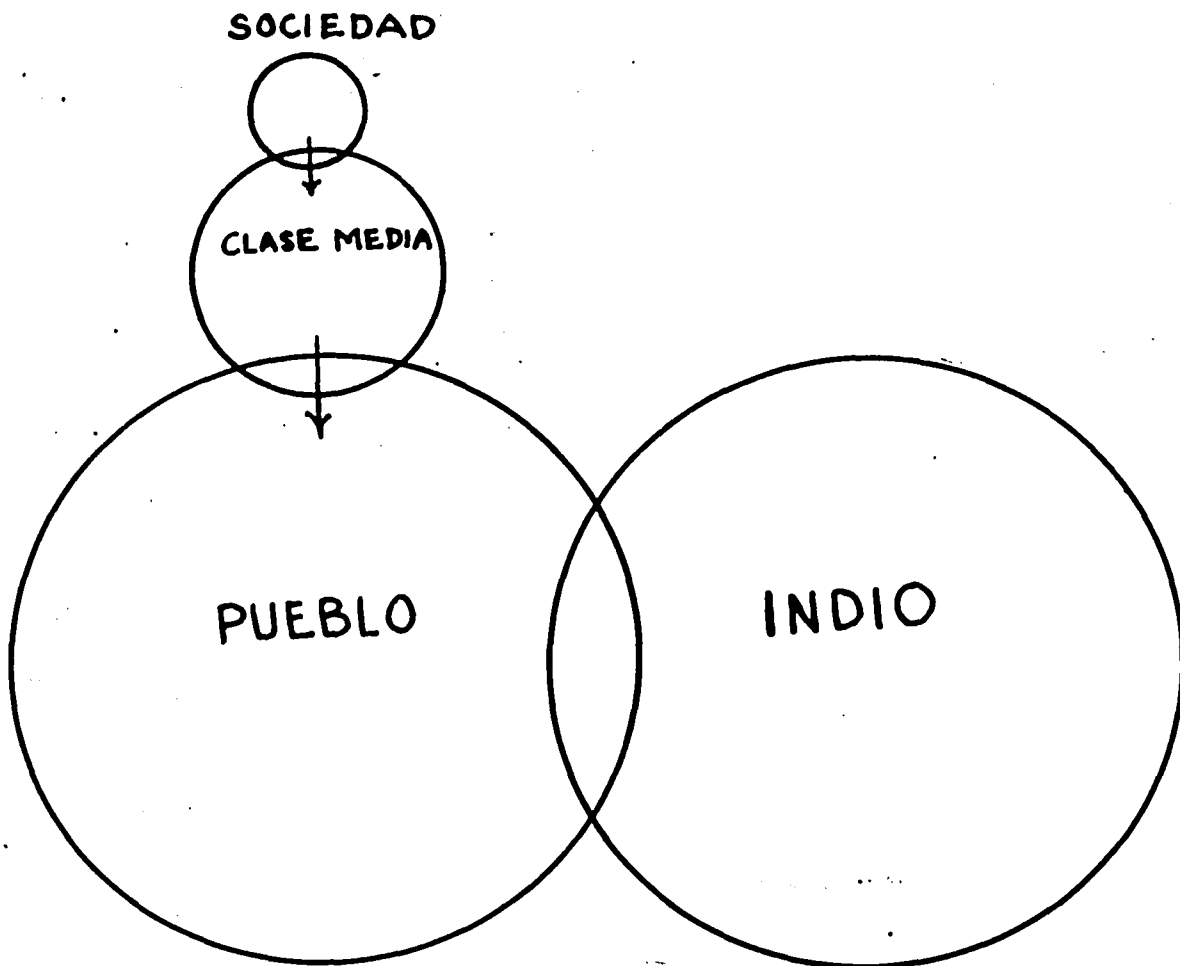
have indicated the formation of such organizations as social clubs among the upper and middle classes that are closed to the lower class. Labor organization is a phenomenon of social organization among the workers.

Class consciousness grows among the members of the group as a result of this growth of class interaction, involving as it does a system of more or less closed relationships and distinctive roles. From this point of view one can easily distinguish the following social classes in Peru: (1) The upper class (sociedad) whose membership is drawn from the controlling figures in the National Government, the Catholic Church, the large landowners, and the large capitalists of native and foreign origin; (2) the middle class (clase media) whose membership is made up of the growing managerial class associated with industrial organization, functionaries of the Government, professionals, and technicians; and (3) the lower class which may be defined occupationally as manual laborers in mines, factories, mills, railroads, and farms. The connection between wage-earning and comparative poverty is all too apparent. The peasant-farmer class made up largely of indigenous people living in the highland regions of the country must be given an extra-class position cutting the lower class vertically.

The following chart (Fig. 14) should serve as a mnemonic device for summarizing the tentative conclusions of this analysis. Each class is represented by a circle, each circle cutting another circle to show the overlapping and indefinite character of class delineation. The relative position of each circle on the vertical axis indicates the direction of origination from top to bottom (control, supervision, power, prestige, etc.) and the size of each circle roughly indicates the size of each class.

FIGURE 14.

# GRAPHIC REPRESENTATION OF SOCIAL CLASSES IN PERU



Special comment is required of the representation of the "Indio" class. This is the peasant-farmer class which overlaps the "Pueblo" class. Much of the "Indio" class is completely outside the modern Peruvian social system; that is, according to the scheme presented here, the true "Indio" deigns not to enter sets of institutional relations that put him in the position of terminating action to members of the other classes. For this reason the circle representing the "Indio" class is placed on the same horizontal plane as the "Pueblo" class but not overlapping "Clase Media." Its extra-class status is thus graphically shown.

It has been pointed out already that social class structure is most meaningful to people in their local community. It is here that the social interaction takes place out of which a class system grows. A test of the generalizations about Peruvian society which have just been presented is to observe the functions and structure of these broad social classes in the local settings.

The social and economic differences between político and ciudadano, patron and peon, padre (priest) and hijos, pueblano and paisano are observable more or less in all three communities but certain important variations should be noted.

In a village-community like Juanjui the political and ecclesiastical hierarchy is clearly apparent but not so the social class differences between pueblano and paisano or the differences between patron and peon. The absence of pueblano-paisano classes is no doubt due to the common residence of both groups in the center and the relatively homogeneous occupational categories, while the insignificance of the patron-peon hierarchy is due to the large number of small, individually operated farms.

The community of Panao clearly reveals the political and ecclesiastical hierarchies. The pueblano-paisano dichotomy is so sharp in Panao that the rural people (mostly Indios) have little feeling of belonging to the community and instead have their own peasant communities.

Tingo Maria reveals a more complex social structure than either Juanjui or Panao. Thus the political hierarchy is much more elaborated because of the Centro de Colonizacion and Agricultural Experiment Station and the patron-peon hierarchy is found on Experiment Station farms as well as haciendas and in Government research offices or in Hotel Turista. The Government, through its agricultural colonization, has sponsored the rise of a small-farmer class who comprise most of the rural population of Tingo Maria. Because of this agricultural development a definite agricultural hierarchy of large, middle, and small farm operators has come about. Rural and urban residence is not enough, therefore, to set class apart from class and in its place is substituted far-reaching social change in social structure as an influential factor in the formation of social classes.

Generally in Peru there are two great classes associated with the soil, the hacendado and the peon. Through the development of small and middle-size farms and the parceling out of the land into individual farms, an intermediate class of owner-cultivators rose to prominence in selected areas, notably in Naranjillo, Afilador, Tulumayo, and Las Palmas. They differ from peons in that they are no longer dominated by a patron class.

The least important hierarchy in Tingo Maria is the ecclesiastical, since the Church has not become, as yet, a strong

force in the community.

Each rural locality in the Tingo Maria community has a distinct social class system which evolves out of the distinct economic and social characteristics of the population. Thus, Hacienda Delicias exemplifies the type of locality group based almost entirely upon a pure patron-peon hierarchy while at the other extreme Naranjillo exemplifies a locality with little social stratification except for the Jefe-Colono relationship which is a modification of the politico-ciudadano and patron-peon hierarchies. Only thus is it possible to explain the following incident witnessed by the author: Accompanied by the head of colonization a visit was made to a number of farmers in Naranjillo. One farmer was contacted in his banana grove on the back of the farm and on taking leave the Jefe led the way directly into the house where the farmer's wife and children were waiting. After a preliminary greeting, the Jefe immediately reprimanded the wife for the obvious unkemptness of the house and filth of the children. Farmer and wife took the lecture with good grace and a promise to try and do better.

#### Occupational Differentiation

It has already been noted that the locality groups have different occupational characteristics. Thus Panao with only a few agriculturalists has an entirely different occupational structure from Juanjui with a relatively large number of farmers. Table 28 presents the families classified as to major occupation of the head. Considerable numbers of family heads combine some business or profession with farming but it is possible to



TABLE 28

## MAJOR ECONOMIC ACTIVITY OF HEAD OF THE FAMILY, BY LOCALITY

| Economic Activity                | Juan-<br>jui            | Panao-<br>Maria | Tingo-<br>dor | Afila-<br>mas | Hda. :<br>Deli-<br>cias | Las :<br>Pal-<br>mas | Naran-<br>jillo-<br>la | Shap-<br>ajil-<br>inas | Tres :<br>Esqu-<br>mayo | Tulu-<br>mayo |
|----------------------------------|-------------------------|-----------------|---------------|---------------|-------------------------|----------------------|------------------------|------------------------|-------------------------|---------------|
|                                  | (1)                     | (2)             | (3)           | (4)           | (5)                     | (6)                  | (7)                    | (8)                    | (9)                     | (10)          |
|                                  | Number of Families      |                 |               |               |                         |                      |                        |                        |                         |               |
| Agriculture, including livestock | 155                     | 25              | 75            | 64            | 18                      | 22                   | 68                     | 33                     | 23                      | 37            |
| Manufacturing                    | 33                      | 47              | 27            | 0             | 0                       | 1                    | 2                      | 0                      | 0                       | 0             |
| Construction                     | 23                      | 9               | 65            | 1             | 0                       | 5                    | 3                      | 2                      | 0                       | 0             |
| Transportation and communication | 0                       | 0               | 12            | 0             | 1                       | 1                    | 0                      | 1                      | 0                       | 0             |
| Commerce and banking             | 31                      | 35              | 62            | 1             | 0                       | 4                    | 1                      | 6                      | 0                       | 1             |
| Public administration            | 16                      | 16              | 38            | 0             | 0                       | 2                    | 2                      | 0                      | 0                       | 0             |
| Professional                     | 3                       | 0               | 3             | 0             | 0                       | 0                    | 0                      | 0                      | 0                       | 0             |
| Domestic service                 | 14                      | 19              | 31            | 0             | 0                       | 0                    | 1                      | 0                      | 0                       | 0             |
| Other                            | 19                      | 1               | 19            | 1             | 0                       | 3                    | 5                      | 9                      | 0                       | 3             |
| Unoccupied                       | 6                       | 8               | 20            | 0             | 0                       | 0                    | 0                      | 0                      | 1                       | 0             |
| Total                            | 300                     | 161             | 352           | 67            | 19                      | 38                   | 82                     | 51                     | 24                      | 41            |
|                                  | Percentage Distribution |                 |               |               |                         |                      |                        |                        |                         |               |
| Agriculture, including livestock | 51.7                    | 15.5            | 21.3          | 95.5          | 94.7                    | 57.9                 | 82.9                   | 64.7                   | 95.8                    | 90.3          |
| Manufacturing                    | 11.0                    | 29.2            | 7.7           | 0             | 0                       | 2.6                  | 2.4                    | 0                      | 0                       | 0             |
| Construction                     | 7.7                     | 5.6             | 18.5          | 1.5           | 0                       | 13.2                 | 3.8                    | 3.9                    | 0                       | 0             |
| Transportation and communication | 0                       | .6              | 3.4           | 0             | 5.3                     | 2.6                  | 0                      | 2.0                    | 0                       | 0             |
| Commerce and banking             | 10.3                    | 21.7            | 17.6          | 1.5           | 0                       | 10.5                 | 1.2                    | 11.8                   | 0                       | 2.4           |
| Public administration            | 5.3                     | 10.0            | 10.8          | 0             | 0                       | 5.3                  | 2.4                    | 0                      | 0                       | 0             |
| Professional                     | 1.0                     | 0               | .8            | 0             | 0                       | 0                    | 0                      | 0                      | 0                       | 0             |
| Domestic service                 | 4.7                     | 11.8            | 8.8           | 0             | 0                       | 0                    | 1.2                    | 0                      | 0                       | 0             |
| Other                            | 6.3                     | .6              | 5.4           | 1.5           | 0                       | 7.9                  | 6.1                    | 17.6                   | 0                       | 7.3           |
| Unoccupied                       | 2.0                     | 5.0             | 5.7           | 0             | 0                       | 0                    | 0                      | 0                      | 4.2                     | 0             |
| Total                            | 100.0                   | 100.0           | 100.0         | 100.0         | 100.0                   | 100.0                | 100.0                  | 100.0                  | 100.0                   | 100.0         |

distinguish between major and minor sources of income by referring to the family budget.

The localities can be differentiated according to the major economic activity present. The occupational differentiation exerts a profound influence on the community life because of the conditioning process constantly at work among individuals in the same economic activity. A community dominated by agriculture markedly affects the behavior and attitude of the total population. It is important, therefore, to classify the ten localities as to economic function.

Agriculture is the leading economic activity of a majority of family heads in all localities excepting Tingo Maria and Panao. Although agriculture is the largest single industry in Tingo Maria, there are almost as many heads of families engaged in construction as in agriculture. Panao has more heads occupied in both manufacturing and commerce than agriculture. Even if secondary occupations are considered, only 39.0 percent of family heads in Panao and 14.5 percent in Tingo Maria were occupied in agriculture.

How may Panao and Tingo Maria be classified occupationally if not agricultural communities? Analysis of Table 28 shows that Panao is a residential site for "manufacturers." Some qualification of these figures is necessary. A breakdown of individual occupations within the manufacturing category reveals that they are largely spinsters, shoemakers, seamstresses, blacksmiths, tailors, and workers in metals and leather. (See Table 29.) Spinning and dress-making are principally the work of women. Panao also has a relatively large number of small merchants and traders in comparison with most of the other communities although Tingo Maria has considerable numbers too.

TABLE 29

## OCCUPATIONAL CLASSIFICATION OF HEADS OF FAMILIES, BY LOCALITY

| Occupation                  | Juan-<br>jui | Panao | Tingo<br>Maria | Afila-<br>dor | Hda.<br>Deli-<br>cias | Las<br>Pal-<br>mas | Naran-<br>jillo | Shapa-<br>jilla | Tres<br>Esqu-<br>inas | Tul-<br>um-<br>ayo | Clase<br>"C" |
|-----------------------------|--------------|-------|----------------|---------------|-----------------------|--------------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| <b>Agriculture</b>          | 155          | 25    | 75             | 64            | 18                    | 22                 | 68              | 33              | 23                    | 37                 | 5            |
| 1. Agricultor               | 12           | 7     | --             | 56            | 2                     | 20                 | 52              | 27              | 22                    | 27                 | 5            |
| 2. Chacarero                | 141          | 14    | 48             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 3. Peon                     | 1            | --    | 9              | 8             | 12                    | 2                  | 13              | 4               | 1                     | 4                  | --           |
| 4. Rubber extractor         | 1            | --    | 5              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 5. Cattleman                | --           | 1     | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 6. Mayordomo                | --           | 2     | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 7. Overseer of fruticulture | --           | --    | 5              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 8. Overseer of livestock    | --           | --    | 6              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 9. Cattle breeder           | --           | --    | 2              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 10. Capataz                 | --           | --    | --             | --            | 2                     | --                 | --              | --              | --                    | 2                  | --           |
| 11. Tecnico in coca         | --           | --    | --             | --            | 1                     | --                 | --              | --              | --                    | --                 | --           |
| 12. Contratista             | --           | --    | --             | --            | 1                     | --                 | --              | --              | --                    | 2                  | --           |
| 13. Administrator           | --           | --    | --             | --            | --                    | --                 | 1               | 2               | --                    | 2                  | --           |
| 14. Campesino               | --           | --    | --             | --            | --                    | --                 | 2               | --              | --                    | --                 | --           |
| <b>Commerce and Trade</b>   | 31           | 35    | 62             | 1             | 0                     | 4                  | 1               | 6               | 0                     | 1                  | 0            |
| 1. Merchant                 | 15           | 17    | 38             | 1             | --                    | 1                  | 1               | 6               | --                    | 1                  | --           |
| 2. Baker                    | 5            | 4     | 4              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 3. Trader                   | 5            | 9     | 11             | --            | --                    | 2                  | --              | --              | --                    | --                 | --           |
| 4. Trapichero               | 1            | --    | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 5. Cantinera                | 1            | --    | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 6. Modiste                  | 1            | --    | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 7. Accountant               | 1            | --    | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 8. Huckster                 | 1            | --    | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 9. Pensionista              | 1            | --    | --             | --            | --                    | 1                  | --              | --              | --                    | --                 | --           |
| 10. Hotel owner             | --           | 2     | 1              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 11. Barterer                | --           | 1     | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 12. Jeweller                | --           | 1     | --             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 13. Butcher                 | --           | 1     | 1              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 14. Grocer                  | --           | --    | 2              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 15. Photographer            | --           | --    | 3              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 16. Timber merchant         | --           | --    | 2              | --            | --                    | --                 | --              | --              | --                    | --                 | --           |

TABLE 29 (Continued)

| Occupation                                | Juan-<br>jui | Panao:<br>Maria | Tingo<br>dora | Afila-<br>dor | Hda.<br>Deli-<br>cias | Las<br>Pal-<br>mas | Naran-<br>jillo | Shap-<br>ajilla | Tres<br>Esqu-<br>inas | Tul-<br>um-<br>ayo | Clase<br>"C" |
|---|--------------|-----------------|---------------|---------------|-----------------------|--------------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| <b>Manufacturing</b>                      | 33           | 47              | 27            | 0             | 0                     | 1                  | 2               | 0               | 0                     | 0                  | 0            |
| 1. Seamstress                             | 15           | 8               | 1             | --            | --                    | --                 | 1               | --              | --                    | --                 | --           |
| 2. Sombrera                               | 7            | --              | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 3. Weaver                                 | 2            | 1               | 2             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 4. Shoemaker                              | 4            | 11              | 9             | --            | --                    | --                 | 1               | --              | --                    | --                 | --           |
| 5. Tailor                                 | 1            | 2               | 3             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 6. Tinsmith                               | 1            | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 7. Pulpera                                | 2            | --              | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 8. Spinster                               | --           | 13              | 6             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 9. Blacksmith                             | --           | 3               | --            | --            | --                    | 1                  | --              | --              | --                    | --                 | --           |
| 10. Adornador                             | --           | 2               | 1             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 11. Silversmith                           | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 12. Saddler                               | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 13. Upholsterer                           | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 14. Sculptor                              | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 15. Fireworks                             | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 16. Ropemaker                             | --           | 1               | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 17. Potter                                | --           | --              | 1             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 18. Brickmaker                            | --           | --              | 3             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 19. Soapmaker                             | --           | --              | 1             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 20. Tilemaker                             | 1            | --              | --            | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| <b>Construction</b>                       | 23           | 9               | 65            | 1             | 0                     | 5                  | 3               | 2               | 0                     | 0                  | 0            |
| 1. Carpenter                              | 13           | 8               | 38            | --            | --                    | 1                  | 2               | --              | --                    | --                 | --           |
| 2. Mason                                  | 6            | 1               | 13            | --            | --                    | --                 | --              | 1               | --                    | --                 | --           |
| 3. Electrician                            | 2            | --              | 7             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 4. Mechanic                               | 2            | --              | 5             | 1             | --                    | --                 | 1               | --              | --                    | --                 | --           |
| 5. Lumbermen                              | --           | --              | 2             | --            | --                    | 4                  | --              | 1               | --                    | --                 | --           |
| <b>Transportation &amp; Communication</b> | 0            | 1               | 12            | 0             | 1                     | 1                  | 0               | 1               | 0                     | 0                  | 0            |
| 1. Telegrapher                            | --           | 1               | 1             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 2. Chauffeur                              | --           | --              | 8             | --            | 1                     | 1                  | --              | 1               | --                    | --                 | --           |
| 3. Agent                                  | --           | --              | 2             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |
| 4. Radio operator                         | --           | --              | 1             | --            | --                    | --                 | --              | --              | --                    | --                 | --           |

TABLE 29 (Continued)

| Occupation            | Juan-<br>: jui | Panao<br>: | Tingo<br>: Maria | Afila-<br>: dor | Hda.<br>: cias | Las<br>: mas | Naran-<br>: jillo | Shap-<br>: ajilla | Tres<br>: Esqu-<br>: inas | Tul-<br>: um-<br>: ayo | Clase<br>: "C" |
|-----------------------|----------------|------------|------------------|-----------------|----------------|--------------|-------------------|-------------------|---------------------------|------------------------|----------------|
| <u>Public Service</u> | : 16           | : 16       | : 38             | : 0             | : 0            | : 2          | : 2               | : 0               | : 0                       | : 0                    | : 0            |
| 1. Civil guard        | : 5            | : 2        | : 4              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 2. Teacher            | : 6            | : 1        | : 3              | : --            | : --           | : 1          | : --              | : --              | : --                      | : --                   | : --           |
| 3. Official           | : 3            | : --       | : --             | : --            | : --           | : 1          | : --              | : --              | : --                      | : --                   | : --           |
| 4. Notary             | : --           | : 2        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 5. Insp. Educ.        | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 6. Typist             | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 7. Minister           | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 8. Treasurer          | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 9. Cashier            | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 10. Constable         | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 11. Director          | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 12. Priest            | : --           | : 1        | : 1              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 13. Mun. empl.        | : --           | : 1        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 14. Agent of C.P.     | : 2            | : 2        | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 15. Office worker     | : --           | : --       | : 11             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 16. Employee          | : --           | : --       | : 5              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 17. Nurse             | : --           | : --       | : 1              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 18. Laboratory        | : --           | : --       | : 3              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 19. Hospital Dir.     | : --           | : --       | : 1              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 20. Security Police   | : --           | : --       | : 1              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 21. Gatekeeper        | : --           | : --       | : 2              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 22. Post office       | : --           | : --       | : 2              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 23. Justice Peace     | : --           | : --       | : 2              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 24. Engineer          | : --           | : --       | : 2              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 25. Librarian         | : --           | : --       | : --             | : --            | : --           | : --         | : 1               | : --              | : --                      | : --                   | : --           |
| 26. Sanitarian        | : --           | : --       | : --             | : --            | : --           | : --         | : 1               | : --              | : --                      | : --                   | : --           |
| <u>Professional</u>   | : 3            | : 0        | : 3              | : 0             | : 0            | : 0          | : 0               | : 0               | : 0                       | : 0                    | : 0            |
| 1. Dental tech.       | : 1            | : --       | : 1              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 2. Nurse              | : 2            | : --       | : --             | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |
| 3. Medical Dr.        | : --           | : --       | : 2              | : --            | : --           | : --         | : --              | : --              | : --                      | : --                   | : --           |

TABLE 29 (Continued)

| Occupation      | Juan-<br>jui | Panao | Tingo:<br>Maria | Afila:<br>dor | Hda.<br>:cias | Las<br>:mas | Naran-<br>:jillo | Shap-<br>:ajilla | Tres<br>:Esqu-<br>:inas | Tul-<br>:um-<br>:ayo | Clase<br>:"C" |
|-----------------|--------------|-------|-----------------|---------------|---------------|-------------|------------------|------------------|-------------------------|----------------------|---------------|
| <u>Domestic</u> | 14           | 19    | 31              | 0             | 0             | 0           | 1                | 0                | 0                       | 0                    | 0             |
| 1. Laundress    | 4            | 8     | 18              | —             | —             | —           | 1                | —                | —                       | —                    | —             |
| 2. Housework    | 4            | 9     | 11              | —             | —             | —           | —                | —                | —                       | —                    | —             |
| 3. Ironer       | 4            | —     | —               | —             | —             | —           | —                | —                | —                       | —                    | —             |
| 4. Hairdresser  | 1            | 1     | 2               | —             | —             | —           | —                | —                | —                       | —                    | —             |
| 5. Curandera    | 1            | —     | —               | —             | —             | —           | —                | —                | —                       | —                    | —             |
| 6. Cook         | —            | 1     | —               | —             | —             | —           | —                | —                | —                       | —                    | —             |
|                 |              |       |                 |               |               |             |                  |                  |                         |                      |               |

Tingo Maria is characterized by large numbers of construction, commercial, governmental, transportation and communication, and domestic service activities; in other words, a more urban type of community. Its strategic location as a site of road construction, agricultural colonization, public administration and communication and as a terminal point for road and river transportation all are reflected in its occupational structure as revealed by broad categories of economic activity.

Summarizing, the ten localities may be classified according to economic functions as follows: (1) Afilador, Hacienda Delicias, Tres Esquinas, and Tulumayo, overwhelmingly agricultural (more than 90 percent); (2) Juanjui, Las Palmas, Naranjillo, Shapajilla, largely agricultural (more than 50 percent) but with a significant number of merchants, lumber and building workers, and other non-agricultural occupations; (3) Pano and Tingo Maria, largely commercial, manufacturing, governmental, and construction centers (plus transportation and communication for Tingo Maria only).

It is not only the kind of economic activity that individuals engage in that influences their behavior but also how they are organized by occupations that is important. Few of the occupational groups represent distinct groups large enough to be recognized and organized as such. That is, there are no "unions" of seamstresses, traders, blacksmiths, etc. Even intense rivalry may exist between individual families. Specialists in tin, leather, woodworking, fireworks, midwifery, tend to be individualists. Most of them, on the other hand, have a smattering knowledge of many specialties so that organization along occupational lines is difficult, with the possible exception of agriculture. It is only in agriculture

that a complex organization may be observed, that is, in the hacienda system and special crop plantations of the State. The division of labor in agriculture will be considered at some length in a later chapter dealing with agricultural production.

But if family heads are classified according to the degree of individual freedom or authority in their occupation, as in Table 30, certain obvious structural facts become clear. The independent owner and self-employed worker classes comprise 81.7 percent of all heads in Juanjui, 70.8 percent in Panao, and only 44.1 percent in Tingo Maria. As a consequence, employees and laborers comprise a larger class in Tingo Maria than Juanjui or Panao.

TABLE 30  
FAMILY HEADS DISTRIBUTED ACCORDING TO THEIR GENERAL  
OCCUPATIONAL CLASSIFICATION, BY URBAN LOCALITY,  
1947

| Occupational class        | Juanjui |       | Panao |       | Tingo Maria |       |
|---------------------------|---------|-------|-------|-------|-------------|-------|
|                           | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All classes               | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| Owner (works for himself) | 245     | 81.7  | 114   | 70.8  | 155         | 44.1  |
| Employee                  | 24      | 8.0   | 23    | 14.3  | 92          | 26.0  |
| Laborer                   | 6       | 2.0   | 8     | 5.0   | 52          | 14.8  |
| No answer                 | 22      | 7.3   | 15    | 9.3   | 49          | 13.9  |

Much of the division of labor and commerce in the communities studied (excepting Tingo Maria) does not go beyond the family unit. Trading is done on a week-to-week basis, usually a Sunday market, in Panao and Juanjui, but is continuous in Tingo Maria from day to day.



Agricultural production of food is for both sale and subsistence in all communities but the dominance of one over the other is of major significance in the structuring of social organization in the locality. Thus, where major emphasis is on sale, such as tea, barbasco, rubber, sinchona, etc., the large hacienda or plantation generally prevails. Under such systems of agricultural production the techniques employed require interaction of a large number of individuals over a relatively long period of time. A plantation's division of labor is described in layers of interaction: hacendado, manager, overseers, and peones. In ancillary social structures such as processing plants, commissaries, distilleries, warehouses, etc., similar hierarchical organization prevails. Special attention will be given to agricultural institutions in a later chapter.

Occupational opportunities outside the immediate locality tend to follow the waterway of the Huallaga River. Thus, all of the 55 family heads who reported working outside Juanjui during 1946 (Table 31) in other than farming occupations, went to other towns on the Huallaga or occupied their time on the river in various pursuits. Iquitos attracted 25 of the family heads during the year, indicating a down-the-river economic orientation in Juanjui. Panao family heads, on the other hand, were attracted to Huanuco, Tingo Maria, Ambo and other montana towns for job opportunities.

Only 14 family heads were occupied outside the study site of Tingo Maria and eight of them were in Huanuco. Family bread-winners of Tingo Maria have less necessity for seeking economic opportunities elsewhere due to the favorable economic situation in general.

TABLE 31

DESTINATIONS OF FAMILY HEADS WORKING OUTSIDE IMMEDIATE  
LOCALITY, BY URBAN PLACES

|                                 | Juanjui | Panao  | Tingo Maria |
|---------------------------------|---------|--------|-------------|
|                                 | Number  | Number | Number      |
| <u>Huallage River towns</u>     |         |        |             |
| Iquitos                         | 25      | --     | --          |
| Huanuco                         | --      | 9      | 8           |
| Tingo Maria                     | --      | 6      | --          |
| Ambo                            | --      | 4      | --          |
| Naranjillo                      | --      | --     | 2           |
| Monzon                          | --      | --     | 1           |
| Pelache                         | 6       | --     | --          |
| Cajumba                         | --      | --     | 1           |
| Other Montana towns             | --      | 13     | 2           |
| <u>On river trips</u>           | 24      | --     | --          |
| <u>Lima (Capital)</u>           | --      | 2      | --          |
| Sub-total                       | (55)    | (34)   | (14)        |
| On neighboring farms            | 60      | 12     | 13          |
| Total working outside community | 115     | 46     | 32          |

## CHAPTER VIII

### LEVELS OF INCOME AND SOCIAL STRUCTURE

Regardless of either occupation or social class, the money income of families is a determining factor in the standard of living of families. Income available to the family determines in large measure whether the family is well-housed, well-clothed, well-fed, and receives the proper medical, educational, and recreational opportunities.

However, income is perhaps one of the most difficult items to ascertain in brief family interviews. Most families are reluctant to reveal what to them is most confidential information even if they were able to remember various items of income and expenditure. Furthermore, there was little precedent to go on in the techniques of eliciting income data from Peruvian families in rural areas. Some pioneering in the process of taking family budget schedules among Lima's laborer families had been done by Dr. Leoncio M. Palacios of Universidad Nacional Mayor de San Marcos.<sup>1</sup> In drawing up that part of the schedule dealing with the family budget, Dr. Palacios was consulted and he made valuable suggestions to facilitate the techniques of interviewing.

It was impossible, considering the limitations on time and money, to use a "long" schedule which attempts to itemize a large number of income items. Instead, a "short" schedule form was used

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<sup>1</sup>  
"Encuesta sobre Presupuestos Familiares Obreros," Revista de la Facultad de Ciencias Economicas y Comerciales, 1944.

incorporating fairly broad categories of items. The family respondent was asked first to estimate the amount of income from salaries or wages during the calendar year 1946. Where all income was from such sources the task was relatively simple. But in the case of families whose income was from farming, livestock, home and industries, or business the problem was more complicated since it was desirable to get some approximation of the net income of the family. In such cases it became necessary therefore to secure some information on how much it cost the family to produce the commodities from which the income was derived. The interviewers were carefully instructed to try and work out with the family the most reasonable figure of income available to the family for its consumption and savings. The results, although far short of ideal standards, seem to provide rough approximations of economic status and provide a classificatory system of prime importance to an understanding of the social organization.

Table 32 shows the manner in which families are distributed according to their incomes by the locality in which they live. Considering income classes broadly as "High," "Medium," and "Low," wide variation between localities in the percentages in each income class are revealed. The largest proportion of families in the high-income class was found in Tingo Maria followed closely by rural Naranjillo. More than half of the families in Tingo Maria and Naranjillo enjoyed incomes of S/.3,000 or more. In contrast, it is seen that only 12.5 percent of the families in Tres Esquinas were in the high-income brackets.

Turning now to the low-income class, it is seen that the largest percentage of families falling under S/.1,000 was reported

TABLE 32

## FAMILIES DISTRIBUTED ACCORDING TO INCOME CLASS, BY LOCALITY, 1946

| Income class      | U r b a n |       |       |       |             |       | R u r a l |       |               |       |
|-------------------|-----------|-------|-------|-------|-------------|-------|-----------|-------|---------------|-------|
|                   | Juanjui   |       | Panao |       | Tingo Maria |       | Afilador  |       | Hda. Delicias |       |
|                   | No.       | Pct.  | No.   | Pct.  | No.         | Pct.  | No.       | Pct.  | No.           | Pct.  |
| High income       | 71        | 23.7  | 42    | 26.1  | 209         | 59.4  | 15        | 22.4  | 4             | 21.1  |
| S/.4,000 and over | 43        | 14.3  | 22    | 13.7  | 141         | 40.1  | 9         | 17.9  | 3             | 15.8  |
| 3,000 - 3,999     | 28        | 9.4   | 20    | 12.4  | 68          | 19.3  | 6         | 4.5   | 1             | 5.3   |
| Medium income     | 154       | 51.3  | 76    | 47.2  | 130         | 36.9  | 43        | 64.2  | 15            | 78.9  |
| S/.2,000 - 2,999  | 56        | 18.7  | 27    | 16.8  | 53          | 15.0  | 16        | 23.9  | 0             | 0     |
| 1,000 - 1,999     | 98        | 32.6  | 49    | 30.4  | 77          | 21.9  | 27        | 40.3  | 15            | 78.9  |
| Low income        | 75        | 25.0  | 43    | 26.7  | 13          | 3.7   | 9         | 13.4  | 0             | 0     |
| Under S/.1,000    | 75        | 25.0  | 43    | 26.7  | 13          | 3.7   | 9         | 13.4  | 0             | 0     |
| All families      | 300       | 100.0 | 161   | 100.0 | 352         | 100.0 | 67        | 100.0 | 19            | 100.0 |

TABLE 32 (Continued)

| Las Palmas |       | : | Naranjillo |       | : | Shapajilla |       | : | Tres Esquinas |       | : | Tulumayo |       | : | Clase "C" |       | : | Total |      |
|------------|-------|---|------------|-------|---|------------|-------|---|---------------|-------|---|----------|-------|---|-----------|-------|---|-------|------|
| No.        | Pct.  | : | No.        | Pct.  | : | No.        | Pct.  | : | No.           | Pct.  | : | No.      | Pct.  | : | No.       | Pct.  | : | No.   | Pct. |
| 17         | 44.7  | : | 42         | 51.9  | : | 12         | 23.5  | : | 3             | 12.5  | : | 13       | 31.7  | : | 0         | 0     | : |       |      |
| 7          | 18.4  | : | 33         | 40.8  | : | 7          | 13.7  | : | 3             | 12.5  | : | 10       | 24.4  | : | 0         | 0     | : |       |      |
| 10         | 26.3  | : | 9          | 11.1  | : | 5          | 9.8   | : | 0             | 0     | : | 3        | 7.3   | : | 0         | 0     | : |       |      |
| 19         | 50.0  | : | 33         | 40.7  | : | 32         | 62.8  | : | 14            | 58.3  | : | 24       | 58.5  | : | 5         | 100.0 | : |       |      |
| 9          | 23.7  | : | 17         | 21.0  | : | 11         | 21.6  | : | 3             | 12.5  | : | 9        | 21.9  | : | 2         | 40.0  | : |       |      |
| 10         | 26.3  | : | 16         | 19.7  | : | 21         | 41.2  | : | 11            | 45.8  | : | 15       | 36.6  | : | 3         | 60.0  | : |       |      |
| 2          | 5.3   | : | 6          | 7.4   | : | 7          | 13.7  | : | 7             | 29.2  | : | 4        | 9.8   | : | 0         | 0     | : |       |      |
| 2          | 5.3   | : | 6          | 7.4   | : | 7          | 13.7  | : | 7             | 29.2  | : | 4        | 9.8   | : | 0         | 0     | : |       |      |
| 38         | 100.0 | : | 81         | 100.0 | : | 51         | 100.0 | : | 24            | 100.0 | : | 41       | 100.0 | : | 5         | 100.0 | : |       |      |

in Tres Esquinas, followed closely by Pano and Juanjui. These three localities each had a fourth or more of all families classified as "low-incomes." Hacienda Delicias reported no families with incomes under \$1,000 and Tingo Maria only 3.7 percent. It should be noted also in this connection that the data do not include figures for the rather large number of more or less transient peons who work on the haciendas and fundos. This may bias upward the low-income classes in localities with large numbers of peon laborers but such facts are only important if we were attempting an appraisal of total economic returns. For instance, if large farms were to be compared with small farms in respect to their relative efficiency in the application of labor and capital on available land resources.

Although the income data are for family units it is possible to distribute the population by income class thereby revealing a significant fact common to most family budget studies, namely, that average size of household tends generally to increase with income. Thus, a larger proportion of the population is included in upper incomes than when family units are compared. (See Table 33.)

Beyond any doubt the income of a family determines to a large extent the family's lot in life, its members' aspirational levels; and its place in the social structure. As a coordinate of social placement it is perhaps of unique importance in most societies.

But one of the practical questions that this thesis attempts to answer is what levels and standards of living may be expected in the Huallaga Valley. Money per se is no universal criterion of the level and standard of life. In addition to the problem of establishing inter-nation comparisons, that is between sol and dollar,

TABLE 33

AVERAGE NUMBER OF PERSONS IN HOUSEHOLD ACCORDING TO  
INCOME CLASS, BY LOCALITY

| Locality      | : Under<br>: S/.1,000 | : 1,000 to<br>: 2,999 | : 3,000 and<br>: over | : All<br>: incomes |
|---------------|-----------------------|-----------------------|-----------------------|--------------------|
| Juanjui       | : 5.3                 | : 6.0                 | : 7.5                 | : 6.1              |
| Panao         | : 4.5                 | : 4.9                 | : 7.3                 | : 5.4              |
| Tingo Maria   | : 3.1                 | : 4.2                 | : 5.1                 | : 4.7              |
| Afilador      | : 4.7                 | : 4.5                 | : 4.7                 | : 4.6              |
| Hda. Delicias | : --                  | : 3.6                 | : 11.3                | : 5.2              |
| Las Palmas    | : 3.0                 | : 4.1                 | : 5.9                 | : 4.8              |
| Naranjillo    | : 3.0                 | : 4.0                 | : 5.6                 | : 4.8              |
| Shapajilla    | : 3.3                 | : 4.3                 | : 8.3                 | : 5.1              |
| Tres Esquinas | : 3.7                 | : 4.6                 | : 7.3                 | : 4.7              |
| Tulumayo      | : 6.0                 | : 5.0                 | : 5.6                 | : 5.3              |

boliviano and pound, etc.; for example, it is necessary to take into account differences between communities within nations. An income of a certain amount will not buy equal levels of living in Lima and Juanjui. The community facilities and their organization are in themselves standardizing elements in the family's conditions of life. It is only through empirical research in small areas that the real significance of any particular income may be understood.

The analysis at this point makes use of two coordinates of the social universe to classify families, namely, (1) locality and (2) income. By placing all families within the general social structure under observation (that is, the Huallaga Valley), using locality and income to locate the family in a socio-spatial sense, it is possible to answer three crucial questions:

- (1) What consumption patterns (expenditures for goods and services) do specified income classes (high, middle, low) have in the Huallaga Valley?



- (2) What levels of living do specified incomes sustain?
- (3) What are the significant social characteristics of families in different income classes? Particularly, how is the standard of living associated with income?

By answering, even partially, these three questions the study will have made the currency of Peru, specifically the sol, meaningful in terms of real levels of living. Limitations of such an approach are obvious. For one thing it is not certain that the income reported for a given family is customary. But it is supposed that for the classes as a whole it has been possible for most families to adjust to about the income reported in 1946. This assumption may be more true for the older communities of Pano and Juanjui and less true for more recent settlement in and around Tingo Maria. But the division of families in each locality according to income groups is simply a convenient means of classification which may or may not have real sociological meaning.

It is assumed that some relationship exists between the distribution of wealth and the social structure. Consequently, it seemed appropriate to begin with the differences in wealth among families as a basis for stratifying families for sociological analysis.

But the problem here conceived is not simply one of grouping families according to some measure of wealth. A scale based on the distribution of such items as income, land, and property delineates families only in a taxonomic sense. Dr. Lewis, in order to rank

the families of a Mexican village according to their wealth, devised a point scale for converting all items of wealth to pesos, using one point for every 100 pesos of value.<sup>1</sup> The significant features of the frequency distribution of 853 families on this "economic point scale" were (1) the extremely wide range of wealth differences from zero to over 400 points; (2) a rather unequal distribution of wealth indicating widespread poverty. Although with such a scale it is possible to determine the relative economic status of every family in the village, it does not provide a classification into sociologically significant groups of families based upon human interaction.

It seemed desirable, therefore, to devise some method of classifying families of the community into sociologically significant classes by combining quantitative information on family incomes with visiting relationships of the same families, thus combining economic and social factors as the basis of stratification.

Informal visiting was taken as the social relationship best meeting the requirements for grouping families after they have been ranked according to wealth. Visiting behavior is shown to be class-typed, that is, visiting families usually are presumed to represent either a single class or adjacent classes. Furthermore, visiting families are assumed to have definite behavior patterns which are fairly uniform for all members of the community and which follow rather closely the behavior patterns of the particular class level on which they function.

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<sup>1</sup>  
Oscar Lewis, "Wealth Differences in a Mexican Village," The Scientific Monthly, Vol. LXV, No. 2, August, 1947, pp. 129-30.

No elaborate index of wealth differences seemed necessary to distribute the families according to economic status, although a two or three-year average income would have been more desirable. Although Dr. Lewis used twelve items most frequently mentioned by local informants as forms of wealth, all are a means of production and a source of income.<sup>1</sup>

Each family was personally interviewed and asked to reply to the following: Name up to three families with whom you visit most frequently. In addition, the respondent was asked to specify the type of relationship existing between him and the family selected, namely, kinship, godparent (compadrazgo) or friendship. Budget data about the income of the family provided the necessary information for classifying the family by size of income.

The pueblo of Panao was selected for intensive analysis of the relationship which might be expected between income and visiting behavior. Panao was selected for a number of reasons among which the following are important: (1) It is a pueblo type of locality group with a population (871 persons, 161 families) which would allow intensive study of family behavior; (2) it is a relatively stable community in terms of length of family residence and thus should give evidence of more pronounced class behavior; finally, (3) it is known to contain a significant Indian-culture population. The range in distribution of income was from zero soles to S/.10,800. Table 34 below shows the income distribution of the 161 families living in the village by class intervals of S/.1,000.

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<sup>1</sup>

Ibid. p. 128.

TABLE 34

## INCOME DISTRIBUTION OF THE 161 FAMILIES IN PANAO, PERU, 1946

| Income class       | F a m i l i e s |         |
|--------------------|-----------------|---------|
|                    | Number          | Percent |
| Total              | 161             | 100.0   |
| Under 1,000 soles* | 43              | 26.8    |
| 1,000 - 1,999      | 49              | 30.5    |
| 2,000 - 2,999      | 27              | 16.8    |
| 3,000 - 3,999      | 20              | 12.4    |
| 4,000 - 4,999      | 11              | 6.9     |
| 5,000 - 5,999      | 2               | 1.2     |
| 6,000 - 6,999      | 4               | 2.4     |
| 7,000 - 7,999      | 2               | 1.2     |
| 8,000 - 8,999      | 2               | 1.2     |
| 9,000 - 9,999      | 0               | .0      |
| 10,000 and over    | 1               | .6      |

\*

One sol was equivalent to approximately 15 cents United States money at time of the survey.

More than half (55.6 percent) of all visiting behavior was between kinfolk in Panao. (See Table 35.) The significance of family visiting among these families makes it highly likely that visiting is class-typed to a large degree as we had assumed. Studies have shown the importance of family in placing individuals in the social hierarchy.<sup>1</sup>

Kinship relations between visiting families made up approximately the same proportion of all visiting selections in the pueblo of Juanjui (58.1 percent) but such was not the case in the pueblo of Tingo Maria. In the latter pueblo, only 25.5 percent of visiting was between kinfolk. This generally less-pronounced association of

<sup>1</sup>

William L. Warner and Paul S. Lunt, The Social Life of a Modern Community, 1941, p. 90.

TABLE 35

SOCIAL RELATION BETWEEN VISITING FAMILIES BY INCOME  
CLASS AND BY LOCALITY

|                            | Juanjui |      | Panao |      | Tingo Maria |       |
|----------------------------|---------|------|-------|------|-------------|-------|
|                            | No.     | Pct. | No.   | Pct. | No.         | Pct.  |
| All Families               | :300    |      | :161  |      | :352        |       |
| Total visiting selections  | :580    |      | :286  |      | :564        |       |
| 1. Kinship                 | :337    | 58.1 | :159  | 55.6 | :144        | 25.5+ |
| 2. Friendship              | :219    | 37.8 | :98   | 34.3 | :392        | 69.5  |
| 3. Compadrazgo             | :23     | 3.9  | :18   | 6.3  | :24         | 4.3   |
| 4. Other                   | :1      | .2   | :11   | 3.8  | :4          | .7    |
| Non-visiting families      | :60     | 20.0 | :42   | 26.1 | :100        | 28.4  |
| I. High Income Families    | :71     |      | :42   |      | :209        |       |
| Total visiting selections  | :139    |      | :71   |      | :366        |       |
| 1. Kinship                 | :72     | 51.8 | :42   | 59.2 | :91         | 24.9  |
| 2. Friendship              | :58     | 41.7 | :22   | 31.0 | :256        | 69.9  |
| 3. Compadrazgo             | :9      | 6.5  | :5    | 7.0  | :18         | 4.9   |
| 4. Other                   | :0      | --   | :2    | 2.8  | :1          | .3    |
| Non-visiting families      | :18     | 25.4 | :11   | 26.2 | :55         | 26.3  |
| II. Middle Income Families | :154    |      | :76   |      | :130        |       |
| Total visiting selections  | :292    |      | :138  |      | :185        |       |
| 1. Kinship                 | :171    | 58.6 | :73   | 52.9 | :48         | 26.0  |
| 2. Friendship              | :113    | 38.7 | :53   | 38.4 | :129        | 69.7  |
| 3. Compadrazgo             | :8      | 2.7  | :11   | 8.0  | :5          | 2.7   |
| 4. Other                   | :0      | --   | :1    | .7   | :3          | 1.6   |
| Non-visiting families      | :30     | 19.5 | :21   | 27.6 | :39         | 30.0  |
| III. Low Income Families   | :75     |      | :43   |      | :13         |       |
| Total visiting selections  | :149    |      | :77   |      | :13         |       |
| 1. Kinship                 | :94     | 63.1 | :44   | 57.1 | :5          | 38.5  |
| 2. Friendship              | :48     | 32.2 | :23   | 29.9 | :7          | 53.8  |
| 3. Compadrazgo             | :6      | 4.0  | :2    | 2.6  | :1          | 7.7   |
| 4. Other                   | :1      | .7   | :8    | 10.4 | :0          | --    |
| Non-visiting families      | :12     | 16.0 | :10   | 23.3 | :6          | 46.2  |

TABLE 35 (Continued)

| : Hda.               |          | : Las    |          | : Naran- |          | : Shapa- |       | : Tres     |      | : Tulum- |      |
|----------------------|----------|----------|----------|----------|----------|----------|-------|------------|------|----------|------|
| Afilador : Delicias: |          | Palmas : |          | jillo :  |          | jilla :  |       | Esquinas : |      | ayo      |      |
| No.                  | Pct.     | No.      | Pct.     | No.      | Pct.     | No.      | Pct.  | No.        | Pct. | No.      | Pct. |
| 67                   | : 19     | : 38     | : 81     | : 51     | : 24     | : 41     |       |            |      |          |      |
| 97                   | : 10     | : 49     | : 69     | : 61     | : 25     | : 34     |       |            |      |          |      |
| 24                   | 24.7: 3  | 30.0: 7  | 14.3: 20 | 29.0: 32 | 52.5: 11 | 44.0: 11 | 32.4  |            |      |          |      |
| 68                   | 70.1: 7  | 70.0: 41 | 83.7: 42 | 60.9: 28 | 45.9: 9  | 36.0: 22 | 64.7  |            |      |          |      |
| 5                    | 5.2: 0   | -- : 0   | -- : 6   | 8.7: 0   | -- : 4   | 16.0: 1  | 2.9   |            |      |          |      |
| 0                    | -- : 0   | -- : 1   | 2.0: 1   | 1.4: 1   | 1.6: 1   | 4.0: 0   | --    |            |      |          |      |
| 17                   | 25.4: 11 | 57.9: 14 | 36.8: 40 | 49.4: 19 | 37.3: 8  | 33.3: 27 | 65.9  |            |      |          |      |
| 15                   | : 4      | : 17     | : 42     | : 12     | : 3      | : 13     |       |            |      |          |      |
| 28                   | : 3      | : 27     | : 41     | : 8      | : 5      | : 6      |       |            |      |          |      |
| 10                   | 35.7: 1  | 33.3: 4  | 14.8: 16 | 39.0: 6  | 75.0: 5  | 100.0: 2 | 33.3  |            |      |          |      |
| 15                   | 53.6: 2  | 66.7: 22 | 81.5: 19 | 46.4: 2  | 25.0: 0  | -- : 4   | 66.7  |            |      |          |      |
| 3                    | 10.7: 0  | -- : 0   | -- : 5   | 12.2: 0  | -- : 0   | -- : 0   | --    |            |      |          |      |
| 0                    | -- : 0   | -- : 1   | 3.7: 1   | 2.4: 0   | -- : 0   | -- : 0   | --    |            |      |          |      |
| 0                    | -- : 2   | 50.0: 4  | 23.5: 22 | 52.4: 7  | 58.3: 0  | -- : 12  | 92.3  |            |      |          |      |
| 43                   | : 15     | : 19     | : 33     | : 32     | : 14     | : 24     |       |            |      |          |      |
| 62                   | : 7      | : 22     | : 24     | : 42     | : 10     | : 21     |       |            |      |          |      |
| 13                   | 21.0: 2  | 28.6: 3  | 13.6: 4  | 16.7: 22 | 52.4: 3  | 30.0: 9  | 42.9  |            |      |          |      |
| 47                   | 75.8: 5  | 71.4: 19 | 86.4: 19 | 79.2: 19 | 45.2: 4  | 40.0: 11 | 52.4  |            |      |          |      |
| 2                    | 3.2: 0   | -- : 0   | -- : 1   | 4.1: 0   | -- : 2   | 20.0: 1  | 4.7   |            |      |          |      |
| 0                    | -- : 0   | -- : 0   | -- : 0   | -- : 1   | 2.4: 1   | 10.0: 0  | --    |            |      |          |      |
| 12                   | 27.9: 9  | 60.0: 8  | 42.1: 14 | 42.4: 10 | 31.3: 6  | 42.9: 13 | 54.2  |            |      |          |      |
| 9                    | : --     | : 2      | : 6      | : 7      | : 7      | : 4      |       |            |      |          |      |
| 7                    | : --     | : 0      | : 4      | : 11     | : 10     | : 7      |       |            |      |          |      |
| 1                    | 14.3: -- | -- : 0   | -- : 0   | -- : 4   | 36.4: 3  | 30.0: 0  | --    |            |      |          |      |
| 6                    | 85.7: -- | -- : 0   | -- : 4   | 100.0: 7 | 63.6: 5  | 50.0: 7  | 100.0 |            |      |          |      |
| 0                    | -- : --  | -- : 0   | -- : 0   | -- : 0   | -- : 2   | 20.0: 0  | --    |            |      |          |      |
| 0                    | -- : --  | -- : 0   | -- : 0   | -- : 0   | -- : 0   | -- : 0   | --    |            |      |          |      |
| 5                    | 55.6: -- | -- : 2   | 25.0: 4  | 66.7: 2  | 28.6: 2  | 28.6: 2  | 15.4  |            |      |          |      |

Each family interviewed was asked to name up to three families visited most. Thus some may specify three while others may not report any.

visiting and kinship was found in the rural localities, with the exception of Shapajilla. Kinship seems to be strongest in the localities where there has been little in migration recently.

Friendship, too, plays an important role in visiting behavior, constituting the basis of 34.3 percent of all visiting according to respondents in Panao. In this respect, too, Panao is similar to Juanjui, 37.8 percent of visiting behavior was based on friendship. But Tingo Maria and neighboring localities, with the exception of Tres Esquinas and Shapajilla, have more than 60 percent friendship relations. Friendship, as a vehicle of visiting behavior, seems most important in the recently settled localities.

Of lesser importance is the godparent relationship which constitutes the basis of only 6.3 percent of visiting relations in Panao. The latter system, known as compadrazgo, is a complex of formalized friendships and fictional kinship. In describing this system in Mexico, Foster writes that usually persons of the same economic status are chosen "since intimate relations between families of widely differing economic status almost invariably are strained."<sup>1</sup>

Compadrazgo was a relatively more important relationship involving visiting behavior in Tres Esquinas and Naranjillo rather than in Panao but of lesser importance in other localities. Compadrazgo seems most prevalent in localities where the proportion

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<sup>1</sup> George M. Foster, Empire's Children, the People of Tzintzuntzan, Publication No. 6, Institute of Social Anthropology, Smithsonian Institution, 1948. p. 263.

of families who are related by kinship is high.

Visiting choices are conceived merely as reflections of standardized modes of behavior which make up part of the institutional relationships connected with the family, the compadrazgo system, and friendship patterns of the village. Visiting behavior at the same time involves symbolic acts associated with the above-mentioned institutions that influence and condition the behavior of families. Thus, visiting relations are not social facts extracted from the life of the village, but represent interactions between families who behave to one another in a standardized manner in carrying on the institutional life of the village.

It is reasonable to expect that kinship, compadrazgo, and friendship constitute only a few of the variable factors that enter into visiting behavior. Certainly, factors such as occupation, age, propinquity and cultural traits play as significant if not more important parts in determining who visits whom.

But how significant is income of the family in determining visiting behavior? One measure of significance is to correlate statistically the income level of the family making the choice with that of the family selected. The coefficient of correlation between the income of a selector family and family selected was .39 in Panao, a moderate correlation. However, it should be noted that the rate of correlation varies between first, second, and third choices, coefficients of correlation being .56, .14, and 1.41, respectively. Income is relatively more important in deciding the first visiting selection than is either second or third choices.



The problem thus clarifies itself: To present a technique for delineating a community into socially stratified classes of families so as to provide the basis for comparative analysis of statistical data describing individual families.

Briefly, the procedure consists in structuring the group of 161 families of the village according to income by means of a matrix of visiting selections; then by statistical and visual manipulation of the matrix to delineate distinct groups of families into significant vertical classes.

But before proceeding with a description of the delineation of social classes employing sociometric techniques, it is necessary to establish the village as a significant social group. Not only is it necessary to set apart the significant social groups in a vertical sense, but the unit we are attempting to analyze must be bounded geographically, that is, in the horizontal sense.

A general principle of integration is that of propinquity and contiguity. We may expect to find more visiting within the municipality than outside. People can only neighbor and visit when they are within reach.

As pointed out previously, Panao is an ancient highland village which serves as the seat of provincial and district government. But it also has its own municipal government and townspeople are thus distinctly set apart from the surrounding countryside. The countryman tends to settle in smaller clusters of houses distinct and at some distance from the village. About 40 percent of the families living in the village have a farm.

The pueblo proper is some six blocks wide and nine blocks long (each block about 50 meters square). The village is compactly,

even densely settled around a single small plaza. The Catholic Church and schools serve both townspeople and countrymen and are the principal agencies to which the population is attached.

Outside contacts with neighboring villages are limited because of lack of communication and transportation. Spanish is the dominant language, but Quechua is the <sup>1</sup>lengua materna of 12 percent of all heads of families. Most people speak Spanish and many speak both Spanish and Quechua.

The most important occupations represented are spinster, husbandman, storekeeper, shoemaker, carpenter, washerwoman, and trader. Panao serves to a large extent as both market village and residence place of farmers.

Local military and judicial authorities are centered in the village, both acting as important agencies of social control. Limited social services, such as a medical dispensary and public welfare services, are also located in the village.

This brief sketch of the social organization of Panao suggests that sufficient factors or ties exist to bind the people together as a functional unit. The natural community in this case can be approximated by using the municipality as the unit of observation because it is clearly set apart by locality of residence and relatively high density of population. There is scarcely a problem of drawing a boundary between Panao and all other settlements in the surrounding area because compact village settlement generally prevails.

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<sup>1</sup>

The language first learned.

Accepting interaction, the medium of which is communication, as the cohesive principle of community, it is possible to establish fairly definitely that the territorial distribution of population delineated as Panao plus its related physical structures and utilities are sufficiently organized so as to set it apart from other social groups. In other words, it must be structured internally having not only function and territorial significance, but in addition, certain norms by which the people live and roles which they fulfill.

In accepting interaction as the cohesive principle of interaction in community life, it is necessary first to establish that visiting behavior, the social factor which we have singled out as significant in structuring social class, is at the same time fairly internalized territorially so that interaction behavior in regard to visiting is more or less coterminous with municipality.

First, the 161 families were divided into (1) those who reported visiting entirely within the village, (2) those who visit partly within and partly outside, (3) those who visit entirely outside, and finally, (4) those not visiting at all, as follows:

|  |            |
|--|------------|
| Families visiting entirely within          | 43 percent |
| Families visiting partly in and partly out | 23 percent |
| Families visiting entirely outside         | 8 percent  |
| Families not visiting in or out            | 26 percent |

It is clear from these figures that two-thirds of all families reported visiting within the village and more than two-fifths did all their visiting within.

A rather large number of families, more than a fourth, did not visit either within or without. If a few of the possible reasons for non-visiting families are factored out, from the table

which follows it is shown that high income families tend to be non-visitors, that is, higher income families are less prone to choose other families for visiting. On the other hand, lower income families say they visit higher income families. This situation results in higher income families receiving more visiting choices than they make, as will be seen later.

Table 36 also indicates some relation between non-visiting families and the proportion of families who reported "sleeping on the ground," e.g., 17 percent of non-visitors customarily sleep on the ground compared with only seven percent of visiting families. This trait is associated also with Indian families of the village. No doubt most Indian families visit, but it is conceivable that their visiting behavior is circumscribed by the household.

TABLE 36

PERCENTAGE OF 161 FAMILIES REPORTING SPECIFIED CHARACTERISTICS CLASSIFIED BY VISITING BEHAVIOR, PANAQ, PERU, 1947

|  | Visiting selections |                 |              |
|--|---------------------|-----------------|--------------|
|  | Within village      | Outside village | Non-visiting |
| Income class                                     |                     |                 |              |
| Under 2,000 soles                                | 59                  | 38              | 57           |
| 2,000 to 4,000                                   | 30                  | 31              | 26           |
| 4,000 and over                                   | 10                  | 31              | 17           |
| Culture item                                     |                     |                 |              |
| Sleep on the ground                              | 7                   | 15              | 17           |
| Go barefoot                                      | 24                  | 0               | 33           |
| Use <u>ojotas</u> *                              | 5                   | 8               | 14           |
| Use <u>poncho</u> and <u>chullo</u> <sup>a</sup> | 31                  | 15              | 45           |
| Use shoes  | 92                  | 92              | 71           |

\* Indian sandals.

<sup>a</sup> Poncho is a cloak like a blanket with a slit in the middle for the head; chullo is an Indian headgear.

Calculating rates of interaction by the equation  $\frac{P}{N} \times 100$ , where P equals the number of visiting families and N the total number of families in the village, we find that the visiting interaction rate was 66 percent within the village. Thus, it is concluded that the group of families living in the village of Panao functions as a unity insofar as the bonds of visiting are concerned. These bonds undoubtedly reflect some of the interdependence existing among the families, ties that infuse into their minds feelings of oneness and community of interest.

Visiting behavior can be conceived of as spontaneous activity in which under normal situations there is equilibrium in the internal organization. The entrance of a stranger into the village would constitute a new stimulus and necessary adjustments in the rates of interaction. When the stranger retires, the village may reasonably be expected to return to its previous state. Furthermore, the initial process in establishing a relationship with a stranger is that of assigning him a position or role with relation to the village group. All this has been demonstrated empirically many times and need not be belabored here.

What is particularly important for the present analysis is the conceptualization of a social system as being in equilibrium when interaction rates of which the equilibrium is composed remain constant. A family's position in the social structure is determined by its ability to attract responses and its rate of response.

Within the village, therefore, we may expect to find three classes of families exhibiting visiting behavior as follows:

- (A) A terminal class of families who tend only to receive visiting selection.
- (B) An intermediate class who tend both to select and to be selected.
- (C) A class of families who tend only to select other families.

Our problem becomes simply that of testing the hypothesis that by use of visiting behavior (interaction) and an arbitrary classification of families according to income, we can delineate groups of families into at least three classes: A terminal class; an intermediate class; a selector class.

#### Structuring the Matrix of Visiting Selections.

Forsyth and Katz<sup>1</sup> have employed a matrix approach to the analysis of groups. Their technique has been applied principally to sociometric analysis of social structure where the type of question asked may be illustrated by such questions as: With whom do you wish to work? With which people do you definitely not want to work?

It seemed to the author that a matrix might be manipulated in such a way so as to produce one which exhibits the class structure graphically in a standard form. Consequently, the 161 families were arranged in rank order according to the amount of income reported. Each family was then assigned a position from high to

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<sup>1</sup>  
Elaine Forsyth and Leo Katz, "A Matrix Approach to the Analysis of Sociometric Data," Sociometry, Vol. IX, No. 4, November, 1946, p. 340.

low on the main diagonal starting in the upper left-hand corner.<sup>1</sup>  
Thus the family with the lowest income is found in the lower right-hand corner.

We start, then, with a square matrix of choices of dimension  $N \times N$ , where  $N$  is the number of families in the village. Since our interview question allowed for a maximum of three choices per family, it is clear that relatively few of the potential number of choices will be made. A + sign is drawn in each cell where selecting family (row) intersects selected family (column). A total of 284 choices (represented by 284 +'s) were recorded. The matrix is composed of squares representing individual families along the main diagonal according to the rank order of income, +'s for visiting selections, and blanks for indifference or no mention.

#### Delineating the Classes.

If chance were all that entered into visiting behavior, we would expect to find the + 's scattered rather haphazardly over the matrix. Such is not the case. A scrutiny of the matrix of selections shows immediately that there are more selections to the left of the main diagonal than to the right. This means that families tend to select above their own income levels, represented by the main diagonal. In fact, a count reveals that 129 choices were to families above the income of the family making the choice and only 86 choices were below.

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<sup>1</sup>  
T. Wilson Longmore, "A Matrix Approach to the Analysis of Rank and Status in a Community in Peru," Sociometry, Vol. XI, No. 3, Aug. 1948, p. 198-9.

If chance were the only factor, we would expect 107.5 choices to the left of the main diagonal and 107.5 to the right. According to the Chi Square test for significance, the difference between the actual number of visiting choices and expected choices is highly significant.<sup>1</sup> Thus at this point we can tentatively conclude that visiting behavior is more elastic upward than downward, tending to support the hypothesis of a selector class and a selected class.

The next step is to group the families arbitrarily into income classes with 1,000 soles intervals up to 4,000 soles and an open class above. Each income class is represented by a square<sup>2</sup> along the main diagonal. The size of each square corresponds to the number of families composing it. We now have the village structured graphically into five income classes as follows:

|           |    |                         |        |
|-----------|----|-------------------------|--------|
| Class I   | 22 | families over S/. 4,000 | income |
| Class II  | 20 | " " 3,000 to 3,999      | "      |
| Class III | 27 | " " 2,000 to 2,999      | "      |
| Class IV  | 49 | " " 1,000 to 1,999      | "      |
| Class V   | 43 | " under " 1,000         | "      |

The significance of each class delimited arbitrarily by income can now be tested by calculating the rate of interaction within each class. This rate will be calculated in terms of the number of visiting choices rather than families as previously. The within-class interaction rates are calculated as follows:

|           |            |
|-----------|------------|
| Class I   | 44 percent |
| Class II  | 24 "       |
| Class III | 24 "       |
| Class IV  | 46 "       |
| Class V   | 23 "       |

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<sup>1</sup> $\chi^2 = 7.5$ . With 1 degree of freedom .001  $P < .01$ .

<sup>2</sup>Sociometry, op. cit., p. 201.



Class I and Class IV are seen at once to be the most internalized groups of families so far as visiting is concerned. (See Table 37.) This means that almost half of the visiting behavior of Classes I and IV, 44 and 46 percent, respectively, is with families in their income groups, whereas less than one-fourth of the visiting of families in Classes II, III, and V is within classes.

TABLE 37

OUTGOING VISITING SELECTIONS AS A PERCENTAGE OF ALL OUT-  
GOING SELECTIONS IN EACH INCOME CLASS

| Selecting class: | Percentage of outgoing selections in |          |           |          |         | Total |
|------------------|--------------------------------------|----------|-----------|----------|---------|-------|
|                  | Class I                              | Class II | Class III | Class IV | Class V |       |
| I                | 44                                   | 13       | 9         | 34       | 0       | 100   |
| II               | 36                                   | 24       | 16        | 20       | 4       | 100   |
| III              | 16                                   | 10       | 24        | 45       | 5       | 100   |
| IV               | 19                                   | 10       | 16        | 46       | 9       | 100   |
| V                | 11                                   | 7        | 21        | 38       | 23      | 100   |

Further analysis of Table 37 shows that Class I and IV tend to interact somewhat with one another. The interaction rate based on visiting selections downward from Class I to Class IV was 34 percent, and upward from Class IV to Class I, was 19 percent.

It is also clear that Class II tends to select visiting families from Class I, whereas Class III selects from Class IV. (See Table 38.) On the basis of the facts regarding selections of families for visiting here presented, it would be reasonable to combine Classes I and II, and Classes III and IV, but we have yet to consider whether there is a significant selector class which

in turn is not selected. Analysis of this interaction pattern can be made by calculating the differences between incoming and outgoing visiting selections. If a class has more outgoing selections than incoming ones, it might be considered as a selector class by that fact.

TABLE 38

INCOMING VISITING SELECTIONS AS A PERCENTAGE OF ALL  
INCOMING SELECTIONS IN EACH INCOME CLASS

| Selecting class | Percentage of incoming selections received by |          |           |          |         |
|-----------------|---|----------|-----------|----------|---------|
|                 | Class I                                       | Class II | Class III | Class IV | Class V |
| I               | 22  | 12       | 5         | 10       | 0       |
| II              | 20  | 25       | 10        | 6        | 4       |
| III             | 13  | 17       | 23        | 20       | 9       |
| IV              | 29  | 29       | 28        | 37       | 26      |
| V               | 16  | 17       | 34        | 27       | 61      |
| Total           | 100   | 100      | 100       | 100      | 100     |

Class V made only 23 percent of its visiting selections within its own class and yet 61 percent of all the selections received by families in Class V are from within the class. (Compare Tables 37 and 38.) In contrast, Class I families made 44 percent of all visiting selections with other Class I families; at the same time only 22 percent of all selections received by families in Class I were from within the class.

Occupying a somewhat intermediate position, we find that Class IV made 46 percent of all visiting selections within the class, and at the same time, 37 percent of all visiting selections received by Class IV were from within the class.

Whereas Class I has 22 more incoming selections than outgoing ones, Class V has 38 less incoming selections than outgoing ones. Class IV has a surplus of 16 incoming as might be expected, while Classes II and III have approximately an equal number of incoming and outgoing selections.<sup>1</sup>

The conclusions now seem clear: (1) Class V is definitely a selector class on the basis of the indifference shown it by classes above; (2) Class I is definitely a terminal class since it tends to receive a disproportionate number of selections from classes below; (3) Class IV is an intermediate class tending to select into classes above and to be selected from below.

Taking Class A, it is clear that 58 percent of all visiting behavior is within class, compared with 64 percent for Class B, and only 23 percent for Class C (Table 39).<sup>2</sup> At the same time, only two percent of Class A's visiting behavior is with Class C. The tendency to select upwards is clearly demonstrated when the foregoing figures are compared; 59 percent of Class C's visiting is with Class B, and 18 percent with Class A. The conclusion seems evident that an element of prestige or status affects the response in regard to visiting. If this were not so, as many selections would be directed downward as upward according to income.

Finally, Table 40 shows that Class A received 43 percent of its incoming selections from Class B and only 16 percent from Class C. At the same time, Class C received only four percent of its incoming selections from Class A. Thus, the tendency to avoid Class C is fully demonstrated.

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<sup>1</sup> Sociometry, op. cit., p. 203.

<sup>2</sup> Sociometry, op. cit., p. 205.

TABLE 39

PERCENTAGE OF OUTGOING VISITING SELECTIONS DISTRIBUTED  
ACCORDING TO SOCIO-ECONOMIC CLASSES

| Selecting class | Percentage of outgoing selections to |         |         |       |
|-----------------|--------------------------------------|---------|---------|-------|
|                 | Class A                              | Class B | Class C | Total |
| A               | 58                                   | 40      | 2       | 100   |
| B               | 28                                   | 64      | 8       | 100   |
| C               | 18                                   | 59      | 23      | 100   |
| All Classes     | 32                                   | 57      | 11      | 100   |

TABLE 40

PERCENTAGE OF INCOMING VISITING SELECTIONS DISTRIBUTED  
ACCORDING TO SOCIO-ECONOMIC CLASSES

| Selecting class | Percentage of incoming selections received by |         |         |             |
|-----------------|---|---------|---------|-------------|
|                 | Class A                                       | Class B | Class C | All classes |
| A               | 41  | 15      | 4       | 22          |
| B               | 43  | 55      | 35      | 49          |
| C               | 16  | 39      | 61      | 29          |
| Total           | 100   | 100     | 100     | 100         |

Sociological Meaning of the Results Obtained.

The internal anatomy of the community of Panao has been exposed in part using economic status (income) and social interaction (visiting behavior) as quantitative variables of measurement. So-called "height" of the social structure has been measured by range in income of families, its "profile" -- number of strata and slope -- by rates of social interaction.

Class A, the highest income group, occupies top position in social status as well; both Class B and C respond to the prestige

status of Class A. But Class B occupies an intermediate social status as evidenced by the response from both Class A and Class C. Lowest status is undoubtedly held by Class C, tending only to respond to the other two classes. Summarizing:

Class A is principally a terminal class.

Class B is an intermediate class.

Class C is an originating class only.

In the process of standardizing the above three types of classes, we have a clue as to how visiting behavior integrates the whole community. It may be described briefly as follows: Status causes the lower class (C) to respond to the middle class (B), which in turn responds to the upper class (A). Visiting behavior is thus seen as a dynamic social psychological process that impels the families of lower status to associate themselves with higher-status families in what amounts to a "stair-step" hierarchy.

#### Income and Family Visiting and Confidence

Table 41 shows the kind of relation associated with inter-family visiting by high, middle, and low income classes. The percentage of all visiting relations based on kinship is greatest among the low income families in Juanjui, constituting almost two-thirds of all, compared with about one-half in the high income class. The association is negative therefore with income. In contrast, Tingo Maria's low-income families reported the smallest proportion of visiting based on kinship (one-fourth) compared with 28.8 percent in high incomes.

Compadrazgo, as a social relation in visiting behavior, is generally associated with high and/or middle income classes in Juanjui

TABLE 41

INTERFAMILY VISITING RELATIONS, BY STUDY SITE AND BY  
INCOME CLASS

| J u a n j u i       |       |       |       |       |        |       |      |       |
|---------------------|-------|-------|-------|-------|--------|-------|------|-------|
|                     | Total |       | High  |       | Middle |       | Low  |       |
|                     | (300) |       | (71)  |       | (154)  |       | (75) |       |
| Kinship             | :337  | 58.1  | : 72  | 51.8  | :171   | 58.6  | : 94 | 63.1  |
| Friendship          | :219  | 37.8  | : 58  | 41.7  | :113   | 38.7  | : 48 | 32.2  |
| Godparent           | : 23  | 4.0   | : 9   | 6.5   | : 8    | 2.7   | : 6  | 4.0   |
| Other               | : 1   | .1    | : 0   | .0    | : 0    | .0    | : 1  | .7    |
| Total               | :580  | 100.0 | :139  | 100.0 | :292   | 100.0 | :149 | 100.0 |
| P a n a o           |       |       |       |       |        |       |      |       |
|                     | Total |       | High  |       | Middle |       | Low  |       |
|                     | (161) |       | (42)  |       | (76)   |       | (43) |       |
| Kinship             | :159  | 55.6  | : 42  | 59.2  | : 73   | 52.9  | : 44 | 57.1  |
| Friendship          | : 98  | 34.3  | : 22  | 31.0  | : 53   | 38.4  | : 23 | 29.9  |
| Godparent           | : 18  | 6.3   | : 5   | 7.0   | : 11   | 8.0   | : 2  | 2.6   |
| Other               | : 11  | 3.8   | : 2   | 2.8   | : 1    | .7    | : 8  | 10.4  |
| Total               | :286  | 100.0 | : 71  | 100.0 | :138   | 100.0 | : 77 | 100.0 |
| T i n g o M a r i a |       |       |       |       |        |       |      |       |
|                     | Total |       | High  |       | Middle |       | Low  |       |
|                     | (682) |       | (315) |       | (321)  |       | (46) |       |
| Kinship             | :252  | 27.4  | :130  | 28.8  | :109   | 26.2  | : 13 | 25.0  |
| Friendship          | :619  | 67.4  | :300  | 66.5  | :283   | 68.0  | : 36 | 69.2  |
| Godparent           | : 40  | 4.3   | : 18  | 4.0   | : 19   | 4.6   | : 3  | 5.8   |
| Other               | : 8   | .9    | : 3   | .7    | : 5    | 1.2   | : 0  | .0    |
| Total               | :919  | 100.0 | :451  | 100.0 | :416   | 100.0 | : 52 | 100.0 |

and Panao. Friendship, too, seems to be more prevalent in visiting among high and middle income families in Juanjui and Panao while in Tingo Maria the relationship is reversed.

If we now turn to interfamily confidence relations, Table 42 shows that kinship is generally associated among 12.0 percent of low income confidence relations in Juanjui compared with 25.2 percent among high income families. In Panao, the respective percentages are 28.6 percent and 37.1 percent. Friendship is relatively more important among low income families in Juanjui than the other higher income classes but this is not true for either Panao or Tingo Maria and generally there seems to be little consistency in the kinds of social relations found among families who express confidence in one another. Furthermore, the variability in social relations based upon interfamily visiting and confidence is so much greater between Tingo Maria than the other more stable localities that the interclass differences seem insignificant indeed. Kinship and compadrazgo are particularly important in Panao as is friendship in Tingo Maria. In most instances Juanjui is intermediate between the other two study sites.

#### Income and Selected Leaders

Table 43 shows the leadership choices of families classified by income class. These figures show clearly that high and middle income families in Juanjui know the subprefect, priest, judge, fiscal agent, head of transport and commandant more often than low income respondents. However, the justice of peace, mayor and governor are known about equally by all three income groups.

TABLE 42

EXPRESSIONS OF INTERFAMILY CONFIDENCE, BY STUDY SITE  
AND BY INCOME CLASS

|            | J u a n j u i       |       |       |       |        |       |      |       |
|------------|---------------------|-------|-------|-------|--------|-------|------|-------|
|            | Total               |       | High  |       | Middle |       | Low  |       |
|            | (300)               |       | (71)  |       | (154)  |       | (75) |       |
| Kinship    | :111                | 20.5  | : 37  | 25.2  | : 59   | 21.9  | : 15 | 12.0  |
| Friendship | :397                | 73.4  | :102  | 69.4  | :191   | 71.0  | :104 | 83.2  |
| Godparent  | : 31                | 5.7   | : 6   | 4.1   | : 19   | 7.1   | : 6  | 4.8   |
| Other      | : 2                 | .4    | : 2   | 1.3   | : 0    | .0    | : 0  | .0    |
| Total      | :541                | 100.0 | :147  | 100.0 | :269   | 100.0 | :125 | 100.0 |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | P a n a o           |       |       |       |        |       |      |       |
|            | Total               |       | High  |       | Middle |       | Low  |       |
|            | (161)               |       | (42)  |       | (76)   |       | (43) |       |
| Kinship    | :119                | 31.5  | : 36  | 37.1  | : 59   | 29.9  | : 24 | 28.6  |
| Friendship | :207                | 54.8  | : 46  | 47.4  | :119   | 60.4  | : 42 | 50.0  |
| Godparent  | : 37                | 9.8   | : 12  | 12.4  | : 17   | 8.6   | : 8  | 9.5   |
| Other      | : 15                | 3.9   | : 3   | 3.1   | : 2    | 1.1   | : 10 | 11.9  |
| Total      | :378                | 100.0 | : 97  | 100.0 | :197   | 100.0 | : 84 | 100.0 |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | T i n g o M a r i a |       |       |       |        |       |      |       |
|            | Total               |       | High  |       | Middle |       | Low  |       |
|            | (682)               |       | (315) |       | (321)  |       | (46) |       |
| Kinship    | :206                | 16.0  | :116  | 17.3  | : 78   | 14.1  | : 12 | 17.6  |
| Friendship | :992                | 76.8  | :507  | 75.6  | :436   | 79.0  | : 49 | 72.1  |
| Godparent  | : 70                | 5.4   | : 40  | 5.9   | : 29   | 5.3   | : 1  | 1.5   |
| Other      | : 23                | 1.8   | : 8   | 1.2   | : 9    | 1.6   | : 6  | 8.8   |
| Total      | :1,291              | 100.0 | :671  | 100.0 | :552   | 100.0 | : 68 | 100.0 |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |
|            | :                   |       | :     |       | :      |       | :    |       |



TABLE 43

## SELECTED LEADERS, BY STUDY SITE AND BY INCOME CLASS

|  | J u a n j u i |      |        |      |
|--|---------------|------|--------|------|
|  | Total         | High | Middle | Low  |
|  | (300)         | (71) | (154)  | (75) |
| 1. Justice of Peace<br>(juez de paz)   | 72            | 20   | 33     | 19   |
| 2. Mayor (alcalde)   | 126           | 32   | 65     | 29   |
| 3. Governor (gobernador)   | 28            | 8    | 13     | 7    |
| 4. Subprefect  | 61            | 24   | 23     | 14   |
| 5. Head of Colonization  | —             | —    | —      | —    |
| 6. Priest  | 22            | 9    | 10     | 3    |
| 7. Judge of 1st Instance   | 16            | 5    | 11     | 0    |
| 8. Fiscal agent  | 33            | 17   | 14     | 2    |
| 9. Head of Transport   | 55            | 19   | 23     | 13   |
| 10. Judge Instructor   | 59            | 19   | 28     | 12   |
| 11. Judge of 1st Nomina-<br>tion   | 11            | 2    | 3      | 6    |
| 12. Commandant   | 11            | 5    | 5      | 1    |
| Other: Provincial Head 2; School commissioner 3; Judge 3; Police 4;<br>Head of Fiscal office 1; Prefectural Secretary 2. |               |      |        |      |

|   | P a n a o |      |        |      |
|---|-----------|------|--------|------|
|   | Total     | High | Middle | Low  |
|   | (161)     | (42) | (76)   | (43) |
| 1. Justice of Peace   | 68        | 11   | 36     | 21   |
| 2. Mayor  | 93        | 28   | 47     | 18   |
| 3. Governor   | 27        | 4    | 12     | 11   |
| 4. Subprefect   | 78        | 21   | 39     | 18   |
| 5. Head of Colonization   | 0         | 0    | 0      | 0    |
| 6. Priest   | 10        | 5    | 5      | 0    |
| 7. Judge of 1st Instancia   | 33        | 10   | 18     | 5    |
| 8. Fiscal agent   | 0         | 0    | 0      | 0    |
| 9. Head of Transport  | 1         | 0    | 1      | 0    |
| 10. Judge Instructor  | 13        | 6    | 6      | 1    |
| 11. Judge of 1st Nomina-<br>tion  | 6         | 1    | 4      | 1    |
| 12. Commandant  | 8         | 4    | 4      | 0    |
| 13. Civil Guard   | 9         | 3    | 2      | 4    |
| Other: Judge of 2nd Nomination 4; School inspector 5; Notary<br>Public 1; Head of Fiscal office 2; Judge 1; Provincial<br>Head 1. |           |      |        |      |

TABLE 43 (Continued)

|  | T i n g o M a r i a |       |        |      |
|--|---------------------|-------|--------|------|
|  | Total               | High  | Middle | Low  |
|  | (682)               | (315) | (321)  | (46) |
| 1. Justice of Peace  | 333                 | 196   | 123    | 14   |
| 2. Mayor   | 255                 | 171   | 77     | 7    |
| 3. Governor  | 224                 | 145   | 75     | 4    |
| 4. Subprefect  | 0                   | 0     | 0      | 0    |
| 5. Head of Colonization  | 93                  | 65    | 26     | 2    |
| 6. Priest  | 0                   | 0     | 0      | 0    |
| 7. Judge of 1st Instancia  | 0                   | 0     | 0      | 0    |
| 8. Fiscal Agent  | 0                   | 0     | 0      | 0    |
| 9. Head of Transport   | 26                  | 10    | 15     | 1    |
| 10. Judge Instructor   | 0                   | 0     | 0      | 0    |
| 11. Judge of 1st Nomina-<br>tion   | 0                   | 0     | 0      | 0    |
| 12. Commandant   | 4                   | 3     | 1      | 0    |
| 13. Civil Guard  | 0                   | 0     | 0      | 0    |
| Other: Chief of Police 3; Municipal Councilman 7; Head of<br>Station 6; Deputy Mayor 1; Inspector 1; Judge 2;<br>Hospital Director 2; <u>Comisario</u> 2; School director 2. |                     |       |        |      |

## Note:

The subprefect is a deputy of the central government and authority for the province. The prefect, supreme authority of the department, has headquarters in Moyobamba and Huanuco. He appoints local political officers for the municipalities and districts with advice of his staff and approval of the central government in Lima.

The gobernador presides over the district, with an assistant. The municipality is in charge of an alcalde (mayor). Judicial authority is vested in a justice of the peace (juez de paz). The Guardia Civil functions as a police post under departmental control.

Panao presents a somewhat different pattern of leadership recognition. A larger proportion of low income families knew the justice of peace and governor than the other classes, whereas the mayor, priest, judge and commandant were better known by the high income respondents.

Middle and low income families in Tingo Maria show relatively low recognition of all leaders as may be seen in Table 43. It would appear that less consensus is present among Tingo Maria families than in either Panao or Juanjui.

Using the index of community cohesion, but computed for each income class, it is possible to test the hypothesis that income of the family and community consciousness are associated positively.

The following table shows for each study site (Tingo Maria and rural localities considered as a single community) the index of community cohesion for each income class.

| Income Class | : | Juanjui | : | Panao | : | Tingo Maria |
|--------------|---|---------|---|-------|---|-------------|
| High         | : | 6.27    | : | 6.21  | : | 5.13        |
| Middle       | : | 5.13    | : | 6.69  | : | 4.02        |
| Low          | : | 5.07    | : | 5.58  | : | 3.21        |

In at least two of the study sites -- Juanjui and Tingo Maria -- community cohesion is positively correlated with income, and in Panao the low-income families have relatively the lowest community consciousness but the middle-income group shows a slightly higher index to provide the single instance of inconsistency. However, the conclusion is apparent that community cohesiveness is associated positively with income, substantiating the delineation of the families into socially significant classes according to income.

Income and Kinds of Occupations.

The kinds of occupations found in each income class are shown in Table 44. In general high incomes are associated with nonagricultural occupations and bureaucratic positions such as are found in the Civil Guard, education, and public administration.

TABLE 44

FAMILIES DISTRIBUTED ACCORDING TO OCCUPATION OF THE  
HEAD, BY INCOME CLASS AND LOCALITY

| <u>JUANJUI</u>               |   |
|------------------------------|---|
| <u>High Income Class.-</u>   | Chacareros (16), merchants (10), carpenters (6), agricultores (5), Civil Guard (5), teachers (4), masons (2), weavers (2), traders (2), seamstresses (1), baker (1), washerwoman (1), shoemaker (1), housewife (1), domestic worker (1), electrician (1), mechanic (1), trapichero (1), cantinera (1), modiste (1), dental technician (1), public office (1), accountant (1), huckster (1), tile maker (1), unoccupied (1). |
| <u>Middle Income Class.-</u> | Chacareros (83), seamstresses (10), carpenters (7), merchants (5), agricultores (4), sombreros (4), masons (4), housewives (4), bakers (3), traders (3), teachers (2), shoemakers (2), public office (2), tinsmith (2), planchadora (2), unoccupied (2), washerwoman (1), electrician (1), mechanic (1), tailor (1), nurse (1), fisherman (1), hairdresser (1), curandera (1), rubber extractor (1).                        |
| <u>Low Income Class.-</u>    | Chacareros (42), housewives (5), seamstresses (4), agricultores (3), sombreros (3), domestic workers (3), washerwoman (2), planchadora (2), pulpera (2), unoccupied (2), baker (1), shoemaker (1), nurse (1), peon (1).   |
| <u>PANAO</u>                 |   |
| <u>High Income Class.-</u>   | Merchants (8), agricultores (3), bakers (3), shoemakers (2), chacareros (2), carpenter (2),   |

TABLE 44 (Continued)

| <u>Panao</u>                 |   |
|------------------------------|---|
| <u>High Income Class.-</u>   | Civil Guard (2), hotel owner (2),<br>notaries (2), mayordomos (2), tailor (1),<br>barterer (1), inspector of education (1),<br>typist (1), treasurer (1), butcher (1),<br>constable (1), director (1), cattleman (1),<br>priest (1), unoccupied (1).  |
| <u>Middle Income Class.-</u> | Merchants (7), shoemakers (7), traders (7),<br>seamstresses (6), spinsters (5), chacareros<br>(5), unoccupied (5), agricultores (4),<br>carpenters (3), housewives (3), blacksmiths<br>(3), domestic workers (2), tailor (1),<br>adornador (1), silversmith (1), saddler (1),<br>telegrapher (1), teacher (1), upholsterer<br>(1), jeweller (1), sculptor (1), tinsmith<br>(1), maker of fireworks (1), minister (1),<br>mason (1), cashier's office (1), municipal<br>employee (1).  |
| <u>Low Income Class.-</u>    | Spinsters (8), washerwomen (8), chacareros<br>(7), carpenters (3), housewives (3),<br>merchants (2), shoemakers (2), seam-<br>stresses (2), unoccupied (2), baker (1),<br>domestic worker (1), adornador (1),<br>notary (1), cook (1), ropemaker (1).   |
| <u>TINGO MARIA (PUEBLO)</u>  |   |
| <u>High Income Class.-</u>   | Merchants (32), agricultores (29),<br>carpenters (21), unoccupied (12), public<br>office (8), chauffeurs (7), traders (6),<br>masons (6), electricians (6), accountants (5),<br>bakers (4), industrial workers (4), over-<br>seers (4), mechanics (4), washerwomen (3),<br>shoemakers (3), Civil Guard (3), teachers (3),<br>contratistas (3), capataces (3), physicians<br>(2), peons (2), mechanographers (2),<br>mayoristas (2), hairdressers (2), engineers<br>(2), laboratory technicians (2), pulperas<br>(2), zootecnic (2), tailors (2), housewife<br>(1), woodworker (1), typist (1), butcher (1),<br>dental technician (1), viverista (1),<br>travel agent (1), hospital director (1),<br>soapmaker (1), telegrapher (1), priest (1),<br>clothmaker (1), modiste (1), brickmaker (1),<br>radio operator (1), justice of peace (1),<br>rubber gatherers (1), adorning (1), nurse (1),<br>security police (1), portero (1). |

TABLE 44 (Continued)

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| <u>Tingo Maria (Pueblo)</u>  |  |
|------------------------------|--|
| <u>Middle Income Class.-</u> | Carpenters (17), agricultores (15), washerwomen (10), housewives (9), masons (7), peons (6), shoemakers (6), unoccupied (6), merchants (5), dressmakers (5), rubber gatherers (4), public office (3), capataces (3), photographers (3), brickmakers (2), postmen (2), drainage workers (2), trader (1), chauffeur (1), electrician (1), woodworker (1), Civil Guard (1), contratista (1), viverista (1), overseer (1), mechanic (1), portero (1), potter (1), cook (1), hotelers (1), pensionista (1), milker (1), tailor (1). |
| <u>Low Income Class.-</u>    | Washerwomen (5), unoccupied (2), merchant (1), agricultore (1), housewife (1), peon (1), dressmaker (1).   |

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TINGO MARIA (RURAL LOCALITIES ONLY)

|                              |   |
|------------------------------|---|
| <u>High Income Class.-</u>   | Agricultores (82), merchants (6), chauffeurs (3), administrators (3), laborers (2), traders (2), carpenter (1), mason (1), public office (1), peon (1), teacher (1), mechanic (1), coca technician (1), librarian (1).  |
| <u>Middle Income Class.-</u> | Agricultores (126), peons (33), laborers (8), woodworkers (5), capataces (4), contratistas (3), carpenters (2), unoccupied (2), administrators (2), campesinos (2), sanitarians (2), blacksmith (1), public office (1), see cuenta (1), dressmaker (1), laboratory technician (1), mechanic (1), shoemaker (1), merchant (1). |
| <u>Low Income Class.-</u>    | Agricultores (18), peons (10), merchants (3), washerwoman (1).  |

## CHAPTER IX

### CONSUMPTION LEVELS

Most governments of the world are today committed to programs of one kind or another which have as their goal the promotion of higher standards of living for the people as a whole. There is a growing recognition among political leaders that improvement in living conditions must be conceived as a world problem and attacked as such. President Truman's Point 4 Program is concrete evidence of the growing concern even in our own country over improving standards of life around the world. It is acknowledgement that the world has in truth become a single economic unit.

A new attitude prevails among the leading industrial nations toward the primary-producing and industrially backward countries of which Peru is fairly representative. In former times economic policies were directed toward the continuance of economic colonialism, using the retarded countries as a source of raw materials for the great countries and, in turn, furnishing a market for finished goods.

Hansen sees a climate of opinion in the world today expressed in the following:

There is a new outlook abroad in the world today. Now, everywhere the note is sounded that development, diversification and industrialization must be undertaken in the backward areas. We have come to realize that the future trade of the world cannot continue to run in the simplified terms of raw materials for finished products. Rather, it must run in terms of highly diversified trade between countries with different skills and resources but each developed to the fullest possible extent. Large-scale developmental projects, industrialization to an extent that is economically feasible, and the diversification of agriculture; the development and improvement

of human resources through improved health, nutrition and education; the promotion of a higher standard of living, rising productivity, and increased purchasing power -- these are the new world economic goals. They promise a more stable economy and better living standards everywhere.<sup>1</sup>

Peru, heretofore, would undoubtedly be included among the world's economically retarded countries whose economy was a mere appendage to that of a few great powers. In more ways than one Peru was an economic colony and many remnants of this status are still to be seen in the country. For example, the mining industry is carried on by large companies under foreign ownership and control, mainly United States or British interests. Most of the railroads of the country are owned and operated by British capitalists.

Like most South American countries, Peru's prosperity is vitally dependent on foreign trade. At the close of the nineteenth century 50 percent of the export trade went to Britain and 44 percent of the imports came from that country. Since the beginning of the Twentieth Century, Britain has relinquished dominance in export and import trade to the United States. At the same time, however, as a result of the closing of former European and Asiatic markets, and the greater commercial integration of South America in recent years, the value of Peru's trade with neighboring countries trebled in the period between the first and second world wars.

Argentina was the second largest import market during World War II and Chile supplanted England as the third largest import market. Although the United States is Peru's most important

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<sup>1</sup> Alvin H. Hansen, America's Role in the World Economy, New York: Penguin Books, Inc., 1946, p. 8.



export market in point of value of goods, Chile takes by far the largest tonnage of goods. Obviously, Peru has diversified her external commerce and brought it closer home. Whether she can continue to integrate her economy with neighboring countries remains to be seen.

Although the pattern of foreign trade has changed markedly in the present epoch, Peru continues to be an agricultural, or raw material country. If the population engaged in occupations of primary production is grouped together it amounts to almost two-thirds (64.3 percent) of the total active population. This leaves only one-third of the active population in manufacturing and services.<sup>1</sup>

#### Trade Problems

Because of Peru's position as an agricultural and raw material country the terms of trade (i.e., the ratio of export prices to import prices) tends to move against the country's economy. This tendency, basically resting upon the relatively inelastic demand for most agricultural products and coupled with the increasing diversification of consumption and higher standards of living in the advanced countries, has often caused the demand for agricultural products to fall in relation to that for industrial products.<sup>2</sup> In the case of Peru, this long term tendency working adversely for the economy can be observed if we compare the prices of major articles of export and import. In 1931 the indexes of the prices

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<sup>1</sup> Ministerio de Hacienda y Comercio, Censo Nacional de Poblacion y Ocupacion de 1940, Vol. I, Lima: 1944, p. CXCVI.

<sup>2</sup>Hansen, op. cit., p. 16.

of articles of exportation and importation stood at 120 and 205, respectively (1913 = 100). Between 1931 and 1943 prices of articles exported rose 136 percent while imported articles went up 211 percent; the price index for exports stood at 283 in 1943 compared with the price index of imports of 638.<sup>1</sup> This chronic imbalance in trade exchange works constantly against the Peruvian economy and eventually leads to industrialization in self protection. Through the deterioration in the terms of trade Peru finds herself in a squeeze between the demand of the people for more and more imports with which to raise the level of living and the shortage of dollars with which to purchase the goods demanded.

One means of achieving some measure of equilibrium in the present dilemma is industrialization within the country. World War II served as a spur to this trend, making it necessary for Peru to produce at home many of the articles formerly imported. Power zones have been established in the Bahia de Chimbote and Valle del Rio Santa in order to electrify and industrialize the country. Peru's first heavy industry, steel, is contemplated in the Chimbote area and much of the agricultural areas of Peru will be electrified by the power to be generated on the Rio Santa. Further indication of the trend toward industry is seen in the large increase in the number of concessions of water for power, the number more than doubling between 1930 and 1946 (266 to 541). Horsepower developed through water rose from 72,815 in 1930 to 168,326 in 1946.<sup>2</sup>

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<sup>1</sup> Boletin del Banco Central de Reserva del Peru, Mensual, Ano XVII, No. 182, Lima: Enero de 1947, p. 37.

<sup>2</sup> Ministerio de Hacienda y Comercio, Anuario Estadistico del Peru, 1946. Lima: 1946, p. 196.

Notwithstanding the rapid progress which Peru has made in recent years toward industrialization it is still far from reaching its potentiality, particularly in respect to development of coal and water.

Manufacturing still is of only minor importance ranking far behind agriculture or mining. However, according to the 1940 Census, about 15 percent of the active population was employed in manufacturing, half of that in the textile mills. Thus manufacturing employed more than eight times as many persons as did the entire mining industry. Textile production is a growing industry, but most of the yardage produced is of the coarser varieties.

The total value of imports has gone up faster than the value of exports as a result of the constantly growing demand for imported products of the finished variety, thus creating a disequilibrium in the balance of payments. Index of the value of imports rose from 128 in 1937 (Base: 1934-36 = 100) to 435 in 1946 while exports went up from 115 to 311 during the same period.

Although value of exports has risen between 1937 and 1946 from 365 million soles to 984 million soles, respectively, still the demand for dollars remains unsatisfied. This situation forced the Ministerio de Hacienda y Comercio to the following conclusion:

Contra este volumen de divisas que tiene relacion directa con la magnitud de nuestro intercambio internacional existe una demanda casi illimitada que no puede ser satisfecha suficientemente.

Asi, mientras en 1944 bastaron \$ 84,205,000 para atender nuestras necesidades sin mayor zozobra y en 1945 \$ 103,774,000 cubrieron los pagos indispensables sobre el exterior, en 1945 se presentaron solicitudes de divisas por un valor de \$ 225,000,000 y en los tres meses corridas de 1947 se han pedido ya cerca de \$ 109,000,000 lo que daria proporcionalmente \$ 436,000,000 para todo el ano.<sup>1</sup>

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Comunicado del Ministerio de Hacienda y Comercio,  
El Comercio, Lima: Abril 10 de 1947.

### Analysis of the Import Demand

An examination of the kinds of products imported into Peru in 1946 shows that machinery and automobiles made up the largest value of imports followed closely by food commodities. The ten most important articles of importation in 1946 were:

TABLE 45

#### ARTICLES OF IMPORTATION TO PERU, 1946 \*

| Articles                           | : Value in soles | : Index No. |
|------------------------------------|------------------|-------------|
| 1. Machines and vehicles           | : 198,583,000    | : 999       |
| 2. Food products                   | : 144,254,000    | : 506       |
| 3. Metals and jewelry              | : 91,522,000     | : 450       |
| 4. Chemical products               | : 55,461,000     | : 636       |
| 5. Miscellaneous                   | : 35,837,000     | : 694       |
| 6. Dyes, oils and gums             | : 39,888,000     | : 403       |
| 7. Cotton                          | : 34,878,000     | : 201       |
| 8. Writing and packing<br>articles | : 35,936,000     | : 518       |
| 9. Electrical products             | : 33,510,000     | : 482       |
| 10. Woods and fibers               | : 29,741,000     | : 481       |

\*

Source: Anuario Estadístico del Perú, 1946, Lima: 1948,  
p. 311, (Base: 1934-36 = 100)

Restrictions during the war years on imports from countries actively engaged in fighting created a tremendous backlog of demand for tools, machinery, and automobiles. It is estimated by the Ministerio de Hacienda y Comercio that the pent up demand for machinery and automobiles alone amounts to \$50,000,000.<sup>1</sup>

<sup>1</sup>

Comunicado del Ministerio de Hacienda y Comercio, op. cit.

It is a little surprising that food should be the second most important import item. The demand for agricultural products has increased even more than machinery and automobiles. Although pastoral and agricultural products comprise only about 40 percent of the total value of exports, it is estimated that 85 percent of the population is dependent, directly or indirectly, upon agriculture and stockraising.<sup>1</sup> The demand for meat has been so great that imports from Argentina have expanded as follows:

TABLE 46  
MEAT IMPORTS FROM ARGENTINA, 1942-46\*

|      |     |           |
|------|-----|-----------|
| 1942 | Kg. | 1,532,728 |
| 1943 | "   | 1,801,983 |
| 1944 | "   | 3,124,495 |
| 1945 | "   | 4,617,083 |
| 1946 | "   | 4,969,179 |

\* Source: Ministerio de Hacienda y Comercio, op. cit.,  
El Comercio.

The same lack of livestock has obliged the country to import large amounts of leather, increasing from 40 metric tons, with a value of \$230,560 in 1930 to 989 tons, with a value of \$568,609 in 1946.

Of the gross tonnage of food products imported in 1944, 81 percent was wheat. The value of each ton of food imported came to 371 soles, while the value of each ton exported was 427 soles, or about 56 soles in favor of the latter. In 1943, the last year

<sup>1</sup>  
Censo Nacional de 1940, op. cit., p. 360-1.

for which records are available, Peru's export-import balance was favorable; that is, she imported food products valued at 50 million soles and exported the value of 79 million soles. However, a great part of this favorable balance is eaten up by costs of services and rates of transportation.

The tendency to import more and more food during World War II is shown in the following data on the importation of selected food items:

TABLE 47  
SELECTED FOOD IMPORTS OF PERU FOR SELECTED YEARS

|             |         |      |    |      |
|-------------|---------|------|----|------|
| Trigo       | 76,000  | Tons | in | 1930 |
| "           | 113,000 | "    | "  | 1943 |
| "           | 197,000 | "    | "  | 1944 |
| Arroz       | 6,900   | "    | "  | 1930 |
| "           | 18,000  | "    | "  | 1944 |
| Carnes      | 670     | "    | "  | 1937 |
| "           | 2,900   | "    | "  | 1944 |
| Manteca     | 92      | "    | "  | 1937 |
| "           | 11,700  | "    | "  | 1944 |
| Mantequilla | 176     | "    | "  | 1937 |
| "           | 415     | "    | "  | 1944 |
| Cebada      | 2,500   | "    | "  | 1937 |
| "           | 4,700   | "    | "  | 1944 |

Early in 1945 "administrative" trade and exchange controls were established to supervise transactions and to avoid flight of capital. Importers were required to apply to the Finance Ministry for import permits and foreign exchange allotments. Exporters were required to have licenses to ship, a prerequisite being their agreement to deliver the corresponding exchange to the Central Reserve Bank.

During 1946 Peru depended upon \$163,738,738 (of which only \$148,881,824 was provided by public selling and the remainder by preexisting funds) to meet import demands. Accordingly, the country only was able to fulfill its needs in the following proportions:

|                        | <u>Percent of demand</u> |
|------------------------|--------------------------|
| Food products          | 82                       |
| Raw materials          | 70                       |
| Pharmaceuticals        | 93                       |
| Machinery and vehicles | 74                       |
| Textiles               | 38                       |
| Diversos               | 45                       |

#### Changes in Consumption Levels

Figures on consumption of products making up the level of living of the people should indicate trends in their standards. Only a few of the many items that make up the level of living can be cited but we can infer from the more significant items many things about the entire level of living. This technique is constantly being used in the social sciences as when the infant mortality rate is used to indicate the overall well-being of a society.

Consumption of selected articles is shown in Table 48.

As is clearly seen in Table 48, changes in consumption do not take place equally among all articles. Essential foods such as wheat and rice have a relatively inelastic demand, particularly when it is considered that population increase during the period under observation was about 10 percent. The same might be said about coca, a drug which is generally masticated by the Sierra Indians of Peru as well as other Andean countries. The greatest elasticity in demand was shown by strong wines, industrial salt,

beer, liquors, sugar, matches, cotton, alcohol, gasoline, etc. It is in the luxury items that the greatest increase has taken place as might be expected in a period of rising incomes. This does not mean that all segments of the population shared in this luxury consumption, in fact the majority of people probably live at a subsistence level or below. It is evident that a rise in the National income does not result in any great increase in the consumption of essential items but tends to reflect itself in greater demand for more or less luxury items.

TABLE 48

PERCENTAGE CHANGE IN CONSUMPTION OF SELECTED  
LIVING ITEMS, PERU, 1940-45\*

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|                    |     |
|--------------------|-----|
| Wines (generosos)  | 396 |
| Industrial salt    | 118 |
| Beer               | 83  |
| Liquors            | 74  |
| Sugar              | 68  |
| Matches            | 55  |
| Cotton             | 47  |
| Alcohol            | 43  |
| Gasoline           | 41  |
| Domestic salt      | 34  |
| Wines (corrientes) | 27  |
| Wood carbon        | 20  |
| Rice               | 16  |
| Coca               | 12  |
| Wheat              | 6   |
| Tea                | -54 |
| Champagne          | -86 |

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\*

Source: Computed from data contained in table 2,  
p. 333, Anuario Estadístico del Perú, 1944-1945.

Changes in the Diet.

The dietary pattern of the people depends upon the following factors:



- (a) The price of food.
- (b) The income or buying power of consumers.
- (c) The proportion of the income destined for food.
- (d) The habits and class standards of consumers.

Each of these factors is examined in the paragraphs that follow.

Theoretically, a decline in food prices is equivalent to raising the purchasing power of consumers; on the other hand, an increase in the price of food is equivalent to lowering the people's purchasing power. What has been the trend in food prices in Peru? The following table presents indexes of prices paid in Lima for specified articles between 1938 and 1945:

TABLE 49

INDEXES OF PRICES PAID IN LIMA FOR SELECTED  
ITEMS, 1938-45\*

|                           | :1945: | :1944: | :1943: | :1942: | :1941: | :1940: | :1939: | :1938 |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Foods of animal origin    | : 227: | : 197: | : 172: | : 142: | : 130: | : 117: | : 111: | : 108 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Foods of vegetable origin | : 225: | : 212: | : 181: | : 158: | : 134: | : 111: | : 103: | : 116 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Beverages                 | : 188: | : 171: | : 187: | : 172: | : 134: | : 120: | : 109: | : 105 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Fuels                     | : 161: | : 154: | : 152: | : 133: | : 124: | : 121: | : 108: | : 103 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Construction materials    | : 294: | : 288: | : 252: | : 202: | : 157: | : 134: | : 118: | : 106 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Textiles                  | : 201: | : 196: | : 186: | : 165: | : 136: | : 118: | : 102: | : 97  |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Metals                    | : 348: | : 371: | : 428: | : 387: | : 274: | : 195: | : 147: | : 127 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |
| Sundries                  | : 237: | : 226: | : 205: | : 174: | : 133: | : 128: | : 117: | : 108 |
|                           | :      | :      | :      | :      | :      | :      | :      | :     |

\* Source: Anuario Estadístico del Perú, 1944-1945, op. cit., p. 319-20. (Base: Trienio 1934-36= 100)

All items included in the cost of living index in Peru have increased in price over the base period. Metals and construction materials have had the most spectacular price rises while fuels and beverages have changed least. Foods, both animal and vegetable, have risen in price relatively more than fuels, beverages, and textiles.

Under conditions of generally rising prices the majority of the families should spend a larger share of their income for the basic foods and clothing; a smaller proportion may go for protective foods such as meat, milk, eggs, fruits, greens, but little may be available for clothes.

No official figures are at hand on Peru's National income. However, it was unofficially estimated at S/o. 2,100,000,000 in 1942, although probably nearer S/o. 2,900,000,000.<sup>1</sup> Accordingly, per capita income may be estimated at S/o. 299 to S/o. 413. In comparison, Mexico's per capita income was S/o. 500, Chile's S/o. 800, and Argentina's S/o. 1,100. It is calculated that per capita income was three times higher in the Coastal region than in the Sierra. Such wide differences in income are reflected in the levels of living of the various regions.<sup>2</sup>

The total amount of money in circulation increased from 94.4 million soles in 1930 to 827.9 million soles in 1946, an expansion of 777 percent. The amount of bank notes rose from 36 soles

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<sup>1</sup>  
Summary of Economic Information, American Embassy, Lima: 1945-46, p. 5.

<sup>2</sup>Romulo A. Ferrero, "Bases Economicas para una Politica de Alimentacion en el Peru," Economia, Trabajo y Seguridad Social, Ano III, N° 11, Enero y Febrero, 1946, Lima, p. 9.

per capita in 1930 to 284 soles in 1946, an increase of 689<sup>1</sup> percent. The greatly expanded commercial character of Peruvian economy is apparent in the above figures.

During World War II the capital and reserve items of commercial banks shot upward, increasing 144 percent over the base period of 1934-36. Bank deposits skyrocketed over 500 percent.

But purchasing power depends to a large extent upon how well the National income is distributed. Wages give some basis for estimating how diffused the buying power is through the population. The trend in wages paid since 1939 follows:

TABLE 50  
DAILY WAGES (AVERAGE) OF MALE WORKERS IN THE PRINCIPAL  
AGRICULTURAL INDUSTRIES \*

| Year | Cotton   |       | Rice     |       | Wheat    |       | Sugar Cane |       |
|------|----------|-------|----------|-------|----------|-------|------------|-------|
|      | Males    | Index | Males    | Index | Males    | Index | Males      | Index |
|      | : soles: |       | : soles: |       | : soles: |       | : soles:   |       |
| 1944 | : 2.95   | : 183 | : 2.53   | : 222 | : 1.33   | : 193 | : —        | : —   |
| 1943 | : 2.78   | : 174 | : 2.31   | : 203 | : 1.16   | : 168 | : 2.53     | : 145 |
| 1942 | : 2.39   | : 148 | : 1.92   | : 168 | : 0.89   | : 129 | : 1.94     | : 110 |
| 1941 | : 1.76   | : 109 | : 1.41   | : 124 | : 0.81   | : 117 | : 1.95     | : 112 |
| 1940 | : 1.23   | : 76  | : 1.31   | : 115 | : 0.67   | : 97  | : 1.87     | : 107 |
| 1939 | : 1.30   | : 81  | : 1.20   | : 105 | : 0.66   | : 96  | : 1.59     | : 91  |

\*

Source: Anuario Estadístico del Peru, 1944-1945, p. 456.  
(Base: Trienio 1934-36 = 100)

Even with the increased economic activity of the war period the average cotton worker in agriculture made 2.95 soles, or about 45 cents per day in 1944, while in wheat the daily wage was 20 cents.

<sup>1</sup>

Anuario Estadístico del Peru, 1944-1945, op. cit., p. 403.

Since the cost of living index stood at 181 in 1944 wages in agricultural work increased slightly more than did the cost of living.

Miners received 57 cents per day in 1944 as compared with 39 cents in 1939, still extremely low in comparison with the cost of living. Workers in water and electrical industries received the highest average daily wage, averaging 95 cents in 1944, but less than 1,800 workers were so employed in 1940.

On such wages there is little doubt that most of the families' budget is spent on food. Even in the city of Lima it is calculated that 55 percent of the family budget is spent on food, 18 percent for housing, 12 percent for clothing, and 15 percent for sundries.

As in most of the areas of life, class status and the habits associated with it have a profound influence upon the food pattern. In the Coastal region of Peru rice is the basic food practically of all the people, even of those with relatively high purchasing power. In Chile or the United States it is a much less important item. Employers spend more for clothes, housing, and furniture than do agricultural and industrial workers, thus maintaining a certain amount of social appearance.

Both the elevation of the cultural level of the population and the general diffusion of knowledge regarding good nutrition have had an important effect on the people of Peru, bettering their diet by increased consumption of meats, especially liver and kidney, of eggs, milk, fruit and green vegetables. But such a program is incapable of doing much about those who are economically unable to afford the extra cost of the so-called protective foods. Education may help consumers to distinguish between the various classes of

foods on the basis of their relative nutritional importance.

Sometimes, however, better education does not lead to any distinct betterment as when white bread is substituted for dark bread, or polished rice for unpolished.

An economy, such as Peru's, which is constantly under pressure to provide even the basic essentials of the diet is essentially weak. This means that it will be impossible to raise the standard of living for a large part of its population unless some way is found to increase the supply of food and reduce the price.

#### The Food Situation

The total quantity of food consumed in 1943-44 was estimated to be about 2,453,000 metric tons, corresponding to an average of 355 kilograms annually per person at an average daily cost of food per person of 50 centavos (S/o. 184.00 per year). At this rate a family of five persons would spend about S/o. 2.50 daily on food.

Although the national average is 355 kilograms of food per year there is wide variation in consumption within the country. Lowest consumption of food is considered to prevail in the eastern and southern provinces while highest consumption is found on the coast. The variation is from 259 kilograms per person per year in Huanuco to 453 kilograms in Lima. This means that the average person in Lima consumes 194 kilograms of food more than is consumed by the average person living in the department of Huanuco.

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Luis Rose Ugarte, La Situacion Alimenticia en el Peru, No. 7, Ministerio de Agricultura, Servicio Cooperativo Inter-Americano de Produccion de Alimentos, Lima: 1945, p. 53-4.

The Hot Springs Conference on food considered the minimum consumption to be about 620 kilograms per person annually, indicating that Peruvian consumption falls well under even this minimum standard. The gap between the average consumption in Peru and the Hot Springs minimum standard is 265 kilograms. But even the Hot Springs minimum standard is not the most desirable since it merely represents the usual consumption in the United States.

It is necessary, in order to raise the food consumption of those departments with lower consumption rates than in Lima and Callao up to the latter level, to increase food production by 736,000 metric tons. In addition, the annual natural increase in the population of Peru requires about 40,000 tons. But even if this level of consumption is achieved it will fall short by 27 percent of the standard set at Hot Springs. To reach the latter goal approximately 1,800,000 metric tons would have to be made available above what is currently used.

The national average of consumption expressed in kilograms per year per person when compared with the Greater Lima consumption and also the Hot Springs minimum standard will show the following facts:

TABLE 51

COMPARISON OF CONSUMPTION IN PERU AND LIMA EXPRESSED IN  
KILOGRAMS OF FOOD PER PERSON ANNUALLY WITH THE HOT  
SPRINGS STANDARD\*

|               | : National Average: | : Lima    | : Hot Springs |
|---------------|---------------------|-----------|---------------|
| Grains        | : 107               | : 145     | : 115         |
| Potatoes      | : 96)               | : 67)     | : 208         |
| Beans         | : 24( 159           | : 40( 186 |               |
| Fruits        | : 39)               | : 79)     |               |
| Meats         | : 24                | : 50      | : 41          |
| Sugar         | : 19                | : 47      | : 16          |
| Fats          | : 6                 | : 16      | : 23          |
| Miscellaneous | : 13                | : —       | : —           |
| Subtotal      | : 328               | : 444     | : 403         |
| Milk          | : 27                | : 67      | : 217         |
| Total         | : 355               | : 511     | : 620         |

\*

Source: Luis Rose Ugarte, La Situacion Alimenticia en el Peru, p. 58.

It is seen that the principal difference between Lima and the Hot Springs standard is in the amount of milk consumed, Lima consuming less than one-third the amount suggested. The Lima diet is favorable in the quantities of grains, meats, and sugars but unfavorable in amounts of fruits, vegetables, and fats.

The difference between the national average and the "standard" set at Hot Springs is much greater than between Lima and Hot Springs. In all items except tubers the provinces consume less food per capita than Lima and the greatest under-consumption occurs in milk, fats, and sugars.

Calculating the number of tons of food in deficit, if it is desired to raise the level of consumption in Peru to the level existing in Lima, gives the following figures:

|        | <u>Deficit per person</u> | <u>Deficit for the country as a whole</u> |
|--------|---------------------------|---|
| Grains | 38 Kgs. per person        | 263,000                                   |
| Beans  | 16 " " "                  | 111,000                                   |
| Fruits | 40 " " "                  | 277,000                                   |
| Meats  | 26 " " "                  | 180,000                                   |
| Fats   | 10 " " "                  | 69,000                                    |
| Milk   | 40 " " "                  | 277,000                                   |

To produce the additional tonnages of grains, fruits, and vegetables which a more adequate diet would require would take more than 400,000 hectares of land and the production of the required meat, milk, and fats would entail a tremendous expansion in the livestock industry.

Such an increase in food consumption is predicated upon increased purchasing power for the majority of the population. The present low income under which a large part of the people are forced to live would have to be raised simultaneously with the expansion in the production of protective foods. Two questions should be asked: How can the per capita income of Peru be increased so as to provide the purchasing power needed for raising the standard of living? But even if the additional purchasing power was immediately forthcoming, where would the food come from?

Additional food can only be secured in two ways: (1) Either it must be produced on Peruvian farms by bringing new lands into production; or (2) it must be imported and paid for by selling other raw materials or finished products produced in Peru. Both courses involve the inversion of capital, increased labor productivity, and more production.



Practically speaking, the approach to the problem must be made more or less in a piece meal fashion; that is, attacking it at various points. For example, a careful study of the price structure of food revealed in 1944 that wide variations in the prices of food from one part of Peru to another could not be accounted for on the basis of distance and costs of transportation.<sup>1</sup> It was found, for instance, that the price of sugar was 30 centavos per kilogram in the department of Libertad and 32 centavos in Lambayeque, areas of production, rising to 47 centavos in Piura and 41 centavos in Tumbes, nearby provinces; in the Sierra department of Cajamarca sugar sold for 48 centavos and S/o. 1.41 in Amazonas; farther to the south in Moquegua the price of sugar was 38 centavos and 47 in Tacna adjacent to it, or about 9 centavos price rise between the first 2,000 kilometers and also 9 centavos between the last 200 kilometers. Rice, although supposedly under strict control, had unexplainable variations from place to place in price although not as bad as sugar. In La Libertad rice is produced in quantities for market while Lima produces very little, yet the price in the former was 70 centavos and 62 centavos in the latter.

Generally speaking, food prices tended to be highest in the far distant and relatively isolated provinces and lowest in the northern and central departments. But the wide divergencies within the market structure suggest that a study of the marketing factors would yield fruitful returns and be a boon to many small farmers who are unable to comprehend, at the present time, the vagaries of the market.

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<sup>1</sup>

Luis Rose Ugarte, op. cit.

With this general background of the family living situation before us the situation in the Huallaga Valley can be anticipated broadly. First, there is a general lack of foods particularly of the protein kind. The diet is monotonous and limited mainly to yuca (sweet potatoes), bananas, tropical fruits, rice, and small amounts of meat. It is customary for the family to eat salted fish (peacado <sup>1</sup>salade).

The prices of most store-bought foods are higher in the Huallaga Valley than in Lima. Salted fish were selling at S/.2.00 soles in Tingo Maria in February, 1947, and S/.1.60 in Lima (May 1948). Evaporated milk was S/.1.60 per can in Tingo Maria and 1.05 in Lima. Butter was only slightly higher in Tingo Maria. Potatoes <sup>2</sup>were cheaper in Tingo Maria than on the Coast.

Cost of food is high in Tingo Maria because much of it must be transported into the area. This in spite of the fact that the rivers are full of fish, fruits abound in the jungle, turkeys and chickens thrive, and land is plentiful.

A partial list of foods found in the stores of Tingo Maria in February, 1947, and their prices follows:

|  |     |           |
|--|-----|-----------|
| Sardinas de California - Rios del Mar 8 onz. | S/. | 3.50      |
| Frijol Canario.....                          | "   | 1.20 Kilo |
| Frijol Bayo.....                             | "   | 0.80 "    |
| Cafe.....                                    | "   | 2.80 "    |
| Azafran.....                                 | "   | 1.50 "    |

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<sup>1</sup> Maxime H. Kuczynski Godard, La Vida en la Amazonia Peruana, Libreria Internacional del Peru, Lima, 1944, p. 147.

<sup>2</sup> Cf. Boletin de Estadistica Peruana, Ano IX, No. 3, Julio-Setiembre, 1948, Ministeriode Hacienda y Comercio, pp. 44-5.

|                             |                     |                       |
|-----------------------------|---------------------|-----------------------|
| Jora.....                   | S/. 1.20            | Kilo                  |
| Lentejas.....               | " 0.80              | "                     |
| Maiz blanco.....            | " 0.80              | "                     |
| Habas.....                  | " 0.80              | "                     |
| Quinua.....                 | " 1.20              | "                     |
| Ajos.....                   | " 2.60              | "                     |
| Harinas de habas.....       | " 1.20              | "                     |
| Cebada.....                 | " 0.60              | "                     |
| Trigo pelado.....           | " 1.80              | "                     |
| Garbanzo.....               | " 1.80              | "                     |
| Arroz primera.....          | " 1.20              | "                     |
| Avena.....                  | " 2.00              | "                     |
| Papa seca.....              | " 3.00              | " (molida)            |
| Papa seca entera.....       | " 2.00              | "                     |
| Mani.....                   | " 2.20              | "                     |
| Chuno.....                  | " 1.40              | " (papa podrida)      |
| Harina de maiz.....         | " 1.60              | "                     |
| Bonito.....                 | " 2.00              | pescado               |
| Promedio.....               | " 0.60              | promedio              |
| Soda de Ambo.....           | " 0.30              | botella               |
| Soda de Tingo.....          | " 0.25              | botella               |
| Papas de mejor calidad..... | " 0.50              | Kilo (30-50 ctvs.     |
| Chirimoyas.....             | " 0.60              | c/u.                  |
| Leche Nestle.....           | " 1.60              | lata (397 gramos)     |
| Mantequilla.....            | " 5.50              | lata (Swith 400 g)    |
| Agua de Viso.....           | " 0.50              | $\frac{1}{2}$ botella |
| Aceite.....                 | "                   |                       |
| Vinagre.....                | " 2.00              | botella               |
| Jabon Ross.....             | " 1.20              | c/u.                  |
| Jabones para lavar.....     | " 0.25; 0.30 y 0.15 | c/u.                  |
| Jabon Sapolio.....          | " 0.60              | c/u.                  |
| Jabon Lactina.....          | " 0.80              | c/u.                  |
| Manteca de chancho.....     | " 5.50              | Kilo                  |
| Cebolla.....                | " 0.60              | "                     |
| Manzanas.....               | " 0.50              | "                     |

This gives some idea of the diversity of goods that are available. Butter and milk both come in cans. Fish are salted dry and are also canned. The selection is about the same in Panao but much less complete in Juanjui. Scarce items of diet in 1947 included meat, sugar, milk, butter, cheese, bread, and rice.

#### Family Living Expenditures.

It is generally assumed that the proportion of income spent on food declines as income rises. That is, food is generally assumed

to be an unelastic component of the family living budget. This is one of the principles enunciated by Engel as a result of his classic 19th century analysis of family budgets.<sup>1</sup>

For purposes of budget analysis "elasticity of expenditure (food, clothing, etc.) on income" may be defined as the proportionate change in expenditures associated with a one percent change in income.<sup>2</sup> Also, any expenditure with an elasticity above unity moves proportionately faster than income changes, while any expenditure that has an elasticity less than unity moves proportionately less than income.

Figure 15 shows the families of Juanjui plotted on double logarithmic paper by income and by expenditure for food. It is relatively easy to fit a line by inspection to the points representing the families. The slope of this regression line may be read as the elasticity of food expenditure on income. For Juanjui, this elasticity is estimated at .90, or 10 points below unity. Respective elasticities for Panao and Tingo Maria are .81 and .87. (See Figures 16 and 17.)

In each case elasticity of food expenditures approached but did not reach unity, varying from .81 in Panao to .90 in Juanjui. How do such results compare with tendencies in the United States?

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1

Ernest Engel, "Die Produktions und Consumtionsverhältnisse des Königreichs Sachsen," published in 1857 in the Zeitschrift des Statistischen Bureaus des Königlich Sachsischen Ministerium des Innern, Nos. 8 and 9, and in the Bulletin de L'Institut International de Statistique, IX, p. 1-124.

2

H. Gregg Lewis and Paul H. Douglas, Studies in Consumer Expenditures (1901, 1918-19, 1922-24), The University of Chicago Press, Chicago, 1947, p. 4.

FIGURE 15.

ELASTICITY OF FOOD EXPENDITURES ON INCOME  
JUANJUI, PERU, 1947.

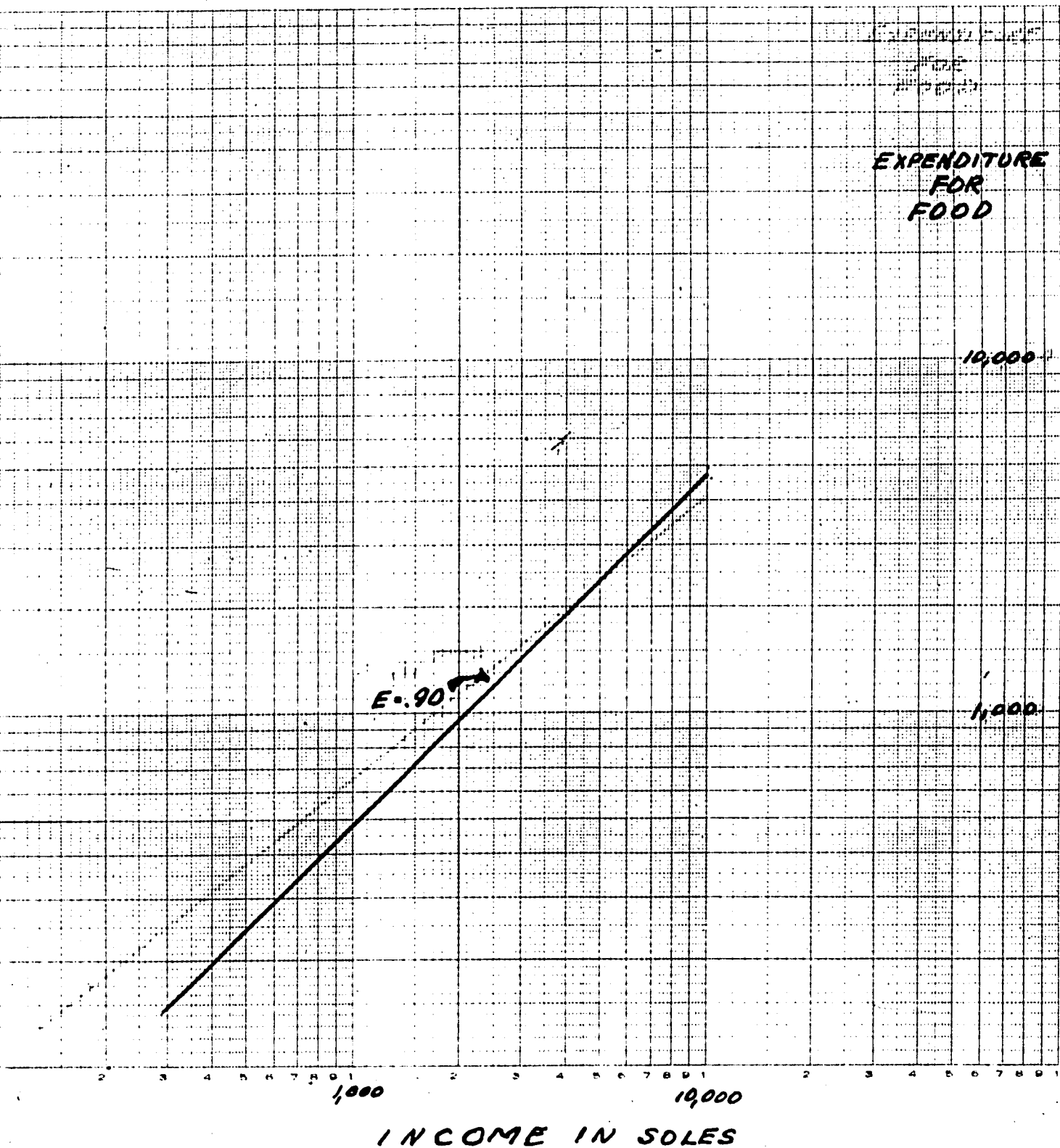
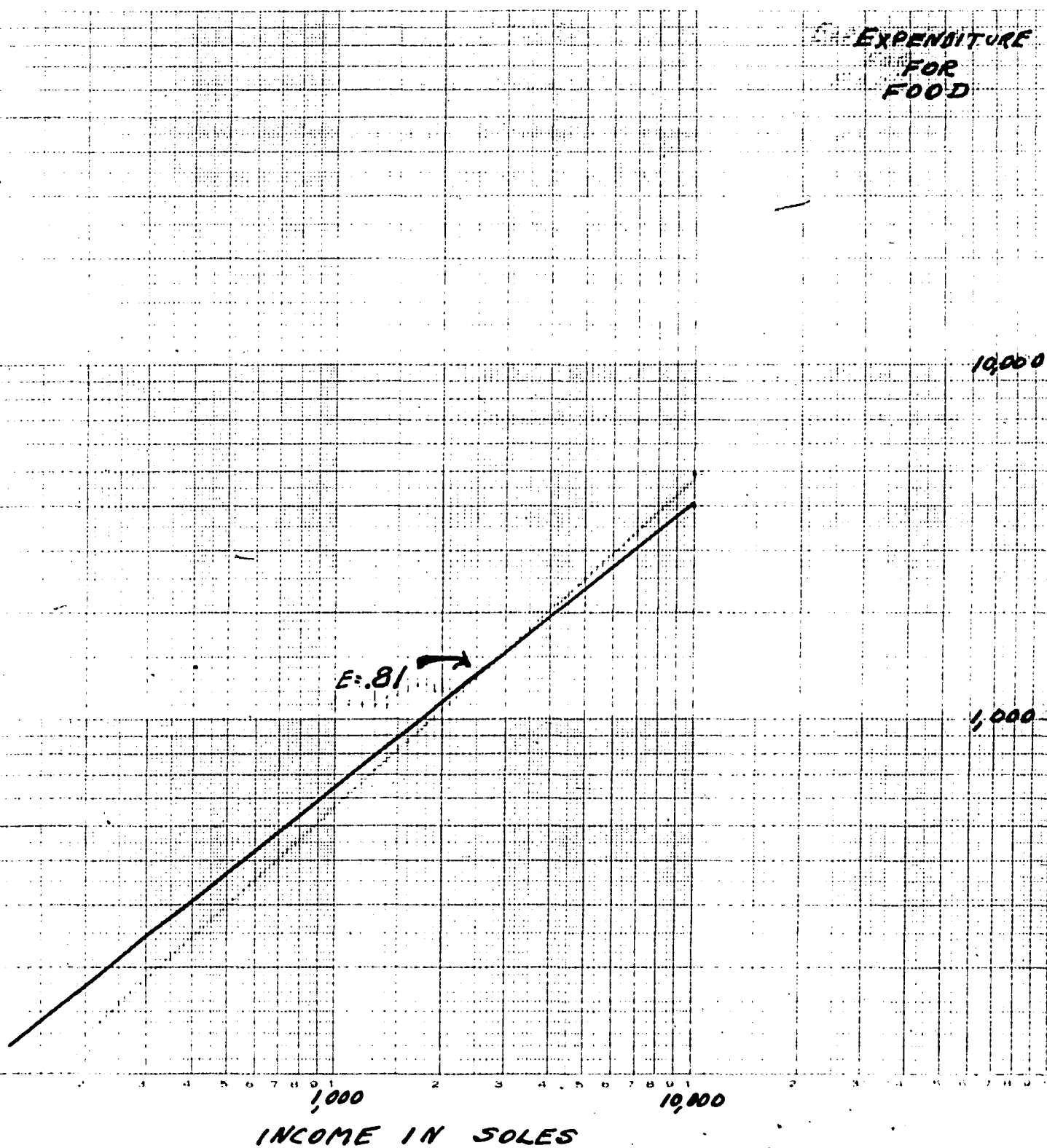
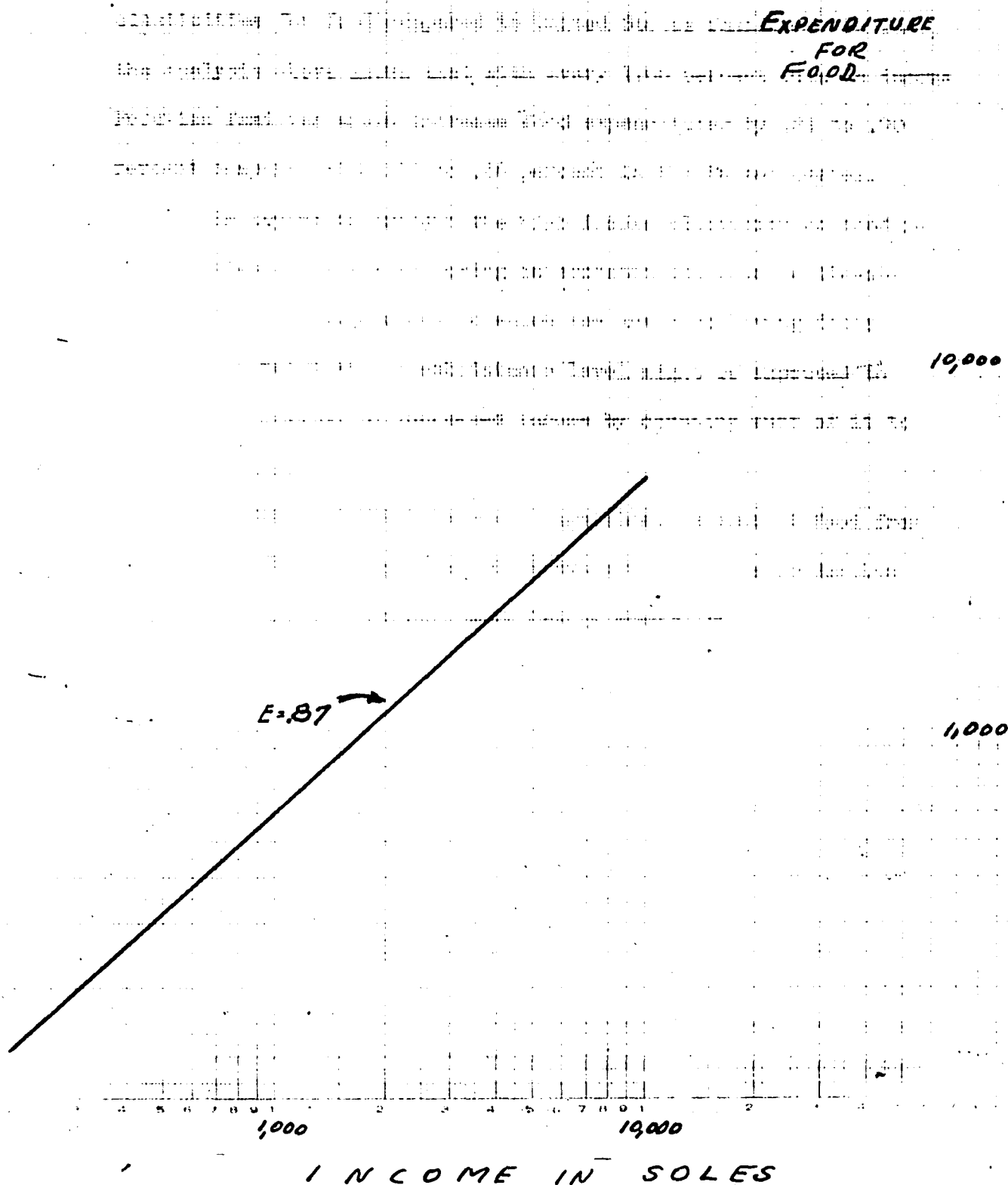


FIGURE 16.

ELASTICITY OF FOOD EXPENDITURES ON INCOME  
PANAO, PERU, 1947.



**FIGURE 17.**  
**ELASTICITY OF FOOD EXPENDITURES ON INCOME**  
**TINGO MARIA, PERU, 1947**



United States studies showed elasticities of food on income varying<sup>1</sup> from .33 to .66 for farm families.

It is clear that the Peruvian families show remarkably high elasticities for food compared to United States families. In fact, the analysis above shows that with every 1.00 percent rise in income Peruvian families would increase food expenditures by .81 to .90 percent compared with .33 to .66 percent in the United States.

In trying to explain the high income elasticity on food in the Peruvian study the following interpretations seem pertinent:

- (1) A rural economy in which the level of living falls below even a subsistence level might be expected to respond to increased income by devoting much of it to food.
- (2) Most families secure a significant amount of food from their own gardens and farms but this home production does not usually meet family standards.

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<sup>1</sup>

Carl C. Taylor and T. Wilson Longmore, Income Elasticities of Farm Family Living, Farm Production and Savings, 1946. (In process) 1950; and Lewis and Douglas, op. cit., p. 52.



## CHAPTER X

### HOUSING AND HOUSEHOLD FACILITIES

Housing and the kinds of household facilities available to families constitute important items of social differentiation. Not only is the type of house important in distinguishing family from family but even location of the house itself is a determining factor. Table 52 shows families in the pueblos of Juanjui, Panao, and Tingo Maria classified by distance they live from the plaza and broken down by high, middle, and low incomes. These figures show in general a definite relation between economic status of families and residence.

The traditional pattern of settlement in which the upper class families tended to cluster close around the plaza is clearly evident in Panao and Juanjui. (See Table 52.) But in Tingo Maria, as has been described earlier, the plaza-type of settlement does not exist to any extent and in its place has been substituted a main street type. Thus, an insignificant number of high-income families live within 100 meters of the plaza. Furthermore, most low-income families are concentrated in a section of town known generally as Barrio Obrero, which is similar to "across the tracks" in the United States. Mention should be made also of the fact that the homes of professional personnel assigned to the Agricultural Experiment Station are clustered near the main administration buildings commanding a dominant position overlooking the valley.

These spatial characteristics, although seemingly elementary, are fundamental to any understanding of housing. Housing is

more than the physical structure and must include all of the surrounding environment which in the Huallaga Valley includes patio, garden, barrio and pueblo.

TABLE 52

DISTANCE FAMILY LIVES FROM THE PLAZA, BY INCOME CLASSES  
IN JUANJUI, PANAQ, AND TINGO MARIA

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| Under 50 meters        | 37      | 12.3  | 46    | 28.6  | 8           | 2.3   |
| 50 - 99 "              | 31      | 10.3  | 22    | 13.7  | 2           | .6    |
| 100 -199 "             | 99      | 33.0  | 30    | 18.6  | 54          | 15.3  |
| 200 -499 "             | 97      | 32.4  | 60    | 37.3  | 148         | 42.0  |
| 500 meters and over    | 36      | 12.0  | 3     | 1.8   | 140         | 39.8  |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| Under 50 meters        | 21      | 29.6  | 26    | 61.9  | 7           | 3.3   |
| 50 - 99 "              | 7       | 9.8   | 7     | 16.7  | 1           | .5    |
| 100 -199 "             | 22      | 31.0  | 2     | 4.7   | 36          | 17.2  |
| 200 -499 "             | 12      | 16.9  | 7     | 16.7  | 100         | 47.9  |
| 500 meters and over    | 9       | 12.7  | -     | --    | 65          | 31.1  |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| Under 50 meters        | 13      | 8.5   | 20    | 26.3  | 1           | .8    |
| 50 - 99 "              | 17      | 11.0  | 10    | 13.2  | -           | --    |
| 100 -199 "             | 53      | 34.4  | 20    | 26.3  | 15          | 11.5  |
| 200 -499 "             | 50      | 32.5  | 26    | 34.2  | 46          | 35.4  |
| 500 meters and over    | 21      | 13.6  | --    | --    | 68          | 52.3  |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| Under 50 meters        | 3       | 4.0   | --    | --    | --          | --    |
| 50 - 99 "              | 7       | 9.3   | 5     | 11.6  | 1           | 7.7   |
| 100 -199 "             | 24      | 32.0  | 8     | 18.6  | 3           | 23.1  |
| 200 -499 "             | 35      | 46.7  | 27    | 62.8  | 2           | 15.4  |
| 500 meters and over    | 6       | 8.0   | 3     | 7.0   | 7           | 53.8  |

### House Structure

The modal size of house in Juanjui, Panao, and Tingo Maria is two rooms. (See Table 53.) However, a fourth or more of all dwellings in Juanjui and Tingo Maria were only one-room. Panao, on the other hand, had relatively few (6.8 percent) one-room dwellings. The special requirements of the cooler climate in Panao accounts for larger dwellings. Certainly, the climate of the humid tropics places less rigid demands on house structure since less permanent homes are required for protection against the rains.

Size of house is associated closely to income status as is shown in Table 53. Less than a fourth (23.9 percent) of high-income families in Juanjui had one-room dwellings compared with over a third of low-income families. Even more striking, in Tingo Maria the proportion of one-room houses ranged from 14.3 percent for high- and 53.8 percent for low-income families. All but one of the one-room dwellings in Panao were reported by low-income families.

When number of persons living in the house is related to number of rooms some measure of crowding may be ascertained therefrom. The number of dwellings with two or more persons per available room is shown in Table 54. In only two localities, Afilador and Hda. Delicias, does there appear to be any relation between income status and crowding. This is accounted for by the fact that although low-income families have fewer rooms available they also tend to have smaller households as Table 55 shows. The average (median) size of household declined consistently from high to low income classes in Juanjui, Panao, and Tingo Maria.

TABLE 53

NUMBER OF ROOMS IN HOUSE, BY INCOME CLASS IN JUANJUI,  
PANA O, AND TINGO MARIA

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1 room                 | 87      | 29.0  | 11    | 6.8   | 87          | 24.7  |
| 2 rooms                | 115     | 38.3  | 52    | 32.3  | 114         | 32.4  |
| 3 rooms                | 67      | 22.3  | 39    | 24.2  | 89          | 25.3  |
| 4 rooms                | 20      | 6.7   | 28    | 17.4  | 26          | 7.4   |
| 5 rooms                | 3       | 1.0   | 12    | 7.5   | 16          | 4.5   |
| 6 rooms or more        | 6       | 2.0   | 18    | 11.2  | 20          | 5.7   |
| Other                  | 2       | .7    | 1     | .6    | --          | --    |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1 room                 | 17      | 23.9  | --    | --    | 30          | 14.3  |
| 2 rooms                | 21      | 29.6  | 6     | 14.3  | 67          | 32.1  |
| 3 rooms                | 18      | 25.4  | 11    | 26.2  | 58          | 27.8  |
| 4 rooms                | 8       | 11.3  | 6     | 14.3  | 22          | 10.5  |
| 5 rooms                | 1       | 1.4   | 8     | 19.0  | 14          | 6.7   |
| 6 rooms or more        | 5       | 7.0   | 10    | 23.8  | 18          | 8.6   |
| Other                  | 1       | 1.4   | 1     | 2.4   | --          | --    |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1 room                 | 43      | 27.9  | 1     | 1.3   | 50          | 38.5  |
| 2 rooms                | 66      | 42.9  | 22    | 29.0  | 44          | 33.9  |
| 3 rooms                | 34      | 22.1  | 20    | 26.3  | 28          | 21.5  |
| 4 rooms                | 9       | 5.9   | 21    | 27.6  | 4           | 3.1   |
| 5 rooms                | 1       | .6    | 4     | 5.3   | 2           | 1.5   |
| 6 rooms or more        | --      | --    | 8     | 10.5  | 2           | 1.5   |
| Other                  | 1       | .6    | --    | --    | --          | --    |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1 room                 | 27      | 36.0  | 10    | 23.3  | 7           | 53.8  |
| 2 rooms                | 28      | 37.4  | 24    | 55.8  | 3           | 23.1  |
| 3 rooms                | 15      | 20.0  | 8     | 18.6  | 3           | 23.1  |
| 4 rooms                | 3       | 4.0   | 1     | 2.3   | --          | --    |
| 5 rooms                | 1       | 1.3   | --    | --    | --          | --    |
| 6 rooms or more        | 1       | 1.3   | --    | --    | --          | --    |
| Other                  | --      | --    | --    | --    | --          | --    |

TABLE 54

NUMBER AND PERCENTAGE OF DWELLINGS WITH TWO OR MORE PERSONS PER ROOM, BY LOCALITY AND  
INCOME CLASS

|                | : Juanjui :  |         | : Panao :    |         | : Tingo :    |         | : Afil- :    |         | : Hda. :     |         | : Las :      |         | : Naran- :   |         | : Shapa- :   |         | : Tres :     |         | : Tulum- :   |       |
|----------------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|-------|
|                | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |         | : No. Pct. : |       |
| ALL FAMILIES   | : 300        | 100.0 : | : 161        | 100.0 : | : 352        | 100.0 : | : 67         | 100.0 : | : 19         | 100.0 : | : 38         | 100.0 : | : 81         | 100.0 : | : 51         | 100.0 : | : 24         | 100.0 : | : 41         | 100.0 |
| 2 or more per- | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| sons per room  | : 223        | 74.3 :  | : 72         | 44.7 :  | : 176        | 50.0 :  | : 36         | 53.7 :  | : 14         | 73.7 :  | : 18         | 47.4 :  | : 28         | 34.6 :  | : 27         | 52.9 :  | : 12         | 50.0 :  | : 17         | 41.5  |
| HIGH INCOME    | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| FAMILIES       | : 71         | 100.0 : | : 42         | 100.0 : | : 209        | 100.0 : | : 15         | 100.0 : | : 4          | 100.0 : | : 17         | 100.0 : | : 42         | 100.0 : | : 12         | 100.0 : | : 3          | 100.0 : | : 13         | 100.0 |
| 2 or more per- | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| sons per room  | : 48         | 67.6 :  | : 19         | 45.2 :  | : 94         | 45.0 :  | : 2          | 13.3 :  | : 1          | 25.0 :  | : 7          | 41.2 :  | : 14         | 33.3 :  | : 7          | 58.3 :  | : 1          | 33.3 :  | : 5          | 38.5  |
| MIDDLE INCOME  | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| FAMILIES       | : 154        | 100.0 : | : 76         | 100.0 : | : 130        | 100.0 : | : 43         | 100.0 : | : 15         | 100.0 : | : 19         | 100.0 : | : 33         | 100.0 : | : 32         | 100.0 : | : 14         | 100.0 : | : 24         | 100.0 |
| 2 or more per- | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| sons per room  | : 123        | 79.9 :  | : 25         | 32.9 :  | : 75         | 57.7 :  | : 26         | 60.5 :  | : 13         | 86.7 :  | : 10         | 52.6 :  | : 13         | 39.4 :  | : 17         | 53.1 :  | : 10         | 71.4 :  | : 12         | 50.0  |
| LOW INCOME     | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| FAMILIES       | : 75         | 100.0 : | : 43         | 100.0 : | : 13         | 100.0 : | : 9          | 100.0 : | : -          | -       | : 2          | 100.0 : | : 6          | 100.0 : | : 7          | 100.0 : | : 7          | 100.0 : | : 4          | 100.0 |
| 2 or more per- | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :       | :            | :     |
| sons per room  | : 52         | 69.3 :  | : 28         | 65.1 :  | : 7          | 53.8 :  | : 8          | 88.9 :  | : -          | -       | : 1          | 50.0 :  | : 1          | 16.7 :  | : 3          | 42.9 :  | : 1          | 14.3 :  | : -          | -     |

TABLE 55

NUMBER OF PERSONS IN THE HOUSEHOLD, BY INCOME CLASS  
IN JUANJUI, PANAÓ, AND TINGO MARIA

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1 - person families    | 12      | 4.0   | 4     | 2.5   | 31          | 8.8   |
| 2 - " "                | 20      | 6.6   | 17    | 10.5  | 46          | 13.1  |
| 3 - " "                | 36      | 12.0  | 23    | 14.3  | 51          | 14.5  |
| 4 - " "                | 30      | 10.0  | 33    | 20.5  | 63          | 17.9  |
| 5 - " "                | 29      | 9.7   | 18    | 11.2  | 50          | 14.2  |
| 6 - " "                | 45      | 15.0  | 18    | 11.2  | 31          | 8.8   |
| 7 - " "                | 41      | 13.7  | 14    | 8.7   | 25          | 7.1   |
| 8 - " "                | 27      | 9.0   | 8     | 5.0   | 21          | 6.0   |
| 9 - " " or more        | 60      | 20.0  | 26    | 16.1  | 34          | 9.6   |
| Median                 | 6.5     |       | 5.2   |       | 4.7         |       |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1 - person families    | 6       | 8.5   | —     | —     | 20          | 9.6   |
| 2 - " "                | 3       | 4.2   | 2     | 4.8   | 23          | 11.0  |
| 3 - " "                | 4       | 5.6   | 2     | 4.8   | 27          | 12.9  |
| 4 - " "                | 2       | 2.8   | 5     | 11.9  | 30          | 14.3  |
| 5 - " "                | 4       | 5.6   | 4     | 9.5   | 29          | 13.9  |
| 6 - " "                | 13      | 18.3  | 4     | 9.5   | 19          | 9.1   |
| 7 - " "                | 7       | 9.9   | 3     | 7.1   | 14          | 6.7   |
| 8 - " "                | 8       | 11.3  | 7     | 16.7  | 18          | 8.6   |
| 9 - " " or more        | 24      | 33.8  | 15    | 35.7  | 29          | 13.9  |
| Median                 | 7.5     |       | 8.4   |       | 5.2         |       |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1 - person families    | 2       | 1.3   | 2     | 2.6   | 10          | 7.7   |
| 2 - " "                | 7       | 4.6   | 12    | 15.8  | 19          | 14.6  |
| 3 - " "                | 23      | 14.9  | 12    | 15.8  | 21          | 16.2  |
| 4 - " "                | 16      | 10.4  | 13    | 17.1  | 30          | 23.1  |
| 5 - " "                | 18      | 11.7  | 11    | 14.5  | 19          | 14.6  |
| 6 - " "                | 24      | 15.6  | 10    | 13.2  | 12          | 9.2   |
| 7 - " "                | 27      | 17.5  | 7     | 9.2   | 11          | 8.5   |
| 8 - " "                | 13      | 8.4   | 1     | 1.3   | 3           | 2.3   |
| 9 - " " or more        | 24      | 15.6  | 8     | 10.5  | 5           | 3.8   |
| Median                 | 6.5     |       | 5.0   |       | 4.5         |       |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1 - person families    | 4       | 5.3   | 2     | 4.6   | 1           | 7.7   |
| 2 - " "                | 10      | 13.4  | 3     | 7.0   | 4           | 30.7  |
| 3 - " "                | 9       | 12.0  | 9     | 20.9  | 3           | 23.1  |
| 4 - " "                | 12      | 16.0  | 15    | 34.9  | 3           | 23.1  |
| 5 - " "                | 7       | 9.3   | 3     | 7.0   | 2           | 15.4  |
| 6 - " "                | 8       | 10.7  | 4     | 9.3   | —           | —     |
| 7 - " "                | 7       | 9.3   | 4     | 9.3   | —           | —     |
| 8 - " "                | 6       | 8.0   | —     | —     | —           | —     |
| 9 - " " or more        | 12      | 16.0  | 3     | 7.0   | —           | —     |
| Median                 | 5.4     |       | 4.5   |       | 3.5         |       |

The extent of over-crowding, that is, the proportion with two or more persons per room, varies widely between localities (Table 54) ranging from about a third of all family dwellings in Naranjillo to about three-fourths in Juanjui and Hda. Delicias. The favorable ratio between persons and rooms in Naranjillo reflects the state-planned colonization. These houses would have cost 4,000 to 5,000 soles to build in 1947. Juanjui's unfavorable housing situation is due mainly to prevalence of large households and small houses.

In the Huallaga Valley around both Tingo Maria and Juanjui good timber is abundant, as well as a great variety of leaves and grass for thatching. But in the almost treeless sierra around Pano the relative scarcity of timber is offset by the availability of clay for roof tiles and adobe bricks. The influence of local environment on the materials used in house construction is clearly seen in the various localities.

Table 56 shows the type of roof material used in each locality. All dwellings in Pano had tiles for roofing whereas practically none of the tropical dwellings were covered with roof tiles. On the other hand, the predominant materials used for roofing in Juanjui, Tingo Maria and adjacent rural localities is either straw (paja) or palm leaves (palmeras). Wood is little used as a roof covering in the Huallaga Valley.

With growth of a commercial economy and with better transportation it is possible to use materials from outside the local area. Thus, in Tingo Maria, Hda. Delicias, Naranjillo, Las Palmas, and Afilador more than a fourth of all dwellings have zinc, Eternit,

TABLE 56

ROOF MATERIAL USED IN HOUSE STRUCTURES, BY INCOME  
AND BY LOCALITY

|                            | Juanjui |       | Panao |       | Tingo Maria |       |
|----------------------------|---------|-------|-------|-------|-------------|-------|
|                            | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES               | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Straw (paja)            | 126     | 42.0  | --    | --    | 125         | 35.5  |
| 2. Palmera (palm leaves)   | 152     | 50.7  | --    | --    | 83          | 23.6  |
| 3. Wood                    | --      | --    | --    | --    | --          | --    |
| 4. Zinc, Eternit, ruberoid | 5       | 1.7   | --    | --    | 133         | 37.8  |
| 5. Roof-tiles              | 15      | 5.0   | 161   | 100.0 | 2           | .6    |
| 6. Other                   | 2       | .6    | --    | --    | 9           | 2.5   |
| HIGH INCOME FAMILIES       | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Straw (paja)            | 20      | 28.2  | --    | --    | 54          | 25.8  |
| 2. Palmera (palm leaves)   | 37      | 52.1  | --    | --    | 33          | 15.8  |
| 3. Wood                    | --      | --    | --    | --    | --          | --    |
| 4. Zinc, Eternit           | 3       | 4.2   | --    | --    | 114         | 54.5  |
| 5. Roof-tiles              | 9       | 12.7  | 42    | 100.0 | 2           | 1.0   |
| 6. Other                   | 2       | 2.8   | --    | --    | 6           | 2.9   |
| MIDDLE INCOME FAMILIES     | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Straw                   | 67      | 43.5  | --    | --    | 61          | 46.9  |
| 2. Palmera                 | 82      | 53.3  | --    | --    | 48          | 36.9  |
| 3. Wood                    | --      | --    | --    | --    | --          | --    |
| 4. Zinc, Eternit           | 2       | 1.3   | --    | --    | 19          | 14.6  |
| 5. Roof-tiles              | 3       | 1.9   | 76    | 100.0 | --          | --    |
| 6. Other                   | --      | --    | --    | --    | 2           | 1.6   |
| LOW INCOME FAMILIES        | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Straw                   | 39      | 52.0  | --    | --    | 10          | 76.9  |
| 2. Palmera                 | 33      | 44.0  | --    | --    | 2           | 15.4  |
| 3. Wood                    | --      | --    | --    | --    | --          | --    |
| 4. Zinc, Eternit           | --      | --    | --    | --    | --          | --    |
| 5. Roof-tiles              | 3       | 4.0   | 43    | 100.0 | --          | --    |
| 6. Other                   | --      | --    | --    | --    | 1           | 7.7   |



TABLE 56 (Continued)

| Afil-ador | Hda.  | Las | Naran- | Shap- | Tres  | Tulum-ayo |       |    |       |    |       |    |       |
|-----------|-------|-----|--------|-------|-------|-----------|-------|----|-------|----|-------|----|-------|
| No.       | Pct.  | No. | Pct.   | No.   | Pct.  | No.       | Pct.  |    |       |    |       |    |       |
| 67        | 100.0 | 19  | 100.0  | 38    | 100.0 | 81        | 100.0 | 51 | 100.0 | 24 | 100.0 | 41 | 100.0 |
| 31        | 46.2  | 8   | 42.1   | 11    | 28.9  | 20        | 24.7  | 31 | 60.8  | 10 | 41.7  | 16 | 39.0  |
| 18        | 26.9  | 1   | 5.3    | 8     | 21.1  | 24        | 29.6  | 17 | 33.3  | 9  | 37.5  | 22 | 53.7  |
| —         | —     | —   | —      | 5     | 13.2  | —         | —     | —  | —     | —  | —     | —  | —     |
| 18        | 26.9  | 10  | 52.6   | 13    | 34.2  | 31        | 38.3  | 2  | 3.9   | 1  | 4.2   | 2  | 4.9   |
| —         | —     | —   | —      | —     | —     | —         | —     | —  | —     | —  | —     | —  | —     |
| —         | —     | —   | —      | 1     | 2.6   | 6         | 7.4   | 1  | 2.0   | 4  | 16.6  | 1  | 2.4   |
| 15        | 100.0 | 4   | 100.0  | 17    | 100.0 | 42        | 100.0 | 12 | 100.0 | 3  | 100.0 | 13 | 100.0 |
| 5         | 33.3  | 3   | 75.0   | 2     | 11.8  | 10        | 23.8  | 6  | 50.0  | 1  | 33.3  | 4  | 30.8  |
| 2         | 13.3  | —   | —      | 3     | 17.6  | 10        | 23.8  | 3  | 25.0  | 2  | 66.7  | 7  | 53.8  |
| —         | —     | —   | —      | 2     | 11.8  | —         | —     | —  | —     | —  | —     | —  | —     |
| 8         | 53.4  | 1   | 25.0   | 9     | 52.9  | 21        | 50.0  | 2  | 16.7  | —  | —     | 2  | 15.4  |
| —         | —     | —   | —      | —     | —     | —         | —     | —  | —     | —  | —     | —  | —     |
| —         | —     | —   | —      | 1     | 5.9   | 1         | 2.4   | 1  | 8.3   | —  | —     | —  | —     |
| 43        | 100.0 | 15  | 100.0  | 19    | 100.0 | 33        | 100.0 | 32 | 100.0 | 14 | 100.0 | 24 | 100.0 |
| 21        | 48.8  | 5   | 33.3   | 9     | 47.4  | 9         | 27.3  | 21 | 65.6  | 4  | 28.6  | 9  | 37.5  |
| 14        | 32.6  | 1   | 6.7    | 4     | 21.0  | 13        | 39.4  | 11 | 34.4  | 7  | 50.0  | 15 | 62.5  |
| —         | —     | —   | —      | 3     | 15.8  | —         | —     | —  | —     | —  | —     | —  | —     |
| 8         | 18.6  | 9   | 60.0   | 3     | 15.8  | 7         | 21.2  | —  | —     | 1  | 7.1   | —  | —     |
| —         | —     | —   | —      | —     | —     | —         | —     | —  | —     | —  | —     | —  | —     |
| —         | —     | —   | —      | —     | —     | 4         | 12.1  | —  | —     | 2  | 14.3  | —  | —     |
| 9         | 100.0 | —   | —      | 2     | 100.0 | 6         | 100.0 | 7  | 100.0 | 7  | 100.0 | 4  | 100.0 |
| 5         | 55.6  | —   | —      | —     | —     | 1         | 16.7  | 4  | 57.1  | 5  | 71.4  | 3  | 75.0  |
| 2         | 22.2  | —   | —      | 1     | 50.0  | 1         | 16.7  | 3  | 42.9  | —  | —     | —  | —     |
| —         | —     | —   | —      | —     | —     | —         | —     | —  | —     | —  | —     | —  | —     |
| 2         | 22.2  | —   | —      | 1     | 50.0  | 3         | 49.9  | —  | —     | —  | —     | —  | —     |
| —         | —     | —   | —      | —     | —     | —         | —     | —  | —     | —  | —     | —  | —     |
| —         | —     | —   | —      | —     | —     | 1         | 16.7  | —  | —     | 2  | 28.6  | 1  | 25.0  |
|           |       |     |        |       |       |           |       |    |       |    |       |    |       |
|           |       |     |        |       |       |           |       |    |       |    |       |    |       |
|           |       |     |        |       |       |           |       |    |       |    |       |    |       |

or ruberoid roofing. Eternit is the trade name for a manufactured product with a cement-like texture. Use of these commercial products is confined almost entirely to middle and high-income families. Half or more of all dwellings of high-income families in Tingo Maria, Afilador, Las Palmas, and Naranjillo have imported roof materials compared with only 4.2 percent of the dwellings in Juanjui.

Walls of the houses likewise reflect local environmental conditions. Thus, in Panao the walls are constructed of either tamped dirt (tapia) or adobe bricks. (See Table 57.) The tapia type of wall is made of puddled earth placed in a wooden frame. Adobes are rectangular bricks of mud and grass pressed in a mold and sun-dried, then laid. Tapia walls are found quite generally in all localities studied whereas adobe is confined largely to Panao.

Wood walls are found extensively only in Tingo Maria and rural parts. Local sawmills provide the necessary lumber as a result of the growing local resource development under government sponsorship. Walls of brick, cement, or Eternit are found mainly in Tingo Maria, Hda. Delicias, and Juanjui. Wood, brick, cement and Eternit walls are generally found among middle and high-income families.

Quincha wall construction consists of split canes (cana brava) stuck into the ground in an upright position and interlaced with horizontal strips of native fibre. This cane wall may later be plastered with mud but this is not always the case. A majority of all houses in Afilador, Shapajilla, Tres Esquinas, and Tulumayo have quincha walls. Quincha is the most generally used wall material of low-income families in all localities excepting Panao, Tingo Maria, and Naranjillo.

TABLE 57

WALL MATERIAL USED IN HOUSE STRUCTURES, BY  
INCOME CLASS AND BY LOCALITY

|                                       | Juanjui |       | Panao |       | Tingo Maria |       |
|---------------------------------------|---------|-------|-------|-------|-------------|-------|
|                                       | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES                          | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Cana brava ( <u>quincha</u> )      | 149     | 49.6  | —     | —     | 101         | 28.7  |
| 2. Mud ( <u>tapia</u> )               | 114     | 38.0  | 122   | 75.8  | 62          | 17.6  |
| 3. Wood                               | —       | —     | —     | —     | 106         | 30.1  |
| 4. Adobe                              | 5       | 1.7   | 39    | 24.2  | 13          | 3.7   |
| 5. Brick, cement, Eternit             | 27      | 9.0   | —     | —     | 60          | 17.0  |
| 6. Other                              | 5       | 1.7   | —     | —     | 10          | 2.9   |
| HIGH INCOME FAMILIES                  | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Cana brava ( <u>quincha</u> )      | 21      | 29.6  | —     | —     | 43          | 20.6  |
| 2. Mud                                | 42      | 59.2  | 28    | 66.7  | 27          | 12.9  |
| 3. Wood                               | —       | —     | —     | —     | 69          | 33.0  |
| 4. Adobe                              | 1       | 1.4   | 14    | 33.3  | 10          | 4.8   |
| 5. Brick, cement, Eternit             | 5       | 7.0   | —     | —     | 56          | 26.8  |
| 6. Other                              | 2       | 2.8   | —     | —     | 4           | 1.9   |
| MIDDLE INCOME FAMILIES                | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Cana brava                         | 83      | 53.9  | —     | —     | 54          | 41.6  |
| 2. Mud                                | 51      | 33.1  | 63    | 82.9  | 33          | 25.4  |
| 3. Wood                               | —       | —     | —     | —     | 32          | 24.6  |
| 4. Adobe                              | 2       | 1.3   | 13    | 17.1  | 3           | 2.3   |
| 5. Brick, cement, Eternit,<br>plaster | 17      | 11.0  | —     | —     | 3           | 2.3   |
| 6. Other                              | 1       | .7    | —     | —     | 5           | 3.8   |
| LOW INCOME FAMILIES                   | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Cana brava                         | 45      | 60.0  | —     | —     | 4           | 30.8  |
| 2. Mud                                | 21      | 28.0  | 31    | 72.1  | 2           | 15.4  |
| 3. Wood                               | —       | —     | —     | —     | 5           | 38.4  |
| 4. Adobe                              | 2       | 2.7   | 12    | 27.9  | —           | —     |
| 5. Brick, cement, Eternit,<br>plaster | 5       | 6.6   | —     | —     | 1           | 7.7   |
| 6. Other                              | 2       | 2.7   | —     | —     | 1           | 7.7   |

TABLE 57 (Continued)

| Afil-ador | Hda.  | Las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulum-ayo |       |    |       |    |       |    |       |
|-----------|-------|------------|------------|------------|---------------|-----------|-------|----|-------|----|-------|----|-------|
| No.       | Pct.  | No.        | Pct.       | No.        | Pct.          | No.       | Pct.  |    |       |    |       |    |       |
| 67        | 100.0 | 19         | 100.0      | 38         | 100.0         | 81        | 100.0 | 51 | 100.0 | 24 | 100.0 | 41 | 100.0 |
| 36        | 53.7  | 3          | 15.8       | 6          | 15.8          | 25        | 30.9  | 34 | 66.6  | 16 | 66.7  | 21 | 51.2  |
| 1         | 1.5   | 1          | 5.3        | 2          | 5.3           | 6         | 7.4   | 3  | 5.9   | 1  | 4.2   | 8  | 19.5  |
| 28        | 41.8  | 6          | 31.5       | 28         | 73.7          | 42        | 51.9  | 11 | 21.6  | 2  | 8.3   | 8  | 19.5  |
| --        | --    | 1          | 5.3        | 1          | 2.6           | 1         | 1.2   | 1  | 2.0   | -- | --    | -- | --    |
| --        | --    | 8          | 42.1       | --         | --            | 1         | 1.2   | -- | --    | -- | --    | 3  | 7.3   |
| 2         | 3.0   | --         | --         | 1          | 2.6           | 6         | 7.4   | 2  | 3.9   | 5  | 20.8  | 1  | 2.5   |
| 15        | 100.0 | 4          | 100.0      | 17         | 100.0         | 42        | 100.0 | 12 | 100.0 | 3  | 100.0 | 13 | 100.0 |
| 6         | 40.0  | 1          | 25.0       | 1          | 5.9           | 11        | 26.2  | 7  | 58.4  | 2  | 66.7  | 4  | 30.7  |
| 1         | 6.7   | --         | --         | --         | --            | 2         | 4.7   | 1  | 8.3   | -- | --    | 3  | 23.1  |
| 8         | 53.3  | 2          | 50.0       | 14         | 82.3          | 27        | 64.3  | 3  | 25.0  | 1  | 33.3  | 3  | 23.1  |
| --        | --    | --         | --         | 1          | 5.9           | --        | --    | -- | --    | -- | --    | -- | --    |
| --        | --    | 1          | 25.0       | --         | --            | 1         | 2.4   | -- | --    | -- | --    | 2  | 15.4  |
| --        | --    | --         | --         | 1          | 5.9           | 1         | 2.4   | 1  | 8.3   | -- | --    | 1  | 7.7   |
| 43        | 100.0 | 15         | 100.0      | 19         | 100.0         | 33        | 100.0 | 32 | 100.0 | 14 | 100.0 | 24 | 100.0 |
| 25        | 58.2  | 2          | 13.3       | 4          | 21.1          | 12        | 36.4  | 20 | 62.5  | 9  | 64.3  | 15 | 62.5  |
| --        | --    | 1          | 6.7        | 1          | 5.2           | 4         | 12.1  | 2  | 6.3   | 1  | 7.1   | 4  | 16.7  |
| 17        | 39.5  | 4          | 26.6       | 14         | 73.7          | 11        | 33.3  | 8  | 25.0  | 1  | 7.1   | 4  | 16.7  |
| --        | --    | 1          | 6.7        | --         | --            | 1         | 3.0   | 1  | 3.1   | -- | --    | -- | --    |
| --        | --    | 7          | 46.7       | --         | --            | --        | --    | -- | --    | -- | --    | 1  | 4.1   |
| 1         | 2.3   | --         | --         | --         | --            | 5         | 15.2  | 1  | 3.1   | 3  | 21.5  | -- | --    |
| 9         | 100.0 | --         | --         | 2          | 100.0         | 6         | 100.0 | 7  | 100.0 | 7  | 100.0 | 4  | 100.0 |
| 5         | 55.6  | --         | --         | 1          | 50.0          | 2         | 33.3  | 7  | 100.0 | 5  | 71.4  | 2  | 50.0  |
| --        | --    | --         | --         | 1          | 50.0          | --        | --    | -- | --    | -- | --    | 1  | 25.0  |
| 3         | 33.3  | --         | --         | --         | --            | 4         | 66.7  | -- | --    | -- | --    | 1  | 25.0  |
| --        | --    | --         | --         | --         | --            | --        | --    | -- | --    | -- | --    | -- | --    |
| --        | --    | --         | --         | --         | --            | --        | --    | -- | --    | -- | --    | -- | --    |
| 1         | 11.1  | --         | --         | --         | --            | --        | --    | -- | --    | 2  | 28.6  | -- | --    |

More than half of all dwellings have dirt floors in Juanjui, Panao, Afilador, Hda. Delicias, Shapajilla, and Tulumayo. (See Table 58.) But wood, brick, or cement predominated in Tingo Maria, Las Palmas, and Naranjillo.

Dirt floors are negatively associated with income. That is, the percentage of houses with dirt floors increases as income decreases. For example, the proportion of dwellings with dirt floors in Panao varies from 73.8 percent for high-income families to 100.0 percent for low-income families.

Table 59 shows that over half of the dwellings are unceiled in all localities, excepting in Panao and Juanjui. Unceiled houses are generally more prevalent in the low-income classes, particularly in Juanjui, Tingo Maria, and Las Palmas. The presence or lack of ceiling is a sharp differentiating factor associated with income. Even in Panao, where only 7.5 percent of all houses are unceiled, 20.9 percent of the dwellings of low-income families are unceiled.

The most commonly used ceiling materials are cana brava, wood, Celotex, and plaster. Cana brava construction is found particularly in Juanjui and Panao. For the latter locality, it is a borrowed material from the neighboring tropical forests and it should be noted that it is not used for walls in Panao. The use of cana brava in ceilings is negatively associated with income while wood and Celotex are positively associated with income. For example, almost a third (31.6 percent) of the houses of high-income families in Tingo Maria have wood or Celotex compared with a tenth of middle-income families, and none of the low-income class. The use of plaster is confined largely to Panao and the percentage of dwellings with such ceilings rises with incomes.

TABLE 58

## FLOOR MATERIALS USED IN HOUSE STRUCTURES, BY INCOME CLASS AND BY LOCALITY

|                        | : Juanjui  |       | : Panao    |       | : Tingo    |       | : Afil-    |       | : Hda.     |       | : Las      |       | : Naran-   |       | : Shap-    |       | : Tres     |       | : Tulum-   |       |
|------------------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                        | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       |
| ALL FAMILIES           | :300       | 100.0 | :161       | 100.0 | :352       | 100.0 | :67        | 100.0 | :19        | 100.0 | :38        | 100.0 | :81        | 100.0 | :51        | 100.0 | :24        | 100.0 | :41        | 100.0 |
| 1. Dirt                | :274       | 91.4  | :137       | 85.1  | :146       | 41.5  | :34        | 50.7  | :11        | 57.9  | :11        | 29.0  | :30        | 37.0  | :28        | 54.9  | :4         | 16.7  | :32        | 78.1  |
| 2. Wood                | :1         | .3    | :18        | 11.2  | :87        | 24.7  | :25        | 37.3  | :2         | 10.5  | :26        | 68.4  | :40        | 49.4  | :10        | 19.6  | :4         | 16.7  | :5         | 12.2  |
| 3. Brick or cement     | :18        | 6.0   | :6         | 3.7   | :83        | 23.6  | :2         | 3.0   | :6         | 31.6  | —          | —     | :1         | 1.2   | :2         | 3.9   | —          | —     | :1         | 2.4   |
| 4. Other               | :7         | 2.3   | —          | —     | :36        | 10.2  | :6         | 9.0   | —          | —     | :1         | 2.6   | :10        | 12.4  | :11        | 21.6  | :16        | 66.6  | :3         | 7.3   |
| HIGH INCOME FAMILIES   | :71        | 100.0 | :42        | 100.0 | :209       | 100.0 | :15        | 100.0 | :4         | 100.0 | :17        | 100.0 | :42        | 100.0 | :12        | 100.0 | :3         | 100.0 | :13        | 100.0 |
| 1. Dirt                | :56        | 78.9  | :31        | 73.8  | :50        | 23.9  | :4         | 26.6  | :3         | 75.0  | :1         | 5.9   | :9         | 21.4  | :3         | 25.0  | —          | —     | :8         | 61.5  |
| 2. Wood                | :1         | 1.4   | :7         | 16.7  | :67        | 32.1  | :9         | 60.0  | :1         | 25.0  | :15        | 88.2  | :28        | 66.7  | :3         | 25.0  | :1         | 33.3  | :4         | 30.8  |
| 3. Brick or cement     | :12        | 16.9  | :4         | 9.5   | :72        | 34.4  | :1         | 6.7   | —          | —     | —          | —     | :1         | 2.4   | :1         | 8.3   | —          | —     | :1         | 7.7   |
| 4. Other               | :2         | 2.8   | —          | —     | :20        | 9.6   | :1         | 6.7   | —          | —     | :1         | 5.9   | :4         | 9.5   | :5         | 41.7  | :2         | 66.7  | —          | —     |
| MIDDLE INCOME FAMILIES | :154       | 100.0 | :76        | 100.0 | :130       | 100.0 | :43        | 100.0 | :15        | 100.0 | :19        | 100.0 | :33        | 100.0 | :32        | 100.0 | :14        | 100.0 | :24        | 100.0 |
| 1. Dirt                | :148       | 96.2  | :63        | 82.9  | :88        | 67.7  | :24        | 55.8  | :8         | 53.3  | :8         | 42.1  | :18        | 54.5  | :19        | 59.4  | :2         | 14.3  | :20        | 83.3  |
| 2. Wood                | —          | —     | :11        | 14.5  | :19        | 14.6  | :14        | 32.6  | :1         | 6.7   | :11        | 57.9  | :10        | 30.3  | :7         | 21.9  | :2         | 14.3  | :1         | 4.2   |
| 3. Brick or cement     | :3         | 1.9   | :2         | 2.6   | :11        | 8.5   | :1         | 2.3   | :6         | 40.0  | —          | —     | —          | —     | :1         | 3.1   | —          | —     | —          | —     |
| 4. Other               | :3         | 1.9   | —          | —     | :12        | 9.2   | :4         | 9.3   | —          | —     | —          | —     | :5         | 15.2  | :5         | 15.6  | :10        | 71.4  | :3         | 12.5  |
| LOW INCOME FAMILIES    | :75        | 100.0 | :43        | 100.0 | :13        | 100.0 | :9         | 100.0 | —          | —     | :2         | 100.0 | :6         | 100.0 | :7         | 100.0 | :7         | 100.0 | :4         | 100.0 |
| 1. Dirt                | :70        | 93.3  | :43        | 100.0 | :8         | 61.5  | :6         | 66.7  | —          | —     | :2         | 100.0 | :3         | 50.0  | :6         | 85.7  | :2         | 28.6  | :4         | 100.0 |
| 2. Wood                | —          | —     | —          | —     | :1         | 7.7   | :2         | 22.2  | —          | —     | —          | —     | :2         | 33.3  | —          | —     | :1         | 14.3  | —          | —     |
| 3. Brick or cement     | :3         | 4.0   | —          | —     | —          | —     | —          | —     | —          | —     | —          | —     | —          | —     | —          | —     | —          | —     | —          | —     |
| 4. Other               | :2         | 2.7   | —          | —     | :4         | 30.8  | :1         | 11.1  | —          | —     | —          | —     | :1         | 16.7  | :1         | 14.3  | :4         | 57.1  | —          | —     |

TABLE 59

CEILING MATERIAL USED IN HOUSE STRUCTURES, BY  
INCOME CLASS AND BY LOCALITY

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Grass (paja)        | 1       | .3    | 19    | 11.8  | 2           | .6    |
| 2. Cana brava          | 122     | 40.6  | 54    | 33.5  | 18          | 5.1   |
| 3. Wood, Celotex, etc. | 1       | .3    | 2     | 1.2   | 78          | 22.2  |
| 4. Plaster             | 31      | 10.3  | 66    | 41.0  | 6           | 1.7   |
| 5. Other               | 17      | 5.7   | 8     | 5.0   | 18          | 5.2   |
| Unceiled               | 128     | 42.8  | 12    | 7.5   | 230         | 65.2  |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Grass               | 1       | 1.4   | 2     | 4.7   | 1           | .5    |
| 2. Cana brava          | 39      | 54.9  | 17    | 40.5  | 13          | 6.2   |
| 3. Wood, Celotex, etc. | --      | --    | 2     | 4.7   | 66          | 31.6  |
| 4. Plaster             | 9       | 12.7  | 18    | 42.9  | 4           | 1.9   |
| 5. Other               | 6       | 8.5   | 1     | 2.4   | 12          | 5.7   |
| Unceiled               | 16      | 22.5  | 2     | 4.8   | 113         | 54.1  |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Grass               | --      | --    | 6     | 7.9   | 1           | .8    |
| 2. Cana brava          | 59      | 38.3  | 27    | 35.5  | 4           | 3.1   |
| 3. Wood, Celotex, etc. | 1       | .7    | --    | --    | 12          | 9.2   |
| 4. Plaster             | 19      | 12.3  | 39    | 51.3  | 2           | 1.5   |
| 5. Other               | 5       | 3.2   | 3     | 4.0   | 5           | 3.8   |
| Unceiled               | 70      | 45.5  | 1     | 1.3   | 106         | 81.6  |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Grass               | --      | --    | --    | --    | --          | --    |
| 2. Cana brava          | 24      | 32.0  | 10    | 23.3  | 1           | 7.7   |
| 3. Wood, Celotex, etc. | --      | --    | 11    | 25.6  | --          | --    |
| 4. Plaster             | 3       | 4.0   | 9     | 20.9  | --          | --    |
| 5. Other               | 6       | 8.0   | 4     | 9.3   | 1           | 7.7   |
| Unceiled               | 42      | 56.0  | 9     | 20.9  | 11          | 84.6  |

TABLE 59 (Continued)

| Afil-<br>ador | Hda.<br>Delicias | Las<br>Palmas | Naran-<br>jillo | Shap-<br>ajilla | Tres<br>Esquinas | Tulum-<br>ayo |
|---------------|------------------|---------------|-----------------|-----------------|------------------|---------------|
| No. Pct.      | No. Pct.         | No. Pct.      | No. Pct.        | No. Pct.        | No. Pct.         | No. Pct.      |
| 67 100.0:19   | 100.0:38         | 100.0:81      | 100.0:51        | 100.0:24        | 100.0:41         | 100.0         |
| -- --         | -- --            | -- --         | -- 2            | 3.9:--          | -- --            | --            |
| 2 3.0: 7      | 36.8:11          | 29.0: 6       | 7.4: 2          | 3.9: 1          | 4.2: 2           | 4.9           |
| 1 1.5: 1      | 5.3:--           | -- --         | -- --           | -- --           | -- --            | --            |
| 2 3.0:--      | -- : 1           | 2.6:13        | 16.1: 3         | 5.9: 6          | 25.0: 5          | 12.2          |
| 62 92.5:11    | 57.9:26          | 68.4:61       | 75.3:44         | 86.3:17         | 70.8:32          | 78.0          |
| 15 100.0: 4   | 100.0:17         | 100.0:42      | 100.0:12        | 100.0: 3        | 100.0:13         | 100.0         |
| -- --         | -- --            | -- --         | -- 1            | 2.4:--          | -- --            | 7.7           |
| 1 6.6:--      | -- : 7           | 41.2: 5       | 11.9: 1         | 8.3:--          | -- --            | --            |
| 1 6.7: 1      | 25.0:--          | -- --         | -- --           | -- --           | -- --            | --            |
| 1 6.7:--      | -- : 1           | 5.9: 4        | 9.5: 1          | 8.3:--          | -- : 2           | 15.4          |
| 12 80.0: 3    | 75.0: 9          | 52.9:32       | 76.2:10         | 83.3: 3         | 100.0:10         | 76.9          |
| 43 100.0:15   | 100.0:19         | 100.0:33      | 100.0:32        | 100.0:14        | 100.0:24         | 100.0         |
| -- --         | -- --            | -- --         | -- 2            | 6.3:--          | -- --            | --            |
| 1 2.3: 7      | 46.7: 4          | 21.1: 1       | 3.0: 1          | 3.1: 1          | 7.1: 1           | 4.2           |
| -- --         | -- --            | -- --         | -- --           | -- --           | -- --            | --            |
| 1 2.3:--      | -- --            | -- : 8        | 24.3: 1         | 3.1: 4          | 28.6: 3          | 12.5          |
| 41 95.4: 8    | 53.3:15          | 78.9:24       | 72.7:28         | 87.5: 9         | 64.3:19          | 79.1          |
| 9 100.0: --   | -- : 2           | 100.0: 6      | 100.0: 7        | 100.0: 7        | 100.0: 4         | 100.0         |
| -- --         | -- --            | -- --         | -- --           | -- --           | -- --            | --            |
| -- --         | -- --            | -- --         | -- --           | -- --           | -- : 1           | 25.0          |
| -- --         | -- --            | -- --         | -- --           | -- --           | -- --            | --            |
| -- --         | -- --            | -- : 1        | 16.7: 1         | 14.3: 2         | 28.6:--          | --            |
| 9 100.0:--    | -- : 2           | 100.0: 5      | 83.3: 6         | 85.7: 5         | 71.4: 3          | 75.0          |



A comparison of localities in respect to windows in the house is given in Table 60. Relatively few homes have windows at all. The proportion of dwellings without windows varies from 42.0 percent in Naranjillo to 79.7 percent in Juanjui. Wood is the most popular material for window frame construction, without glass. A larger percentage of the dwellings of high-income families in all localities have windows than do dwellings of low-income families.

Screens are a rarity excepting in Naranjillo, Las Palmas, and Tingo Maria. In Naranjillo the number of houses with screens accounted for only 14.8 percent of the dwellings and only 4.8 percent in Tingo Maria. Furthermore, screens are more consistently found among high-income families than among low-income families.

Most houses, from 12.5 percent in Tres Esquinas to 100.0 percent in Panao, have wooden doors. (See Table 61.) In only one locality, Tres Esquinas, are more than a fifth of the houses without doors at all. However, wooden doors are found more prevalently among high-income families.

Closely connected with the house structure are such housing items as (1) toilet facilities, (2) water, (3) lights, and (4) fuel. They too constitute important bases of social differentiation.

Table 62 provides the data on toilet facilities. The percentage of families without toilets varies from about two-thirds (68.5 percent) in Tingo Maria to almost all (95.8 percent) in Tres Esquinas. Tingo Maria clearly stands out in respect to the pattern of toilet facilities. Almost a fourth (24.1 percent) of the families have pit privies and 7.4 percent have water closets. Furthermore, almost half (47.4 percent) of high-income families in Tingo Maria had toilet facilities compared with none of the low-income

TABLE 60

## WINDOW MATERIALS USED IN HOUSE STRUCTURES, BY INCOME CLASS AND BY LOCALITY

|                        | : Juanjui  |       | : Pano     |       | : Tingo    |       | : Afil-    |       | : Hda.     |       | : Las      |       | : Naran-   |       | : Shap-    |       | : Tres     |       | : Tulum-   |       |
|------------------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                        | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       | : No. Pct. |       |
| ALL FAMILIES           | : 300      | 100.0 | : 161      | 100.0 | : 352      | 100.0 | : 67       | 100.0 | : 19       | 100.0 | : 38       | 100.0 | : 81       | 100.0 | : 51       | 100.0 | : 24       | 100.0 | : 41       | 100.0 |
| 1. Wood & tabla        | : 57       | 19.0  | : 76       | 47.2  | : 164      | 46.6  | : 15       | 22.4  | : 8        | 42.1  | : 14       | 36.9  | : 26       | 32.1  | : 11       | 21.5  | : 1        | 4.2   | : 7        | 17.1  |
| 2. Screen              | : --       | --    | : --       | --    | : 17       | 4.8   | : 2        | 3.0   | : --       | --    | : 4        | 10.5  | : 12       | 14.8  | : 1        | 2.0   | : 1        | 4.2   | : 2        | 4.9   |
| 3. Window glass        | : --       | --    | : --       | --    | : 4        | 1.1   | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    |
| 4. Other               | : 4        | 1.3   | : 15       | 9.3   | : 12       | 3.4   | : 1        | 1.5   | : 1        | 5.3   | : 1        | 2.6   | : 9        | 11.1  | : 1        | 2.0   | : 4        | 16.6  | : 5        | 12.2  |
| Without windows        | : 239      | 79.7  | : 70       | 43.5  | : 155      | 44.1  | : 49       | 73.1  | : 10       | 52.6  | : 19       | 50.0  | : 34       | 42.0  | : 38       | 74.5  | : 18       | 75.0  | : 27       | 65.8  |
| HIGH INCOME FAMILIES   | : 71       | 100.0 | : 42       | 100.0 | : 209      | 100.0 | : 15       | 100.0 | : 4        | 100.0 | : 17       | 100.0 | : 42       | 100.0 | : 12       | 100.0 | : 3        | 100.0 | : 13       | 100.0 |
| 1. Wood & tabla        | : 26       | 36.6  | : 31       | 73.8  | : 117      | 56.0  | : 5        | 33.3  | : 2        | 50.0  | : 10       | 58.8  | : 19       | 45.2  | : 5        | 41.7  | : --       | --    | : 5        | 38.5  |
| 2. Screen              | : --       | --    | : --       | --    | : 14       | 6.7   | : 1        | 6.7   | : --       | --    | : 2        | 11.8  | : 8        | 19.1  | : --       | --    | : 1        | 33.3  | : 1        | 7.7   |
| 3. Window glass        | : --       | --    | : --       | --    | : 2        | 1.0   | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    |
| 4. Other               | : 1        | 1.4   | : 4        | 9.5   | : 8        | 3.8   | : --       | --    | : --       | --    | : 1        | 5.9   | : 3        | 7.1   | : 1        | 8.3   | : --       | --    | : 2        | 15.3  |
| Without windows        | : 44       | 62.0  | : 7        | 16.7  | : 68       | 32.5  | : 9        | 60.0  | : 2        | 50.0  | : 4        | 23.5  | : 12       | 28.6  | : 6        | 50.0  | : 2        | 66.7  | : 5        | 38.5  |
| MIDDLE INCOME FAMILIES | : 154      | 100.0 | : 76       | 100.0 | : 130      | 100.0 | : 43       | 100.0 | : 15       | 100.0 | : 19       | 100.0 | : 33       | 100.0 | : 32       | 100.0 | : 14       | 100.0 | : 24       | 100.0 |
| 1. Wood & tabla        | : 23       | 14.9  | : 41       | 53.9  | : 44       | 33.9  | : 9        | 20.9  | : 6        | 40.0  | : 4        | 21.1  | : 5        | 15.2  | : 5        | 15.6  | : 1        | 7.1   | : 2        | 8.3   |
| 2. Screen              | : --       | --    | : --       | --    | : 3        | 2.3   | : 1        | 2.3   | : --       | --    | : 2        | 10.5  | : 3        | 9.1   | : 1        | 3.1   | : --       | --    | : --       | --    |
| 3. Window glass        | : --       | --    | : --       | --    | : 2        | 1.5   | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    |
| 4. Other               | : 3        | 2.0   | : 6        | 7.9   | : 3        | 2.3   | : --       | --    | : 1        | 6.7   | : --       | --    | : 5        | 15.2  | : --       | --    | : 2        | 14.3  | : 3        | 12.5  |
| Without windows        | : 128      | 83.1  | : 29       | 38.2  | : 78       | 60.0  | : 33       | 76.8  | : 8        | 53.3  | : 13       | 68.4  | : 20       | 60.5  | : 26       | 81.3  | : 11       | 78.6  | : 19       | 79.2  |
| LOW INCOME FAMILIES    | : 75       | 100.0 | : 43       | 100.0 | : 13       | 100.0 | : 9        | 100.0 | : --       | --    | : 2        | 100.0 | : 6        | 100.0 | : 7        | 100.0 | : 7        | 100.0 | : 4        | 100.0 |
| 1. Wood & tabla        | : 8        | 10.7  | : 4        | 9.3   | : 3        | 23.1  | : 1        | 11.1  | : --       | --    | : --       | --    | : 2        | 33.3  | : 1        | 14.3  | : --       | --    | : --       | --    |
| 2. Screen              | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : 1        | 16.7  | : --       | --    | : --       | --    | : 1        | 33.3  |
| 3. Window glass        | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    | : --       | --    |
| 4. Other               | : --       | --    | : 5        | 11.6  | : 1        | 7.7   | : 1        | 11.1  | : --       | --    | : --       | --    | : 1        | 16.7  | : --       | --    | : 2        | 28.6  | : --       | --    |
| Without windows        | : 67       | 89.3  | : 34       | 79.1  | : 9        | 69.2  | : 7        | 77.8  | : --       | --    | : 2        | 100.0 | : 2        | 33.3  | : 6        | 85.7  | : 5        | 71.4  | : 3        | 66.7  |

TABLE 61

DOOR MATERIALS USED IN HOUSE STRUCTURES, BY INCOME  
CLASS AND BY LOCALITY

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Wood                | 198     | 66.0  | 161   | 100.0 | 306         | 86.9  |
| 2. Tabla               | 57      | 19.0  | --    | --    | 14          | 4.0   |
| 3. Cana brava          | 12      | 4.0   | --    | --    | 1           | .3    |
| 4. Rajas de topa       | 17      | 5.6   | --    | --    | 4           | 1.1   |
| 5. Other               | 8       | 2.7   | --    | --    | 8           | 2.3   |
| Without doors          | 8       | 2.7   | --    | --    | 19          | 5.4   |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Wood                | 60      | 84.5  | 42    | 100.0 | 187         | 89.5  |
| 2. Tabla               | 4       | 5.7   | --    | --    | 4           | 1.9   |
| 3. Cana brava          | 1       | 1.4   | --    | --    | --          | --    |
| 4. Rajas de topa       | 2       | 2.8   | --    | --    | 3           | 1.4   |
| 5. Other               | 2       | 2.8   | --    | --    | 4           | 1.9   |
| Without doors          | 2       | 2.8   | --    | --    | 11          | 5.3   |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Wood                | 103     | 66.9  | 76    | 100.0 | 109         | 83.8  |
| 2. Tabla               | 28      | 18.2  | --    | --    | 8           | 6.1   |
| 3. Cana brava          | 6       | 3.9   | --    | --    | 1           | .8    |
| 4. Rajas de topa       | 8       | 5.2   | --    | --    | 1           | .8    |
| 5. Other               | 5       | 3.2   | --    | --    | 4           | 3.1   |
| Without doors          | 4       | 2.6   | --    | --    | 7           | 5.4   |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Wood                | 35      | 46.7  | 43    | 100.0 | 10          | 76.9  |
| 2. Tabla               | 25      | 33.3  | --    | --    | 2           | 15.4  |
| 3. Cana brava          | 5       | 6.7   | --    | --    | --          | --    |
| 4. Rajas de topa       | 7       | 9.3   | --    | --    | --          | --    |
| 5. Other               | 1       | 1.3   | --    | --    | --          | --    |
| Without doors          | 2       | 2.7   | --    | --    | 1           | 7.7   |

TABLE 61 (Continued)

| Afil-<br>ador | Hda.<br>:Delicias: | Las<br>:Palmas: | Naran-<br>:jillo: | Shap-<br>:ajilla: | Tres<br>:Esquinas: | Tulum-<br>:ayo |
|---------------|--------------------|-----------------|-------------------|-------------------|--------------------|----------------|
| No. Pct.:     | No. Pct.:          | No. Pct.:       | No. Pct.:         | No. Pct.:         | No. Pct.:          | No. Pct.:      |
| 67 100.0:     | 19 100.0:          | 38 100.0:       | 81 100.0:         | 51 100.0:         | 24 100.0:          | 41 100.0:      |
| 46 68.6:      | 12 63.1:           | 27 71.1:        | 51 62.9:          | 38 74.5:          | 3 12.5:            | 21 51.2:       |
| 3 4.5:        | 5 26.3:            | 3 7.9:          | 2 2.5:            | 2 3.9:            | 1 4.2:             | 6 14.6:        |
| 5 7.5:        | -- : 1             | 2.6:            | 3 3.7:            | 3 5.9:            | -- : 1             | 2.5:           |
| -- --:        | -- --:             | -- --:          | -- --:            | -- --:            | -- --:             | -- --:         |
| 2 3.0:        | 1 5.3:             | 1 2.6:          | 14 17.3:          | 2 3.9:            | 5 20.8:            | 6 14.6:        |
| 11 16.4:      | 1 5.3:             | 6 15.8:         | 11 13.6:          | 6 11.8:           | 15 62.5:           | 7 17.1:        |
| 15 100.0:     | 4 100.0:           | 17 100.0:       | 42 100.0:         | 12 100.0:         | 3 100.0:           | 13 100.0:      |
| 13 86.6:      | 2 50.0:            | 14 82.3:        | 34 80.9:          | 9 75.1:           | 1 33.3:            | 8 61.5:        |
| -- --:        | 2 50.0:            | 1 5.9:          | 2 4.8:            | 1 8.3:            | 1 33.3:            | 2 15.4:        |
| -- --:        | -- --:             | -- : 1          | 2.4:              | -- --:            | -- --:             | -- --:         |
| -- --:        | -- --:             | -- --:          | -- --:            | -- --:            | -- --:             | -- --:         |
| 1 6.7:        | -- : 1             | 5.9:            | 3 7.1:            | 1 8.3:            | 1 33.4:            | 1 7.7:         |
| 1 6.7:        | -- : 1             | 5.9:            | 2 4.8:            | 1 8.3:            | -- : 2             | 15.4:          |
| 43 100.0:     | 15 100.0:          | 19 100.0:       | 33 100.0:         | 32 100.0:         | 14 100.0:          | 24 100.0:      |
| 29 67.4:      | 10 66.6:           | 12 63.2:        | 14 42.4:          | 25 78.2:          | 2 14.3:            | 12 50.0:       |
| 2 4.7:        | 3 20.0:            | 2 10.5:         | -- : 1            | 3.1:              | -- : 1             | 4.2:           |
| 4 9.3:        | -- : 1             | 5.3:            | 2 6.1:            | 1 3.1:            | -- : 1             | 4.2:           |
| -- --:        | -- --:             | -- --:          | -- --:            | -- --:            | -- --:             | -- --:         |
| -- --:        | 1 6.7:             | -- : 9          | 27.3:             | 1 3.1:            | 2 14.3:            | 5 20.8:        |
| 8 18.6:       | 1 6.7:             | 4 21.0:         | 8 24.2:           | 4 12.5:           | 10 71.4:           | 5 20.8:        |
| 9 100.0:      | -- : 2             | 100.0:          | 6 100.0:          | 7 100.0:          | 7 100.0:           | 4 100.0:       |
| 4 44.5:       | -- : 1             | 50.0:           | 3 50.0:           | 4 57.1:           | -- : 1             | 25.0:          |
| 1 11.1:       | -- --:             | -- --:          | -- --:            | -- --:            | -- : 3             | 75.0:          |
| 1 11.1:       | -- --:             | -- --:          | -- : 2            | 28.6:             | -- --:             | -- --:         |
| -- --:        | -- --:             | -- --:          | -- --:            | -- --:            | -- --:             | -- --:         |
| 1 11.1:       | -- --:             | -- : 2          | 33.3:             | -- : 2            | 28.6:              | -- --:         |
| 2 22.2:       | -- : 1             | 50.0:           | 1 16.7:           | 1 14.3:           | 5 71.4:            | -- --:         |
| :             | :                  | :               | :                 | :                 | :                  | :              |
| :             | :                  | :               | :                 | :                 | :                  | :              |

TABLE 62

## TYPE OF TOILET, BY INCOME CLASS AND BY LOCALITY

|                          | Juanjui |       | Panao |       | Tingo Maria |       |
|--------------------------|---------|-------|-------|-------|-------------|-------|
|                          | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES             | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Pit privy             | 31      | 10.3  | 9     | 5.6   | 85          | 24.1  |
| 2. Water closet only     | 3       | 1.0   | —     | —     | —           | —     |
| 3. Bath and water closet | 1       | .3    | 2     | 1.2   | 26          | 7.4   |
| No toilet facility       | 265     | 88.4  | 150   | 93.2  | 241         | 68.5  |
| HIGH INCOME FAMILIES     | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Pit privy             | 19      | 26.8  | 5     | 11.9  | 75          | 35.9  |
| 2. Water closet only     | 2       | 2.8   | —     | —     | —           | —     |
| 3. Bath and water closet | 1       | 1.4   | 2     | 4.8   | 24          | 11.5  |
| No toilet facility       | 49      | 69.0  | 35    | 83.3  | 110         | 52.6  |
| MIDDLE INCOME FAMILIES   | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Pit privy             | 9       | 5.8   | 4     | 5.3   | 10          | 7.7   |
| 2. Water closet only     | 1       | .7    | —     | —     | —           | —     |
| 3. Bath and water closet | —       | —     | —     | —     | 2           | 1.5   |
| No toilet facility       | 144     | 93.5  | 72    | 94.7  | 118         | 90.8  |
| LOW INCOME FAMILIES      | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Pit privy             | 3       | 4.0   | —     | —     | —           | —     |
| 2. Water closet only     | —       | —     | —     | —     | —           | —     |
| 3. Bath and water closet | —       | —     | —     | —     | —           | —     |
| No toilet facility       | 72      | 96.0  | 43    | 100.0 | 13          | 100.0 |

TABLE 62 (Continued)

| Afil-<br>ador | Hda.<br>:Delicias: | Las<br>:Palmas: | Naran-<br>:jillo: | Shap-<br>:ajilla: | Tres<br>:Esquinas: | Tulum-<br>:ayo |
|---------------|--------------------|-----------------|-------------------|-------------------|--------------------|----------------|
| No. Pct.:     | No. Pct.:          | No. Pct.:       | No. Pct.:         | No. Pct.:         | No. Pct.:          | No. Pct.:      |
| 67            | 100.0:             | 19 100.0:       | 38 100.0:         | 81 100.0:         | 51 100.0:          | 24 100.0:      |
| 10            | 14.9: 1            | 5.3: 4          | 10.5: 8           | 9.9: 4            | 7.8:--             | -- : 1         |
| --            | -- :--             | -- :--          | -- :--            | -- :--            | -- :--             | -- : 1         |
| --            | -- : 1             | 5.3: 1          | 2.6: 2            | 2.5:--            | -- : 1             | 4.2:--         |
| 57            | 85.1:17            | 89.4:33         | 86.9:71           | 87.6:46           | 90.2:23            | 95.8:39        |
| 15            | 100.0: 4           | 100.0:17        | 100.0:42          | 100.0:12          | 100.0: 3           | 100.0:13       |
| 3             | 20.0:--            | -- : 3          | 17.6: 8           | 19.0: 2           | 16.7:--            | -- : 1         |
| --            | -- :--             | -- :--          | -- :--            | -- :--            | -- :--             | -- : 1         |
| --            | -- : 1             | 25.0: 1         | 5.9: 2            | 4.8:--            | -- :--             | -- :--         |
| 12            | 80.0: 3            | 75.0:13         | 76.5:32           | 76.2:10           | 83.3: 3            | 100.0:11       |
| 43            | 100.0:15           | 100.0:19        | 100.0:33          | 100.0:32          | 100.0:14           | 100.0:24       |
| 6             | 14.0: 1            | 6.7: 1          | 5.3:--            | -- : 2            | 6.3:--             | -- :--         |
| --            | -- :--             | -- :--          | -- :--            | -- : 1            | 3.1:--             | -- :--         |
| --            | -- :--             | -- :--          | -- :--            | -- :--            | -- : 1             | 7.1:--         |
| 37            | 86.0:14            | 93.3:18         | 94.7:33           | 100.0:29          | 90.6:13            | 92.9:24        |
| 9             | 100.0:--           | -- : 2          | 100.0: 6          | 100.0: 7          | 100.0: 7           | 100.0: 4       |
| 1             | 11.1:--            | -- :--          | -- :--            | -- :--            | -- :--             | -- :--         |
| --            | -- :--             | -- :--          | -- :--            | -- :--            | -- :--             | -- :--         |
| --            | -- :--             | -- :--          | -- :--            | -- :--            | -- :--             | -- :--         |
| 8             | 88.9:--            | -- : 2          | 100.0: 6          | 100.0: 7          | 100.0: 7           | 100.0: 4       |

families. This close relationship between income and toilet facilities persists in all localities analyzed.

The source of drinking water is a limiting factor in settlement. House location is largely determined by the availability of water, principally for drinking and cooking purposes. With the exception of Pano, which has a municipal water system, all localities are dependent upon immediate sources of water such as the river, quebrada, wells, or springs. Quebrada is a ravine which generally stems off from the main course of the river and contains a small live stream.

The Huallaga River is the main source of the family's water supply in Juanjui and Las Palmas, the quebrada in Hda. Delicias and Tres Esquinas. Quebradas are important sources of water supply in all localities except Juanjui. This is to be expected since Juanjui is located in broad lowland areas bordering the Huallaga River.

Table 63 shows that almost half (48.5 percent) of the families in Pano get water from the municipal system, either from a common fountain (pila) or piped water (caneria del pueblo). However, piped water in the dwelling is somewhat associated with income with 19.1 percent of the high-income class having piped water in comparison with 11.2 percent of the low-income class. Almost a third of low-income families took their water from the open canals carrying water to the town. The latter is probably the least desirable of all from a health and sanitation standpoint.

A third of all families in Tingo Maria and almost half (46.3 percent) in Tulumayo have wells or springs. Also a fourth or more families have wells and springs in Hda. Delicias, Naranjillo,

TABLE 63

SOURCES OF DRINKING WATER FOR FAMILIES, BY INCOME  
CLASS AND BY LOCALITY

|                                | Juanjui |       | Panao |       | Tingo<br>Varia |       |
|--------------------------------|---------|-------|-------|-------|----------------|-------|
|                                | No.     | Pct.  | No.   | Pct.  | No.            | Pct.  |
| ALL FAMILIES                   | 300     | 100.0 | 161   | 100.0 | 352            | 100.0 |
| 1. River                       | 292     | 97.4  | 10    | 6.2   | 151            | 42.9  |
| 2. Quebrada                    | 3       | 1.0   | 15    | 9.3   | 70             | 19.9  |
| 3. Canal                       | --      | --    | 16    | 9.9   | 2              | .6    |
| 4. Caneria del pueblo          | --      | --    | 22    | 13.7  | --             | --    |
| 5. Well or spring              | 1       | .3    | 12    | 7.5   | 118            | 33.5  |
| 6. Water basin ( <u>pila</u> ) | --      | --    | 56    | 34.8  | --             | --    |
| 7. Other                       | 4       | 1.3   | 30    | 18.6  | 11             | 3.1   |
| HIGH INCOME FAMILIES           | 71      | 100.0 | 42    | 100.0 | 209            | 100.0 |
| 1. River                       | 69      | 97.2  | 5     | 11.9  | 81             | 38.7  |
| 2. Quebrada                    | --      | --    | 7     | 16.7  | 34             | 16.3  |
| 3. Canal                       | --      | --    | 1     | 2.4   | 1              | .5    |
| 4. Caneria del pueblo          | --      | --    | 8     | 19.1  | --             | --    |
| 5. Well or spring              | --      | --    | 3     | 7.1   | 83             | 39.7  |
| 6. Water basin ( <u>pila</u> ) | --      | --    | 9     | 21.4  | --             | --    |
| 7. Other                       | 2       | 2.8   | 9     | 21.4  | 10             | 4.8   |
| MIDDLE INCOME FAMILIES         | 154     | 100.0 | 75    | 100.0 | 130            | 100.0 |
| 1. River                       | 151     | 98.1  | 5     | 6.6   | 60             | 46.1  |
| 2. Quebrada                    | --      | --    | 7     | 9.2   | 33             | 25.4  |
| 3. Canal                       | --      | --    | 1     | 1.3   | 1              | .8    |
| 4. Caneria del pueblo          | --      | --    | 9     | 11.8  | --             | --    |
| 5. Well or spring              | 1       | .6    | 5     | 6.6   | 35             | 26.9  |
| 6. Water basin ( <u>pila</u> ) | --      | --    | 30    | 39.5  | --             | --    |
| 7. Other                       | 2       | 1.3   | 19    | 25.0  | 1              | .8    |
| LOW INCOME FAMILIES            | 75      | 100.0 | 43    | 100.0 | 13             | 100.0 |
| 1. River                       | 72      | 96.0  | --    | --    | 10             | 76.9  |
| 2. Quebrada                    | 3       | 4.0   | 1     | 2.3   | 3              | 23.1  |
| 3. Canal                       | --      | --    | 14    | 32.6  | --             | --    |
| 4. Caneria del pueblo          | --      | --    | 5     | 11.6  | --             | --    |
| 5. Well or spring              | --      | --    | 4     | 9.3   | --             | --    |
| 6. Water basis ( <u>pila</u> ) | --      | --    | 17    | 39.5  | --             | --    |
| 7. Other                       | --      | --    | 2     | 4.7   | --             | --    |



TABLE 63 (Continued)

| Afil-    | : Hda.     | : Las     | : Naran-  | : Shap-   | : Tres     | : Tulum-  |
|----------|------------|-----------|-----------|-----------|------------|-----------|
| ador     | :Delicias: | Palmas    | : jillo   | : ajilla  | :Esquinas: | ayo       |
| No. Pct. | No. Pct.   | No. Pct.  | No. Pct.  | No. Pct.  | No. Pct.   | No. Pct.  |
| 67       | 100.0:     | 19 100.0: | 38 100.0: | 81 100.0: | 51 100.0:  | 24 100.0: |
| 41       | 100.0:     |           |           |           |            |           |
| 33       | 49.2:--    | -- :25    | 65.8:35   | 43.2:18   | 35.3: 5    | 20.8: 9   |
| 22.0     |            |           |           |           |            |           |
| 32       | 47.8:14    | 73.7: 8   | 21.0:24   | 29.6:17   | 33.3:16    | 66.7:13   |
| 31.7     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| 2        | 3.0: 5     | 26.3: 3   | 7.9:20    | 24.7:15   | 29.4: 3    | 12.5:19   |
| 46.3     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :2     | 5.3: 2    | 2.5: 1    | 2.0:--     | -- :--    |
| --       | -- :--     |           |           |           |            |           |
| 15       | 100.0: 4   | 100.0:17  | 100.0:42  | 100.0:12  | 100.0: 3   | 100.0:13  |
| 100.0    |            |           |           |           |            |           |
| 3        | 20.0:--    | -- : 9    | 52.9:14   | 33.3: 3   | 25.0: 1    | 33.3: 3   |
| 23.1     |            |           |           |           |            |           |
| 11       | 73.3: 2    | 50.0: 5   | 29.4:12   | 28.6: 3   | 25.0: 1    | 33.3: 4   |
| 30.8     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| 1        | 6.7: 2     | 50.0: 1   | 5.9:15    | 35.7: 5   | 41.7: 1    | 33.4: 6   |
| 46.1     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :2     | 11.8: 1   | 2.4: 1    | 8.3:--     | -- :--    |
| --       | -- :--     |           |           |           |            |           |
| 43       | 100.0:15   | 100.0:19  | 100.0:33  | 100.0:32  | 100.0:14   | 100.0:24  |
| 100.0    |            |           |           |           |            |           |
| 26       | 60.5:--    | -- :14    | 73.7:18   | 54.6:12   | 37.5: 4    | 28.6: 6   |
| 25.0     |            |           |           |           |            |           |
| 17       | 39.5:12    | 80.0: 3   | 15.8:11   | 33.3:12   | 37.5: 9    | 64.3: 7   |
| 29.2     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- : 3     | 20.0: 2   | 10.5: 3   | 9.1: 8    | 25.0: 1    | 7.1:11    |
| 45.8     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :1     | 3.0:--    | -- :--     | -- :--    |
| --       | -- :--     |           |           |           |            |           |
| 9        | 100.0:--   | -- : 2    | 100.0: 6  | 100.0: 7  | 100.0: 7   | 100.0: 4  |
| 100.0    |            |           |           |           |            |           |
| 4        | 44.4:--    | -- : 2    | 100.0: 3  | 50.0: 3   | 42.8:--    | -- :--    |
| --       |            |           |           |           |            |           |
| 4        | 44.4:--    | -- :--    | -- : 1    | 16.7: 2   | 28.6: 6    | 85.7: 2   |
| 50.0     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| 1        | 11.2:--    | -- :--    | -- : 2    | 33.3: 2   | 28.6: 1    | 14.3: 2   |
| 50.0     |            |           |           |           |            |           |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
| --       | -- :--     | -- :--    | -- :--    | -- :--    | -- :--     | -- :--    |
|          | :          | :         | :         | :         | :          | :         |
|          | :          | :         | :         | :         | :          | :         |

and Shapajilla. Otherwise, wells or springs are minor sources of water. There is no consistent relation between use of a well or spring and income status.

Table 64 shows the lighting used in the house. Kerosene lamps are the predominate type of lighting in all localities except Panao. Panao has a municipal light plant and Tingo Maria has a small plant supplying the Experiment Station, Hotel Turista, Hospital, municipal buildings, and some private homes. In both pueblos, electrification is confined largely to middle- and high-income classes. For example, 90.5 percent of high-income families in Panao had electricity in the home compared with only 11.6 percent of low-income families. In Tingo Maria, the respective percentages are 44.5 percent versus zero.

Candles are not extensively used, probably because of the relatively great expense. Kerosene is apparently the most popular as well as most economical type of lighting in lieu of an electrical distribution system.

There is an abundance of timber for firewood and, as a result, a majority of families in every locality use it (lena) for fuel in the home. (See Table 65.) The percentage using firewood varies from 52.9 percent in Shapajilla to 98.8 percent in Naranjillo. However, a significant number of high-income families in some localities--notably Shapajilla, Tres Esquinas, Tulumayo, Las Palmas, Afilador, and Tingo Maria--use kerosene for fuel. Charcoal, on the other hand, is a minor source of fuel.

TABLE 64

## TYPE OF LIGHTING IN HOUSES, BY INCOME CLASS AND BY LOCALITY

|   | Juanjui  | Panao | Tingo<br>Maria | Afil-<br>ador | Hda.<br>Delicias | Las<br>Palmas | Naran-<br>jillo | Shap-<br>ajilla | Tres<br>Esquinas | Tulum-<br>ayo |
|---|--|-------|----------------|---------------|------------------|---------------|-----------------|-----------------|------------------|---------------|
| ALL FAMILIES                              | 300 100.0:161 100.0:352 100.0:67 100.0:19 100.0:38 100.0:81 100.0:51 100.0:24 100.0:41 100.0 |       |                |               |                  |               |                 |                 |                  |               |
| 1. Candles                                | 2 .6: 3 1.9: 34 9.7:19 28.4: 1 5.3: 6 15.8: 1 1.2:12 23.5:— — : 1 2 .4                       |       |                |               |                  |               |                 |                 |                  |               |
| 2. Lamps (kero-<br>sene or gas-<br>oline) | 293 97.7: 62 38.5:214 60.8:48 71.6:18 94.7:32 84.2:80 98.8:39 76.5:24 100.0:40 97.6          |       |                |               |                  |               |                 |                 |                  |               |
| 3. Electricity                            | — — : 93 57.7: 99 28.1:— — :— — :— — :— — :— — :— — :— —                                     |       |                |               |                  |               |                 |                 |                  |               |
| 4. Other                                  | 5 1.7: 3 1.9: 5 1.4:— — :— — :— — :— — :— — :— — :— —  |       |                |               |                  |               |                 |                 |                  |               |
| HIGH INCOME<br>FAMILIES                   | 71 100.0: 42 100.0:209 100.0:15 100.0: 4 100.0:17 100.0:42 100.0:12 100.0: 3 100.0:13 100.0  |       |                |               |                  |               |                 |                 |                  |               |
| 1. Candles                                | 2 2.8: — — : 9 4.3: 3 20.0: 1 25.0: 2 11.8:— — : 2 16.7:— — :— —                             |       |                |               |                  |               |                 |                 |                  |               |
| 2. Lamps                                  | 66 93.0: 4 9.5:103 49.3:12 80.0: 3 75.0:15 88.2:42 100.0:10 83.3: 3 100.0:13 100.0           |       |                |               |                  |               |                 |                 |                  |               |
| 3. Electricity                            | — — : 38 90.5: 93 44.5:— — :— — :— — :— — :— — :— — :— —                                     |       |                |               |                  |               |                 |                 |                  |               |
| 4. Other                                  | 3 4.2: — — : 4 1.9:— — :— — :— — :— — :— — :— — :— —   |       |                |               |                  |               |                 |                 |                  |               |
| MIDDLE INCOME<br>FAMILIES                 | 154 100.0: 76 100.0:130 100.0:43 100.0:15 100.0:19 100.0:33 100.0:32 100.0:14 100.0:24 100.0 |       |                |               |                  |               |                 |                 |                  |               |
| 1. Candles                                | — — : 1 1.3: 23 17.7:14 32.6:— — : 2 10.5: 1 3.0: 7 21.9:— — : 1 4.2                         |       |                |               |                  |               |                 |                 |                  |               |
| 2. Lamps                                  | 153 99.4: 22 28.9:100 76.9:29 67.4:15 100.0:17 89.5:32 97.0:25 78.1:14 100.0:23 95.8         |       |                |               |                  |               |                 |                 |                  |               |
| 3. Electricity                            | — — : 50 65.8: 6 4.6:— — :— — :— — :— — :— — :— — :— —                                       |       |                |               |                  |               |                 |                 |                  |               |
| 4. Other                                  | 1 .6: 3 4.0: 1 .8:— — :— — :— — :— — :— — :— — :— —  |       |                |               |                  |               |                 |                 |                  |               |
| LOW INCOME<br>FAMILIES                    | 75 100.0: 43 100.0: 13 100.0: 9 100.0:— — : 2 100.0: 6 100.0: 7 100.0: 7 100.0: 4 100.0      |       |                |               |                  |               |                 |                 |                  |               |
| 1. Candles                                | — — : 2 4.7: 2 15.4: 2 22.2:— — :— — :— — :— — : 3 42.9:— — :— —                             |       |                |               |                  |               |                 |                 |                  |               |
| 2. Lamps                                  | 74 98.7: 36 83.7: 11 84.6: 7 77.8:— — : 2 100.0: 6 100.0: 4 57.1: 7 100.0: 4 100.0           |       |                |               |                  |               |                 |                 |                  |               |
| 3. Electricity                            | — — : 5 11.6: — — :— — :— — :— — :— — :— — :— — :— —   |       |                |               |                  |               |                 |                 |                  |               |
| 4. Other                                  | 1 1.3: — — : — — :— — :— — :— — :— — :— — :— — :— —  |       |                |               |                  |               |                 |                 |                  |               |

TABLE 65

## FUELS USED BY FAMILIES, BY INCOME CLASS AND BY LOCALITY

|                        | : Juanjui : |        | : Panao : |        | : Tingo : Maria : |        | : Afil- : ador : |        | : Hda. : Delicias : |        | : Las : Palmas : |        | : Naran- : jillo : |        | : Shap- : ajilla : |        | : Tres : Esquinas : |        | : Tulum- : ayo : |        |
|------------------------|-------------|--------|-----------|--------|-------------------|--------|------------------|--------|---------------------|--------|------------------|--------|--------------------|--------|--------------------|--------|---------------------|--------|------------------|--------|
|                        | No.         | Pct.   | No.       | Pct.   | No.               | Pct.   | No.              | Pct.   | No.                 | Pct.   | No.              | Pct.   | No.                | Pct.   | No.                | Pct.   | No.                 | Pct.   | No.              | Pct.   |
| ALL FAMILIES           | :300        | 100.0: | :161      | 100.0: | :352              | 100.0: | :67              | 100.0: | :19                 | 100.0: | :38              | 100.0: | :81                | 100.0: | :51                | 100.0: | :24                 | 100.0: | :41              | 100.0: |
| 1. Firewood (Lena)     | :286        | 95.3:  | :156      | 96.9:  | :274              | 77.9:  | :50              | 74.6:  | :18                 | 94.7:  | :35              | 92.1:  | :80                | 98.8:  | :27                | 52.9:  | :23                 | 95.8:  | :32              | 78.0   |
| 2. Charcoal            | : 1         | .3:    | : 2       | 1.2:   | : 17              | 4.8:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| 3. Kerosene or gas     | : 2         | .7:    | : 2       | 1.2:   | : 31              | 8.8:   | :17              | 25.4:  | : 1                 | 5.3:   | : 3              | 7 .9:  | : 1                | 1.2:   | :24                | 47.1:  | : 1                 | 4.2:   | : 9              | 22.0   |
| 4. Other               | : 11        | 3.7:   | : 1       | .7:    | : 30              | 8.5:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| HIGH INCOME FAMILIES   | : 71        | 100.0: | : 42      | 100.0: | :209              | 100.0: | :15              | 100.0: | : 4                 | 100.0: | :17              | 100.0: | :42                | 100.0: | :12                | 100.0: | : 3                 | 100.0: | :13              | 100.0: |
| 1. Firewood            | : 66        | 93.0:  | : 41      | 97.6:  | :144              | 68.9:  | :11              | 73.3:  | : 4                 | 100.0: | :14              | 82.4:  | :41                | 97.6:  | : 8                | 66.7:  | : 2                 | 66.7:  | : 9              | 69.2   |
| 2. Charcoal            | : —         | —      | : —       | —      | : 13              | 6.2:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| 3. Kerosene            | : 1         | 1.4:   | : 1       | 2.4:   | : 30              | 14.4:  | : 4              | 26.7:  | —                   | —      | : 3              | 17.6:  | : 1                | 2.4:   | : 4                | 33.3:  | : 1                 | 33.3:  | : 4              | 30.8   |
| 4. Other               | : 4         | 5.6:   | : —       | —      | : 22              | 10.5:  | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| MIDDLE INCOME FAMILIES | :154        | 100.0: | : 76      | 100.0: | :130              | 100.0: | :43              | 100.0: | :15                 | 100.0: | :19              | 100.0: | :33                | 100.0: | :32                | 100.0: | :14                 | 100.0: | :24              | 100.0: |
| 1. Firewood            | :149        | 96.8:  | : 72      | 94.8:  | :119              | 91.5:  | :31              | 72.1:  | :14                 | 93.3:  | :19              | 100.0: | :33                | 100.0: | :16                | 50.0:  | :14                 | 100.0: | :19              | 79.2   |
| 2. Charcoal            | : 1         | .6:    | : 2       | 2.6:   | : 3               | 2.3:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| 3. Kerosene            | : —         | —      | : 1       | 1.3:   | : 1               | .8:    | :12              | 27.9:  | : 1                 | 6.7:   | —                | —      | —                  | :16    | 50.0:              | —      | —                   | : 5    | 20.8             | —      |
| 4. Other               | : 4         | 2.6:   | : 1       | 1.3:   | : 7               | 5.4:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| LOW INCOME FAMILIES    | : 75        | 100.0: | : 43      | 100.0: | : 13              | 100.0: | : 9              | 100.0: | —                   | —      | : 2              | 100.0: | : 6                | 100.0: | : 7                | 100.0: | : 7                 | 100.0: | : 4              | 100.0: |
| 1. Firewood            | : 71        | 94.7:  | : 43      | 100.0: | : 11              | 84.6:  | : 8              | 88.9:  | —                   | —      | : 2              | 100.0: | : 6                | 100.0: | : 3                | 42.9:  | : 7                 | 100.0: | : 4              | 100.0: |
| 2. Charcoal            | : —         | —      | : —       | —      | : 1               | 7.7:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |
| 3. Kerosene            | : 1         | 1.3:   | —         | —      | : —               | —      | : 1              | 11.1:  | —                   | —      | —                | —      | —                  | : 4    | 57.1:              | —      | —                   | —      | —                | —      |
| 4. Other               | : 3         | 4.0:   | —         | —      | : 1               | 7.7:   | —                | —      | —                   | —      | —                | —      | —                  | —      | —                  | —      | —                   | —      | —                | —      |

Furniture and Equipment.

In addition to housing facilities a selected number of items of household furniture and equipment were inventoried in the dwellings and results are shown in Tables 66 and 67.

Wardrobes are used to keep articles of clothing in and are a part of the cultural configuration associated with clothing. Families with few garments would have little need for a wardrobe. It is, therefore, an indication of the level of clothing. Wardrobes are reported by about a sixth of the families in Tingo Maria and Pano, and about an eighth in Naranjillo, Juanjui, and Tres Esquinas. The remaining rural localities have few or no wardrobes. This item is clearly associated with income; the percentage of families reporting wardrobes rises consistently with income.

One or more radios are found in only half the localities analyzed. About a tenth of all Tingo Maria families have a radio and a twentieth of Pano families. Juanjui reports only two radios in the entire community. All radios are owned by high-income families with the exception of one middle-class owned radio in Pano.

Clocks are possessed by a fourth or more families in only three of the ten communities--Tingo Maria, Afilador, and Naranjillo. Only two low-income families own clocks in all localities, and it is perhaps significant that both are found in Naranjillo, the family-size farming area.

Bedsteads are reported by a majority of all families only in Juanjui, Pano, Tingo Maria, and Naranjillo. They are clearly associated with income, the percentage of families with bedsteads rising with income.

TABLE 66

SELECTED HOUSEHOLD FURNITURE AND EQUIPMENT OF  
FAMILIES, BY INCOME CLASS AND BY LOCALITY

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Wardrobes           | 38      | 12.7  | 26    | 16.1  | 63          | 17.9  |
| 2. Radios              | 2       | .7    | 8     | 5.0   | 37          | 10.5  |
| 3. Clocks              | 26      | 8.7   | 39    | 24.2  | 129         | 36.6  |
| 4. Bedsteads           | 155     | 51.6  | 130   | 80.7  | 262         | 75.4  |
| 5. Mosquito nets       | 136     | 45.3  | 4     | 2.5   | 140         | 39.8  |
| 6. Sewing machines     | 84      | 28.0  | 53    | 32.9  | 60          | 17.0  |
| 7. Irons               | 166     | 55.3  | 96    | 59.6  | 235         | 66.8  |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Wardrobes           | 23      | 32.4  | 11    | 26.2  | 59          | 28.2  |
| 2. Radios              | 2       | 2.8   | 7     | 16.7  | 37          | 17.7  |
| 3. Clocks              | 19      | 26.8  | 24    | 57.1  | 116         | 55.5  |
| 4. Bedsteads           | 58      | 81.7  | 42    | 100.0 | 182         | 87.1  |
| 5. Mosquito nets       | 48      | 67.6  | 3     | 7.1   | 98          | 46.9  |
| 6. Sewing machines     | 40      | 56.3  | 21    | 50.0  | 51          | 24.4  |
| 7. Irons               | 57      | 80.3  | 38    | 90.5  | 160         | 76.6  |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Wardrobes           | 14      | 9.1   | 15    | 19.7  | 3           | 2.3   |
| 2. Radios              | —       | —     | 1     | 1.3   | —           | —     |
| 3. Clocks              | 7       | 4.5   | 15    | 19.7  | 12          | 9.2   |
| 4. Bedsteads           | 75      | 48.7  | 67    | 88.2  | 75          | 57.7  |
| 5. Mosquito nets       | 69      | 44.8  | 1     | 1.3   | 38          | 29.2  |
| 6. Sewing machines     | 36      | 23.4  | 28    | 36.8  | 8           | 6.2   |
| 7. Irons               | 87      | 56.5  | 52    | 68.4  | 70          | 53.8  |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Wardrobes           | 1       | 1.3   | —     | —     | 1           | 7.7   |
| 2. Radios              | —       | —     | —     | —     | —           | —     |
| 3. Clocks              | —       | —     | —     | —     | —           | —     |
| 4. Bedsteads           | 22      | 29.3  | 21    | 48.8  | 5           | 38.5  |
| 5. Mosquito nets       | 19      | 25.3  | —     | —     | 5           | 38.5  |
| 6. Sewing machines     | 8       | 10.7  | 4     | 9.3   | —           | —     |
| 7. Irons               | 22      | 29.3  | 6     | 14.0  | 4           | 30.8  |

TABLE 66 (Continued)

| Afil-<br>ador |       | Hda.<br>Delicias |       | Las<br>Palmas |       | Naran-<br>jillo |       | Shap-<br>ajilla |       | Tres<br>Esquinas |       | Tulum-<br>ayo |       |
|---------------|-------|------------------|-------|---------------|-------|-----------------|-------|-----------------|-------|------------------|-------|---------------|-------|
| No.           | Pct.  | No.              | Pct.  | No.           | Pct.  | No.             | Pct.  | No.             | Pct.  | No.              | Pct.  | No.           | Pct.  |
| 67            | 100.0 | 19               | 100.0 | 38            | 100.0 | 81              | 100.0 | 51              | 100.0 | 24               | 100.0 | 41            | 100.0 |
| 2             | 1.5   | 1                | 5.2   | --            | --    | 11              | 13.6  | 1               | 2.0   | 3                | 12.5  | 2             | 4.9   |
| --            | --    | --               | --    | --            | --    | 1               | 1.2   | --              | --    | --               | --    | 1             | 2.5   |
| 18            | 26.9  | 1                | 5.2   | 8             | 21.0  | 30              | 37.0  | 12              | 23.5  | 3                | 12.5  | 5             | 12.2  |
| 27            | 40.3  | 3                | 15.6  | 17            | 44.7  | 42              | 51.9  | 14              | 27.5  | 5                | 20.8  | 17            | 41.5  |
| 17            | 25.4  | 2                | 10.4  | 7             | 18.4  | 44              | 54.3  | 14              | 27.5  | 2                | 8.3   | 19            | 46.3  |
| 5             | 7.5   | --               | --    | 7             | 18.4  | 16              | 19.8  | 3               | 5.9   | 4                | 16.7  | 3             | 7.3   |
| 24            | 35.8  | 4                | 21.1  | 21            | 55.3  | 44              | 54.3  | 19              | 37.3  | 4                | 16.7  | 8             | 19.5  |
| 15            | 100.0 | 4                | 100.0 | 17            | 100.0 | 42              | 100.0 | 12              | 100.0 | 3                | 100.0 | 13            | 100.0 |
| 1             | 6.7   | 1                | 25.0  | --            | --    | 6               | 14.3  | --              | --    | 2                | 66.7  | 2             | 15.4  |
| --            | --    | --               | --    | --            | --    | 1               | 2.4   | --              | --    | --               | --    | 1             | 7.7   |
| 6             | 40.0  | 1                | 25.0  | 5             | 29.4  | 25              | 59.5  | 6               | 50.0  | 2                | 66.7  | 3             | 23.1  |
| 11            | 73.3  | 3                | 75.0  | 12            | 70.6  | 31              | 73.8  | 7               | 58.3  | 2                | 66.7  | 8             | 61.5  |
| 5             | 33.3  | --               | --    | 2             | 11.8  | 27              | 64.3  | 4               | 33.3  | 1                | 33.3  | 10            | 76.9  |
| 2             | 13.3  | --               | --    | 5             | 29.4  | 11              | 26.2  | 1               | 8.3   | 2                | 66.7  | 1             | 7.7   |
| 8             | 53.3  | 3                | 75.0  | 14            | 82.4  | 29              | 69.0  | 8               | 66.7  | 3                | 100.0 | 5             | 38.5  |
| 43            | 100.0 | 15               | 100.0 | 19            | 100.0 | 33              | 100.0 | 32              | 100.0 | 14               | 100.0 | 24            | 100.0 |
| --            | --    | --               | --    | --            | --    | 3               | 9.1   | 1               | 3.1   | 1                | 7.1   | --            | --    |
| --            | --    | --               | --    | --            | --    | --              | --    | --              | --    | --               | --    | --            | --    |
| 12            | 27.9  | --               | --    | 3             | 15.8  | 3               | 9.1   | 6               | 18.8  | 1                | 7.1   | 2             | 8.3   |
| 16            | 37.2  | --               | --    | 5             | 26.3  | 9               | 27.3  | 5               | 15.6  | 3                | 21.4  | 7             | 29.2  |
| 11            | 25.6  | 2                | 13.3  | 5             | 26.3  | 13              | 39.4  | 9               | 28.1  | 1                | 7.1   | 6             | 25.0  |
| 3             | 7.0   | --               | --    | 2             | 10.5  | 4               | 12.1  | 2               | 6.2   | 2                | 14.3  | --            | --    |
| 15            | 34.9  | 1                | 6.7   | 7             | 36.8  | 12              | 36.4  | 10              | 31.2  | 1                | 7.1   | 3             | 12.5  |
| 9             | 100.0 | --               | --    | 2             | 100.0 | 6               | 100.0 | 7               | 100.0 | 7                | 100.0 | 4             | 100.0 |
| --            | --    | --               | --    | --            | --    | 2               | 33.3  | --              | --    | --               | --    | --            | --    |
| --            | --    | --               | --    | --            | --    | --              | --    | --              | --    | --               | --    | --            | --    |
| --            | --    | --               | --    | --            | --    | 2               | 33.3  | --              | --    | --               | --    | --            | --    |
| --            | --    | --               | --    | --            | --    | 2               | 33.3  | 2               | 28.6  | --               | --    | 2             | 50.0  |
| 1             | 11.1  | --               | --    | --            | --    | 4               | 66.7  | 1               | 14.3  | --               | --    | 3             | 75.0  |
| --            | --    | --               | --    | --            | --    | 1               | 16.7  | --              | --    | --               | --    | 2             | 50.0  |
| 1             | 11.1  | --               | --    | --            | --    | 3               | 50.0  | 1               | 14.3  | --               | --    | --            | --    |

TABLE 67

SELECTED UTENSILS AND EATING EQUIPMENT REPORTED BY  
FAMILIES, BY INCOME CLASS AND BY LOCALITY

|                        | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Wash basins         | 160     | 53.3  | 94    | 58.4  | 212         | 60.2  |
| 2. Water pitchers      | 109     | 36.3  | 85    | 52.8  | 203         | 57.7  |
| 3. Table forks         | 110     | 36.7  | 83    | 51.6  | 280         | 79.5  |
| 4. Glasses             | 223     | 74.3  | 117   | 72.7  | 286         | 81.2  |
| 5. Skimmers            | 94      | 31.3  | 88    | 54.7  | 215         | 61.1  |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Wash basins         | 53      | 74.6  | 37    | 88.1  | 154         | 73.7  |
| 2. Water pitchers      | 43      | 60.6  | 32    | 76.2  | 137         | 65.6  |
| 3. Table forks         | 48      | 67.6  | 39    | 92.9  | 175         | 83.7  |
| 4. Glasses             | 63      | 88.7  | 40    | 95.2  | 185         | 88.5  |
| 5. Skimmers            | 41      | 57.7  | 32    | 76.2  | 146         | 69.9  |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Wash basins         | 80      | 51.9  | 50    | 65.8  | 53          | 40.8  |
| 2. Water pitchers      | 53      | 34.4  | 47    | 61.8  | 61          | 46.9  |
| 3. Table forks         | 52      | 33.8  | 41    | 53.9  | 98          | 75.4  |
| 4. Glasses             | 117     | 76.0  | 62    | 81.6  | 90          | 69.2  |
| 5. Skimmers            | 40      | 26.0  | 48    | 63.2  | 65          | 50.0  |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Wash basins         | 27      | 36.0  | 7     | 16.3  | 4           | 30.8  |
| 2. Water pitchers      | 13      | 17.3  | 6     | 14.0  | 4           | 30.8  |
| 3. Table forks         | 10      | 13.3  | 3     | 7.0   | 6           | 46.2  |
| 4. Glasses             | 43      | 57.3  | 15    | 34.9  | 11          | 84.6  |
| 5. Skimmers            | 13      | 17.3  | 8     | 18.6  | 4           | 30.8  |



TABLE 67 (Continued)

| Afil-<br>ador | Hda.<br>:Delicias: | Las<br>Palmas | Naran-<br>jillo | Shap-<br>ajilla | Tres<br>Esquinas: | Tulum-<br>ayo |
|---------------|--------------------|---------------|-----------------|-----------------|-------------------|---------------|
| No. Pct.:     | No. Pct.:          | No. Pct.:     | No. Pct.:       | No. Pct.:       | No. Pct.:         | No. Pct.:     |
| 67 100.0:     | 19 100.0:          | 38 100.0:     | 81 100.0:       | 51 100.0:       | 24 100.0:         | 41 100.0      |
| 17 25.4:      | 6 31.6:            | 13 34.2:      | 46 56.8:        | 18 35.3:        | 3 12.5:           | 14 34.1       |
| 34 50.7:      | 5 26.3:            | 20 52.6:      | 42 51.9:        | 29 56.9:        | 6 25.0:           | 20 48.8       |
| 36 53.7:      | 6 31.6:            | 21 55.3:      | 52 64.2:        | 38 74.5:        | 3 12.5:           | 26 63.4       |
| 38 56.7:      | 9 47.4:            | 28 73.7:      | 66 81.5:        | 33 64.7:        | 12 50.0:          | 35 85.4       |
| 36 53.7:      | 8 42.1:            | 22 57.9:      | 48 59.3:        | 33 64.7:        | 10 41.7:          | 19 46.3       |
| 15 100.0:     | 4 100.0:           | 17 100.0:     | 42 100.0:       | 12 100.0:       | 3 100.0:          | 13 100.0      |
| 7 46.7:       | 4 100.0:           | 9 52.9:       | 32 76.2:        | 7 58.3:         | 2 66.7:           | 8 61.5        |
| 10 66.7:      | 4 100.0:           | 11 64.7:      | 29 69.0:        | 8 66.7:         | 1 33.3:           | 9 69.2        |
| 11 73.3:      | 3 75.0:            | 12 70.6:      | 30 71.4:        | 10 83.3:        | 2 66.7:           | 11 84.6       |
| 12 80.0:      | 4 100.0:           | 14 82.4:      | 39 92.9:        | 9 75.0:         | 3 100.0:          | 13 100.0      |
| 12 80.0:      | 2 50.0:            | 11 64.7:      | 31 73.8:        | 8 66.7:         | 3 100.0:          | 7 53.8        |
| 43 100.0:     | 15 100.0:          | 19 100.0:     | 33 100.0:       | 32 100.0:       | 14 100.0:         | 24 100.0      |
| 10 23.3:      | 2 13.3:            | 4 21.1:       | 12 36.4:        | 9 28.1:         | 1 7.1:            | 6 25.0        |
| 24 55.8:      | 1 6.7:             | 8 42.1:       | 12 36.4:        | 17 53.1:        | 5 35.7:           | 10 41.7       |
| 24 55.8:      | 3 20.0:            | 8 42.1:       | 20 60.6:        | 24 75.0:        | 1 7.1:            | 13 54.2       |
| 25 58.1:      | 5 33.3:            | 13 68.4:      | 23 69.7:        | 20 62.5:        | 7 50.0:           | 19 79.2       |
| 23 53.5:      | 6 40.0:            | 11 57.9:      | 15 45.5:        | 20 62.5:        | 6 42.9:           | 10 41.7       |
| 9 100.0:      | -- --              | 2 100.0:      | 6 100.0:        | 7 100.0:        | 7 100.0:          | 4 100.0       |
| -- --         | -- --              | -- --         | 2 33.3:         | 2 28.6:         | -- --             | -- --         |
| -- --         | -- --              | 1 50.0:       | 1 16.7:         | 4 57.1:         | -- --             | 1 25.0        |
| 1 11.1:       | -- --              | 1 50.0:       | 2 33.3:         | 4 57.1:         | -- --             | 2 50.0        |
| 1 11.1:       | -- --              | 1 50.0:       | 4 66.7:         | 4 57.1:         | 2 28.6:           | 3 75.0        |
| 1 11.1:       | -- --              | -- --         | 2 33.3:         | 5 71.4:         | 1 14.3:           | 2 50.0        |
| :             | :                  | :             | :               | :               | :                 | :             |
| :             | :                  | :             | :               | :               | :                 | :             |

Naranjillo was the lone locality reporting a majority of families with mosquito nets, although Tulumayo, Juanjui, and Tingo Maria had 40 percent or more. There is little need for mosquito nets in Panao because of the high attitude and better drainage so it is not surprising that only 2.5 percent reported this item. However, the widespread lack of mosquito protection in Afilador, Hda. Delicias, Las Palmas, Shapajilla, and Tres Esquinas is definitely a hazard to health.

Mosquito nets, outside Panao where they are not so urgent, are somewhat associated with income but the relation is not entirely consistent, as witness the 64.3 percent of high-income families reporting in Naranjillo compared with 66.7 percent of low-income families.

One of the most interesting items analyzed is sewing machines. It may be surprising to many people that 28.0 percent of all families in Juanjui report a sewing machine in the home, and almost a third in Panao. None of the other localities reported more than 20 percent of the families with sewing machines. The low proportion in the Tingo Maria study site may be due mainly to the recent settlement and a general scarcity of new machines during the period. More than half of high-income families in Juanjui and Panao reported sewing machines compared with 10.7 percent and 9.3 percent, respectively, for low-income families.

A majority of all families report irons in the home in Juanjui, Panao, Tingo Maria, Las Palmas, and Naranjillo but less than a fourth in Hda. Delicias, Tres Esquinas, and Tulumayo. The percentage reporting irons is consistently associated with income class.

For example, 90.5 percent of the high-incomes, 68.4 percent of the middle-incomes, and 14.0 percent of the low-incomes reported irons in Panao. The respective percentages for Tingo Maria are 76.6, 53.8, and 30.8.

Five selected household items are shown in Table 67. The percentage of families reporting wash basins varies from only 12.5 percent in Tres Esquinas to 60.2 percent in Tingo Maria. This item is positively associated with income and undoubtedly is a good indicator of the family's cultural level.

Water pitchers are reported by 25.0 percent of all families in Tres Esquinas and range up to 57.7 percent in Tingo Maria. In all communities, the percentage of families reporting water pitchers declines consistently as income decreases. (See Table 67.)

The percentage of families reporting table forks in the home varies from a low of 12.5 percent in Tres Esquinas to 79.5 percent in Tingo Maria. The relation between table forks and income is very close and consistent within each locality analyzed. Range in percentage of high-income families with table forks runs from 66.7 percent in Tres Esquinas to 92.9 percent in Panao, and of low-income families from zero in Tres Esquinas to 57.1 percent in Shapajilla.

Drinking glasses are reported more extensively than any of the five selected items in Table 67. In fact they are reported widely even among low-income families. However, as income increases the percentage of families reporting glasses also increases and this relation is consistent in every locality excepting Tingo Maria, but the ranges between high and low classes are narrower than any other item analyzed.

Skimmers are used in cooking and are indispensable utensils for preparing traditional Peruvian dishes such as chupa and stews. The percentage of families reporting skimmers varied from 31.3 percent in Juanjui to 64.7 percent in Shapajilla, a relatively narrow range. Skimmers are reported by 50.0 percent of high-income class families in Hda. Delicias and 100.0 percent in Tres Esquinas, compared with zero percent of the low-income class families in Las Palmas and 71.4 percent in Shapajilla. This item is related positively to income.

In the preceding pages an analysis was made of (1) the dwelling structure, (2) household conveniences associated with the home, (3) selected items of furniture, and (4) selected equipment found in the home. Taken all together these various items describe the levels of living of families in respect to housing and related facilities. The levels of living of families are the actual goods and services available to family members. A family's standard of living is that level of living to which it aspires and with which it feels it would be satisfied. Relative satisfaction or dissatisfaction therefore constitutes one measure of the gap between a family's level and standard of living. A family who feels that its present housing is adequate would represent a situation in which its level coincided with its standard. A family that feels dissatisfied with its housing is indicative of a level that is lower than its standard. It is likewise conceivable that in some cases a family may feel that its present housing is too pretentious and would reflect a situation in which its level was above its standard. The latter condition is undoubtedly less common than the former.

The families in each locality were asked to indicate satisfaction or dissatisfaction with their housing situation. Results are shown in Table 68 for the three urban localities.

The percentage of satisfied families varies from about a fifth of all families in Juanjui and Tingo Maria to almost half (44.7 percent) in Panao. It seems reasonably clear that the levels and standards of housing in Panao more nearly coincide than in Juanjui and Tingo Maria.

Satisfaction with housing is not equally distributed among income classes but tends to be more prevalent among the low-income families than among middle- or high-income families. In Panao, for example, only a third of the high-income class reported that they were satisfied compared with 55.3 percent of the low-income class. The respective income class figures are 15.5 percent and 29.3 percent for Juanjui, and 17.7 percent and 30.8 percent for Tingo Maria.

Families were asked to tell what were their housing needs. About half of the dissatisfied families in Tingo Maria wanted more rooms in their house and almost a third (32.5 percent) wanted more household facilities. Juanjui families laid less stress on more rooms (18.3 percent) but indicated greater need for repairs to the house.

About a tenth of all families in Juanjui and Panao desired to own their own home as compared with less than one-fiftieth of the families in Tingo Maria. Since practically all of the houses in Tingo Maria are owner-occupied compared with only about two-thirds in Juanjui and half in Panao, (Table 69), this fact undoubtedly reflects itself in the above figures.

TABLE 68

HOUSING SATISFACTION AND NEEDS OF FAMILIES, BY  
INCOME CLASS AND BY LOCALITY

|                                      | : Juanjui : |       | : Panao : |       | : Tingo Maria : |       |
|--------------------------------------|-------------|-------|-----------|-------|-----------------|-------|
|                                      | No.         | Pct.  | No.       | Pct.  | No.             | Pct.  |
| ALL FAMILIES                         | 300         | 100.0 | 161       | 100.0 | 352             | 100.0 |
| 1. Satisfied                         | 61          | 20.3  | 72        | 44.7  | 78              | 22.2  |
| 2. Unsatisfied because family needs: | 239         | 79.7  | 89        | 55.3  | 274             | 77.8  |
| a. More rooms                        | 40          | 16.7  | 26        | 29.2  | 136             | 49.6  |
| b. Repairs on house                  | 89          | 37.2  | 19        | 21.3  | 44              | 16.1  |
| c. Own house                         | 26          | 10.9  | 8         | 9.0   | 5               | 1.8   |
| d. Household facilities              | 81          | 33.9  | 36        | 40.4  | 89              | 32.5  |
| e. Other                             | 3           | 1.3   | —         | —     | —               | —     |
| HIGH INCOME FAMILIES                 | 71          | 100.0 | 42        | 100.0 | 209             | 100.0 |
| 1. Satisfied                         | 11          | 15.5  | 14        | 33.3  | 37              | 17.7  |
| 2. Unsatisfied because family needs: | 60          | 84.5  | 28        | 66.7  | 172             | 82.3  |
| a. More rooms                        | 11          | 18.3  | 6         | 21.4  | 81              | 47.1  |
| b. Repairs on house                  | 18          | 30.0  | 6         | 21.4  | 31              | 18.0  |
| c. Own house                         | 7           | 11.7  | 2         | 7.2   | 1               | .6    |
| d. Household facilities              | 23          | 38.3  | 14        | 50.0  | 59              | 34.3  |
| e. Other                             | 1           | 1.6   | —         | —     | —               | —     |
| MIDDLE INCOME FAMILIES               | 154         | 100.0 | 76        | 100.0 | 130             | 100.0 |
| 1. Satisfied                         | 28          | 18.2  | 34        | 44.7  | 37              | 28.5  |
| 2. Unsatisfied because family needs: | 126         | 81.8  | 42        | 55.3  | 93              | 71.5  |
| a. More rooms                        | 23          | 18.3  | 17        | 40.5  | 51              | 54.8  |
| b. Repairs on house                  | 46          | 36.5  | 6         | 14.3  | 13              | 14.0  |
| c. Own house                         | 12          | 9.5   | 4         | 9.5   | 2               | 2.2   |
| d. Household facilities              | 44          | 34.9  | 15        | 35.7  | 27              | 29.0  |
| e. Other                             | 1           | .8    | —         | —     | —               | —     |
| LOW INCOME FAMILIES                  | 75          | 100.0 | 43        | 100.0 | 13              | 100.0 |
| 1. Satisfied                         | 22          | 29.3  | 24        | 55.8  | 4               | 30.8  |
| 2. Unsatisfied because family needs: | 53          | 70.7  | 19        | 44.2  | 9               | 69.2  |
| a. More rooms                        | 6           | 11.3  | 3         | 15.8  | 4               | 44.5  |
| b. Repairs on house                  | 25          | 47.2  | 7         | 36.8  | —               | —     |
| c. Own house                         | 7           | 13.2  | 2         | 10.5  | 2               | 22.2  |
| d. Household facilities              | 14          | 26.4  | 7         | 36.8  | 3               | 33.3  |
| e. Other                             | 1           | 1.9   | —         | —     | —               | —     |

TABLE 69

HOME TENURE OF FAMILIES, BY INCOME CLASS, IN JUANJUI  
AND PANAÓ \*

|                        | Juanjui |       | Panao |       |
|------------------------|---------|-------|-------|-------|
|                        | No.     | Pct.  | No.   | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 |
| 1. Owner               | 207     | 69.0  | 83    | 51.6  |
| 2. Renter              | 64      | 21.4  | 61    | 37.9  |
| 3. Vine gratis         | 4       | 1.3   | 7     | 4.3   |
| 4. Caretaker           | 1       | .3    | 9     | 5.6   |
| 5. Other               | 24      | 8.0   | 1     | .6    |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 |
| 1. Owner               | 47      | 66.2  | 22    | 52.4  |
| 2. Renter              | 14      | 19.7  | 19    | 45.2  |
| 3. Vine gratis         | 1       | 1.4   | —     | —     |
| 4. Caretaker           | —       | —     | 1     | 2.4   |
| 5. Other               | 9       | 12.7  | —     | —     |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 |
| 1. Owner               | 109     | 70.8  | 44    | 57.9  |
| 2. Renter              | 29      | 18.8  | 28    | 36.9  |
| 3. Vine gratis         | 3       | 2.0   | 2     | 2.6   |
| 4. Caretaker           | 1       | .6    | 1     | 1.3   |
| 5. Other               | 12      | 7.8   | 1     | 1.3   |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 |
| 1. Owner               | 49      | 65.3  | 17    | 39.5  |
| 2. Renter              | 21      | 28.0  | 14    | 32.6  |
| 3. Vine gratis         | —       | —     | 5     | 11.6  |
| 4. Caretaker           | —       | —     | 7     | 16.3  |
| 5. Other               | 5       | 6.7   | —     | —     |

\*

This question was not secured in Tingo Maria and is treated in rural localities as "farm tenure."

Household facilities are about equally desired between the three pueblos, comprising about a third of all families.

Little difference is noted in the responses of dissatisfied families by income classes and where differences exist they are not consistent. Thus, where gaps between the levels and standards of housing occur it seems that the entire community agrees with the general remedies, regardless of income. The main differences, therefore, are found in the general awareness of inadequacies in housing.



## CHAPTER XI

### MEDICAL NEEDS AND TREATMENT

The relation between productivity and health of the family is indisputable. A productive family unit is one in which each individual of which it is composed is capable of sustained activity. Too little recognition is given to the part that each individual plays in the proper functioning of the family. The family institution, with its division of labor, is the basic unit through which society perpetuates itself. As a result the health of its members is an essential prerequisite to the proper functioning of the entire community.

How healthy are the people in the ten localities under analysis? In answering this question some idea of the hazards facing new immigrants to the Huallaga Valley may be ascertained.

A first approach to health and sanitation may be made through an analysis of diseases or conditions most commonly reported in each locality. Such information of course does not provide sound medical diagnosis but merely represents the knowledge of local people as to prevailing diseases. It has the additional advantage, however, of probing the opinions of the people in regard to health conditions and thereby provides clues as to the proper basis for a health education program.

The question ?Que enfermedades se presentan con mas frecuencia en estos lugares y cuales son los medicinas que Ud. toma para combatirlas? was asked of each family and the answers to the first part of the question are shown in Table 70. The family was

asked to specify up to three diseases or conditions and most respondents were able to give at least three. In a few cases less than three diseases were reported.

Malaria (paludismo) was reported as prevalent oftener than any other disease in all localities, excepting Panao and Las Palmas. (See Table 70.) In Panao and Las Palmas localities gripe (gripe) was most often designated. Malaria was definitely of minor concern in Panao but was of almost equal concern with gripe in Las Palmas. Generally speaking, malaria is confined to the jungle localities where climate and topography are conducive to the cycle of development in mosquitoes. Since temperatures below 60° F. inhibit this cycle, it is understandable why families in Panao, where such temperatures are not uncommon, evidence little awareness of malaria. Las Palmas is situated at the highest elevation and roughest topography of the Tingo Maria study site where conditions are less favorable for mosquitoes, hence the somewhat lesser awareness among the people.

Gripe is generally recognized but is considered of slight importance in Hda. Delicias, Naranjillo, and Tulumayo.

Rheumatism is generally reported in Juanjui but is not extensively found throughout the other localities. Undoubtedly, jungle dampness and poor housing has much to do with the prevalence of this complaint. Rheumatism may be symptomatic of other diseases but without more widespread medical diagnosis correct diagnosis is impossible.

The Tingo Maria area generally is burdened with a disease the families call mal de ojos, probably conjunctivitis. Some

TABLE 70

## DISEASES OR CONDITIONS REPORTED BY FAMILIES IN TEN LOCALITIES

|  | :<br>:Juanjui: | :<br>:Panao: | :<br>:Tingo<br>:Maria: | :<br>:Afil-<br>:ador: | :<br>:Hda.<br>:Deli-<br>:cias: | :<br>:Las<br>:Palmas: | :<br>:Naran-<br>:jillo: | :<br>:Shap-<br>:ajilla: | :<br>:Tres<br>:Esqui-<br>:nas: | :<br>:Tulum-<br>:ayo: |
|--|----------------|--------------|------------------------|-----------------------|--------------------------------|-----------------------|-------------------------|-------------------------|--------------------------------|-----------------------|
| TOTAL FAMILIES   | : 300          | : 161        | : 352                  | : 67                  | : 19                           | : 38                  | : 81                    | : 51                    | : 29                           | : 41                  |
| 1. Malaria ( <u>paludismo</u> )                                | : 260          | : 5          | : 271                  | : 58                  | : 11                           | : 14                  | : 69                    | : 48                    | : 29                           | : 39                  |
| 2. Grippe  | : 162          | : 127        | : 72                   | : 26                  | : 1                            | : 18                  | : 9                     | : 17                    | : 5                            | : 4                   |
| 3. Rheumatism  | : 109          | : 6          | : 19                   | : 2                   | : 0                            | : 1                   | : 5                     | : 3                     | : 0                            | : 0                   |
| 4. <u>Mal de ojos</u>  | : 22           | : 4          | : 66                   | : 19                  | : 8                            | : 7                   | : 28                    | : 12                    | : 12                           | : 17                  |
| 5. Pneumonia   | : 14           | : 56         | : 9                    | : 2                   | : 0                            | : 1                   | : 0                     | : 1                     | : 0                            | : 0                   |
| 6. Parasites, colic,<br>vomiting                               | : 23           | : 13         | : 97                   | : 5                   | : 0                            | : 3                   | : 12                    | : 2                     | : 8                            | : 7                   |
| 7. Anemia  | : 0            | : 0          | : 17                   | : 3                   | : 0                            | : 3                   | : 5                     | : 2                     | : 7                            | : 3                   |
| 8. Bronchitis  | : 26           | : 0          | : 0                    | : 0                   | : 0                            | : 0                   | : 0                     | : 0                     | : 0                            | : 0                   |
| 9. Whooping cough  | : 43           | : 12         | : 59                   | : 0                   | : 0                            | : 4                   | : 2                     | : 1                     | : 0                            | : 0                   |
| 10. Typhoid fever  | : 0            | : 69         | : 9                    | : 1                   | : 0                            | : 0                   | : 0                     | : 1                     | : 0                            | : 0                   |
| 11. Measles ( <u>sarampion</u> )                               | : 31           | : 1          | : 17                   | : 0                   | : 0                            | : 0                   | : 2                     | : 0                     | : 0                            | : 0                   |
| 12. Small pox ( <u>viruela</u> )                               | : 0            | : 15         | : 6                    | : 1                   | : 0                            | : 0                   | : 0                     | : 0                     | : 0                            | : 0                   |
| 13. Tuberculosis   | : 9            | : 2          | : 2                    | : 0                   | : 0                            | : 0                   | : 0                     | : 0                     | : 0                            | : 0                   |
| 14. Uta (probably<br><u>Leishmaniasis</u><br><u>espundia</u> ) | : 0            | : 0          | : 0                    | : 0                   | : 2                            | : 0                   | : 0                     | : 1                     | : 5                            | : 2                   |
| 15. Yaws (probably<br><u>Framboesia</u> )                      | : 35           | : 0          | : 0                    | : 0                   | : 0                            | : 0                   | : 0                     | : 0                     | : 0                            | : 0                   |
| 16. Venereal disease   | : 5            | : 17         | : 4                    | : 0                   | : 0                            | : 0                   | : 0                     | : 0                     | : 0                            | : 0                   |

research into the causes of mal de ojos was being carried on at the hospital in Tingo Maria during 1946 and 1947. Relatively few families reported this disease in Juanjui or Panao.

Panao families were generally concerned over the prevalence in their locality of typhoid fever, pneumonia, small pox, and venereal diseases. Less concern for these infectious diseases was shown in the other communities and their epidemic nature undoubtedly accounts for the widespread concern in Panao.

Whooping cough is recognized to some degree in Tingo Maria, Juanjui, Panao, and Las Palmas. Measles, on the other hand, are reported principally in Tingo Maria and Juanjui.

The effect of medical diagnosis on the layman's language is observed in the Tingo Maria area. Some anemia cases in Tingo Maria have generally been hospitalized and medical diagnosis was possible, hence the reporting of anemia by lay persons.

Bronchitis, perhaps of epidemic proportions, is reported by a relatively large number of families in Juanjui only.

Most medical men acquainted with the Huallaga River Valley say that practically all persons have internal parasites of one kind or other. But they add that unless complicated by poor diets, exposure, or other diseases, the individual's efficiency is not too much impaired. This may explain somewhat the less widespread concern over parasitic diseases and related stomach disorders. Greatest awareness of parasites is found in Tingo Maria which may be accounted for by the educational processes set in motion by the local hospital and its medical staff, plus the lack of natural resistance of recent arrivals in the community from the Sierra and Coast.

Uta, probably Leishmaniasis espundia, is unreported in all but Tres Esquinas, Tulumayo, Hda. Delicias, and Shapajilla. This disease is a form of cutaneous leishmaniasis which is frequently followed by horrible, spreading ulcers of the mucous membranes of the nose and pharynx and occurs endemically in areas where the climate is hot and moist. However, uta also occurs in certain mountain valleys of Peru. Unfortunately, little is definitely known about the transmission of the disease.

Yaws, or framboesia, is recognized as such by more than a tenth of the families in Juanjui and is reported by them as prevalent in the area. This disease is caused by a spirochete morphologically indistinguishable from that of syphilis. To some extent, at least, the two diseases produce immunity to each other, while the general nature of the infections to which they give rise is strikingly similar. The fact that only yaws is reported in Juanjui and not syphilis may be due to the reciprocal immunity conferred by these diseases on each other.

Undoubtedly, any medical survey of the Huallaga Valley would reveal important differences between what the families report and the medical doctor. One obvious omission from the families' list of diseases is the complete lack of verbalization of anquilostomiasis, or common hookworm. Practically none of the families reported hookworm per se as prevalent in the communities. This lack of concern over one of the most prevalent diseases of warm climates indicates a rather widespread ignorance of its causes and symptoms and may account for the unconcern over proper toilet and water facilities, or the wearing of shoes for protection. Evidence, such as the

widespread knowledge of anemia around Tingo Maria due to more adequate modern medical facilities, leads to the conclusion that general education programs on hookworm are needed in the Huallaga Valley.

Summing up the pattern of diseases in the various localities, Table 70 shows that Tingo Maria and the rural localities adjacent to it are somewhat similar. Juanjui differs from Tingo Maria in at least three ways: (1) Juanjui does not report anemia, Tingo Maria does; (2) Juanjui does report bronchitis, Tingo Maria does not; and (3) Juanjui does report yaws, Tingo Maria does not.

Lesser differences between Tingo Maria and Juanjui are also to be noted: (1) Tingo Maria reports somewhat less grippe, rheumatism, and measles; (2) Tingo Maria reports more small pox, typhoid fever, parasites, and mal de ojos.

Panao diverges radically from the other localities in at least five significant ways: (1) Practically no concern with malaria; (2) wide prevalence of grippe; (3) little concern with mal de ojos; (4) recognition of the prevalence of pneumonia, typhoid fever, small pox, and venereal disease; and (5) lack of concern with measles, uta, yaws, bronchitis, anemia, and rheumatism.

#### Kinds of Treatment of Disease

For each disease or condition reported the family was asked to indicate the kind of treatment it customarily used in dealing with the specified disease. A wide variety of medicines were reported of which the following are illustrative:

nicotina de sigarro (cigar nicotine)  
colireo ideal or collyruim (wash for the eyes)  
agua borico (boric water)  
Acido borico  
Mejoral (aspirin)  
Metoquina (quinine derivative)  
quinina  
pastillas  
sudorifico lozenge (medicated lozenge)  
Sulfatiazol  
Pildoras de Witt  
de hoja guayaba (guava leaf)  
inyecciones salicilate  
"Yerba santa" ("Sacred herb")  
frotacion (friction or rubbing)  
charcot  
pomada oxida zin (zinc oxide ointment)  
pastillas ferruginosa  
Chuchuhuasi con aguardiente  
Remedios caceres (home remedies)  
Banandas (baths)  
Pastillas de Quen  
cofe con limon  
jarabes de cucharadas (sirups)  
tonicos  
jabon de pepa  
anquilostamino y pastillas Kemp  
anticoqueluche (anti-whooping cough)  
jarabe alquitran (sirup of tar)  
Tosiol  
bebidas de vervena (verbena)  
aceite de lagarto (oil of lizard)  
pomadas mercurio (mercurial pomadas)  
purgante Crystoides (laxative)  
papa salada con vinagre  
Borrage (borax)  
vermifugo de Kemp (vermifuge)  
verbas del campo (field herbs)  
Orgisol  
latex de alcol  
cascarilla  
palta hervida  
agua de sal  
cortezas de quina  
aguardiente  
emoglobina  
pastillas eucaliptus  
jarabe Tofinol  
hoja de capuli (leaf of Capulin)  
pomadas secante  
Vitaminces  
"Sloan"  
Carbosolina  
bicarbonato  
Inyecciones antiplogenia  
Sulfato de cobre

However, the preceding list of medicines and procedures suggested may be classified broadly into at least six categories of treatment: (1) Medical prescriptions; (2) home remedies; (3) injections, which may or may not be under direct medical supervision; (4) quinine, or its substitutes; (5) patent medicines; and (6) hospital care. Results of this classification are shown in Table 71.

Widespread use of quinine and its substitutes, atebrina, totaquina, paludiol, etc., is indicated in all localities, excepting Panao. Most of the world supply of quinine came from Java, although the cinchona tree, from whose bark the drug is derived, is a native of Peru. In fact, cinchona has been one of the complementary crops whose spread in Peru has been stimulated through the United States program of international collaboration in agriculture. Large plantings are located in the Divisoria about a hundred miles east of Tingo Maria.

In addition to quinine, the alkaloids known as quinidine, cinchonidine, and cinchonine are also obtained from cinchona bark. A mixture of these with quinine, and with other extracts of cinchona bark, constitute what is known as totaquina, a nonsynthetic product<sup>1</sup> for treatment of malaria. Injections of various drugs with or without medical supervision is prevalent in Juanjui, Tingo Maria, and to a lesser degree in Panao. Mejoral, a patent medicine, is used in the treatment of colds and constitutes the principal drug from the botica (drug store).

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1

Ross E. Moore, "Agricultural Contributions to Health through Inter-American Cooperation," The Record, Vol. IV, No. 5, May 1948, p. 23.



TABLE 71

## TYPE OF TREATMENT REPORTED BY FAMILIES FOR MOST PREVALENT DISEASES AND CONDITIONS

| Locality      | : Total    |        | : Medical   |        | : Home     |        | : Injections |        | : Quinine, |        | : Botica    |        | : Hospital |        |
|---------------|------------|--------|-------------|--------|------------|--------|--------------|--------|------------|--------|-------------|--------|------------|--------|
|               | : diseases |        | : prescrip- |        | : remedies |        | :            |        | : etc.     |        | : (Mejoral) |        | :          |        |
|               | : No.      | : Pct. | : No.       | : Pct. | : No.      | : Pct. | : No.        | : Pct. | : No.      | : Pct. | : No.       | : Pct. | : No.      | : Pct. |
| Juanjui       | :743       | 100.0  | : 87        | 11.7   | :282       | 38.0   | :166         | 22.3   | :153       | 20.6   | : 55        | 7.4    | : —        | —      |
| Panao         | :309       | 100.0  | : 83        | 26.9   | : 79       | 25.6   | : 26         | 8.4    | : —        | —      | :121        | 39.1   | : —        | —      |
| Tingo Maria   | :677       | 100.0  | :119        | 17.6   | :136       | 20.1   | : 64         | 9.5    | :185       | 27.3   | :126        | 18.6   | : 47       | 6.9    |
| Afilador      | :128       | 100.0  | : 10        | 7.8    | : 25       | 19.5   | : —          | —      | : 50       | 39.1   | : 43        | 33.6   | : —        | —      |
| Hda. Delicias | : 27       | 100.0  | : 3         | 11.1   | : 11       | 40.8   | : —          | —      | : 6        | 22.2   | : 7         | 25.9   | : —        | —      |
| Las Palmas    | : 63       | 100.0  | : 11        | 17.5   | : 30       | 47.6   | : —          | —      | : 11       | 17.5   | : 8         | 12.7   | : 3        | 4.7    |
| Naranjillo    | :150       | 100.0  | : 31        | 20.6   | : 18       | 12.0   | : 1          | 0.7    | : 56       | 37.3   | : 43        | 28.7   | : 1        | 0.7    |
| Shapajilla    | : 94       | 100.0  | : 5         | 5.3    | : 15       | 16.0   | : 1          | 1.0    | : 45       | 47.9   | : 28        | 29.8   | : —        | —      |
| Tres Esquinas | : 71       | 100.0  | : 1         | 1.4    | : 12       | 16.9   | : —          | —      | : 25       | 35.2   | : 24        | 33.8   | : 9        | 12.7   |
| Tulumayo      | : 78       | 100.0  | : 4         | 5.1    | : 22       | 28.2   | : —          | —      | : 32       | 41.0   | : 17        | 21.8   | : 3        | 3.9    |

Home remedies range from baths (banandos) to "chuchuhuasi con aguardiente." If to the sundry home remedies classified in this category are added injections, malarial drugs, and Mejoral, it is obvious that treatment of disease by modern medical doctors is a comparatively small part of the total medical needs. Hospitalization is deemed necessary for specified diseases only in Tingo Maria, Tres Esquinas, Las Palmas, Tulumayo, and Naranjillo. Of course, only Tingo Maria has a hospital.

Below are summarized the recommended ways for the treatment of malaria, mal de ojos, and gripe in each of the rural localities.

Las Palmas:

Paludismo (malaria)

11 used Totaquina or Atebrina

1 used "cortezas de quina y aguardiente de cana."

2 used medical prescription

14 total

Mal de ojos

7 used colireo

Gripe

12 used aguardiente

2 used vegetable remedies

1 used medical prescription

1 used cucharada

2 used home remedies

18 total

Hda. Delicias:

Paludismo

6 used Totaquina

## Hda. Delicias: (continued)

Paludismo

- 1 used aguardiente y dimor
- 3 used medical prescription
- 1 unknown

Mal de ojos

- 1 used colireo
- 1 used "hoja de capuli"

Gripe

- 1 used Mejoral

Tres Esquinas:Paludismo

- 25 used Metoquina, atebrina or quinine
- 3 were hospitalized
- 1 Recina del platano de la Isla
- 29 total

Mal de ojos

- 10 used colireo or boric water
- 1 used pastillas
- 1 used sulfatiozol
- 12 total

Gripe

- 5 used Mejoral or Anacin

Tulumayo:Paludismo

- 31 used Totaquina
- 2 were hospitalized
- 5 chuchuhuasi
- 1 Paludiol
- 39 total

Tulumayo: (Continued)Mal de ojos

15 used Colireo

1 Argyrol

$$\frac{1}{17} \text{ "latex de alcol"}$$

total

Naranjillo:Paludismo

13 used medical prescriptions

$$\frac{56}{69} \text{ used other Atebrina, Totaquina, Paludiol}$$

total

Mal de ojos

25 used colireo

1 used medical prescription

1 " "yerba santa"

$$\frac{1}{28} \text{ " "suno de hoja guayaba"}$$

total

Gripe

5 used Mejoral or antigripales

1 was hospitalized

2 Chuchuhuasi con aguardiente

$$\frac{1}{9} \text{ other}$$

total

Afilador:Paludismo

3 used medical prescriptions

50 used Atebrina, Totaquina

1 used Mejoral

Afilador: (Continued)Paludismo

1 used pastillas

2 used home remedies

1 other

58 total

Mal de ojos

19 used coliero

Gripe

23 used Mejoral or sudorificos

1 used te y limon

1 used "bebido de vervena"

1 used "home remedies"

26 total

Shapajilla:Paludismo

45 used Totaquina

1 "leche de oje"

1 Tonica

1 Medical prescription

48 total

Mal de ojos

12 used colireo

Gripe

16 used mejoral

1 used agua caliente

17 total

### Medical Symptoms

A second approach to incidence of diseases and conditions was made by using a carefully designed schedule covering a selected number of medical symptoms upon which the family was asked to report for each member of the family. Symptoms were reported if found on the day visited and the method of treating such symptom was also ascertained.

The original symptoms schedule was designed by Schuler for use under conditions found in the United States and was revised later to fit Latin American conditions in consultation with medical doctors of the Pan-American Sanitary Bureau and United States Public Health Service. The schedule in Spanish was pretested by Oscar Lewis in Cuba and T. Wilson Longmore in Puerto Rico during 1946. An analysis of the results obtained from the use of this symptoms schedule follows:

Extent of medical need.—Twenty-four different symptoms were reported upon and the number reporting positively in each category are shown in Table 72. The number of times symptoms were reported varied from only 28 in Tres Esquinas to 981 in Tingo Maria. But in order to study the data contained in Table 72, it is necessary to compute ratios of symptoms to population so as to make proper comparisons. Table 73 shows the number of medical symptoms reported per 100 population for each category and by locality. This rate will hereinafter be referred to as the "medical symptom rate." Thus, Panao has the lowest total medical symptom rate of 22.46 and Afilador the highest of 98.69. In the opinion of medical doctors who cooperated in making the list, every symptom reported constitutes

a unit of medical need at least to the extent that medical advice should be sought regarding the matter for diagnosis and possible treatment. The medical symptom rate constitutes a fair measure of each locality's medical needs at the particular time of the survey. As far as is known, no disease of epidemic nature was prevalent in any localities at the time of survey. Consequently, it is reasonable to assume that more or less "normal" conditions prevailed for the season of the year during which the survey was done, which happened to fall in the latter part of the wet season in the Montana.

A rate of 98.69 as found in Afilador means that there are practically as many symptoms as individuals reporting them. This does not mean that each and every individual reported a symptom because some persons reported more than one.

Medical need, measured by the symptom rate, is more than four times as great in Afilador as in Panao or Tres Esquinas, and more than three times as great in Afilador as in Juanjui, Naranjillo, or Hda. Delicias. Tingo Maria, Las Palmas, Shapajilla, and Tulumayo have medical symptom rates roughly intermediate between the extremes of Panao and Afilador, ranging from 54.39 in Las Palmas to 69.23 in Shapajilla.

Taking up individual symptoms, Table 73 shows that diarrhea rates range from zero in Hda. Delicias to 5.73 in Tingo Maria. Since two of the localities--Hda. Delicias and Tres Esquinas--have populations of 99 and 113, respectively, an underreporting of one symptom would result in an error of approximately 1.00 in the medical symptom rate. The chances of error in these two localities are enhanced by small numbers.

TABLE 72

## MEDICAL SYMPTOMS REPORTED BY LOCALITY

| Symptoms                 | Juanjui | Panao | Tingo Maria | Afilador | Hda. Delicias | Las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulumayo |
|--------------------------|---------|-------|-------------|----------|---------------|------------|------------|------------|---------------|----------|
| Symptoms                 | 1844    | 871   | 1643        | 306      | 99            | 184        | 391        | 260        | 113           | 216      |
| 1. Diarrhea              | 39      | 12    | 95          | 6        | 0             | 7          | 20         | 6          | 3             | 1        |
| 2. Chills and fever      | 84      | 9     | 122         | 60       | 1             | 21         | 7          | 38         | 0             | 41       |
| 3. Accidents             | 6       | 9     | 14          | 4        | 1             | 0          | 1          | 1          | 0             | 1        |
| 4. Loss of weight        | 7       | 2     | 18          | 2        | 0             | 0          | 1          | 0          | 1             | 0        |
| 5. Loss of appetite      | 12      | 2     | 59          | 8        | 1             | 5          | 12         | 8          | 3             | 6        |
| 6. Unexplained tiredness | 8       | 4     | 18          | 0        | 0             | 0          | 0          | 1          | 0             | 3        |
| 7. Running ear           | 10      | 2     | 12          | 2        | 0             | 3          | 1          | 2          | 1             | 4        |
| 8. Nosebleed             | 11      | 3     | 16          | 2        | 0             | 2          | 1          | 1          | 0             | 0        |
| 9. Headaches             | 32      | 13    | 90          | 43       | 1             | 8          | 9          | 32         | 7             | 15       |
| 10. Toothache            | 16      | 28    | 132         | 43       | 7             | 15         | 12         | 20         | 0             | 6        |
| 11. Defective vision     | 52      | 9     | 105         | 30       | 6             | 6          | 12         | 5          | 7             | 15       |
| 12. Skin rash            | 18      | 1     | 46          | 7        | 1             | 9          | 8          | 16         | 1             | 11       |
| 13. Pains in chest       | 7       | 0     | 7           | 1        | 0             | 2          | 1          | 0          | 2             | 3        |
| 14. Persistent cough     | 56      | 10    | 62          | 18       | 5             | 6          | 7          | 7          | 0             | 5        |
| 15. Spitting blood       | 5       | 0     | 3           | 2        | 0             | 1          | 0          | 0          | 0             | 0        |
| 16. Difficult breathing  | 4       | 4     | 9           | 0        | 0             | 0          | 2          | 0          | 0             | 0        |
| 17. Pains in back        | 53      | 16    | 37          | 7        | 4             | 6          | 4          | 8          | 2             | 5        |
| 18. Pains in joints      | 86      | 19    | 44          | 12       | 3             | 0          | 8          | 5          | 1             | 4        |
| 19. Running sores        | 17      | 2     | 5           | 0        | 0             | 1          | 1          | 0          | 0             | 1        |
| 20. Swelling of ankles   | 2       | 3     | 7           | 0        | 0             | 0          | 1          | 1          | 0             | 0        |
| 21. Vomiting             | 4       | 2     | 19          | 9        | 0             | 0          | 1          | 2          | 0             | 5        |
| 22. Abdominal pains      | 55      | 32    | 34          | 41       | 0             | 6          | 10         | 21         | 0             | 9        |
| 23. Hernia               | 5       | 2     | 10          | 0        | 0             | 1          | 0          | 1          | 0             | 0        |
| 24. Nervous disorder     | 29      | 13    | 17          | 5        | 0             | 2          | 3          | 5          | 0             | 0        |
| Total                    | 618     | 197   | 981         | 302      | 30            | 101        | 122        | 180        | 28            | 135      |



TABLE 73

## MEDICAL SYMPTOMS PER 100 POPULATION BY LOCALITY

| Symptom                  | Juanjui | Panao | Tingo Maria | Afilador | Hda. Delicias | Las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulum-ayo |
|--------------------------|---------|-------|-------------|----------|---------------|------------|------------|------------|---------------|-----------|
| 1. Diarrhea              | 2.10    | 1.37  | 5.73        | 1.96     | —             | 3.80       | 5.12       | 2.31       | 2.65          | .46       |
| 2. Chills and fever      | 4.53    | 1.03  | 7.36        | 19.61    | 1.01          | 11.41      | 1.79       | 14.62      | —             | 18.98     |
| 3. Accidents             | .32     | 1.03  | .84         | 1.31     | 1.01          | —          | .26        | .38        | —             | .46       |
| 4. Loss of weight        | .38     | .23   | 1.08        | .65      | —             | —          | .26        | —          | .88           | —         |
| 5. Loss of appetite      | .65     | .23   | 3.56        | 2.61     | 1.01          | 2.72       | 3.07       | 3.08       | 2.65          | 2.78      |
| 6. Unexplained tiredness | .43     | .46   | 1.09        | —        | —             | —          | —          | .38        | —             | 1.39      |
| 7. Running ear           | .54     | .23   | .72         | .65      | —             | 1.63       | .26        | .77        | .88           | 1.85      |
| 8. Nosebleed             | .59     | .34   | .96         | .65      | —             | 1.09       | .26        | .38        | —             | —         |
| 9. Headache              | 1.73    | 1.48  | 5.43        | 14.05    | 1.01          | 4.35       | 2.30       | 12.31      | 6.19          | 6.94      |
| 10. Toothache            | .86     | 3.19  | 7.96        | 14.05    | 7.07          | 8.15       | 3.07       | 7.69       | —             | 2.78      |
| 11. Defective vision     | 2.80    | 1.03  | 6.33        | 9.80     | 6.06          | 3.26       | 3.07       | 1.92       | 6.19          | 6.94      |
| 12. Skin rash            | .97     | .11   | 2.77        | 2.29     | 1.01          | 4.89       | 2.05       | 6.15       | .88           | 5.09      |
| 13. Pains in chest       | .38     | —     | .42         | .33      | —             | 1.09       | .26        | —          | 1.77          | 1.39      |
| 14. Persistent cough     | 3.02    | 1.14  | 3.74        | 5.88     | 5.05          | 3.26       | 1.79       | 2.69       | —             | 2.31      |
| 15. Spitting blood       | .27     | —     | .18         | .65      | —             | .54        | —          | —          | —             | —         |
| 16. Difficult breathing  | .22     | .46   | .54         | —        | —             | —          | .51        | —          | —             | —         |
| 17. Pains in back        | 2.86    | 1.82  | 2.23        | 2.29     | 4.04          | 3.26       | 1.02       | 3.08       | 1.77          | 2.31      |
| 18. Pains in joints      | 4.64    | 2.17  | 2.65        | 3.92     | 3.03          | —          | 2.05       | 1.92       | .88           | 1.85      |
| 19. Running sores        | .92     | .23   | .30         | —        | —             | .54        | .26        | —          | —             | .46       |
| 20. Swelling ankles      | .11     | .34   | .42         | —        | —             | —          | .26        | .38        | —             | —         |
| 21. Vomiting             | .22     | .23   | 1.15        | 2.94     | —             | —          | .26        | .77        | —             | 2.31      |
| 22. Abdominal pains      | 2.97    | 3.65  | 2.05        | 13.40    | —             | 3.26       | 2.56       | 8.08       | —             | 4.17      |
| 23. Hernia               | .27     | .23   | .60         | —        | —             | .54        | —          | .38        | —             | —         |
| 24. Nervous disorders    | 1.56    | 1.48  | 1.02        | 1.63     | —             | 1.09       | .77        | 1.92       | —             | —         |
| Total symptom rate       | 33.33   | 22.46 | 59.17       | 98.69    | 30.30         | 54.89      | 31.20      | 69.23      | 24.78         | 62.50     |

Reasons for some of the wide variations between localities are due partly to the differing age-sex characteristics to be found in the localities. For example, in Panao, females have a medical symptom rate of 26.09 compared with 17.3 for males. (See Table 74.) Females have higher rates in 20 out of the 24 symptoms reported upon, males have more diarrhea, defective vision, difficult breathing, and running sores. On the other hand, the female rates for pains in joints, nervous disorders, headaches, unexplained tiredness, swelling of ankles, vomiting, hernia, loss of weight, loss of appetite, running ear, nosebleed, and skin rash were all twice as high as the corresponding rates for males.

Age has often been shown to be closely related positively to the need for medical care. The data for Panao further substantiate this functional relation. Table 75 shows the main symptoms according to broad age groups. The medical symptom rate increases consistently with age from 9.7 in the under 15 years of age class to 59.5 for persons over 65 years old.

Abdominal pains increase with age excepting in the age group 45 to 64. Toothaches are more important in adulthood between ages 20 and 64, inclusive. Pains in joints increase consistently with age up to "old age" then declines. Pains in back, on the other hand, are highest in old age.

Nervous disorders are more prevalent among the age group 20 to 44 years and headaches in the class 65 and over.

Diarrhea is high in youth (under 15 years old) and old age (65 and over).

Accidents tend to concentrate in adulthood years from 20 to 64. Defective vision advances with age. All other symptoms lumped together tend to increase with age.

TABLE 74

## MEDICAL SYMPTOMS BY SEX IN PANA0

| Symptoms                 | Number of symptoms   |      |        | Number of symptoms   |      |        |
|--------------------------|----------------------|------|--------|----------------------|------|--------|
|                          | per 1,000 population |      |        | per 1,000 population |      |        |
|                          | Total                | Male | Female | Total                | Male | Female |
| 22. Abdominal pains      | 35                   | 15   | 20     | 4.0                  | 3.9  | 4.1    |
| 10. Toothache            | 28                   | 11   | 17     | 3.3                  | 2.8  | 3.5    |
| 18. Pains in joints      | 19                   | 4    | 15     | 2.1                  | 1.0  | 3.1    |
| 17. Pains in back        | 15                   | 5    | 10     | 1.8                  | 1.3  | 2.1    |
| 24. Nervous disorders    | 13                   | 3    | 10     | 1.5                  | .8   | 2.1    |
| 9. Headache              | 13                   | 2    | 11     | 1.5                  | .5   | 2.3    |
| 1. Diarrhea              | 11                   | 7    | 4      | 1.3                  | 1.8  | .8     |
| 3. Accidents             | 10                   | 3    | 7      | 1.1                  | .8   | 1.4    |
| 14. Persistent cough     | 9                    | 3    | 6      | 1.0                  | .8   | 1.2    |
| 2. Chills and fevers     | 8                    | 3    | 5      | .9                   | .8   | 1.0    |
| 11. Defective vision     | 7                    | 5    | 2      | .8                   | 1.3  | .4     |
| Others                   | 25                   | 6    | 19     | 2.8                  | 1.5  | 4.1    |
| 16. Difficult breathing  | 5                    | 4    | 1      |                      |      |        |
| 6. Unexplained tiredness | 4                    | 0    | 4      |                      |      |        |
| 20. Swelling of ankles   | 3                    | 0    | 3      |                      |      |        |
| 21. Vomiting             | 2                    | 0    | 2      |                      |      |        |
| 23. Hernia               | 2                    | 0    | 2      |                      |      |        |
| 19. Running sores        | 2                    | 2    | 0      |                      |      |        |
| 4. Loss of weight        | 2                    | 0    | 2      |                      |      |        |
| 5. Loss of appetite      | 2                    | 0    | 2      |                      |      |        |
| 7. Running ear           | 1                    | 0    | 1      |                      |      |        |
| 8. Nosebleed             | 1                    | 0    | 1      |                      |      |        |
| 12. Skin rash            | 1                    | 0    | 1      |                      |      |        |
| Total symptoms           | 193                  | 67   | 126    | 22.1                 | 17.3 | 26.1   |
| Total population         | 871                  | 388  | 483    |                      |      |        |

Table 76 summarizes the medical symptom rates by age and sex for the pueblo of Panao. Thus, the medical symptom rate increases with age for both males and females with the exception of males between 15 and 19 years. The inconsistency may be due to under-reporting in this group.

TABLE 75

## NUMBER OF MEDICAL SYMPTOMS BY AGE IN PANA O

| Symptoms              | A g e s                               |         |         |         |         | Number per 1,000 population            |         |         |         |         |
|-----------------------|---------------------------------------|---------|---------|---------|---------|--|---------|---------|---------|---------|
|                       | : 0 - 14:14 - 19:20 - 44:45-64 : 65 - |         |         |         |         | : 0 - 14:14 - 19:20 - 44:45 - 64: 65 - |         |         |         |         |
|                       | :Number                               | :Number | :Number | :Number | :Number | :Number                                | :Number | :Number | :Number | :Number |
| 22. Abdominal pains   | : 9                                   | : 4     | : 15    | : 2     | : 5     | : 2.3                                  | : 4.6   | : 5.9   | : 2.2   | : 13.6  |
| 10. Toothache         | : 9                                   | : 1     | : 15    | : 3     | : --    | : 2.3                                  | : 1.2   | : 5.8   | : 3.3   | : --    |
| 18. Pains in joints   | : 2                                   | : 1     | : 5     | : 9     | : 2     | : .5                                   | : 1.2   | : 2.0   | : 9.9   | : 5.4   |
| 17. Pains in back     | : 1                                   | : 0     | : 9     | : 2     | : 3     | : .2                                   | : --    | : 3.5   | : 2.2   | : 8.1   |
| 24. Nervous disorders | : 0                                   | : 1     | : 9     | : 2     | : 1     | : --                                   | : 1.2   | : 3.5   | : 2.2   | : 2.7   |
| 9. Headache           | : 0                                   | : 0     | : 7     | : 2     | : 4     | : --                                   | : --    | : 2.8   | : 2.2   | : 10.3  |
| 1. Diarrhea           | : 7                                   | : 0     | : 2     | : 1     | : 1     | : 1.8                                  | : --    | : 0.8   | : 1.1   | : 2.7   |
| 3. Accidents          | : 2                                   | : 0     | : 5     | : 3     | : 0     | : .5                                   | : --    | : 2.0   | : 3.3   | : --    |
| 14. Persistent cough  | : 1                                   | : 1     | : 4     | : 2     | : 1     | : .2                                   | : 1.1   | : 1.6   | : 2.2   | : 2.7   |
| 2. Chills and fever   | : 1                                   | : 1     | : 3     | : 3     | : --    | : .2                                   | : 1.1   | : 1.2   | : 3.3   | : --    |
| 11. Defective vision  | : 1                                   | : 0     | : 1     | : 3     | : 2     | : .2                                   | : --    | : 0.4   | : 3.3   | : 5.4   |
| Others                | : 6                                   | : 1     | : 7     | : 8     | : 3     | : 1.5                                  | : 1.1   | : 2.8   | : 8.8   | : 8.1   |
| Total with symptoms   | : 39                                  | : 10    | : 82    | : 40    | : 22    | : 9.7                                  | : 11.5  | : 32.3  | : 44.0  | : 59.5  |

TABLE 76

## MEDICAL SYMPTOM RATE FOR ALL CATEGORIES BY AGE AND SEX, PANA0

| Age              | Population | Persons reporting positive symptoms |                       | Symptoms reported | Symptoms per 100 population |
|------------------|------------|-------------------------------------|-----------------------|-------------------|-----------------------------|
|                  |            | Number                              | Percent of population | Number            |                             |
|                  |            |                                     |                       |                   |                             |
| TOTAL POPULATION |            |                                     |                       |                   |                             |
| Under 15 years   | 402        | 38                                  | 9.5-                  | 39                | 9.7                         |
| 15 - 19 "        | 87         | 7                                   | 8.0                   | 10                | 11.5-                       |
| 20 - 44 "        | 254        | 52                                  | 20.5-                 | 82                | 32.3                        |
| 45 - 64 "        | 91         | 30                                  | 33.0                  | 40                | 44.0                        |
| 65 and over      | 37         | 18                                  | 48.6                  | 22                | 59.5-                       |
| MALES            |            |                                     |                       |                   |                             |
| Under 15 years   | 202        | 21                                  | 10.4                  | 21                | 10.4                        |
| 15 - 19 "        | 38         | 2                                   | 5.3                   | 2                 | 5.3                         |
| 20 - 44 "        | 96         | 14                                  | 14.6                  | 21                | 21.9                        |
| 45 - 64 "        | 38         | 11                                  | 28.9                  | 16                | 42.1                        |
| 65 and over      | 14         | 7                                   | 50.0                  | 7                 | 50.0                        |
| FEMALES          |            |                                     |                       |                   |                             |
| Under 15 years   | 200        | 17                                  | 8.5                   | 18                | 9.0                         |
| 15 - 19 "        | 49         | 5                                   | 10.2                  | 8                 | 16.3                        |
| 20 - 44 "        | 158        | 38                                  | 24.1                  | 61                | 38.6                        |
| 45 - 64 "        | 53         | 19                                  | 35.8                  | 24                | 45.3                        |
| 65 and over      | 23         | 11                                  | 47.8                  | 15                | 65.2                        |

Pattern of medical symptoms.---Distinctive patterns of medical need are associated with the three study sites. One technique of presentation and analysis of this data is simply to select the most important symptoms in each locality. Table 77 shows symptoms with rates of 3.00 or more, by locality.

The scope of symptoms with rates of 3.00 or more varies somewhat by locality from only toothache and abdominal pains in Panao, and headaches and defective vision in Tres Esquinas to diarrhea, chills and fever, headaches, defective vision, skin rash, persistent cough, pains in back, and abdominal pains in Las Palmas. Afilador reported the highest symptom rates of all localities for chills and fevers, headaches, toothaches, defective vision, persistent cough, and abdominal pains. In summarizing this data greatest medical need prevails in Tingo Maria and most rural localities, especially Afilador, Shapajilla, Las Palmas, and Tulumayo.

A comparison of the three study sites shows interesting similarities and differences in the pattern of medical symptoms. Table 78 shows the proportional distribution of all categories. Thus, the similarities between the two jungle sites--Tingo Maria and Juanjui--are clearly shown especially in respect to relative importance of symptoms of diarrhea, chills and fevers, defective vision, and abdominal pains. However, important differences should also be noted in regard to lower proportions in Juanjui for loss of appetites, headaches, toothaches, and skin rash, also higher proportions in Juanjui for persistent cough, pains in backs, pains in joints, running sores, abdominal pains, and nervous disorders.

TABLE 77

SYMPTOMS WITH 3.00 OR MORE PER 100 POPULATION BY LOCALITY

| Symptoms            | Juanjui | Panao | Tingo : Maria | Afila- : dor | Hda. : Deli- : cias | Las : Palmas | Naran- : jillo | Shap- : ajilla | Tres : Esqui- : nas | Tulum- : ayo |
|---------------------|---------|-------|---------------|--------------|---------------------|--------------|----------------|----------------|---------------------|--------------|
| 1. Diarrhea         | —       | —     | 5.73          | —            | —                   | 3.80         | 5.12           | —              | —                   | —            |
| 2. Chills and fever | 4.53    | —     | 7.36          | 19.61        | —                   | 11.41        | —              | 14.62          | —                   | 18.98        |
| 3. Loss of appetite | —       | —     | 3.56          | —            | —                   | —            | 3.07           | 3.08           | —                   | —            |
| 4. Headache         | —       | —     | 5.43          | 14.05        | —                   | 4.35         | —              | 12.31          | 6.19                | 6.94         |
| 5. Toothache        | —       | 3.19  | 7.96          | 14.05        | 7.07                | 8.15         | 3.07           | 7.69           | —                   | —            |
| 6. Defective vision | —       | —     | 6.33          | 9.80         | 6.06                | 3.26         | 3.07           | —              | 6.19                | 6.94         |
| 7. Skin rash        | —       | —     | —             | —            | —                   | 4.89         | —              | 6.15           | —                   | 5.09         |
| 8. Persistent cough | 3.02    | —     | 3.74          | 5.88         | 5.05                | 3.26         | —              | —              | —                   | —            |
| 9. Pains in back    | —       | —     | —             | —            | 4.04                | 3.26         | —              | 3.08           | —                   | —            |
| 10. Pains in joints | 4.64    | —     | —             | 3.92         | 3.03                | —            | —              | —              | —                   | —            |
| 11. Abdominal pains | —       | 3.65  | —             | 13.40        | —                   | 3.26         | —              | 8.08           | —                   | 4.17         |

TABLE 78

## PROPORTIONAL DISTRIBUTION OF MEDICAL SYMPTOMS BY STUDY SITE

| Symptoms                 | Total |        | Juanjui |        | Panao |        | Tingo Maria and<br>rural localities |        |
|--------------------------|-------|--------|---------|--------|-------|--------|-------------------------------------|--------|
|                          | No.   | Pct.   | No.     | Pct.   | No.   | Pct.   | No.                                 | Pct.   |
| 1. Diarrhea              | 189   | 6.96   | 39      | 6.31   | 12    | 6.09   | 138                                 | 7.26   |
| 2. Chills and fever      | 388   | 14.29  | 84      | 13.59  | 9     | 4.57   | 295                                 | 15.52  |
| 3. Accidents             | 37    | 1.36   | 6       | 0.97   | 9     | 4.57   | 22                                  | 1.16   |
| 4. Loss of weight        | 32    | 1.18   | 7       | 1.13   | 2     | 1.02   | 23                                  | 1.21   |
| 5. Loss of appetite      | 116   | 4.27   | 12      | 1.94   | 2     | 1.02   | 102                                 | 5.37   |
| 6. Unexplained tiredness | 34    | 1.25   | 8       | 1.29   | 4     | 2.03   | 22                                  | 1.16   |
| 7. Running ear           | 38    | 1.40   | 10      | 1.62   | 2     | 1.02   | 26                                  | 1.37   |
| 8. Nosebleed             | 36    | 1.33   | 11      | 1.78   | 3     | 1.52   | 22                                  | 1.16   |
| 9. Headaches             | 254   | 9.35   | 32      | 5.18   | 13    | 6.60   | 209                                 | 10.99  |
| 10. Toothache            | 284   | 10.46  | 16      | 2.59   | 28    | 14.21  | 240                                 | 12.62  |
| 11. Defective vision     | 248   | 9.13   | 52      | 8.41   | 9     | 4.57   | 187                                 | 9.84   |
| 12. Skin rash            | 118   | 4.34   | 18      | 2.91   | 1     | 0.51   | 99                                  | 5.21   |
| 13. Pains in chest       | 23    | 0.85   | 7       | 1.13   | 0     | —      | 16                                  | 0.84   |
| 14. Persistent cough     | 178   | 6.55   | 56      | 9.06   | 10    | 5.08   | 112                                 | 5.89   |
| 15. Spitting blood       | 11    | 0.41   | 5       | 0.81   | 0     | —      | 6                                   | 0.32   |
| 16. Difficult breathing  | 19    | 0.70   | 4       | 0.65   | 4     | 2.03   | 11                                  | 0.58   |
| 17. Pains in back        | 142   | 5.23   | 53      | 8.58   | 16    | 8.12   | 73                                  | 3.84   |
| 18. Pains in joints      | 132   | 6.70   | 86      | 13.92  | 19    | 9.64   | 77                                  | 4.05   |
| 19. Running sores        | 27    | 0.99   | 17      | 2.75   | 2     | 1.02   | 8                                   | 0.42   |
| 20. Swelling ankles      | 14    | 0.52   | 2       | 0.32   | 3     | 1.52   | 9                                   | 0.47   |
| 21. Vomiting             | 42    | 1.55   | 4       | 0.65   | 2     | 1.02   | 36                                  | 1.89   |
| 22. Abdominal pains      | 211   | 7.77   | 55      | 8.90   | 32    | 16.24  | 124                                 | 6.52   |
| 23. Hernia               | 19    | 0.70   | 5       | 0.81   | 2     | 1.02   | 12                                  | 0.63   |
| 24. Nervous disorder     | 74    | 2.72   | 29      | 4.69   | 13    | 6.60   | 32                                  | 1.68   |
| Total                    | 2716  | 100.00 | 618     | 100.00 | 197   | 100.00 | 1901                                | 100.00 |



Panao's pattern differs in a few important respects from those of Juanjui and Tingo Maria. For instance, the relative number of chills and fevers, defective vision, and skin rash are low in comparison with the other study sites, while proportions of accidents, difficult breathing, swelling of ankles, and abdominal pains are relatively high.

If all symptoms reported in each study site are combined, rates for each category of symptoms may be computed by three income classes: Low, under 1,000 soles; Middle, 1,000 to 2,999 soles; High, 3,000 soles and over. Table 79 shows this data in detail.

It is clear that income bears a relation to medical symptom rates in at least half of the 24 symptoms. This relation is positive, that is, the rate increases with income, in the case of (1) diarrhea, (2) loss of weight, (3) loss of appetite, (4) toothache, (5) defective vision, (6) skin rash, and (7) hernia. The relation is negative in the case of (1) pains in chest, (2) pains in back (3) pains in joints, (4) running sores, and (5) abdominal pains. The total medical symptom rate increases with income from 37.34 for the population in families with incomes under 1,000 soles to 41.64 for families with incomes of 3,000 soles and over. Thus, families with high incomes generally have more positive symptoms.

However, this does not hold for all study sites as can be seen from Table 80. High-income families in Tingo Maria have a rate of 49.20 compared with 73.53 for low-income families and 73.75 for middle-income families. Thus, high-income families in Tingo Maria enjoy a rate approximately one-third less than the other two classes.

TABLE 79

MEDICAL SYMPTOM RATES, PER 1,000 POPULATION, FOR ALL  
THREE STUDY SITES COMBINED, BY INCOME CLASSES

| Symptom                       | All<br>incomes | Under<br>1,000 | 1000 -<br>2,999 | 3,000 and<br>over |
|-------------------------------|----------------|----------------|-----------------|-------------------|
| 1. Diarrhea                   | 33.26          | 17.63          | 27.48           | 44.00             |
| 2. Chills and fever           | 48.99          | 52.88          | 53.34           | 43.48             |
| 3. Accidents                  | 6.61           | 9.62           | 9.16            | 3.14              |
| 4. Loss of weight             | 6.15           | 1.60           | 2.69            | 11.00             |
| 5. Loss of appetite           | 16.63          | 8.01           | 10.78           | 25.14             |
| 6. Unexplained tired-<br>ness | 6.84           | 8.01           | 4.85            | 8.38              |
| 7. Running ear                | 5.47           | 4.81           | 5.93            | 5.24              |
| 8. Nosebleed                  | 6.84           | 3.21           | 9.16            | 5.76              |
| 9. Headaches                  | 30.76          | 24.04          | 35.56           | 28.29             |
| 10. Toothaches                | 40.10          | 19.23          | 30.71           | 56.05             |
| 11. Defective vision          | 37.82          | 28.85          | 31.79           | 46.62             |
| 12. Skin rash                 | 14.81          | 9.62           | 14.01           | 17.29             |
| 13. Pains in chest            | 3.19           | 4.81           | 3.77            | 2.10              |
| 14. Persistent cough          | 29.16          | 19.23          | 37.72           | 24.10             |
| 15. Spitting blood            | 1.82           | --             | 2.69            | 1.57              |
| 16. Difficult breathing       | 3.87           | 4.81           | 3.23            | 4.19              |
| 17. Pains in back             | 24.15          | 33.65          | 31.25           | 14.14             |
| 18. Pains in joints           | 33.95          | 56.09          | 35.56           | 25.14             |
| 19. Running sores             | 5.47           | 9.62           | 7.54            | 2.10              |
| 20. Swelling ankles           | 2.73           | 1.60           | 3.77            | 2.10              |
| 21. Vomiting                  | 5.70           | 4.81           | 6.47            | 5.24              |
| 22. Abdominal pains           | 27.57          | 36.86          | 32.87           | 19.38             |
| 23. Hernia                    | 3.87           | --             | 3.23            | 5.76              |
| 24. Nervous disorder          | 13.44          | 14.42          | 10.24           | 16.24             |
| Total                         | 409.20         | 373.40         | 413.79          | 416.45            |

On the other hand, income is less clearly associated with medical need in Juanjui, the rate varying only from 33.25 for low to 36.60 for high-income families. Furthermore, the variation is not consistent since the lowest rate is found among middle-income families. Only in Pano is the symptom rate clearly correlated negatively with income. There the rate increases from 14.24 for high-income families to 32.14 for low-income families. In fact, low-income people are burdened with over twice the medical need found among high-income families.

TABLE 80

MEDICAL SYMPTOM RATES FOR EACH STUDY SITE,  
BY INCOME CLASS

| Symptom                  | J u a n J u i              |        |        |            |
|--------------------------|----------------------------|--------|--------|------------|
|                          | Number per 1000 population |        |        |            |
|                          | High                       | Medium | Low    | All income |
| 1. Diarrhea              | 35.85                      | 16.03  | 12.89  | 21.04      |
| 2. Chills and fevers     | 30.19                      | 45.94  | 64.43  | 45.31      |
| 3. Accidents             | —                          | 4.27   | 5.15   | 3.24       |
| 4. Loss of weight        | 13.21                      | —      | —      | 3.78       |
| 5. Loss of Appetite      | 13.21                      | 5.34   | —      | 6.47       |
| 6. Unexplained tiredness | 9.43                       | 1.07   | 5.15   | 4.31       |
| 7. Running ear           | 9.43                       | 3.21   | 5.15   | 5.39       |
| 8. Nosebleed             | 5.66                       | 7.48   | 2.58   | 5.39       |
| 9. Headaches             | 18.87                      | 19.23  | 10.31  | 17.26      |
| 10. Toothache            | 16.98                      | 3.21   | 10.31  | 8.63       |
| 11. Defective vision     | 35.85                      | 22.44  | 30.93  | 28.05      |
| 12. Skin rash            | 5.66                       | 12.82  | 7.73   | 9.71       |
| 13. Pains in chest       | 3.77                       | 4.27   | 2.58   | 3.78       |
| 14. Persistent cough     | 28.30                      | 37.39  | 15.46  | 30.20      |
| 15. Spitting blood       | 3.77                       | 3.21   | —      | 2.70       |
| 16. Difficult breathing  | 1.89                       | 3.21   | —      | 2.16       |
| 17. Pains in back        | 22.64                      | 30.98  | 30.93  | 28.59      |
| 18. Pains in joints      | 33.96                      | 42.74  | 72.16  | 46.39      |
| 19. Running sores        | 5.66                       | 9.62   | 12.89  | 9.17       |
| 20. Swelling of ankles   | 1.89                       | —      | 2.58   | 1.08       |
| 21. Vomiting             | 1.89                       | 2.14   | 2.58   | 2.16       |
| 22. Abdominal pains      | 33.96                      | 28.95  | 25.77  | 29.67      |
| 23. Hernia               | 7.55                       | 1.07   | —      | 2.70       |
| 24. Nervous disorder     | 26.42                      | 10.68  | 12.89  | 15.64      |
| Total                    | 366.04                     | 315.17 | 332.47 | 333.33     |



It is difficult to account for many of the inconsistencies which the preceding analysis brings out between income and medical need. Without trying to explain entirely what factors might influence the results, it should be pointed out that the results obtained from such a tool as the medical symptom questionnaire depend largely upon the individual respondents appraisal as to whether a symptom is present, in other words, the general awareness of what constitutes medical need. Furthermore, it is not yet clear how much effect the differences between culture groups in the "pain" threshold might have in the inadequacies of reporting on symptoms by the techniques employed here. Mayo and Fullerton in a study of a southern county in the United States suggest, for example, that the explanation for their finding that the probable under-representation of positive symptoms in the Negro population was due in part to the "pain endurance" attitude developed by the Negro.<sup>1</sup>

But to the above qualifying remarks should be added the tendency noted in this study for a wider scope of symptoms to be reported by larger number of individuals in the Tingo Maria area and a broader medical vocabulary, e.g. "anemia", "parasites" etc., which is due without doubt to the presence of hospital facilities and medical personnel within the area, whereas Juanjui has practically no access to a medical doctor or hospital, and Pano does not have private medical personnel or hospital facilities close at hand.

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<sup>1</sup>  
Selz C. Mayo and Kie Sebastian Fullerton, Medical Care in Greene County, A.E.S. Bul. 364, North Carolina State College, Raleigh, Nov. 1948.

Although Panao did not have a resident medical doctor at time of the survey the pueblo was the site of a Sanitary Post and Public Health Pharmacist under Federal supervision.

Treatment of medical symptoms.—Families were asked to indicate the type of treatment given for each symptom as follows: (1) No treatment (ningun tratamiento), (2) medical prescriptions or medical doctors (prescripciones o medico), (3) home remedies (remedios caseros, yerbas, etc.), and (4) curandero (native doctor).

The proportion of all symptoms treated by a medical doctor varies, according to Table 81, from 15.6 percent in Shapajilla to 59.7 percent in Tingo Maria. Besides Tingo Maria the widest use of medical doctors are found in Naranjillo and Tres Esquinas.

The effect of lack of medical personnel and facilities may be seen in Juanjui where only 25.3 percent of the symptoms found among high-income families were treated by a medical doctor compared with 66.1 percent in Tingo Maria and 77.3 percent in Panao. Thus, whereas the range between low and high-income classes in Panao is from 25.4 percent to 77.3 percent, it is only from 16.3 percent to 25.3 percent in Juanjui, and the relative effect of income on use of medical doctors is shown to be slight in Juanjui because they are not readily available.

Generally, use of medical doctors increases with income as is clearly shown in Juanjui, Panao, Tingo Maria, Afilador, Shapajilla, Tres Esquinas, and Tulumayo. In Hda. Delicias, Las Palmas, and Naranjillo no such relationship is apparent.

The use of home remedies varies widely from zero percent of treatment in Tres Esquinas to 66.9 percent in Afilador. Home remedies are generally the more prevailing type of treatment in the low-income class.

TABLE 81

## PROPORTIONAL DISTRIBUTION OF TYPES OF TREATMENT GIVEN MEDICAL SYMPTOMS, BY LOCALITY

|                               | Juanjui | Panao | Tingo Maria | Afilador | Hda. Delicias | Las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulumayo |
|-------------------------------|---------|-------|-------------|----------|---------------|------------|------------|------------|---------------|----------|
|                               | Pct.    | Pct.  | Pct.        | Pct.     | Pct.          | Pct.       | Pct.       | Pct.       | Pct.          | Pct.     |
| ALL FAMILIES                  |         |       |             |          |               |            |            |            |               |          |
| No treatment                  | 39.5    | 15.2  | 21.2        | 8.6      | 66.6          | 17.8       | 26.2       | 18.3       | 46.4          | 20.7     |
| Home remedies                 | 38.4    | 39.6  | 18.9        | 66.9     | 16.7          | 55.5       | 16.4       | 66.1       | —             | 51.2     |
| Medical prescription (doctor) | 18.9    | 43.1  | 59.7        | 24.5     | 16.7          | 26.7       | 57.4       | 15.6       | 53.6          | 28.1     |
| Curandero                     | 3.2     | 2.1   | .2          | —        | —             | —          | —          | —          | —             | —        |
| TOTAL                         | 100.0   | 100.0 | 100.0       | 100.0    | 100.0         | 100.0      | 100.0      | 100.0      | 100.0         | 100.0    |
| HIGH INCOME FAMILIES          |         |       |             |          |               |            |            |            |               |          |
| No treatment                  | 37.1    | 15.9  | 25.3        | 14.7     | —             | 2.4        | 25.4       | 17.9       | 33.3          | 5.9      |
| Home remedies                 | 32.5    | 6.8   | 8.6         | 48.5     | —             | 73.8       | 18.7       | 48.7       | —             | 38.2     |
| Medical prescription (doctor) | 25.3    | 77.3  | 66.1        | 36.8     | 100.0         | 23.8       | 55.9       | 33.4       | 66.7          | 55.9     |
| Curandero                     | 15.1    | —     | —           | —        | —             | —          | —          | —          | —             | —        |
| TOTAL                         | 100.0   | 100.0 | 100.0       | 100.0    | 100.0         | 100.0      | 100.0      | 100.0      | 100.0         | 100.0    |
| MIDDLE INCOME FAMILIES        |         |       |             |          |               |            |            |            |               |          |
| No treatment                  | 44.4    | 10.0  | 14.9        | 6.4      | 71.4          | 30.9       | 26.3       | 18.5       | 40.0          | 23.2     |
| Home remedies                 | 36.6    | 48.9  | 31.8        | 72.0     | 17.9          | 38.2       | 15.8       | 69.5       | —             | 57.9     |
| Medical prescription (doctor) | 15.9    | 38.9  | 53.0        | 21.6     | 10.7          | 30.9       | 57.9       | 12.0       | 60.0          | 18.9     |
| Curandero                     | 3.1     | 2.2   | .3          | —        | —             | —          | —          | —          | —             | —        |
| TOTAL                         | 100.0   | 100.0 | 100.0       | 100.0    | 100.0         | 100.0      | 100.0      | 100.0      | 100.0         | 100.0    |
| LOW INCOME FAMILIES           |         |       |             |          |               |            |            |            |               |          |
| No treatment                  | 31.8    | 22.2  | 24.4        | 10.0     | —             | —          | 33.3       | 18.2       | 80.0          | 66.6     |
| Home remedies                 | 51.1    | 49.2  | 36.6        | 73.3     | —             | 100.0      | —          | 75.7       | —             | 16.7     |
| Medical prescription (doctor) | 16.3    | 25.4  | 36.6        | 16.7     | —             | —          | 66.7       | 6.1        | 20.0          | 16.7     |
| Curandero                     | .8      | 3.2   | 2.4         | —        | —             | —          | —          | —          | —             | —        |
| TOTAL                         | 100.0   | 100.0 | 100.0       | 100.0    | —             | 100.0      | 100.0      | 100.0      | 100.0         | 100.0    |

Treatment by curandero, the native medicine man, is of minor importance in Juanjui, Panao, and Tingo Maria and no such treatments are reported in the remaining seven localities.

In summary, the information secured by the medical symptoms approach shows that medical need is greatest in Tingo Maria, Afilador, Las Palmas, Shapajilla, and Tulumayo. Over half of this medical need was treated by a medical doctor in Tingo Maria, Naranjillo, and Tres Esquinas.

The rates of medical symptoms that were not treated by a medical doctor are shown in Table 82. This constitutes what might be referred to as the "unmet medical need." The highest rate of unmet medical symptoms are found in Shapajilla and the lowest in Tres Esquinas. Of particular significance is the fact that although the total medical symptoms rate was considerably higher in Tingo Maria than in Juanjui, when medical treatment is considered, the unmet medical symptoms rate for Tingo Maria is less than for Juanjui.

TABLE 82

NUMBER OF MEDICAL SYMPTOMS PER 100 POPULATION THAT DID  
NOT RECEIVE TREATMENT BY A MEDICAL DOCTOR, BY  
LOCALITY

| <u>Locality</u> | <u>Number</u> |
|-----------------|---------------|
| Afilador        | 74.51         |
| Shapajilla      | 58.43         |
| Tulumayo        | 44.94         |
| Las Palmas      | 40.23         |
| Juanjui         | 27.03         |
| Hda. Delicias   | 24.70         |
| Tingo Maria     | 23.85         |
| Naranjillo      | 13.29         |
| Panao           | 12.78         |
| Tres Esquinas   | 11.50         |



Table 83 shows what proportion of the population have medical symptoms and also what proportion of the families are involved. As can be seen, the percentage of population involved is much smaller (16.3 to 34.2 percent) than the percentage of families (53.4 to 79.7 percent). This means that the effects of medical need are felt more by the family unit than is indicated by the number of individuals involved.

TABLE 83

PERCENTAGES OF POPULATION AND FAMILIES WITH MEDICAL SYMPTOMS, BY STUDY SITE AND INCOME CLASS OF FAMILY

|                | Juanjui         |               | Panao           |               | Tingo Maria     |               |
|----------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
|                | Popu-<br>lation | Fami-<br>lies | Popu-<br>lation | Fami-<br>lies | Popu-<br>lation | Fami-<br>lies |
| Families with: |                 |               |                 |               |                 |               |
| High income    | 26.7            | 78.9          | 10.1            | 38.1          | 29.9            | 71.4          |
| Middle income  | 28.9            | 77.3          | 18.2            | 54.0          | 39.2            | 79.4          |
| Low income     | 28.8            | 85.3          | 22.5            | 67.4          | 38.8            | 81.3          |
| Total          | 28.3            | 79.7          | 16.3            | 53.4          | 34.2            | 75.8          |

As evidence of the impact on the economic productivity of the family unit, Table 84 shows that 20.1 percent of all families in Juanjui had one or more members not at work on the day of interview due to sickness or accident. Panao had 8.7 percent of all families in this situation, and Tingo Maria only 5.9 percent.

Further analysis of the impacts of ill health on the functioning of family shows that during the six months prior to the survey a fourth of all family heads in Juanjui lost 60 days or more of work due to illness or accident. This compared with a fifth of

all family heads in Panao and a tenth in Tingo Maria. (See Table 85.) Also it is to be noted that only 41.0 percent of heads in Panao did not lose any time compared with 53.0 percent in Juanjui and 68.2 percent in Tingo Maria.

TABLE 84

FAMILIES DISTRIBUTED ACCORDING TO NUMBER OF PERSONS  
NOT WORKING DUE TO SICKNESS OR ACCIDENT ON THE  
DAY OF THE INTERVIEW, BY COMMUNITY, 1947

| Number of persons not at work | All Communities |       | Juanjui |       | Panao |       | Tingo Maria and Rural Localities |       |
|-------------------------------|-----------------|-------|---------|-------|-------|-------|----------------------------------|-------|
|                               | No.             | Pct.  | No.     | Pct.  | No.   | Pct.  | No.                              | Pct.  |
|                               | :               | :     | :       | :     | :     | :     | :                                | :     |
| All families                  | :813            | 100.0 | :300    | 100.0 | :161  | 100.0 | :673                             | 100.0 |
| 0                             | :720            | 88.6  | :240    | 80.0  | :147  | 91.3  | :633                             | 94.1  |
| 1                             | :79             | 9.7   | :50     | 16.7  | :12   | 7.5   | :35                              | 5.2   |
| 2                             | :11             | 1.4   | :7      | 2.3   | :2    | 1.2   | :4                               | .6    |
| 3                             | :2              | .2    | :2      | .7    | —     | —     | :1                               | .1    |
| 4                             | :1              | .1    | :1      | .3    | —     | —     | :                                |       |
|                               | :               | :     | :       | :     | :     | :     | :                                | :     |

TABLE 85

HEADS OF FAMILIES DISTRIBUTED ACCORDING TO NUMBER OF DAYS  
LOST DURING THE SIX MONTHS PRIOR TO THE INTERVIEW OWING  
TO SICKNESS OR ACCIDENT, BY COMMUNITY, 1947

| Number of days lost | All Communities |       | Juanjui |       | Panao |       | Tingo Maria |       |
|---------------------|-----------------|-------|---------|-------|-------|-------|-------------|-------|
|                     | No.             | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
|                     | :               | :     | :       | :     | :     | :     | :           | :     |
| All hands           | :813            | 100.0 | :300    | 100.0 | :161  | 100.0 | :352        | 100.0 |
| None                | :465            | 57.1  | :159    | 53.0  | :66   | 41.0  | :240        | 68.2  |
| 1 - 9               | :37             | 4.6   | :10     | 3.3   | :9    | 5.6   | :18         | 5.1   |
| 10 - 19             | :53             | 6.5   | :17     | 5.7   | :14   | 8.7   | :22         | 6.2   |
| 20 - 29             | :18             | 2.2   | :2      | .7    | :9    | 5.6   | :7          | 2.0   |
| 30 - 39             | :79             | 9.7   | :33     | 11.0  | :26   | 16.1  | :20         | 5.7   |
| 40 - 49             | :14             | 1.7   | :4      | 1.3   | :4    | 2.5   | :6          | 1.7   |
| 50 - 59             | :3              | .4    | —       | —     | :1    | .6    | :2          | .6    |
| 60 and over         | :144            | 17.8  | :75     | 25.0  | :32   | 19.9  | :37         | 10.5  |
|                     | :               | :     | :       | :     | :     | :     | :           | :     |

Infant mortality is exceedingly high in all localities studied. During 1946 in Juanjui there were 32 deaths of infants under one year of age and a total of 305 livebirths. This is an infant death rate of about 105 per 1,000. Similar data for Panao show 14 infant deaths during 1946 and 90 livebirths, or an infant mortality rate of 155 per 1,000. These data were secured directly from the official register in the respective municipalities by Sr. Noe Alva O., field supervisor of the study. No comparable data were available for the Tingo Maria study area.

However, information was secured directly from the family concerning the number of children who had died in the family prior to time of survey. Table 86 shows that a smaller percentage of Tingo Maria families (35.4 percent) had lost children by death than in either Juanjui (58.4 percent) or Panao (43.4 percent). This would indicate a somewhat lower infant mortality in Tingo Maria than the other two pueblos.

It appears that health is not a result of any one factor, such as climatic conditions, social or economic status, or demographic composition. Causes of differential morbidity evidenced by symptoms data and death rates are complex and are incapable of being explained by any single factor. To illustrate the interlocking nature of various social and economic factors on the health of a given population it is proposed here to compare briefly two rather extreme types of communities. Naranjillo is obviously one of the most favored localities in the ten localities being studied, while Afilador is one of the most backward. These two communities

were studied by Loomis in his analysis of extension methods in  
<sup>1</sup>  
 1943.

Comparative data on selected items for these two communities are as follows:

|                                  | <u>Naranjillo</u>  | <u>Afilador</u>    |
|----------------------------------|--------------------|--------------------|
| Medical symptoms rate            | 31.20 per 100 pop. | 98.69 per 100 pop. |
| Chills and fevers rate           | 1.79 " " "         | 19.61 " " "        |
| Medically treated symptoms       | 57.4 percent       | 24.5 percent       |
| Income per family                | s/ 3,167           | s/ 1,907'          |
| Percentage of families who:      |                    |                    |
| (a) Boil drinking water          | 59.3 percent       | 22.4 percent       |
| (b) Do not sleep on ground       | 98.8 "             | 82.1 "             |
| (c) Wear shoes                   | 92.6 "             | 73.1 "             |
| Percentage of families with:     |                    |                    |
| (a) Toilet facilities available  | 12.4 percent       | 14.9 percent       |
| (b) Less than 2 persons per room | 65.4 "             | 46.3 "             |
| Percentage of heads who:         |                    |                    |
| (a) Are Quechua speaking         | 18.5 percent       | 32.8 percent       |
| (b) Know how to read             | 88.9 "             | 70.1 "             |

The family standards of medical care are revealed in part by tabulation of their answers to the question: "What should the government do to help combat the diseases prevalent in the community?" Table 87 shows that three-fourths or more of the families recognize the great need for medical doctors in Juanjui and Pano, where there are no resident physicians. Also, almost half (44.8 percent) of all families in Tingo Maria suggested more medical doctors.

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<sup>1</sup>

Charles P. Loomis, Studies of Rural Social Organization in the United States, Latin America and Germany, State College Book Store, East Lansing, Mich., 1945. p. 245 et passim.

TABLE 86

FAMILIES DISTRIBUTED ACCORDING TO NUMBER OF DEAD  
CHILDREN REPORTED, BY COMMUNITY, 1947

| Number dead | All Communities |       | Juanjui |       | Panao |       | Tingo Maria |       |
|-------------|-----------------|-------|---------|-------|-------|-------|-------------|-------|
|             | No.             | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All numbers | 813             | 100.0 | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| None        | 443             | 54.4  | 125     | 41.6  | 91    | 56.6  | 227         | 64.6  |
| One         | 136             | 16.8  | 55      | 18.3  | 27    | 16.8  | 54          | 15.3  |
| Two         | 108             | 13.3  | 48      | 16.0  | 21    | 13.0  | 39          | 11.1  |
| Three       | 54              | 6.7   | 30      | 10.0  | 6     | 3.7   | 18          | 5.1   |
| Four        | 35              | 4.3   | 23      | 7.7   | 6     | 3.7   | 6           | 1.7   |
| Five        | 17              | 2.1   | 8       | 2.7   | 5     | 3.1   | 4           | 1.1   |
| Six         | 16              | 2.0   | 8       | 2.7   | 4     | 2.5   | 4           | 1.1   |
| Seven       | 2               | .2    | 2       | .7    | --    | --    | --          | --    |
| Eight       | 1               | .1    | --      | --    | 1     | .6    | --          | --    |
| No answer   | 1               | .1    | 1       | .3    | --    | --    | --          | --    |

Scarcity of medical doctors is undoubtedly one of the most pressing problems facing Peru and the people are generally aware of the acute need. Peru has between 1400 and 1500 medical doctors of which 800 are located in Lima and Callao and only 650 in the other department. <sup>1</sup> Lima has one physician per 1,000 population while the provinces have only one per 7,000 or 8,000 population.

According to good medical standards (one doctor per 1,000 population) there ought to be at least one or two doctors in Juanjui, at least one doctor in Panao, and four in Tingo Maria. In actuality, Tingo Maria has three medical doctors, the other communities have none.

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<sup>1</sup>

Constantino J. Carvallo, "La Sanidad en El Peru,"  
Boletin de la Oficina Sanitaria Panamericana, Vol. 25, No. 2, p. 10.

TABLE 87

FAMILIES REPORTING HEALTH AND SANITATION NEEDS, BY  
PUEBLO AND INCOME CLASSES

|                             | : Juanjui |       | : Pano |       | : Tingo Maria |       |
|-----------------------------|-----------|-------|--------|-------|---------------|-------|
|                             | :No.      | Pct.  | :No.   | Pct.  | :No.          | Pct.  |
| ALL FAMILIES                | :300      | 100.0 | :161   | 100.0 | :352          | 100.0 |
| Medical doctors             | :226      | 75.3  | :134   | 83.2  | :158          | 44.9  |
| Pharmacy                    | : 5       | 1.7   | : 48   | 29.8  | : 3           | 0.9   |
| Free drugs                  | : 24      | 8.0   | : 10   | 6.2   | : 26          | 7.4   |
| Hospital (Improve or build) | :226      | 75.3  | : 62   | 38.5† | :153          | 43.5- |
| Sanitary facilities         | : 15      | 5.0   | : 4    | 2.5   | : 15          | 4.3   |
| Sanitary campaign           | : 6       | 2.0   | : --   | --    | : 80          | 22.7  |
| Public assistance           | : 3       | 1.0   | : --   | --    | : 13          | 3.7   |
| No suggestions              | : 21      | 7.0   | : 7    | 4.3   | : 57          | 16.2  |
| HIGH INCOME FAMILIES        | : 71      | 100.0 | : 42   | 100.0 | :209          | 100.0 |
| Medical doctors             | : 57      | 80.3  | : 32   | 76.2  | : 91          | 43.5† |
| Pharmacy                    | : 2       | 2.8   | : 15   | 35.7  | : 2           | 1.0   |
| Free drugs                  | : 2       | 2.8   | : 3    | 7.1   | : 8           | 3.8   |
| Hospital                    | : 57      | 80.3  | : 16   | 38.1  | : 87          | 41.6  |
| Sanitary facilities         | : 5       | 7.0   | : 2    | 4.8   | : 11          | 5.3   |
| Sanitary campaign           | : 2       | 2.8   | : --   | --    | : 57          | 27.3  |
| Public assistance           | : 2       | 2.8   | : --   | --    | : 6           | 2.9   |
| No suggestions              | : 1       | 1.4   | : 1    | 2.4   | : 34          | 16.3  |
| MIDDLE INCOME FAMILIES      | :154      | 100.0 | : 76   | 100.0 | :130          | 100.0 |
| Medical doctors             | :114      | 74.0  | : 71   | 93.4  | : 64          | 49.2  |
| Pharmacy                    | : 2       | 1.3   | : 22   | 28.9  | : --          | --    |
| Free drugs                  | : 15      | 9.7   | : --   | --    | : 14          | 10.8  |
| Hospital                    | :114      | 74.0  | : 35   | 46.1  | : 63          | 48.5- |
| Sanitary facilities         | : 9       | 5.8   | : 2    | 2.6   | : 4           | 3.1   |
| Sanitary campaign           | : 2       | 1.3   | : --   | --    | : 22          | 16.9  |
| Public assistance           | : 1       | 0.6   | : --   | --    | : 5           | 3.8   |
| No suggestions              | : 11      | 7.1   | : 2    | 2.6   | : 20          | 15.4  |
| LOW INCOME FAMILIES         | : 75      | 100.0 | : 43   | 100.0 | : 13          | 100.0 |
| Medical doctors             | : 55      | 73.3  | : 31   | 72.1  | : 3           | 23.1  |
| Pharmacy                    | : 1       | 1.3   | : 11   | 25.6  | : 1           | 7.7   |
| Free drugs                  | : 7       | 9.3   | : 7    | 16.3  | : 4           | 30.8  |
| Hospital                    | : 55      | 73.3  | : 11   | 25.6  | : 3           | 23.1  |
| Sanitary facilities         | : 1       | 1.3   | : --   | --    | : --          | --    |
| Sanitary campaign           | : 2       | 2.7   | : --   | --    | : 1           | 7.7   |
| Public assistance           | : --      | --    | : --   | --    | : 2           | 15.4  |
| No suggestions              | : 9       | 12.0  | : 4    | 9.3   | : 3           | 23.1  |

Graduate nurses are even more scarce than doctors but Tingo Maria has three assigned to the hospital. The 60-bed hospital at Tingo Maria is capable of serving approximately 12,000 population (U. S. standards are 4.5 beds per 1,000 population). The problem in regard to hospital care is transportation. It is difficult and expensive for Juanjui, Uchiza, and other downstream people to use the Tingo Maria hospital although airplanes may be used in emergency cases. The hospital tries to overcome this problem by Sanitary Posts (Puestos Sanitarios) at Uchiza, Naranjillo, and Sinchona.

The Servicio Interamericana de Salud Publica has experimented with medical launches on the Ucayali River bearing modern medical personnel and facilities but such services have not been attempted on the Huallaga River. But a mobile medical dispensary was established for a short period to operate between Tingo Maria and Pucallpa on the Ucayali River.

Three-fourths of all families reported need for a hospital in Juanjui. Less awareness of hospital need is noted in Panao since patients may be taken fairly conveniently to the hospital in Huannco. But in Tingo Maria 43.4 percent of the families indicate a need to improve the present hospital facilities which may reflect the generally rising standards of living. Free drugs are spoken for by less than one family in 10 but these opinions tend to concentrate among low-income families.

Expressions of a need for better sanitary facilities and public health campaign of education and prevention are accepted more widely in Tingo Maria where the Public Health Department has been

doing an active job of combating malaria. Broad programs of public health and social assistance are comparatively new innovations in Peru. The Ministerio de Salud Publica y Asistencia Social was created in 1935. Its policy has gradually shifted from merely attacking epidemics when they arise to a broad health education program accompanied by positive preventive measures. The effectiveness of such a policy in creating a more general awareness of health problems and remedial measures seems to be fully demonstrated in the different attitudes of Tingo Maria families as to the need for such programs. Thus, in Tingo Maria over a fifth (22.4 percent) of the families indicated a need for sanitary campaigns and an additional 8.0 percent for social assistance and sanitary facilities. Not a single family indicated the need for a sanitary campaign in Pano and only 6.0 percent in Juanjui. Furthermore, support of sanitary campaigns is to be found more among high income families than middle or low income families. Apparently, the more they know about such things, the more they want.



## CHAPTER XII

### EDUCATION

Peruvian law provides for a six-year course of elementary education. Education is compulsory and free for all children from 7 to 16 years of age. Between the ages of six and seven years, children generally are enrolled in what in Peru are termed "classes of transition" (clases de transicion) from preschool to the primary grades of elementary school. Secondary education is offered in a five-year school but is not gratuitous.

Table 88 presents for Juanjui and Panao pertinent statistics on age and enrollment in the respective schools of the two places. These data were secured from local school records by Sr. Noe Alva O. who supervised the field survey party. Comparable information was not readily available on Tingo Maria schools but Table 89 presents statistics available at the time, supplied by O. Caribaldi P., assistant director of the Estacion Central de Colonizacion en Tingo Maria.

A wider spread in age groups is noted in Panao as a result of the broad scope of facilities. Thus, when the question Esta Ud. contento con la instruccion que reciben sus hijos? was put to the family respondents a larger percentage in Panao were satisfied than in any other locality. (See Table 90.) A bare majority of the families reported that they were satisfied in Juanjui but less than a fourth in Tingo Maria.

Dissatisfaction with the instruction provided was generally more widespread in the seven rural localities than in the pueblos.

This is understandable considering the almost complete lack of school facilities in rural parts. The only rural localities with schools operating in 1946 were Naranjillo and Las Palmas. However, a mixed school operated in Afilador during 1947.

The degree of dissatisfaction reported is indicative of the gap existing between family standards and the actual levels of education. Table 91 shows the important problems as reported by families. Thus, the lack of secondary education (educacion secundaria comun) was widely recognized in Juanjui. Secondary education is supposed to be offered in a five-year school but is not gratuitous as is elementary education. Almost a third (32.3 percent) of all families in Pano reported lack of secondary school education.

Distance was no problem in the pueblos but is a real problem in all rural localities. Lack of local schools was commented upon most widely in Afilador, Hda. Delicias, Shapajilla, Tres Esquinas, and Tulumayo.

Poor teaching was the main educational problem on the tongues of family respondents in Naranjillo but it was here also that the families showed a broader understanding of educational problems: This would indicate much higher standards throughout a large part of Naranjillo's people. Some suggested night schools, particularly for adults who cannot go to school during the day. Others specified needs for secondary education, better school buildings and facilities, more rural schools, kindergarten, and scholarships for families unable to afford education. It is also significant, as an indication of understanding of problems, that at least two respondents indicated a need to provide housing and other facilities for teachers.

TABLE 88

## AGE AND ENROLLMENT OF PUPILS IN THE SCHOOLS OF JUANJUI AND PANA O, 1946

| P a n a o |        |         |              |       |       |                 | J u a n j u i |      |              |      |       |       |  |
|-----------|--------|---------|--------------|-------|-------|-----------------|---------------|------|--------------|------|-------|-------|--|
| Age       | School | School: | Mixed school |       | Total | Central School: | Elementary    |      | Mixed school |      | Total |       |  |
|           | for    | for     | Boys         | Girls |       | Boys            | Girls         | Boys | Girls        | Boys |       | Girls |  |
| 4         | —      | —       | 4            | 1     | 5     | —               | —             | —    | —            | —    | —     |       |  |
| 5         | —      | —       | 11           | 4     | 15    | —               | —             | —    | —            | —    | —     |       |  |
| 6         | 2      | 6       | 13           | 7     | 28    | —               | —             | —    | —            | —    | —     |       |  |
| 7         | 11     | 15      | 5            | 6     | 37    | 1               | 1             | 53   | 65           | 20   | 18    |       |  |
| 8         | 23     | 14      | —            | —     | 37    | 3               | 1             | 31   | 43           | —    | —     |       |  |
| 9         | 19     | 10      | —            | —     | 29    | 11              | 7             | 45   | 32           | 4    | 6     |       |  |
| 10        | 26     | 14      | —            | —     | 40    | 23              | 24            | 39   | 27           | 2    | —     |       |  |
| 11        | 20     | 17      | —            | —     | 37    | 29              | 28            | 15   | 19           | 3    | 3     |       |  |
| 12        | 21     | 10      | —            | —     | 31    | 44              | 31            | 16   | 9            | 2    | 5     |       |  |
| 13        | 26     | 22      | —            | —     | 48    | 66              | 51            | 3    | 5            | 1    | 1     |       |  |
| 14        | 19     | 16      | —            | —     | 35    | 68              | 51            | 7    | —            | 7    | —     |       |  |
| 15        | 11     | 11      | —            | —     | 22    | 4               | 29            | —    | —            | —    | —     |       |  |
| 16        | 12     | 6       | —            | —     | 18    | —               | —             | —    | —            | —    | —     |       |  |
| 17        | 12     | 1       | —            | —     | 13    | —               | —             | —    | —            | —    | —     |       |  |
| 18        | 8      | 1       | —            | —     | 9     | 82              | 32            | —    | —            | —    | —     |       |  |
| 19        | 3      | 2       | —            | —     | 5     | —               | —             | —    | —            | —    | —     |       |  |
| N. A.     | 41     | —       | —            | —     | 41    | —               | —             | —    | —            | —    | —     |       |  |
| Total     | 254    | 145     | 33           | 18    | 450   | 331             | 255           | 209  | 200          | 39   | 33    |       |  |

TABLE 89

SCHOOL ENROLLMENT AND ATTENDANCE, TINGO MARIA AND  
RURAL PARTS, 1947

|                                  | : Enrollment | : Attendance |
|----------------------------------|--------------|--------------|
| Naranjillo mixed school          | : 60         | : 30         |
| Las Palmas " " No. 4006          | : 50         | : 35         |
| Afilador " "                     | : 55         | : 20         |
| "Oropel" No. 1280 in Tingo Maria | : 66         | : 60         |
| Central School No. 410 for girls | : 232        | : 170        |
| " " No. 409 for boys             | : 217        | : 150        |
| Total                            | : 680        | : 460        |

TABLE 90

SATISFACTION AND DISSATISFACTION WITH INSTRUCTION OF  
CHILDREN AMONG FAMILY RESPONDENTS, BY LOCALITY

|               | : Satisfied  | : Dissatisfied | : Total       |
|---------------|--------------|----------------|---------------|
|               | : No. : Pct. | : No. : Pct.   | : No. : Pct.  |
| Juanjui       | : 135 : 50.5 | : 132 : 49.5   | : 267 : 100.0 |
| Panao         | : 90 : 73.8  | : 32 : 26.2    | : 112 : 100.0 |
| Tingo Maria   | : 41 : 24.1  | : 129 : 75.9   | : 170 : 100.0 |
| Afilador      | : 11 : 55.0  | : 9 : 45.0     | : 20 : 100.0  |
| Hda. Delicias | : 1 : 25.0   | : 3 : 75.0     | : 4 : 100.0   |
| Las Palmas    | : 11 : 47.8  | : 12 : 52.2    | : 23 : 100.0  |
| Naranjillo    | : 10 : 19.2  | : 42 : 80.8    | : 52 : 100.0  |
| Shapajilla    | : 2 : 22.2   | : 7 : 77.8     | : 9 : 100.0   |
| Tres Esquinas | : 2 : 12.5   | : 14 : 87.5    | : 16 : 100.0  |
| Tulumayo      | : 1 : 9.1    | : 10 : 90.9    | : 11 : 100.0  |

TABLE 91

FAMILIES DISTRIBUTED ACCORDING TO THEIR ANSWERS TO THE  
FOLLOWING QUESTION: "WHAT ARE THE MOST IMPORTANT  
EDUCATIONAL PROBLEMS FOR YOUR FAMILY?" BY  
PUEBLO, 1947

| Answer                                     | Juanjui    | Panao      | Tingo Maria |
|--|------------|------------|-------------|
|  | No. Pct.   | No. Pct.   | No. Pct.    |
| All answers                                | :300 100.0 | :161 100.0 | :352 100.0  |
| Poor instruction                           | : 51 17.0  | : 12 7.5   | : 46 13.1   |
| Lack of secondary education                | : 84 28.0  | : 52 32.3  | : 23 6.5    |
| Lack of teachers                           | : 44 14.7  | : 7 4.3    | : 16 4.5    |
| Inadequate economic resources<br>of family | : 4 1.3    | : 20 12.4  | : 2 .6      |
| Poor school buildings                      | : 46 15.3  | : 3 1.9    | : 80 22.7   |
| Schools lacking                            | : 10 3.3   | : 1 .6     | : 2 .6      |
| No problem                                 | : 43 14.3  | : 60 37.3  | : 92 26.1   |
| No answer                                  | : 18 6.0   | : 6 3.7    | : 91 25.9   |

TABLE 92

FAMILIES DISTRIBUTED ACCORDING TO THEIR ANSWERS TO THE  
FOLLOWING QUESTION: "WHAT ARE THE MOST IMPORTANT  
EDUCATIONAL PROBLEMS FOR YOUR FAMILY?" IN  
RURAL LOCALITIES, 1947

| Problem                       | Afil-<br>ador | Hda.<br>Deli-<br>cias | Las<br>Pal-<br>mas | Naran-<br>jillo | Shap-<br>ajilla | Tres<br>Esqu-<br>inas | Tulum-<br>ayo |
|-------------------------------|---------------|-----------------------|--------------------|-----------------|-----------------|-----------------------|---------------|
| 1. No school                  | : 37          | : 7                   | : --               | : --            | : 37            | : 26                  | : 29          |
| 2. Distance too far           | : 15          | : --                  | : --               | : 12            | : --            | : 6                   | : 2           |
| 3. School meals               | : 5           | : --                  | : --               | : --            | : --            | : --                  | : --          |
| 4. No secondary               | : 5           | : --                  | : --               | : 4             | : --            | : --                  | : --          |
| 5. No night school            | : 1           | : --                  | : 2                | : 8             | : --            | : --                  | : 2           |
| 6. Poor teaching              | : --          | : --                  | : --               | : 35            | : --            | : --                  | : --          |
| 7. Facilities for<br>teachers | : --          | : --                  | : --               | : 2             | : --            | : --                  | : --          |
| 8. School facilities          | : --          | : --                  | : 32               | : 15            | : --            | : --                  | : --          |
| 9. Rural schools              | : --          | : --                  | : --               | : 6             | : --            | : --                  | : --          |
| 10. Separate schools          | : --          | : --                  | : --               | : 4             | : --            | : 1                   | : 1           |
| 11. Kindergarten              | : --          | : --                  | : --               | : 3             | : --            | : --                  | : --          |
| 12. Scholarships              | : --          | : --                  | : --               | : 4             | : --            | : --                  | : --          |
| 13. Teachers                  | : --          | : 4                   | : --               | : --            | : --            | : 8                   | : 3           |
| 14. Family income             | : --          | : --                  | : --               | : --            | : --            | : 1                   | : --          |
| Total                         | : 63          | : 11                  | : 34               | : 93            | : 37            | : 42                  | : 37          |

Inadequate individual family income, as an educational problem, was reported by 20 families (12.4 percent) in Panao. If adequate books and equipment were required in the schools the number of families unable to buy them would undoubtedly be very high. The association between income and educational opportunity seems clear indeed.

Table 93 shows the relation that exists between income and satisfaction with schooling received by children. The association is definitely negative, meaning that as income of the family decreases there is a tendency to be more satisfied with instruction. This seems to reflect the generally lower standards of education among low-income people in which income per se may reasonably be the standardizing element conditioning behavior. Hence, 87.9 percent of low-income families in Panao were satisfied compared with 55.9 percent of high-income families. Beyond any doubt the relatively inadequate educational opportunities present in each study-site satisfies more low-income families than high.

#### Persons who are able to read.

Much of modern culture is transmitted by means of the printed word. Ability to read, therefore, becomes crucial in the process of spreading new ideas and values. A broad program of extending research is dependent in large measure upon written material in the form of bulletins, pamphlets, and circulars. How many families are equipped to take advantage of such material becomes of crucial importance in putting across any program designed to raise the levels of living.

TABLE 93

SATISFACTION AND DISSATISFACTION WITH INSTRUCTION OF CHILDREN  
AMONG FAMILIES OF JUANJUI, PANA0, AND TINGO MARIA, BY INCOME

|                    | : High |       | : Middle |       | : Low |       |
|--------------------|--------|-------|----------|-------|-------|-------|
|                    | : No.  | Pct.  | : No.    | Pct.  | : No. | Pct.  |
| <u>Juanjui</u>     |        |       |          |       |       |       |
| Satisfied          | : 31   | 47.7  | : 68     | 50.0  | : 36  | 54.5  |
| Dissatisfied       | : 34   | 52.3  | : 68     | 50.0  | : 30  | 45.5  |
| Total              | : 65   | 100.0 | : 136    | 100.0 | : 66  | 100.0 |
| <u>Panao</u>       |        |       |          |       |       |       |
| Satisfied          | : 19   | 55.9  | : 42     | 76.4  | : 29  | 87.9  |
| Dissatisfied       | : 15   | 44.1  | : 13     | 23.6  | : 4   | 12.1  |
| Total              | : 34   | 100.0 | : 55     | 100.0 | : 33  | 100.0 |
| <u>Tingo Maria</u> |        |       |          |       |       |       |
| Satisfied          | : 18   | 16.7  | : 20     | 34.5  | : 3   | 75.0  |
| Dissatisfied       | : 90   | 83.3  | : 38     | 65.5  | : 1   | 25.0  |
| Total              | : 108  | 100.0 | : 58     | 100.0 | : 4   | 100.0 |

Data has been tabulated so as to show the number of heads of families who can or cannot read, also the number of other members of the family. (See Table 94.) The percentage of male heads who read varies from 96.6 percent in Tingo Maria to 63.2 percent in Hda. Delicias. The pueblo populations show consistently larger proportions of male heads who are able to read than the rural localities.

Comparatively fewer female heads than males are able to read in all localities, the proportion varying from 88.2 percent in Juanjui to 22.2 percent in Hda. Delicias. Rural localities tend to be more disadvantaged when it comes to reading than pueblos.

TABLE 94

## NUMBER OF MALE AND FEMALE HEADS WHO ARE ABLE TO READ, BY LOCALITY

| Locality      | Male Head |      |          |      | Female Head |      |          |      | Children * |      |          |      |
|---------------|-----------|------|----------|------|-------------|------|----------|------|------------|------|----------|------|
|               | Able to   |      | Not able |      | Able to     |      | Not able |      | Able to    |      | Not able |      |
|               | read      |      | to read  |      | read        |      | to read  |      | read       |      | to read  |      |
|               | No.       | Pct. | No.      | Pct. | No.         | Pct. | No.      | Pct. | No.        | Pct. | No.      | Pct. |
| Juanjui       | 233       | 94.7 | 13       | 5.3  | 239         | 88.2 | 32       | 11.8 | 191        | 97.9 | 4        | 2.1  |
| Panao         | 97        | 91.5 | 9        | 8.5  | 99          | 68.8 | 45       | 31.2 | 100        | 93.5 | 7        | 6.5  |
| Tingo Maria   | 286       | 96.6 | 10       | 3.4  | 239         | 85.4 | 41       | 14.6 | 135        | 94.4 | 8        | 5.6  |
| Afilador      | 46        | 69.7 | 20       | 30.3 | 24          | 47.1 | 27       | 52.9 | 19         | 63.3 | 11       | 36.7 |
| Hda. Delicias | 12        | 63.2 | 7        | 36.8 | 4           | 22.2 | 14       | 77.8 | 4          | 80.0 | 1        | 20.0 |
| Las Palmas    | 32        | 86.5 | 5        | 13.5 | 17          | 54.8 | 14       | 45.2 | 19         | 86.4 | 3        | 13.6 |
| Naranjillo    | 68        | 89.5 | 8        | 10.5 | 46          | 75.4 | 15       | 24.6 | 30         | 93.8 | 2        | 6.2  |
| Shapajilla    | 28        | 65.1 | 15       | 34.9 | 16          | 38.1 | 26       | 61.9 | 6          | 54.5 | 5        | 45.5 |
| Tres Esquinas | 16        | 66.7 | 24       | 33.3 | 4           | 26.7 | 15       | 73.3 | 14         | 70.0 | 6        | 30.0 |
| Tulumayo      | 35        | 92.1 | 3        | 7.9  | 17          | 51.5 | 16       | 48.5 | 12         | 85.7 | 2        | 14.3 |

\* Children



The data in Table 95 show that a rather significant number of families have no adult head (either male or female) who is able to read. Thus, in Panao there are 28 such families, 21 in Juanjui, and 19 in Afilador. Most of these families have low incomes in addition to the handicap of poor education.

TABLE 95

NUMBER OF FAMILIES WHOSE MALE AND FEMALE HEADS ARE UNABLE TO READ, AND NUMBER WITHOUT PERSONS WITH READING ABILITY

| Locality      | Neither head |         | No reader |         |
|---------------|--------------|---------|-----------|---------|
|               | Number       | Percent | Number    | Percent |
| Juanjui       | 21           | 7.0     | 3         | 1.0     |
| Panao         | 28           | 17.4    | 6         | 3.7     |
| Tingo Maria   | 17           | 4.8     | 9         | 2.6     |
| Afilador      | 19           | 28.4    | 16        | 23.9    |
| Hda. Delicias | 7            | 36.8    | 6         | 31.6    |
| Las Palmas    | 6            | 15.8    | 4         | 10.5    |
| Naranjillo    | 9            | 11.1    | 6         | 7.4     |
| Shapajilla    | 17           | 33.3    | 14        | 27.5    |
| Tres Esquinas | 7            | 29.2    | 5         | 20.8    |
| Tulumayo      | 5            | 12.2    | 1         | 2.4     |

Finally, if the families are analyzed in regard to whether they include any individual, either adult or child, who has the ability to read the number by locality varies from only one such family in Tulumayo to 16 families in Afilador. Again the rural localities generally are more disadvantaged in this respect than the pueblos.

The association between income and ability to read is shown in Table 96. For example, practically none of the high-income families have male heads unable to read but the percentage unable to read ranges from 11.1 percent in Juanjui to 100 percent in Las Palmas, among low-income families. Among female heads the ranges, by

locality, are from zero to 37.5 percent of high-income families and 21.4 percent to 100 percent of low-income families.

TABLE 96

PERCENTAGE OF MALE AND FEMALE HEADS THAT CANNOT  
READ, BY INCOME

| Locality      | Male heads |      |      | Female heads |      |       | Families without a reader |      |      |
|---------------|------------|------|------|--------------|------|-------|---------------------------|------|------|
|               | Med-       |      |      | Med-         |      |       | Med-                      |      |      |
|               | High:      | ium  | Low  | High:        | ium  | Low   | High:                     | ium  | Low  |
| Juanjui       | —          | 6.2  | 11.1 | —            | 12.4 | 21.4  | —                         | —    | 1.0  |
| Panao         | 2.6        | 5.8  | 31.2 | 10.5         | 22.7 | 65.0  | .6                        | —    | 3.1  |
| Tingo Maria   | —          | 8.2  | 40.0 | 3.7          | 28.4 | 44.4  | —                         | 2.0  | .6   |
| Afilador      | 6.7        | 28.6 | 77.8 | 25.0         | 54.8 | 87.5  | 1.5                       | 11.9 | 10.4 |
| Hda. Delicias | —          | 46.7 | —    | —            | 93.3 | —     | —                         | 31.6 | —    |
| Las Palmas    | 5.9        | 21.1 | —    | 37.5         | 50.0 | 100.0 | 2.6                       | 7.9  | —    |
| Naranjillo    | 7.3        | 13.3 | 20.0 | 16.7         | 30.8 | 40.0  | 2.5                       | 3.7  | 1.2  |
| Shapajilla    | 12.5       | 38.7 | 50.0 | 33.3         | 69.2 | 71.4  | —                         | 19.6 | 7.8  |
| Tres Esquinas | —          | 42.9 | 28.6 | —            | 77.8 | 100.0 | —                         | 16.7 | 4.2  |
| Tulumayo      | —          | 9.1  | 25.0 | —            | 75.0 | 33.3  | —                         | —    | 2.4  |
|               | :          | :    | :    | :            | :    | :     | :                         | :    | :    |
|               | :          | :    | :    | :            | :    | :     | :                         | :    | :    |

### School enrollment

The school-age population varies from 16 in Hda. Delicias to 597 in Juanjui, as shown in Table 97. However, only 23.9 percent of the children of school age were actually enrolled in school in Shapajilla and 97.8 percent in Panao.

The Tingo Maria site, including both the pueblo and adjacent rural localities, was considerably under Juanjui or Panao in regard to proportions of school-age populations enrolled in schools. Less than a fourth of school-age children were enrolled in Shapajilla and roughly half in Afilador, Hda. Delicias, Tres Esquinas, and Tulumayo.

TABLE 97

## SCHOOL ENROLLMENT AS A PERCENTAGE OF TOTAL SCHOOL-AGE POPULATION (5-14 yrs.), BY LOCALITY AND INCOME CLASS

|                                   | : Juanjui |       | : Panao |       | : Tingo Maria |       | : Afilador |       | : Hda. Delicias |       | : Las Palmas |       | : Naranjillo |       | : Shapajilla |       | : Tres Esquinas |       | : Tulum-ayo |       |
|-----------------------------------|-----------|-------|---------|-------|---------------|-------|------------|-------|-----------------|-------|--------------|-------|--------------|-------|--------------|-------|-----------------|-------|-------------|-------|
|                                   | No.       | Pct.  | No.     | Pct.  | No.           | Pct.  | No.        | Pct.  | No.             | Pct.  | No.          | Pct.  | No.          | Pct.  | No.          | Pct.  | No.             | Pct.  | No.         | Pct.  |
| ALL FAMILIES                      |           |       |         |       |               |       |            |       |                 |       |              |       |              |       |              |       |                 |       |             |       |
| School-age population (5-14 yrs.) | 597       | 100.0 | 279     | 100.0 | 376           | 100.0 | 69         | 100.0 | 16              | 100.0 | 42           | 100.0 | 78           | 100.0 | 46           | 100.0 | 27              | 100.0 | 46          | 100.0 |
| Attending school                  | 542       | 90.8  | 273     | 97.8  | 273           | 72.6  | 35         | 50.7  | 8               | 50.0  | 30           | 71.4  | 64           | 82.1  | 11           | 23.9  | 15              | 55.6  | 24          | 52.2  |
| HIGH INCOME FAMILIES              |           |       |         |       |               |       |            |       |                 |       |              |       |              |       |              |       |                 |       |             |       |
| School-age population             | 176       | 100.0 | 98      | 100.0 | 250           | 100.0 | 17         | 100.0 | 7               | 100.0 | 23           | 100.0 | 47           | 100.0 | 12           | 100.0 | 5               | 100.0 | 10          | 100.0 |
| Attending school                  | 148       | 84.1  | 101     | 103.1 | 212           | 84.8  | 20         | 117.6 | 4               | 57.1  | 20           | 87.0  | 43           | 91.5  | 5            | 41.7  | 2               | 40.0  | 5           | 50.0  |
| MIDDLE INCOME FAMILIES            |           |       |         |       |               |       |            |       |                 |       |              |       |              |       |              |       |                 |       |             |       |
| School-age population             | 285       | 100.0 | 110     | 100.0 | 120           | 100.0 | 46         | 100.0 | 9               | 100.0 | 18           | 100.0 | 28           | 100.0 | 28           | 100.0 | 21              | 100.0 | 28          | 100.0 |
| Attending school                  | 282       | 98.9  | 108     | 98.2  | 58            | 48.3  | 14         | 30.4  | 4               | 44.4  | 10           | 55.6  | 20           | 71.4  | 6            | 21.4  | 10              | 47.6  | 7           | 25.0  |
| LOW INCOME FAMILIES               |           |       |         |       |               |       |            |       |                 |       |              |       |              |       |              |       |                 |       |             |       |
| School-age population             | 136       | 100.0 | 71      | 100.0 | 6             | 100.0 | 6          | 100.0 | —               | —     | 1            | 100.0 | 3            | 100.0 | 6            | 100.0 | 1               | 100.0 | 8           | 100.0 |
| Attending school                  | 112       | 82.4  | 64      | 90.1  | 3             | 50.0  | 1          | 16.7  | —               | —     | —            | —     | 1            | 33.3  | —            | —     | —               | —     | 5           | 62.5  |

School enrollment as a percentage of school-age children is positively correlated with income classes in all localities, excepting Juanjui, Tres Esquinas, and Tulumayo. Therefore, lack of family income accounts for some of the limited school enrollment although the availability of school facilities is undoubtedly of more importance. Economic conditions in rural areas place demands upon the children's labor at the earliest age and so discourage school attendance.

Mother tongue of heads of family.

Language is a complex set of symbols to which a group of individuals have learned to respond. It is the primary material out of which almost all social interaction, starting at birth, takes place. It is therefore of particular importance to inquire into language which is the first tool through which the early conditioning is begun. Thus, mother tongue becomes a powerful factor in the determination of an individual's total culture.

The mother tongue of the heads of each family is shown in Table 98. It should be noted that language, be it Spanish, Quechua, Italian, etc., is an indicator of a distinct culture and by that token constitutes an index of the relative weight or influence of that culture in contemporary life.

The Spanish influence clearly dominates in all but one locality, that of Tres Esquinas. In the latter, Quechua is the maternal language of 62.5 percent of the families. The Quechua influence is found less in the pueblo-type of localities and more in the rural localities. Juanjui has less Quechua influence, using prevalence of the language as an index, than any of the localities under analysis.

TABLE 98

## MOTHER TONGUE OF THE HEAD OF THE FAMILY, BY INCOME CLASS AND BY LOCALITY

|               | Urban   |       |       |       |          |        | Rural |        |          |       |     |       |    |       |    |       |    |       |    |       |
|---------------|---------|-------|-------|-------|----------|--------|-------|--------|----------|-------|-----|-------|----|-------|----|-------|----|-------|----|-------|
| Language      | Juanjui | Panao | Maria | ador  | Delicias | Palmas | jillo | ajilla | Esquinas | ayo   |     |       |    |       |    |       |    |       |    |       |
|               | No.     | Pct.  | No.   | Pct.  | No.      | Pct.   | No.   | Pct.   | No.      | Pct.  | No. | Pct.  |    |       |    |       |    |       |    |       |
| ALL FAMILIES  | 300     | 100.0 | 161   | 100.0 | 352      | 100.0  | 67    | 100.0  | 19       | 100.0 | 38  | 100.0 | 81 | 100.0 | 51 | 100.0 | 24 | 100.0 | 41 | 100.0 |
| 1. Castellano | 292     | 97.3  | 140   | 87.0  | 312      | 88.6   | 42    | 62.7   | 10       | 52.6  | 31  | 81.6  | 58 | 71.6  | 40 | 78.4  | 7  | 29.2  | 26 | 63.4  |
| 2. Quechua    | 3       | 1.0   | 19    | 11.8  | 33       | 9.4    | 25    | 37.3   | 8        | 42.1  | 7   | 18.4  | 18 | 22.2  | 10 | 19.6  | 15 | 62.5  | 13 | 31.7  |
| 3. Chinese    | 1       | .3    | 2     | 1.2   | 3        | .9     | —     | —      | 1        | 5.3   | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 4. Italian    | 2       | .7    | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 5. Portuguese | 1       | .3    | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 6. Other      | 1       | .3    | —     | —     | 4        | 1.1    | —     | —      | —        | —     | —   | —     | 5  | 6.2   | 1  | 2.0   | 2  | 8.3   | 2  | 4.9   |
| HIGH INCOME   |         |       |       |       |          |        |       |        |          |       |     |       |    |       |    |       |    |       |    |       |
| FAMILIES      | 71      | 100.0 | 42    | 100.0 | 209      | 100.0  | 15    | 100.0  | 4        | 100.0 | 17  | 100.0 | 42 | 100.0 | 12 | 100.0 | 3  | 100.0 | 13 | 100.0 |
| 1. Castellano | 68      | 95.8  | 41    | 97.6  | 194      | 92.8   | 15    | 100.0  | 3        | 75.0  | 15  | 88.2  | 35 | 83.3  | 12 | 100.0 | 2  | 66.7  | 9  | 69.2  |
| 2. Quechua    | —       | —     | —     | —     | 9        | 4.3    | —     | —      | —        | —     | 2   | 11.8  | 3  | 7.1   | —  | —     | —  | —     | 2  | 15.4  |
| 3. Chinese    | 1       | 1.4   | 1     | 2.4   | 2        | 1.0    | —     | —      | 1        | 25.0  | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 4. Italian    | 2       | 2.9   | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 5. Portuguese | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 6. Other      | —       | —     | —     | —     | 4        | 2.1    | —     | —      | —        | —     | —   | —     | 4  | 9.5   | —  | —     | 1  | 33.3  | 2  | 15.4  |
| MIDDLE INCOME |         |       |       |       |          |        |       |        |          |       |     |       |    |       |    |       |    |       |    |       |
| FAMILIES      | 154     | 100.0 | 76    | 100.0 | 130      | 100.0  | 43    | 100.0  | 15       | 100.0 | 19  | 100.0 | 33 | 100.0 | 32 | 100.0 | 14 | 100.0 | 24 | 100.0 |
| 1. Castellano | 151     | 98.1  | 68    | 89.5  | 109      | 83.8   | 25    | 58.1   | 7        | 46.7  | 16  | 84.2  | 19 | 57.6  | 25 | 78.1  | 5  | 35.7  | 13 | 54.2  |
| 2. Quechua    | 2       | 1.3   | 7     | 9.2   | 20       | 15.4   | 18    | 41.9   | 8        | 53.3  | 3   | 15.8  | 13 | 39.4  | 6  | 18.8  | 8  | 57.1  | 11 | 45.8  |
| 3. Chinese    | —       | —     | 1     | 1.3   | 1        | .8     | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 4. Italian    | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 5. Portuguese | 1       | .6    | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 6. Other      | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | 1  | 3.0   | 1  | 3.1   | 1  | 7.1   | —  | —     |
| LOW INCOME    |         |       |       |       |          |        |       |        |          |       |     |       |    |       |    |       |    |       |    |       |
| FAMILIES      | 75      | 100.0 | 43    | 100.0 | 13       | 100.0  | 9     | 100.0  | —        | —     | 2   | 100.0 | 6  | 100.0 | 7  | 100.0 | 7  | 100.0 | 4  | 100.0 |
| 1. Castellano | 73      | 97.3  | 31    | 72.1  | 9        | 69.2   | 2     | 22.2   | —        | —     | —   | —     | 4  | 66.7  | 3  | 42.9  | —  | —     | 4  | 100.0 |
| 2. Quechua    | 1       | 1.3   | 12    | 27.9  | 4        | 30.8   | 7     | 77.8   | —        | —     | 2   | 100.0 | 2  | 33.3  | 4  | 57.1  | 7  | 100.0 | —  | —     |
| 3. Chinese    | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 4. Italian    | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 5. Portuguese | —       | —     | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |
| 6. Other      | 1       | 1.3   | —     | —     | —        | —      | —     | —      | —        | —     | —   | —     | —  | —     | —  | —     | —  | —     | —  | —     |

It has been established statistically that a close relation exists in Peru between ability to speak Spanish (castellanizacion) and instruction. Using the 23 Departments, the correlation coefficient (Pearsonian) between percentages Spanish-speaking and with instruction was .85 in 1940.<sup>1</sup> The value of this coefficient indicates a strong reciprocal dependency between the observed phenomena.

In the process of mestization of the country, the linguistic factor must be seen in a fundamental role, for the language of the conqueror was required in instruction. It follows, that when the majority of people, stranger and native alike, speak the official language, this fact in and of itself is a powerful educational force. Thus, the slow process of mestization has been paralleled more or less by the spread of the Spanish language; first, as a means of instruction, and later as a binding and facilitating force in all social relations.

Formal education accounts for a relatively small part of the total process whereby the unconditioned infant is gradually introduced to his culture and its values. Of paramount importance stands the family institution, as in most societies, with fixed responsibilities for the upbringing of the child. Any educational program should assess the part the family can play in bringing about social change.

Experience in Mexico has shown the need for schools for adults as well as children and that the program of education must

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<sup>1</sup>  
Censo Nacional de Poblacion y Ocupacion, 1940, op. cit., p. CLXXIV.

necessarily include many types of activity--production, health and sanitation, land reform, and even reorganization of community<sup>1</sup> life.

The type of family pattern varies somewhat by locality as is shown in Table 99. Families composed of both parents and children make up proportions of all household units varying from 47.1 percent in Shapajilla to 63.2 percent in Las Palmas and Hda. Delicias. Such range is perhaps not too significant except to indicate that in most localities the normal biologic family comprises a majority of family units.

It is more revealing, however, to consider the relation between the percentage of biologic family units and income class. Relatively few low-income families are units containing both parents and children, comprising a third or less of all households in Tingo Maria, Pano, Shapajilla, and Naranjillo. Low-income families tend to be the "parent-and-children type" or "husband-and-wife type."

The family institution as a group of habitually interacting individuals is derived from a number of basic circumstances among which is the need for caring for the helpless infant through a rather long period of conditioning. The normal stages in the life cycle of individual families--(1) husband-wife, (2) parents-children, (3) husband-wife again--are determining factors in the productivity and social participation of family members in the life of the community. Variants on the three basic types cited above include

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<sup>1</sup>  
Ramon Beteta, Programa Economico y Social de Mexico, Ciudad de Mexico, Nov. 1935, p. 209-10.

TABLE 99

## TYPE OF FAMILY, BY INCOME CLASS AND BY LOCALITY

| Type of family               | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------------|---------|-------|-------|-------|-------------|-------|
|                              | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES                 | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1. Both parents and children | 184     | 61.3  | 89    | 55.4  | 202         | 57.4  |
| 2. One parent and children   | 83      | 27.7  | 50    | 31.0  | 55          | 15.6  |
| 3. Husband and wife only     | 10      | 3.3   | 6     | 3.7   | 35          | 9.9   |
| 4. Individual                | 22      | 7.4   | 13    | 8.0   | 59          | 16.8  |
| 5. Grandparents and kin      | —       | —     | 3     | 1.9   | 1           | .3    |
| 6. Other                     | 1       | .3    | —     | —     | —           | —     |
| HIGH INCOME FAMILIES         | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1. Both parents and children | 53      | 74.6  | 35    | 83.3  | 134         | 64.1  |
| 2. One parent and children   | 8       | 11.3  | 3     | 7.1   | 17          | 8.1   |
| 3. Husband and wife only     | 2       | 2.8   | 3     | 7.1   | 20          | 9.6   |
| 4. Individual                | 8       | 11.3  | 1     | 2.4   | 38          | 18.2  |
| 5. Grandparents and kin      | —       | —     | —     | —     | —           | —     |
| 6. Other                     | —       | —     | —     | —     | —           | —     |
| MIDDLE INCOME FAMILIES       | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1. Both parents and children | 101     | 65.6  | 41    | 53.9  | 65          | 50.0  |
| 2. One parent and children   | 39      | 25.3  | 22    | 28.9  | 30          | 23.1  |
| 3. Husband and wife only     | 4       | 2.6   | 3     | 3.9   | 15          | 11.5  |
| 4. Individual                | 10      | 6.5   | 9     | 11.8  | 19          | 14.6  |
| 5. Grandparents and kin      | —       | —     | 1     | 1.3   | 1           | .8    |
| 6. Other                     | —       | —     | —     | —     | —           | —     |
| LOW INCOME FAMILIES          | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1. Both parents and children | 30      | 40.0  | 13    | 30.2  | 3           | 23.1  |
| 2. One parent and children   | 36      | 48.0  | 25    | 58.1  | 8           | 61.5  |
| 3. Husband and wife only     | 4       | 5.3   | —     | —     | —           | —     |
| 4. Individual                | 4       | 5.3   | 3     | 7.0   | 2           | 15.4  |
| 5. Grandparents and kin      | —       | —     | 2     | 4.7   | —           | —     |
| 6. Other                     | 1       | 1.3   | —     | —     | —           | —     |



TABLE 99 (Continued)

| Afil-ador | Hda.      | Las      | Naran-   | Shap-    | Tres     | Tulum-ayo |
|-----------|-----------|----------|----------|----------|----------|-----------|
| No. Pct.  | No. Pct.  | No. Pct. | No. Pct. | No. Pct. | No. Pct. | No. Pct.  |
| 67        | 100.0:19  | 100.0:38 | 100.0:81 | 100.0:51 | 100.0:24 | 100.0:41  |
| 42        | 62.7:12   | 63.2:24  | 63.2:45  | 55.5:24  | 47.1:13  | 54.1:22   |
| 4         | 6.0: 1    | 5.3: 5   | 13.1: 8  | 9.9: 9   | 17.6: 3  | 12.5: 3   |
| 6         | 9.0: 6    | 31.5: 3  | 7.9: 8   | 9.9: 4   | 7.8: 1   | 4.2: 2    |
| 7         | 10.4: --  | -- : 2   | 5.3: 2   | 2.5: --  | -- : 1   | 4.2: --   |
| --        | -- : --   | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| 8         | 11.9: --  | -- : 4   | 10.5:18  | 22.2:14  | 27.5: 6  | 25.0:14   |
| 15        | 100.0: 4  | 100.0:17 | 100.0:42 | 100.0:12 | 100.0: 3 | 100.0:13  |
| 12        | 80.0: 3   | 75.0:13  | 76.5:25  | 59.5: 6  | 50.0: 2  | 66.7: 7   |
| 1         | 6.7: 1    | 25.0: 3  | 17.6: 3  | 7.1: 3   | 25.0: -- | -- : --   |
| --        | -- : --   | -- : --  | -- : 3   | 7.1: --  | -- : --  | -- : --   |
| 2         | 13.3: --  | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| --        | -- : --   | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| --        | -- : --   | -- : 1   | 5.9:11   | 26.2: 3  | 25.0: 1  | 33.3: 6   |
| 43        | 100.0:15  | 100.0:19 | 100.0:33 | 100.0:32 | 100.0:14 | 100.0:24  |
| 25        | 58.1: 9   | 60.0:10  | 52.6:18  | 54.5:16  | 50.0: 7  | 50.0:13   |
| 3         | 7.0: --   | -- : 2   | 10.5: 4  | 12.1: 3  | 9.4: 2   | 14.3: 3   |
| 3         | 7.0: 2    | 13.3: 3  | 15.8: 3  | 9.1: 3   | 9.4: 1   | 7.1: 2    |
| 5         | 11.6: --  | -- : 2   | 10.5: 2  | 6.1: --  | -- : 1   | 7.1: --   |
| --        | -- : --   | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| 7         | 16.3: 4   | 26.7: 2  | 10.5: 6  | 18.2:10  | 31.2: 3  | 21.4: 6   |
| 9         | 100.0: -- | -- : 2   | 100.0: 6 | 100.0: 7 | 100.0: 7 | 100.0: 4  |
| 5         | 55.6: --  | -- : 1   | 50.0: 2  | 33.3: 2  | 28.6: 4  | 57.1: 2   |
| --        | -- : --   | -- : --  | -- : 1   | 16.7: 3  | 42.8: 1  | 14.3: --  |
| 3         | 33.3: --  | -- : --  | -- : 2   | 33.3: 1  | 14.3: -- | -- : --   |
| --        | -- : --   | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| --        | -- : --   | -- : --  | -- : --  | -- : --  | -- : --  | -- : --   |
| 1         | 11.1: --  | -- : 1   | 50.0: 1  | 16.7: 1  | 14.3: 2  | 28.6: 2   |

biologic families broken by death or desertion of either parent. The "one-parent-and-children type" comprise more than half of all low-income families in Panao and Tingo Maria and almost half (48.0 percent) in Juanjui.

Individuals make up 16.8 percent of all family units in Tingo Maria and they tend to correlate positively with income. Rural localities generally reveal a paucity of such units.

The age of the head of the family was tabulated for the pueblo population according to classes shown in Table 100. Although the modal class is between 30 and 40 years in each pueblo, the proportion of heads below 30 years of age was only 11.2 percent in Panao, 23.3 percent in Juanjui, and 32.1 percent in Tingo Maria. Panao is unable to attract or hold young families, in fact, has actually contributed a number of family heads to Tingo Maria. Juanjui stands intermediate in this respect.

Families in Tingo Maria are composed largely of those in the early stages of family formation whereas those in Panao are largely in the late stages of the family cycle. High income is associated with the middle stage of the family cycle—between youth and old-age—while low income is associated with both youth and old-age. The generalization also applies to type of family pattern, that is, low income is related to young and single-person units and old-age and broken, or husband-wife, types while high income is related to normal biologic families.

Practically all families migrated into the Tingo Maria community since 1938, in other words, within the last ten years. In contrast, only about a third of those in Juanjui and less than a fifth in Panao lived in the community less than ten years.

TABLE 100

AGE OF HEAD OF THE FAMILY, BY INCOME CLASS IN JUANJUI,  
PANAO, AND TINGO MARIA

| Age                    | Juanjui |       | Panao |       | Tingo Maria |       |
|------------------------|---------|-------|-------|-------|-------------|-------|
|                        | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| Under 20               | --      | --    | --    | --    | 8           | 2.3   |
| 20 - 29                | 70      | 23.3  | 18    | 11.2  | 105         | 29.8  |
| 30 - 39                | 90      | 30.0  | 45    | 27.9  | 115         | 32.7  |
| 40 - 49                | 79      | 26.4  | 37    | 23.0  | 83          | 23.6  |
| 50 - 59                | 38      | 12.7  | 34    | 21.1  | 23          | 6.5   |
| 60 - 69                | 16      | 5.3   | 19    | 11.8  | 12          | 3.4   |
| 70 and over            | 6       | 2.0   | 8     | 5.0   | 6           | 1.7   |
| Not reported           | 1       | .3    | --    | --    | --          | --    |
| Median age             |         | 38.8  |       | 44.8  |             | 35.5  |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| Under 20               | --      | --    | --    | --    | --          | --    |
| 20 - 29                | 15      | 21.1  | 5     | 11.9  | 61          | 29.2  |
| 30 - 39                | 22      | 31.0  | 13    | 31.0  | 68          | 32.5  |
| 40 - 49                | 25      | 35.2  | 11    | 26.2  | 56          | 26.8  |
| 50 - 59                | 7       | 9.9   | 8     | 19.0  | 15          | 7.2   |
| 60 - 69                | 1       | 1.4   | 5     | 11.9  | 7           | 3.3   |
| 70 and over            | 1       | 1.4   | --    | --    | 2           | 1.0   |
| Not reported           | --      | --    | --    | --    | --          | --    |
| Median age             |         | 39.3  |       | 42.7  |             | 36.4  |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| Under 20               | --      | --    | --    | --    | 5           | 3.8   |
| 20 - 29                | 36      | 23.4  | 8     | 10.5  | 42          | 32.3  |
| 30 - 39                | 46      | 29.9  | 22    | 28.9  | 44          | 33.9  |
| 40 - 49                | 35      | 22.7  | 16    | 21.1  | 26          | 20.0  |
| 50 - 59                | 23      | 14.9  | 17    | 22.4  | 8           | 6.2   |
| 60 - 69                | 11      | 7.1   | 9     | 11.8  | 2           | 1.5   |
| 70 and over            | 3       | 2.0   | 4     | 5.3   | 3           | 2.3   |
| Not reported           | --      | --    | --    | --    | --          | --    |
| Median age             |         | 38.9  |       | 39.1  |             | 34.1  |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| Under 20               | --      | --    | --    | --    | 3           | 23.1  |
| 20 - 29                | 19      | 25.3  | 5     | 11.6  | 2           | 15.4  |
| 30 - 39                | 22      | 29.4  | 10    | 23.3  | 3           | 23.1  |
| 40 - 49                | 19      | 25.3  | 10    | 23.3  | 1           | 7.6   |
| 50 - 59                | 8       | 10.7  | 9     | 20.9  | --          | --    |
| 60 - 69                | 4       | 5.3   | 5     | 11.6  | 3           | 23.1  |
| 70 and over            | 2       | 2.7   | 4     | 9.3   | 1           | 7.6   |
| Not reported           | 1       | 1.3   | --    | --    | --          | --    |
| Median age             |         | 38.4  |       | 46.5  |             | 35.0  |

(See Table 101.) Length of residence is not associated with income status of the family.

Table 102 shows the number of children away from home in the three pueblo localities. About a fourth of all families had one or more children away at the time of interview in Juanjui and Panao but only about a twentieth in Tingo Maria. There is a slight tendency for lower income families to have children away from home, particularly in Panao. More than a third of all low-income families in Panao reported children away compared with less than a fourth of the high-income class.

In summarizing the significant points in regard to family structure and its relation to broad educational programs, it is evident that certain profound differences exist between localities and income groups. The solution of educational problems is not to be found solely in opening up schools. As important as the schools themselves, are programs designed to improve economic conditions which make it possible for the children to attend and to be able to do it without jeopardizing the functioning of the family. Furthermore, it is clear that any sound program of maternal and child welfare would help to raise educational levels. Education is intimately interwoven with the people's standard of living.

TABLE 101

## LENGTH OF RESIDENCE, BY INCOME CLASS IN JUANJUI AND PANAÓ\*

| Length of residence    | Juanjui |       | Panao |       |
|------------------------|---------|-------|-------|-------|
|                        | No.     | Pct.  | No.   | Pct.  |
| ALL FAMILIES           | 300     | 100.0 | 161   | 100.0 |
| Less than 5 years      | 73      | 24.3  | 17    | 10.6  |
| 5 - 9 years            | 29      | 9.7   | 12    | 7.4   |
| 10 - 19 years          | 37      | 12.3  | 18    | 11.2  |
| 20 - 29 years          | 56      | 18.7  | 23    | 14.3  |
| 30 years or more       | 97      | 32.3  | 91    | 56.5  |
| Not reported           | 8       | 2.7   | —     | —     |
| HIGH INCOME FAMILIES   | 71      | 100.0 | 42    | 100.0 |
| Less than 5 years      | 21      | 29.6  | 5     | 11.9  |
| 5 - 9 years            | 3       | 4.2   | 4     | 9.5   |
| 10 - 19 years          | 11      | 15.5  | 4     | 9.5   |
| 20 - 29 years          | 14      | 19.7  | 9     | 21.5  |
| 30 years or more       | 17      | 24.0  | 20    | 47.6  |
| Not reported           | 5       | 7.0   | —     | —     |
| MIDDLE INCOME FAMILIES | 154     | 100.0 | 76    | 100.0 |
| Less than 5 years      | 30      | 19.5  | 4     | 5.3   |
| 5 - 9 years            | 19      | 12.3  | 4     | 5.3   |
| 10 - 19 years          | 20      | 13.0  | 6     | 7.9   |
| 20 - 29 years          | 28      | 18.2  | 10    | 13.1  |
| 30 years or more       | 55      | 35.7  | 52    | 68.4  |
| Not reported           | 2       | 1.3   | —     | —     |
| LOW INCOME FAMILIES    | 75      | 100.0 | 43    | 100.0 |
| Less than 5 years      | 22      | 29.3  | 8     | 18.6  |
| 5 - 9 years            | 7       | 9.3   | 4     | 9.3   |
| 10 - 19 years          | 6       | 8.0   | 8     | 18.6  |
| 20 - 29 years          | 14      | 18.7  | 4     | 9.3   |
| 30 years or more       | 25      | 33.4  | 19    | 44.2  |
| Not reported           | 1       | 1.3   | —     | —     |

\* This question was not ascertained in Tingo Maria. However, it is a fact that most of the population in Tingo Maria and rural localities settled in the community since 1938, the year in which agricultural colonization began.

TABLE 102

CHILDREN AWAY FROM HOME, BY INCOME CLASS IN JUANJUI,  
PANAQ, AND TINGO MARIA

|                          | Juanjui |       | Panao |       | Tingo Maria |       |
|--------------------------|---------|-------|-------|-------|-------------|-------|
|                          | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| ALL FAMILIES             | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| 1 away from home         | 45      | 15.0  | 17    | 10.6  | 10          | 2.8   |
| 2 " " "                  | 14      | 4.7   | 17    | 10.6  | 5           | 1.4   |
| 3 " " "                  | 5       | 1.7   | 1     | .6    | 3           | .9    |
| 4 " " "                  | 6       | 2.0   | 2     | 1.2   | --          | --    |
| 5 or more away from home | 1       | .3    | 2     | 1.2   | 1           | .3    |
| None                     | 229     | 76.3  | 122   | 75.8  | 333         | 94.6  |
| HIGH INCOME FAMILIES     | 71      | 100.0 | 42    | 100.0 | 209         | 100.0 |
| 1 away from home         | 11      | 15.5  | 3     | 7.1   | 6           | 2.9   |
| 2 " " "                  | 4       | 5.6   | 6     | 14.3  | 3           | 1.4   |
| 3 " " "                  | --      | --    | --    | --    | 3           | 1.4   |
| 4 " " "                  | --      | --    | 1     | 2.4   | --          | --    |
| 5 or more away from home | --      | --    | --    | --    | 1           | .5    |
| None                     | 56      | 78.9  | 32    | 76.2  | 196         | 93.8  |
| MIDDLE INCOME FAMILIES   | 154     | 100.0 | 76    | 100.0 | 130         | 100.0 |
| 1 away from home         | 25      | 16.2  | 8     | 10.5  | 3           | 2.3   |
| 2 " " "                  | 5       | 3.2   | 5     | 6.6   | 2           | 1.5   |
| 3 " " "                  | 4       | 2.6   | 1     | 1.3   | --          | --    |
| 4 " " "                  | 2       | 1.3   | --    | --    | --          | --    |
| 5 or more away from home | 1       | .7    | --    | --    | --          | --    |
| None                     | 117     | 76.0  | 62    | 81.6  | 125         | 96.2  |
| LOW INCOME FAMILIES      | 75      | 100.0 | 43    | 100.0 | 13          | 100.0 |
| 1 away from home         | 9       | 12.0  | 6     | 14.0  | 1           | 7.7   |
| 2 " " "                  | 5       | 6.7   | 6     | 14.0  | --          | --    |
| 3 " " "                  | 1       | 1.3   | --    | --    | --          | --    |
| 4 " " "                  | 4       | 5.3   | 1     | 2.3   | --          | --    |
| 5 or more away from home | --      | --    | 2     | 4.6   | --          | --    |
| None                     | 56      | 74.7  | 28    | 65.1  | 12          | 92.3  |

# CHAPTER XIII

## LAND RESOURCES AND A PLAN FOR THEIR DEVELOPMENT

One of the most distinguishing features of the social structure of each locality is the relative importance of agriculture in the total economic life of the people. The locality with a social structure that is dominated more or less by the farm as an occupational organization is likewise characterized by a division of labor and specialization which is circumscribed by farming operations.

Table 103 shows the numbers and proportions of all family heads who are engaged in agriculture in one way or another; that is, as farm owners, tenants, peons, managers, or supervisors.

TABLE 103  
FAMILY HEADS ENGAGED IN AGRICULTURE

| Locality      | All families |       | Agricultural heads |      | Non-agriculture |      |
|---------------|--------------|-------|--------------------|------|-----------------|------|
|               | No.          | Pct.  | No.                | Pct. | No.             | Pct. |
|               |              |       |                    |      |                 |      |
| Juanjui       | 300          | 100.0 | 155                | 51.7 | 145             | 48.3 |
| Panao         | 161          | 100.0 | 25                 | 15.6 | 136             | 84.4 |
| Tingo Maria   | 352          | 100.0 | 75                 | 21.3 | 277             | 78.7 |
| Afilador      | 67           | 100.0 | 64                 | 95.5 | 3               | 4.5  |
| Hda. Delicias | 19           | 100.0 | 18                 | 94.7 | 1               | 5.3  |
| Las Palmas    | 38           | 100.0 | 22                 | 57.9 | 16              | 42.1 |
| Naranjillo    | 81           | 100.0 | 68                 | 83.9 | 13              | 16.1 |
| Shapajilla    | 51           | 100.0 | 33                 | 64.7 | 18              | 35.3 |
| Tres Esquinas | 24           | 100.0 | 23                 | 95.9 | 1               | 4.1  |
| Tulumayo      | 41           | 100.0 | 37                 | 90.2 | 4               | 9.8  |
|               |              |       |                    |      |                 |      |
|               |              |       |                    |      |                 |      |

Agriculturally occupied heads of families comprise a majority in all localities except in Panao and Tingo Maria. The most dominantly agricultural localities are Tres Esquinas, Afilador,

Hda. Delicias, and Tulumayo; in which over 90 percent of the family heads are occupied in agriculture.

However, a strict occupational analysis does not adequately indicate the relative dependence upon agriculture in any locality because many heads whose main occupation may be nonagricultural, also have an interest in a farm. Hence, in Juanjui, although only 155 heads consider themselves to be occupied in agriculture, actually 226 operate farms, or 75.3 percent of all families. In Panao 63 families reported farms, or 39.1 percent of all families.

The ten localities may be classified into at least three types according to agricultural significance as follows:

1. Farm-village type, of which the distinguishing features are a large agricultural population living in the pueblo in close relation with town specialists, but going out seasonally to work and harvest the crops. Only Juanjui epitomizes this distinct type.
2. Town-subsistence type, distinguished by a very small population engaged in agriculture but a fair proportion of families operating small garden plots within the pueblo, or on the outskirts of town. Only Panao and Tingo Maria fall within this category.
3. Farm type, which is characterized by an almost completely agricultural population living more or less continuously on the land they operate or tend. The large majority of localities fall into this type. This class, however, might reasonably be broken into two sub-types according to the kind or size of farm organization: (1) Naranjillo, Tulumayo, Afilador, Las Palmas, and Tres Esquinas, all



are made up of family-sized farms; and (2) Hda. Delicias and Shapajilla where most of the land is operated in large haciendas.

### Farm Tenure

The farm tenure pattern varies markedly by locality as may be seen in Table 104. Owner operatorship is the predominant type of tenure in all localities with the single exception of Shapajilla where mejoreros comprise 58.6 percent of all farmers. A mejorero is a contract farmer who agrees to plant coca and to bring it into full bearing for the landlord after about two years. The landlord, on his part, provides a modicum of subsistence and the plants, amounting to about 30 soles per 1,000 plants. The landlord also pays the mejorero a stipulated amount of money when the crop is turned over to him at the end of the two years. It should be added that during the contract period the mejorero harvests from the land all crops which usually include yuca, corn, and coca.

Cash or share renters comprise a small percentage of farm operators, with the highest tenancy rate to be found in Las Palmas.

### Size of farm

According to Table 105 the modal size of farm is one to two hectares in Juanjui, Panao, and Shapajilla compared with 15 to 20 hectares in Tingo Maria and Naranjillo, 10 to 15 hectares in Afilador and Tres Esquinas, and 50 hectares or more in Tulumayo and Las Palmas. The average size of farm varies from about five hectares in Panao and Juanjui to 104.5 hectares in Hda. Delicias (Table 106).

TABLE 104

## TENURE STATUS OF FARM UNITS, BY LOCALITY

| Locality          | Total       |       | Owner          |       | Renter          |      | Mejorero    |      | Partidario  |      | Admin.      |      | No data     |      |
|-------------------|-------------|-------|----------------|-------|-----------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
|                   | : No. Pct.: |       | : Propietario: |       | : Arrendatario: |      | : No. Pct.: |      | : No. Pct.: |      | : No. Pct.: |      | : No. Pct.: |      |
|                   | No.         | Pct.  | No.            | Pct.  | No.             | Pct. | No.         | Pct. | No.         | Pct. | No.         | Pct. | No.         | Pct. |
| Juanjui           | 226         | 100.0 | 202            | 89.4  | 5               | 2.2  | —           | —    | —           | —    | —           | —    | 19          | 8.4  |
| Panao             | 63          | 100.0 | 57             | 90.5  | 4               | 6.3  | —           | —    | 1           | 1.6  | 1           | 1.6  | —           | —    |
| Tingo Maria       | 51          | 100.0 | 44             | 86.3  | 4               | 7.8  | 2           | 3.9  | —           | —    | 1           | 2.0  | —           | —    |
| Afilador          | 56          | 100.0 | 38             | 67.8  | 1               | 1.8  | 16          | 28.6 | 1           | 1.8  | —           | —    | —           | —    |
| Hacienda Delicias | 2           | 100.0 | 2              | 100.0 | —               | —    | —           | —    | —           | —    | —           | —    | —           | —    |
| Las Palmas        | 20          | 100.0 | 12             | 60.0  | 3               | 15.0 | 5           | 25.0 | —           | —    | —           | —    | —           | —    |
| Narenjillo        | 52          | 100.0 | 44             | 84.6  | 5               | 9.6  | 2           | 3.9  | 1           | 1.9  | —           | —    | —           | —    |
| Shapajilla        | 29          | 100.0 | 9              | 31.0  | —               | —    | 17          | 58.6 | 1           | 3.5  | 2           | 6.9  | —           | —    |
| Tres Esquinas     | 22          | 100.0 | 22             | 100.0 | —               | —    | —           | —    | —           | —    | —           | —    | —           | —    |
| Tulumayo          | 32          | 100.0 | 17             | 53.1  | 4               | 12.5 | 9           | 28.2 | —           | —    | 2           | 6.2  | —           | —    |
|                   | :           | :     | :              | :     | :               | :    | :           | :    | :           | :    | :           | :    | :           | :    |
|                   | :           | :     | :              | :     | :               | :    | :           | :    | :           | :    | :           | :    | :           | :    |

TABLE 105

## SIZE OF FARM, BY LOCALITY

| Hectares         | : Juanjui |        | : Panao |        | : Tingo Maria |        | : Afil-ador |        | : Hda. Delicias |        | : Las Palmas |        | : Naran-jillo |        | : Shapa-jilla |        | : Tres Esquinas |        | : Tulum-ayo |       |
|------------------|-----------|--------|---------|--------|---------------|--------|-------------|--------|-----------------|--------|--------------|--------|---------------|--------|---------------|--------|-----------------|--------|-------------|-------|
|                  | :No.      | Pct.   | :No.    | Pct.   | :No.          | Pct.   | :No.        | Pct.   | :No.            | Pct.   | :No.         | Pct.   | :No.          | Pct.   | :No.          | Pct.   | :No.            | Pct.   | :No.        | Pct.  |
| Less than 1      | : 33      | 14.6:  | 13      | 20.6:  | 2             | 3.9:   | —           | —      | : 1             | 5.0:   | —            | —      | : 2           | 6.9:   | —             | —      | : 2             | 6.3    |             |       |
| 1.0 - 1.9        | : 52      | 23.0:  | 15      | 23.8:  | 4             | 7.8:   | 3           | 5.4:   | —               | —      | : 3          | 15.0:  | —             | : 8    | 27.6:         | —      | : 4             | 12.5   |             |       |
| 2.0 - 2.9        | : 35      | 15.5:  | 9       | 14.3:  | 2             | 3.9:   | 3           | 5.4:   | —               | —      | : 1          | 5.0:   | 1             | 1.9:   | 5             | 17.3:  | —               | : 2    | 6.2         |       |
| 3.0 - 3.9        | : 22      | 9.7:   | 5       | 7.9:   | —             | —      | : 3         | 5.4:   | —               | —      | : 2          | 10.0:  | 1             | 1.9:   | —             | —      | : 1             | 3.1    |             |       |
| 4.0 - 4.9        | : 4       | 1.8:   | 3       | 4.8:   | 2             | 3.9:   | 1           | 1.8:   | —               | —      | : 1          | 1.9:   | 1             | 3.4:   | —             | —      | : —             | —      |             |       |
| 5.0 - 9.9        | : 16      | 7.1:   | 7       | 11.1:  | 3             | 5.9:   | 6           | 10.7:  | 1               | 50.0:  | 1            | 5.0:   | 1             | 1.9:   | 2             | 6.9:   | 2               | 9.1:   | 3           | 9.4   |
| 10.0 - 14.9      | : 15      | 6.6:   | 2       | 3.2:   | 8             | 15.7:  | 12          | 21.4:  | —               | —      | : 20         | 38.6:  | 5             | 17.3:  | 18            | 81.8:  | —               | : —    | —           |       |
| 15.0 - 19.9      | : 7       | 3.1:   | 1       | 1.6:   | 9             | 17.7:  | 10          | 17.8:  | —               | —      | : 1          | 5.0:   | 26            | 50.0:  | —             | —      | : —             | —      |             |       |
| 20.0 - 29.9      | : 7       | 3.1:   | 1       | 1.6:   | 3             | 5.9:   | 1           | 1.8:   | —               | —      | : 1          | 5.0:   | 1             | 1.9:   | 1             | 3.4:   | 2               | 9.1:   | —           |       |
| 30.0 - 39.9      | : 6       | 2.7:   | —       | —      | : 7           | 13.7:  | 3           | 5.3:   | —               | —      | : 1          | 5.0:   | —             | : —    | —             | —      | : 3             | 9.4    |             |       |
| 40.0 - 49.9      | : 2       | 0.9:   | 1       | 1.6:   | 1             | 2.0:   | 1           | 1.8:   | —               | —      | : 1          | 5.0:   | —             | : —    | —             | —      | : —             | —      |             |       |
| 50.0 - 99.9      | : 1       | 0.4:   | 1       | 1.6:   | —             | —      | : 1         | 1.8:   | —               | —      | : 1          | 5.0:   | —             | : 1    | 3.4:          | —      | : 5             | 15.6   |             |       |
| 100.0 - and over | : 1       | 0.4:   | —       | —      | : 7           | 13.7:  | —           | —      | : 1             | 50.0:  | 6            | 30.0:  | —             | : 1    | 3.4:          | —      | : 7             | 21.9   |             |       |
| No data          | : 25      | 11.1:  | 5       | 7.9:   | 3             | 5.9:   | 12          | 21.4:  | —               | —      | : 1          | 5.0:   | 1             | 1.9:   | 3             | 10.4:  | —               | : 5    | 15.6        |       |
| All farms        | :226      | 100.0: | 63      | 100.0: | 51            | 100.0: | 56          | 100.0: | 2               | 100.0: | 20           | 100.0: | 52            | 100.0: | 29            | 100.0: | 22              | 100.0: | 32          | 100.0 |

TABLE 106

AVERAGE SIZE OF FARM AND HECTARES CULTIVATED  
PER FARM

| Locality      | Area in farm |          | Area cultivated |          |
|---------------|--------------|----------|-----------------|----------|
|               | Total        | Av. per  | Total           | Av. per  |
|               |              | farm     |                 | farm     |
|               | Hectares     | Hectares | Hectares        | Hectares |
| Juanjui       | 1,157.3      | 5.38     | 434             | 2.01     |
| Panao         | 286.0        | 5.16     | 95              | 1.73     |
| Tingo Maria   | 1,821.25     | 37.94    | 320             | 6.67     |
| Afilador      | 610.5        | 13.87    | 186             | 4.23     |
| Hda. Delicias | 209.0        | 104.50   | 126             | 63.25    |
| Las Palmas    | 931.75       | 49.04    | 105             | 5.54     |
| Naranjillo    | 707.0        | 13.86    | 377             | 7.39     |
| Shapajilla    | 554.75       | 21.34    | 240             | 9.22     |
| Tres Esquinas | 240.00       | 10.90    | 46              | 2.10     |
| Tulumayo      | 1,498.75     | 55.51    | 222             | 8.20     |
|               |              |          |                 |          |
|               |              |          |                 |          |

Of more significance perhaps than total land area per farm are the figures on land in cultivation.. (See Table 107.) Small farms (under 5 hectares cultivated land) predominate in Juanjui, Panao, Afilador, Shapajilla, and Tres Esquinas. Middle-size farms (5.0 to 10.0 hectares) comprise from about a fifth to a half of all units in Tingo Maria, Las Palmas, Tulumayo, and Naranjillo.

The largest farm reported in any of the localities was the hacienda of Mr. Federico Tong which contained 370 hectares of which about 120 hectares were in cultivation in 1947. The uniformity in farm size in Naranjillo is due to the parcelling out of farms of 15 hectares each under the government's scheme of colonization.

#### Farm Workers

Each farm operator was asked to estimate the number of farm laborers required on the farm during the year. A majority of all farms require day laborers at some time during the year varying

TABLE 107

## CULTIVATED LAND PER FARM, BY LOCALITY

| Hectares       | : Juanjui : |        | : Panao : |        | : Tingo Maria : |        | : Afil-ador : |         | : Hda. Delicias : |         | : Las Palmas : |        | : Naran-jillo : |                  | : Shapa-jilla : |        | : Tres Esquinas : |        | : Tulum-ayo : |       |
|----------------|-------------|--------|-----------|--------|-----------------|--------|---------------|---------|-------------------|---------|----------------|--------|-----------------|------------------|-----------------|--------|-------------------|--------|---------------|-------|
|                | :No.        | Pct.   | :No.      | Pct.   | :No.            | Pct.   | :No.          | Pct.    | :No.              | Pct.    | :No.           | Pct.   | :No.            | Pct.             | :No.            | Pct.   | :No.              | Pct.   | :No.          | Pct.  |
| Less than 1.0  | : 38        | 16.8:  | 21        | 33.3:  | 4               | 7.8:   | 2             | 3.6:--  | --                | : 1     | 5.0:--         | --     | : 4             | 13.8:            | 4               | 18.2:  | 3                 | 9.4    |               |       |
| 1.0 to 2.0     | : 71        | 31.4:  | 18        | 28.6:  | 7               | 13.7:  | 3             | 5.3:--  | --                | : 3     | 15.0:          | 1      | 1.9:            | 6                | 20.7:           | 7      | 31.8:             | 4      | 12.5          |       |
| 2.0 to 3.0     | : 48        | 21.3:  | 8         | 12.7:  | 6               | 11.8:  | 10            | 17.9:-- | --                | : 2     | 10.0:          | 3      | 5.8:            | 6                | 20.7:           | 4      | 18.2:             | 3      | 9.4           |       |
| 3.0 to 4.0     | : 17        | 7.5:   | 4         | 6.4:   | 6               | 11.8:  | 9             | 16.1:-- | --                | : 2     | 10.0:          | 5      | 9.6:            | 3                | 10.4:           | 5      | 22.7:             | 2      | 6.2           |       |
| 4.0 to 5.0     | : 6         | 2.7:   | 2         | 3.2:   | 1               | 2.0:   | 5             | 8.9:--  | --                | : --    | --             | : 4    | 7.7:            | 1                | 3.4:--          | --     | : 2               | 6.2    |               |       |
| 5.0 to 10.0    | : 16        | 7.1:   | 4         | 6.3:   | 15              | 29.4:  | 12            | 21.4:   | 1                 | 50.0:   | 7              | 35.0:  | 25              | 48.1:            | 2               | 6.9:   | 2                 | 9.1:   | 6             | 18.8  |
| 10.0 to 15.0   | : 4         | 1.8:   | 1         | 1.6:   | 1               | 1.9:   | 2             | 3.6:--  | --                | : 1     | 5.0:           | 12     | 23.1:--         | --               | : --            | --     | : 3               | 9.4    |               |       |
| 15.0 to 20.0   | : 1         | .4:--  | --        | : 3    | 5.9:--          | --     | : --          | --      | : 2               | 10.0:-- | --             | : 2    | 6.9:--          | --               | : --            | --     | : --              | --     |               |       |
| 20.0 to 30.0   | : 1         | .4:--  | --        | : 2    | 3.9:            | 1      | 1.8:--        | --      | : --              | --      | : --           | --     | : 1             | 3.4:--           | --              | : 1    | 3.1               |        |               |       |
| 30.0 to 40.0   | : --        | --     | : --      | --     | : 1             | 2.0:-- | --            | : --    | --                | : --    | --             | : --   | --              | : --             | --              | : --   | --                | : 1    | 3.1           |       |
| 40.0 to 50.0   | : --        | --     | : --      | --     | : 1             | 2.0:-- | --            | : --    | --                | : --    | --             | : --   | --              | : --             | --              | : --   | --                | : --   | --            |       |
| 50.0 to 100.0  | : --        | --     | : --      | --     | : --            | --     | : --          | --      | : --              | --      | : --           | --     | : --            | --               | : --            | --     | : 1               | 3.1    |               |       |
| 100.0 and over | : --        | --     | : --      | --     | : --            | --     | : --          | --      | : 1*              | 50.0:-- | --             | : --   | --              | : 2 <sup>a</sup> | 6.9:--          | --     | : --              | --     |               |       |
| No data        | : 24        | 10.6:  | 5         | 7.9:   | 4               | 7.8:   | 12            | 21.4:-- | --                | : 2     | 10.0:          | 2      | 3.8:            | 2                | 6.9:--          | --     | : 6               | 18.8   |               |       |
| All farms      | : 226       | 100.0: | 63        | 100.0: | 51              | 100.0: | 56            | 100.0:  | 2                 | 100.0:  | 20             | 100.0: | 52              | 100.0:           | 29              | 100.0: | 22                | 100.0: | 32            | 100.0 |

\* Actually 120 hectares.

<sup>a</sup> Actually 105 and 128 hectares.

from a few days to full-time work. Agricultural work continues throughout the year but is concentrated during the wet season (verano). Corn and beans are sown between May and July and harvested three to four months later. Yuca is grown throughout the year. Coffee is cultivated between February and March. Workers are generally needed for a period of less than one month.

Table 108 shows roughly the number of workers required in each locality. The number of laborers required per farm varies from about two laborers in Panao to over a hundred in Hda. Delicias. The amount of labor required is clearly a function of the farm size, and may be estimated roughly at one laborer per hectare in addition to the family labor that may be available.

Peons or day laborers come down from the sierra to work at Tingo Maria and Juanjui. The feeling is widespread that sierra peons do not come readily into jungle areas. It is customary for labor agents to advance the laborer money with which he usually pays back debts, buys liquor, or cares for his family. In this way the laborer is "hooked" by the agent for work in the jungle. Such laborers are referred to as enganchados. Contracts are usually for 40 to 45 days. Free laborers are called huayradores.

One hacendado described the labor situation existing in 1947 as follows:

Peru is in need of more laborers but not any more farmers. More farmers would only increase the demand for the available labor supply and labor is scarce because the sierra Indian will not come down to the jungle to work. In the past it has been customary for the sierra Indian to migrate temporarily to the Coast or Montana to make a little cash and then return to his small farm in the highlands. Presently however, the Indian is raising some produce for sale in the public market place; consequently the Indian feels quite independent. More "humble" labor is required, such as

might come from India. As for the sierra Indian, he would line them all up against a wall and kill them like beasts. They really are "beasts of burden," lacking in feeling or sentiment and any sense of responsibility. They carry roughly 150 pounds on their backs in quick, shuffling gait that they never change. The secret to their endurance is found in their being taught how to carry by their fathers in early childhood.

TABLE 108

NUMBER OF FARM WORKERS NEEDED PER FARM UNIT,  
BY LOCALITY

| Number              | Juanjui | Panao | Tingo Maria | Afilador | Hda. Delicias | Las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulumayo |
|---------------------|---------|-------|-------------|----------|---------------|------------|------------|------------|---------------|----------|
| No workers          | :117    | : 28  | : 18        | : 17     | : —           | : 3        | : 3        | : 9        | : 6           | : 8      |
| One worker          | : 2     | : 2   | : —         | : 1      | : —           | : 2        | : —        | : 1        | : 2           | : —      |
| Two workers         | : 14    | : 17  | : 3         | : 3      | : —           | : 2        | : 3        | : 7        | : 6           | : 6      |
| Three workers       | : 9     | : 3   | : 3         | : 4      | : —           | : 2        | : 7        | : 3        | : 1           | : 2      |
| Four workers        | : 19    | : 5   | : 12        | : 13     | : —           | : 2        | : 11       | : 2        | : 3           | : 4      |
| Five to ten workers | : 38    | : 5   | : 10        | : 11     | : 1           | : 3        | : 21       | : 1        | : 1           | : 5      |
| Ten or more workers | : 27    | : 3   | : 5         | : 7      | : 1           | : 6        | : 7        | : 6        | : 3           | : 7      |
| Total farms         | :226    | : 63  | : 51        | : 56     | : 2           | : 20       | : 52       | : 29       | : 22          | : 32     |

#### Crops Grown.

The effect of altitude on the cropping system is apparent from Table 109. The staple crop for man and beast in Panao is corn. Only a limited number of other crops are grown. Potatoes are the second most important crop. Beans are interplanted with corn or raised in house gardens. Arborculture is limited in Panao. Crop planting in Panao begins in September and October. Hilling (aporque or uria) is effected during January to March. Harvesting (deshierbo

or uria) begins in April and May, with potatoes in May, corn in June, and small grains during July and August.

Corn is grown generally in all localities studied but is cropped in a variety of ways. In the lower valley it is customary to interplant corn and yuca with banana plants. This practice is called cultivos asociados.

It seemed desirable to secure local cost of production figures in the Tingo Maria area. Since no data were readily available, it was decided to visit a number of farm operators and secure estimates as to the probable costs of production and then to estimate the probable returns based on current prices for farm products.

There is little doubt that the figures secured are crude. On the other hand, the data secured are so localized that a certain amount of homogeneity in type and size of farm somewhat overcomes the criticism of being too broad. The cost of production data that follow are therefore only applicable to the small farms of the Tingo Maria area. They are based upon a number of interviews with farmers, technicians, and persons with knowledge about farming conditions. They were pieced together by the author so as to give some approximation to the overall costs of starting in farming in the general area of Tingo Maria.

|  |          |
|--|----------|
| Clearing and burning . . . . .                       | S/ . 200 |
| Light finish cleaning . . . . .                      | 50       |
| Corn seeds (20 kilos. @ S/.50) . . . . .             | 10       |
| Yuca seeds . . . . .                                 | 10       |
| Seeding of corn (5 man days) . . . . .               | 20       |
| Seeding of yuca (5 man days) . . . . .               | 20       |
| Planting 400 banana plants . . . . .                 | 400      |
| Cultivating three times during first year            | 270      |
| Harvesting corn                                      | 40       |
| Shelling corn (100 arrobas <sup>1</sup> @ S/.25) . . | 25       |
| Harvesting yuca (1,000 arrobas @ S/.20). .           | 200      |

---

1

One arroba equals 25 pounds.



|  |        |
|--|--------|
| Cutting and transport to road of<br>50 heads of bananas a distance of 600<br>to 1,000 meters from the road @ S/.50 | S/. 25 |
|--|--------|

|            |           |
|------------|-----------|
| Total cost | S/ .1,270 |
|------------|-----------|

Production

|  |         |
|--|---------|
| 100 arrobas of corn @ S/. 3.00 . . . . . | S/. 300 |
| 1,000 arrobas of yuca @ 1.00 . . . . .   | 1,000   |
| 50 heads of bananas @ 5.00 . . . . .     | 250     |

|                          |           |
|--------------------------|-----------|
| Total receipts . . . . . | S/. 1,550 |
|--------------------------|-----------|

|                       |              |
|-----------------------|--------------|
| Total costs . . . . . | <u>1,270</u> |
|-----------------------|--------------|

|                                 |         |
|---------------------------------|---------|
| Net return first year . . . . . | S/. 280 |
|---------------------------------|---------|

Banana production increases in the second and later years, averaging perhaps 800 heads. They are the most important crop both in area and number of farms reporting in Naranjillo, Tingo Maria, and Juanjui. In Naranjillo 40 of the 52 farms reported some banana land, averaging 4.86 hectares per farm and 14 farms reported an average of 3.39 hectares cultivos asociados. The banana acreage per farm was considerably smaller in Juanjui because of a limited market for surpluses beyond home needs. Thus, only about one hectare of bananas per farm and 1.20 hectares of cultivos asociados per farm were worked in Juanjui. Bananas from Naranjillo and Tingo Maria found a ready market in Lima during 1946 and 1947. The generally higher incomes found in Naranjillo (averaging about S/. 3,200 in Naranjillo) are due mainly to the good prices currently being received for bananas.

Coca (Enthroxylon coca) is grown both for production of cocaine and to meet the demand for the dried leaves among the Indian population. It is grown mainly in the higher slopes of the jungle

lands. Thus, Table 109 shows few hectares of coca in Juanjui but it is the principal cash crop in Las Palmas, Afilador, Shapajilla, and Hda. Delicias. Panao is above the coca zone, Juanjui below it.

Cost of producing one hectare of coca is estimated as follows:

|   |            |
|---|------------|
| Clearing the purma                          | S/o. 150   |
| Clearing off the land                       | 200        |
| Digging 10,000 holes @ S/. 40 per 1,000     | 400        |
| Plants - 40,000 @ S/. 7.00 per 1,000        | 280        |
| Planting 40,000 plants @ S/. 5.00 per 1,000 | 200        |
| Interplanting yuca for shade                |            |
| — 10 man days                               | 40         |
| Four cultivations during the first year     | <u>360</u> |
| Total costs                                 | S/o. 1,630 |

#### Production

|                                 |            |
|---------------------------------|------------|
| First year, 800 arrobas of yuca |            |
| @ S/. 1.00                      | S/. 800    |
| Coca, 3 lbs. per 1,000 or about |            |
| 5 arrobas @ S/. 30.00           | <u>150</u> |
| Total receipts                  | S/. 950    |

Thus it is seen that the farmer invests about S/. 680 the first year in the crop. After the first year, however, the crop should pay all the costs and produce about 30 arrobas rising to 160 arrobas in following years.

A majority of all farms in Las Palmas, Afilador, Shapajilla, Tulumayo, Tres Esquinas, and Hda. Delicias reported coca land in 1947. Average land area varied from 1.22 hectares of coca in Tres Esquinas to 30 hectares in Hda. Delicias.

Due to the demand for rotenone as an insecticide the cultivation of barbasco (cube) increased in the selva region during World War II. However, barbasco (Lonchocarpus utilis) was the most

important crop in terms of area cultivated in Tulumayo and Hda. Delicias but small amounts were grown in all other localities, except Panao.

The cost of one hectare of barbasco may be estimated as follows:

|   |      |           |
|---|------|-----------|
| Clearing and burning (50 mandays)                   | S/o. | 200       |
| Cleaning land (12.5 mandays)                        |      | 50        |
| 30 quintals <sup>1</sup> of barbasco seeds @ S/. 15 |      | 450       |
| Digging holes and planting (30 mandays)             |      | 120       |
| Four hillings during first year @ S/. 90            |      | 360       |
| Two hillings during second year                     |      | 180       |
| One hilling during third year                       |      | 90        |
| Harvesting 130 quintals of barbasco root @ S/. 6.50 |      | 845       |
| Packing @ S/.50 per Ha.                             |      | <u>50</u> |
| Total costs   | S/o. | 2,345     |
| 65 quintals of barbasco @ S/. 125 in Tingo Maria    |      | 8,125     |
| Net returns   | S/o. | 5,780     |

Since about 1938 barbasco has been one of the main export crops from the Huallaga Valley. The ready market in Europe and the United States has provided sufficient security so that the Banco Agricola has made loans available to farmers for its development. In 1942, the United States and Peru entered into an agreement in which the former agreed to buy a minimum of two and one-half million pounds of barbasco roots and a maximum of six million pounds.

Other commercial crops grown in the localities include tea, tobacco, sinchona, rubber, and sugar cane but the number of farmers growing these crops is small. Therefore for the large majority of farmers they may be ignored.

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<sup>1</sup>

One quintal equals 46 kilos.

TABLE 109

## HECTARES IN CROPS BY LOCALITY AND NUMBER OF FARMS REPORTING

| Crops        | Juanjui     | Panao     | Tingo      | Afil-     | Hda.      | Las       | Naran-    | Shapa-    | Tres      | Tulum-    |
|--------------|-------------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|              | Ha. Farms   | Ha. Farms | Ha. Farms  | Ha. Farms | Ha. Farms | Ha. Farms | Ha. Farms | Ha. Farms | Ha. Farms | Ha. Farms |
| Bananas      | :126.4 130: | .5 1      | :85.5 35:  | 32.0 23:  | 8.0 2:    | 12.8 8:   | 194.5 40: | 24.8 7:   | 3.3 6:    | 39.8 14   |
| Coca         | : 1.5 2:    | — —       | :38.0 11:  | 38.8 28:  | 30.0 1:   | 29.5 14:  | 18.5 17:  | 75.3 26:  | 19.5 16:  | 47.0 19   |
| Corn         | : 24.6 43:  | 82.7 45:  | :23.5 15:  | 7.5 6:    | 3.5 1:    | 3.0 2:    | 16.5 10:  | 10.0 1:   | 1.0 1:    | 18.5 7    |
| Barbasco     | :31.0 19:   | — —       | :51.5 11:  | 5.0 2:    | 50.0 1:   | 1.5 1:    | 12.0 6:   | 15.5 3:   | — —       | 52.8 11   |
| Coffee       | : 5.5 7:    | 5.0 4:    | : 7.5 6:   | 19.3 22:  | 3.0 1:    | 15.5 8:   | 10.0 10:  | 2.0 3:    | 1.0 3:    | — —       |
| Rice         | : 7.1 18:   | — —       | : 2.0 3:   | 6.3 6:    | — —       | — —       | 2.0 2:    | — —       | — —       | — —       |
| Yuca         | :16.4 26:   | 1.5 1:    | :33.0 16:  | 9.3 12:   | 5.0 1:    | 3.0 2:    | 19.3 15:  | 13.5 3:   | 1.8 3:    | 6.8 4     |
| Sugar cane   | :13.5 7:    | — —       | : — —      | — —       | 10.0 1:   | — —       | — —       | — —       | — —       | — —       |
| Beans        | :14.9 32:   | — —       | : .8 2:    | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| Pitucas      | : — —       | — —       | : 1.0 1:   | 2.0 4:    | — —       | 6.0 2:    | — —       | 1.5 2:    | — —       | .5 1      |
| Potatoes     | : — —       | 6.5 7:    | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| Tobacco      | : — —       | — —       | : — —      | — —       | — —       | — —       | 2.0 1:    | — —       | — —       | — —       |
| Cocoa        | : — —       | — —       | : — —      | — —       | — —       | — —       | — —       | 1.0 1:    | — —       | — —       |
| Cebolla      | : 1.6 5:    | — —       | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| Peanuts      | : .8 3:     | — —       | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| Cotton       | : .6 2:     | — —       | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| Tea          | : — —       | — —       | : 5.0 1:   | — —       | 3.0 1:    | — —       | 4.0 1:    | — —       | 1.0 2:    | — —       |
| Topas        | : 2.0 1:    | — —       | : 1.5 2:   | — —       | — —       | — —       | — —       | — —       | — —       | 1.0 1     |
| Rubber       | : — —       | — —       | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | 1.0 1     |
| Oranges      | : — —       | — —       | :10.0 4:   | 10.3 2:   | — —       | — —       | 24.5 16:  | 7.5 3:    | .3 1:     | 3.0 1     |
| Lemons       | : — —       | — —       | : — —      | .2 1:     | — —       | .5 1:     | — —       | — —       | — —       | — —       |
| Avocados     | : — —       | — —       | : — —      | 2.2 2:    | — —       | 1.3 2:    | 2.5 5:    | — —       | — —       | — —       |
| Pinas        | : — —       | — —       | : 1.0 2:   | — —       | — —       | 8.0 1:    | .5 1:     | — —       | — —       | — —       |
| Mangos       | : — —       | — —       | : .3 1:    | — —       | — —       | — —       | 2.5 3:    | — —       | — —       | — —       |
| Mixed fruit: | — —         | .5 1:     | : 2.0 3:   | 17.5 11:  | — —       | 1.5 2:    | 7.0 6:    | 5.0 5:    | — —       | 1.0 1     |
| Mixed crops: | 101.2 84:   | — —       | : 5.0 4:   | 13.8 11:  | 7.0 1:    | 4.0 2:    | 47.5 14:  | 12.8 9:   | 11.0 10:  | 12.3 6    |
| Other crops: | — —         | — —       | : — —      | 3.0 3:    | — —       | 1.8 2:    | 1.0 1:    | — —       | — —       | — —       |
| Panllevar    | : — —       | — —       | : — —      | 14.3 10:  | — —       | 2.0 2:    | — —       | 7.3 8:    | .4.5 4:   | 4.5 2     |
| Pasture      | :86.7 33:   | 5.5 1:    | :41.5 4:   | — —       | 7.0 1:    | — —       | 20.3 18:  | — —       | — —       | 1.0 1     |
| Other and    | : — —       | — —       | : — —      | — —       | — —       | — —       | — —       | — —       | — —       | — —       |
| idle         | : — —       | — —       | :10.5 1:   | — —       | — —       | 6.0 1:    | — —       | 42.0 —    | — —       | 33.3 1    |
| Total        | :433.8 226: | 102.2 63: | :309.9 51: | 181.5 56: | 126.5 2:  | 96.4 20:  | 384.6 52: | 218.2 29: | 43.4 22:  | 221.7 32  |

Subsistence crops (panllevar) are of minor importance in some of the localities. However, all families have a variety of tropical fruits such as papoyas, mangos, achiotes, avocados, pine-apples, oranges, lemons, limes, and others. Few are grown commercially, but as a result of the extension program of the Agricultural Experiment Station, sixteen farms in Naranjillo are growing orange trees for commercial purposes. None were bearing fruit in 1946. Estimates of the cost of preparing one hectare of oranges are as follows:

|                                |           |
|--------------------------------|-----------|
| Complete clearance             | S/. 800   |
| Seedlings @ S/. 40 (200 trees) | 80        |
| Setting out trees (10 mandays) | 50        |
| Other expenses                 | <u>70</u> |
|                                | S/. 1,000 |

The area in rice during 1947 was negligible throughout the localities studied and little was produced for sale. Cost of production of one hectare of rice is estimated as follows:

|                       |            |
|-----------------------|------------|
| Clearance             | S/. 200    |
| Planting              | 32         |
| Maintenance clearing  | 50         |
| Pajares (seedings)    | 30         |
| Harvesting            | 60         |
| Threshing             | <u>20</u>  |
|                       | S/. 392    |
| Production            |            |
| 1,500 kilos. @ S/. 40 | <u>600</u> |
| Net return            | S/. 208    |

Rice is a crop which competes with cash crops such as barbasco, coca, and rubber. The amounts planted tend to decline in a period of boom and to increase during depression periods.

Coffee is grown in small quantities in almost all localities and constitutes an important crop in Afilador. One hectare of coffee yields about 15 quintals of coffee which returns about S/. 1,245 gross.

Tea is grown on at least one farm in Tingo Maria, Naranjillo, Tres Esquinas, and Hda. Delicias. It generally is better adapted to altitudes above Tingo Maria (670 meters) and does better therefore at Hda. Delicias. The soil should be acid and the rainfall about two meters. Estimated cost of establishing one hectare of tea is as follows:

|   |            |
|---|------------|
| Complete clearing and burning                   | S/o. 800   |
| Cost of 300 meters of trails @ .30              | 90         |
| Cost of 300 meters of drainage<br>ditches @ .20 | 60         |
| Staking (5,500 stakes and placing)              | 64         |
| Digging   | 144        |
| Planting  | 144        |
| Two cultivations during the first year          | 200        |
| Four cultivations during the second year        | 400        |
| First pruning (second year)                     | 100        |
| Second pruning (second year)                    | 200        |
| Four hillings in third year @ S/o. 100          | 400        |
| Third pruning (third year)                      | <u>300</u> |

Total costs S/o. 2,902

Not until the fourth year is the planter able to harvest the tea leaves for sale. The high investment (almost S/o. 3,000 per hectare) and the long period before any returns are possible make tea unattractive to the average small farmer. Some planters say that tea brings returns that are comparable to rubber but less than those of coca.

Rubber, although native to the Tingo Maria and Juanjui sites, is not of major importance. It is believed that the area is adapted to this great industrial crop and the Experiment Station is attempting to get more widespread acceptance on the small farms. The rubber worker (shiringuero) can work six hectares of 140 plants each, producing 2,160 kilos of rubber later. At prices prevailing in 1947 this would bring a return of about S/o. 1,000 per hectare.

However, the rubber tree requires five to six years to come into production but it is possible to interplant yuca, bananas, coffee, barbasco, etc. The cost of planting one hectare of rubber is estimated as follows:

|                                  |            |
|----------------------------------|------------|
| 140 plants                       | S/o. 420   |
| Superficial cleaning             | 200        |
| Four hillings per year (3 years) | 720        |
| Planting (14 mandays)            | 70         |
| Other costs                      | <u>100</u> |
| Total costs                      | S/o. 1,510 |

The price of rubber in March 1947 was S/o. 8.20 but this was relatively high and the price was expected to fall considerably after relatively high wartime prices.

#### Poultry and Livestock.

A large majority of families, farm and nonfarm, in most of the localities have poultry flocks. But only about a fourth of all families in the pueblo of Tingo Maria and Hda. Delicias reported poultry. (See Table 110.) Hogs are not reported by as many families as reported poultry in any of the localities, still from a fourth to a half of all families have them in all but Tingo Maria and Hda. Delicias.

Although some people connect guinea pigs with Indian families, the facts do not entirely substantiate such a generalization. Guinea pigs are reported by about 10 percent of all families in three localities and although Panao and Afilador rank high on the scale of Indianism, Las Palmas ranks low. However, Panao has more guinea pigs than any other place. (See Table 111.)

Goats and sheep are most general in Panao and Tres Esquinas. Many of the families in Tres Esquinas came originally from Panao and this may account for this similarity.

TABLE 110

PERCENTAGE OF ALL FAMILIES REPORTING POULTRY, HOGS,  
MILK COWS, AND OTHER ANIMALS, BY LOCALITY

| Locality      | Poultry<br>Pct. | Hogs<br>Pct. | Guinea<br>pigs<br>Pct. | Goats<br>Pct. | Sheep<br>Pct. | Milk<br>cows<br>Pct. | Cattle<br>Pct. |
|---------------|-----------------|--------------|------------------------|---------------|---------------|----------------------|----------------|
| Juanjui       | 83.7            | 36.0         | —                      | —             | 1.0           | 15.3                 | 11.3           |
| Panao         | 50.3            | 34.8         | 9.9                    | 5.6           | 6.8           | 6.2                  | 1.2            |
| Tingo Maria   | 26.1            | 5.6          | .3                     | .6            | —             | —                    | —              |
| Afilador      | 74.6            | 43.3         | 9.0                    | —             | —             | —                    | —              |
| Hda. Delicias | 26.3            | 5.3          | 5.3                    | —             | —             | —                    | —              |
| Las Palmas    | 78.9            | 47.4         | 10.5                   | —             | —             | —                    | —              |
| Naranjillo    | 70.4            | 32.1         | 1.2                    | 2.5           | 1.2           | 24.7                 | 9.9            |
| Shapajilla    | 70.6            | 45.1         | 3.9                    | 2.0           | —             | —                    | —              |
| Tres Esquinas | 62.5            | 25.0         | 4.2                    | 4.2           | 8.4           | —                    | —              |
| Tulumayo      | 70.7            | 31.7         | 7.3                    | —             | —             | 2.4                  | 2.4            |

TABLE 111

NUMBER OF POULTRY AND SELECTED LIVESTOCK, BY  
LOCALITY

| Locality      | Poultry<br>No. | Hogs<br>No. | Guinea<br>pigs<br>No. | Goats<br>No. | Sheep<br>No. | Milk<br>cows<br>No. | Cattle<br>No. |
|---------------|----------------|-------------|-----------------------|--------------|--------------|---------------------|---------------|
| Juanjui       | 5,778          | 1,160       | —                     | —            | 21           | 151                 | 183           |
| Panao         | 610            | 136         | 144                   | 37           | 110          | 33                  | 25            |
| Tingo Maria   | 1,398          | 109         | 1                     | 9            | —            | —                   | —             |
| Afilador      | 1,299          | 105         | 75                    | —            | —            | —                   | —             |
| Hda. Delicias | 184            | 1           | 19                    | —            | —            | —                   | —             |
| Las Palmas    | 773            | 60          | 45                    | —            | —            | —                   | —             |
| Naranjillo    | 2,989          | 136         | 50                    | 9            | 2            | 29                  | 13            |
| Shapajilla    | 535            | 75          | 30                    | 6            | —            | —                   | —             |
| Tres Esquinas | 245            | 12          | 40                    | 2            | 2            | —                   | —             |
| Tulumayo      | 716            | 32          | 26                    | —            | —            | 1                   | 2             |



Milk cows were reported only in Naranjillo, Juanjui, Panao, and Tulumayo. The comparatively favorable situation of families in Naranjillo in respect to milk cows should not be overlooked and is due to the efforts of the Experiment Station. Cattle are reported by more families in Juanjui than in any other locality. The lower Huallaga Valley undoubtedly is adapted to cattle raising and in fact already has a certain amount of development.

#### Acquiring Land

The typical "slash-and-burn" system of agriculture prevails in Juanjui. Growth is felled and then burned. The minerals thus released are usually sufficient to produce two or three crops of corn or rice after which the old clearings are abandoned and new ones made. Such a system is possible only where land is plentiful and cheap and labor return of little consequence. Thus, over four-fifths of all farms were acquired merely by hacking out a clearing from the unappropriated state lands that abound. (See Table 112.) Less than half of these lands have been filed upon by the settler.

Contrasting markedly with Juanjui, Panao farms were either purchased or acquired through inheritance while Tingo Maria farms all were acquired from the Government through the Centro de Colonizacion. In both Panao and Tingo Maria the boundaries of farm units have been established and operations thus are confined to definite land areas.

#### Soil Practices

For all practical purposes the only power available to work the land is human; the only implements are hand tools such as the machete, the acute-angled pick, and the axe.

TABLE 112

## HOW FARM UNITS WERE ACQUIRED IN JUANJUI AND PANAO

| Locality | Com-<br>prado<br>No. Pct. | Heren-<br>cia<br>No. Pct. | Baldio<br>No. Pct. | Del<br>Estado<br>No. Pct. | Other<br>No. Pct. | Total<br>No. Pct. |
|----------|---------------------------|---------------------------|--------------------|---------------------------|-------------------|-------------------|
| Juanjui  | 30 15.8                   | 2 1.0                     | 76 40.0            | 80 42.2                   | 2 1.0             | 190 100.0         |
| Panao    | 28 48.3                   | 19 32.8                   | — —                | — —                       | 11 18.9           | 58 100.0          |

Practically none of the farmers reported using fertilizer on the soil. In Juanjui this problem of soil fertility is taken care of by the slash-and-burn type of farming. The recency of the Tingo Maria development makes it conjecturable how long good crop yields can be maintained without some fertilization on a large scale. Loomis pointed out in 1943 that "the Experiment Station technicians and the extension agent will have a problem on their hands developing a fertilizer which will be cheap enough to make agricultural production profitable on 15-hectare units under the existing high freight rates." <sup>1</sup> Little has been done apparently to overcome the problem of soil erosion in the intervening four years.

In Panao, the system of agriculture conforms closely to that prevailing in Inca and Colonial Epochs. There are no modern machines nor are any fertilizers applied. Maurtua commented in 1919 as follows:

<sup>1</sup>Charles P. Loomis, op. cit., p. 249.

"Los sistemas de cultivo son los mas rudimentarios. No han variado desde las epocas antiguas. No se tiene idea de los abonos ni de las maquinarias modernos de cultivo. Todo se efectua conforme a las costumbres, estaciones y herramientas usadas desde las epocas incaica y colonia."<sup>2</sup>

### Fishing

Mention should be made of the rather widespread activity of fishing in the Huallaga River and its tributaries at Tingo Maria and Juanjui. Nets (tarrafas), dynamite and barbasco are used. During August large swarms of fish move upstream and this is the time when the people go to selected points along the river and await the passing of the shoal of fish, called locally "mijano".

### Man-land Ratio

One of the fundamental relations in all societies is the ratio of land, especially cultivated land, to population. Of course, such microscopic studies as these do not lend themselves to broad generalizations in this respect, but it should be noted that according to Table 113 there are only .12 hectares of cultivated land for each person in 1947 in Panao compared with 1.28 hectares in Hda. Delicias. Two factors affect these ratios. One, the large nonagricultural population in Panao has been included in the calculation thereby tending to lower the ratio; second, the rather large transient population of day laborers that accompany such large-scale farming operations as at Hda. Delicias tends to increase the ratio there. Naranjillo with a ratio of about one person per hectare of cultivated land approaches a more desirable man-land ratio considering the type of farming practiced.

TABLE 113

## CULTIVATED AREA PER INHABITANT, BY LOCALITY

| Locality      | Cultivated<br>area<br>Hectares | Population | Hectares<br>per<br>Person |
|---------------|--------------------------------|------------|---------------------------|
| Juanjui       | 433.8                          | 1,844      | .24                       |
| Panao         | 102.2                          | 871        | .12                       |
| Tingo Maria   | 309.9                          | 1,643      | .19                       |
| Afilador      | 181.5                          | 306        | .59                       |
| Hda. Delicias | 126.5                          | 99         | 1.28                      |
| Las Palmas    | 96.4                           | 184        | .52                       |
| Naranjillo    | 384.6                          | 391        | .98                       |
| Shapajilla    | 176.2                          | 260        | .68                       |
| Tres Esquinas | 43.4                           | 113        | .38                       |
| Tulumayo      | 190.7                          | 216        | .89                       |

In 1938, Ferrero estimated for Peru that there were .24 hectares of cultivated land per inhabitant and he concluded that the country had one of the lowest ratios of cultivated land to population in the world.<sup>1</sup> A more refined study in 1945 by Rose showed a ratio of .25 hectares per inhabitant. Such figures do not take account of large amounts of pasture lands particularly in the highlands. But they do demonstrate beyond any doubt the relative scarcity of productive land in the country.

The area of colonization at Tingo Maria, all in all, has a more favorable man-land ratio than the country at large and must therefore be of material help to the total economy.

The relation between net income from farming and cultivated area for rural localities is shown in Table 114. The average income

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<sup>1</sup>

Romulo A. Ferrero, *Tierra y Poblacion en el Peru*, Banco Agricola del Peru, Lima, 1938, p. 5.

for farms with less than five acres in cultivation varies from S/. 1,583 in Shapajilla to S/. 2,750 in Las Palmas. Generally, income increases with cultivation. Farms with 10 hectares or more have average incomes ranging from S/. 3,867 in Afilador to S/. 17,075 in Shapajilla.

TABLE 114

AVERAGE NET INCOME CLASSIFIED BY CULTIVATED AREA IN FARM UNIT, BY RURAL LOCALITY

| Cultivated area      | Afilador | Hda. Delicias | las Palmas | Naranjillo | Shapajilla | Tres Esquinas | Tulumayo |
|----------------------|----------|---------------|------------|------------|------------|---------------|----------|
| Under 5 hectares     | 2,400    | *             | 2,750      | 1,706      | 1,583      | 1,642         | 1,945    |
| 5 to 10 "            | 3,068    | *             | 5,430      | 5,756      | 1,460      | 3,399         | 3,920    |
| 10 hectares and over | 3,867    | *             | 4,740      | 10,068     | 17,075     | —             | 13,454   |

\* No data available

If five to ten hectares of cultivated land is taken arbitrarily as the most desirable size for a single farm family, being the size a family of five or six might reasonably be expected to take care of, then family-sized farms may provide incomes on average as low as S/. 1,460 in Shapajilla and S/. 5,756 in Naranjillo. The greater returns in the latter locality are due to the more efficient use of land, labor, and capital in comparison with Shapajilla or Afilador. This means more variety in crops, with less reliance on coca and greater emphasis on livestock and poultry.

Transportation

It is generally recognised by local people that there is great need for better transportation facilities. (See Tables 115 and 116.) In Juanjui, for instance, all but 16 of 300 respondents acknowledged the need for better roads or trails; 269 respondents specifically mentioned the need for extension of an auto road from Tingo Maria down the Huallaga. Most of the people are conscious of their isolation from most of Peru and desire to be brought into closer union with other parts.

TABLE 115

FAMILIES DISTRIBUTED ACCORDING TO THEIR ANSWERS TO  
THE FOLLOWING QUESTION: "WHAT ARE THE MOST IM-  
PORTANT TRANSPORTATION PROBLEMS THAT OUGHT  
TO BE IMPROVED UPON IMMEDIATELY?" BY  
PUEBLO

| Answer                               | : All com- : |       | : Juanjui : |       | : Panoa : |       | : Tingo Maria : |       |
|--------------------------------------|--------------|-------|-------------|-------|-----------|-------|-----------------|-------|
|                                      | No.          | Pct.  | No.         | Pct.  | No.       | Pct.  | No.             | Pct.  |
| All answers                          | :813         | 100.0 | :300        | 100.0 | :161      | 100.0 | :352            | 100.0 |
| Lack of auto roads<br>and railroads  | :524         | 64.5  | :263        | 87.7  | :34       | 21.1  | :227            | 64.5  |
| Lack of vehicles<br>or cargo animals | :46          | 5.7   | :1          | .3    | :16       | 9.9   | :29             | 8.2   |
| Poor economic<br>resources           | :14          | 1.7   | :--         | --    | :14       | 8.7   | :--             | --    |
| Poor conditions of<br>roads          | :22          | 2.7   | :--         | --    | :22       | 13.7  | :--             | --    |
| Lack of roads to<br>montana          | :40          | 4.9   | :--         | --    | :40       | 24.8  | :--             | --    |
| Lack of street<br>lights             | :8           | 1.0   | :--         | --    | :--       | --    | :8              | 2.3   |
| No problem                           | :115         | 14.1  | :19         | 6.3   | :22       | 13.7  | :74             | 21.0  |
| No answer                            | :44          | 5.4   | :17         | 5.7   | :13       | 8.1   | :14             | 4.0   |

TABLE 116

FAMILIES DISTRIBUTED ACCORDING TO THEIR ANSWERS TO  
THE FOLLOWING QUESTION: "WHAT SHOULD THE GOVERN-  
MENT DO IMMEDIATELY TO RESOLVE THE PROBLEM  
OF TRANSPORTATION?" BY PUEBLO

| Answers                                    | All com- |       | Juanjui |       | Panao |       | Tingo Maria |       |
|--|----------|-------|---------|-------|-------|-------|-------------|-------|
|  | No.      | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All answers                                | 813      | 100.0 | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| Build auto roads<br>and railroads          | 480      | 59.0  | 260     | 86.7  | 16    | 9.9   | 204         | 57.9  |
| Construct road to<br>montana               | 42       | 5.2   | —       | —     | 42    | 26.1  | —           | —     |
| Form public utility<br>corporations        | 3        | .4    | —       | —     | —     | —     | 3           | .9    |
| Improve the roads                          | 13       | 1.6   | —       | —     | 13    | 8.1   | —           | —     |
| Send road engineers                        | 1        | .1    | —       | —     | —     | —     | 1           | .3    |
| Determine the needs<br>and develop a plan  | 74       | 9.1   | 4       | 1.3   | 22    | 13.7  | 48          | 13.7  |
| The Government ought<br>to know what to do | 11       | 1.4   | —       | —     | 11    | 6.8   | —           | —     |
| Provide facilities                         | 31       | 3.8   | 1       | .3    | 22    | 13.7  | 8           | 2.3   |
| Other                                      | 6        | .7    | —       | —     | 2     | 1.2   | 4           | 1.1   |
| Nothing desired                            | 45       | 5.5   | 2       | .7    | 1     | .6    | 42          | 11.9  |
| No answer                                  | 107      | 13.2  | 33      | 11.0  | 32    | 19.9  | 42          | 11.9  |

Respondents expressing themselves in Panao may be summarized  
as follows:

Of 61 respondents -

40 expressed a need for a road to the Montana,  
that is to Pozuzo and Mairo.

56 showed a concern for better roads in general.

16 expressed a need for more adequate vehicles of  
transportation, e.g. buses, autos, trucks, etc.

14 indicated that their main problem was a lack of  
money with which to travel or ship goods.

11 expressed no opinion.

These opinions in Panao reflect the generally better land transportation than in Juanjui but they still show that the people desire better transportation than is now available.

In Tingo Maria, of 352 respondents:

227 expressed a need for better roads.

29 expressed a need for more vehicles of transport.

8 said the streets of Tingo Maria needed electric lights to improve transportation.

88 expressed no opinion.

Thus, Tingo Maria seems much more satisfied than the other two pueblos with its transportation. However, a large majority see a real need for improving the quality of roads.

The system of roads and rivers are the arteries along which flow the economic life of the area. Both goods and human cargo tend to follow these channels. (See Table 117.) In Juanjui, 22 of the heads of families made river trips to Tingo Maria during 1946 while an additional 31 work part-time down river at San Julian or Pelache. At least 8 of the family heads in Tingo Maria traveled to Huanuco to work part of the year and six others traveled to neighboring localities. More than a fourth (45) of all family heads in Panao worked part-time during the year in the montana at Tingo Maria (6), Ambo and Chaglla (26), and other parts (10); 9 heads traveled to Huanuco to work part of the year.

In addition to this kind of migratory movement, 18 family heads in Tingo Maria and 60 heads in Juanjui spent a part of the year on their small farms (chacras) in the surrounding jungle.



TABLE 117

FAMILY HEADS DISTRIBUTED ACCORDING TO WHERE THEY WORK  
AWAY FROM HOME, BY PUEBLO

|                                      | All communities |       | Juanjui |       | Panao |       | Tingo Maria |       |
|--------------------------------------|-----------------|-------|---------|-------|-------|-------|-------------|-------|
|                                      | No.             | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All places                           | 813             | 100.0 | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| On the <u>chacra</u> or <u>fundo</u> | 90              | 11.2  | 60      | 20.0  | 12    | 7.5   | 18          | 5.1   |
| Huaxtilla                            | 2               | .2    | --      | --    | --    | --    | 2           | .6    |
| Naranjillo                           | 2               | .2    | --      | --    | --    | --    | 2           | .6    |
| Around his house                     | 92              | 11.3  | 35      | 11.7  | --    | --    | 57          | 16.1  |
| Lima                                 | 2               | .2    | --      | --    | 2     | 1.2   | --          | --    |
| San Julian, Iquitos                  | 25              | 3.1   | 25      | 8.3   | --    | --    | --          | --    |
| Panao                                | 14              | 1.7   | --      | --    | 14    | 8.7   | --          | --    |
| Juanjui                              | 17              | 2.1   | 17      | 5.7   | --    | --    | --          | --    |
| Huanuco                              | 17              | 2.1   | --      | --    | 9     | 5.6   | 8           | 2.3   |
| In school                            | 6               | .7    | 6       | 2.0   | --    | --    | --          | --    |
| Tingo Maria                          | 6               | .7    | --      | --    | 6     | 3.7   | --          | --    |
| Making trips on the river            | 22              | 2.7   | 22      | 7.3   | --    | --    | --          | --    |
| Public employment                    | 11              | 1.4   | 9       | 3.0   | 1     | .6    | 1           | .3    |
| Ambo, San Jose                       | 4               | .5    | --      | --    | 4     | 2.5   | --          | --    |
| At the river                         | 2               | .2    | 2       | .7    | --    | --    | --          | --    |
| In <u>Guardia Civil</u>              | 10              | 1.2   | 4       | 1.3   | --    | --    | 6           | 1.7   |
| Cajumba                              | 1               | .1    | --      | --    | --    | --    | 1           | .3    |
| Palache                              | 6               | .7    | 6       | 2.0   | --    | --    | --          | --    |
| Monzon                               | 1               | .1    | --      | --    | --    | --    | 1           | .3    |
| In the <u>montana</u>                | 13              | 1.6   | --      | --    | 13    | 8.1   | --          | --    |
| Domestic work                        | 3               | .4    | --      | --    | 3     | 1.9   | --          | --    |
| No answer                            | 467             | 57.6  | 114     | 38.0  | 97    | 60.2  | 256         | 72.7  |

# CHAPTER XIV

## AN AGRICULTURAL PLAN FOR THE MIDDLE HUALLAGA VALLEY

Each family was polled during the interview as to their attitude toward bringing in Europeans as agricultural colonists in Peru. The question asked was: Piensa Ud. que el Peru deberia aceptar colonos de Europa ahora? The number replying to this question are shown in Table 118.

TABLE 118

NUMBER OF FAMILIES ANSWERING "YES" OR "NO" TO THE QUESTION: "DO YOU THINK THAT PERU OUGHT TO ACCEPT EUROPEAN COLONISTS AT THE PRESENT TIME?" BY LOCALITY

| Locality      | Yes     |                 | No      |                 | No opinion |                 |
|---------------|---------|-----------------|---------|-----------------|------------|-----------------|
|               | Percent |                 | Percent |                 | Percent    |                 |
|               | Number  | of all families | Number  | of all families | Number     | of all families |
| Juanjui       | 230     | 76.7            | 58      | 19.3            | 2          | .7              |
| Panao         | 105     | 65.2            | 52      | 32.3            | 1          | .6              |
| Tingo Maria   | 291     | 82.6            | 52      | 14.8            | —          | —               |
| Afilador      | 49      | 73.2            | 12      | 17.9            | 6          | 17.9            |
| Hda. Delicias | 7       | 36.8            | 6       | 31.6            | 6          | 31.6            |
| Las Palmas    | 30      | 78.9            | 7       | 18.4            | 1          | 2.7             |
| Naranjillo    | 59      | 72.0            | 17      | 20.7            | 6          | 7.3             |
| Shapajilla    | 36      | 70.6            | 10      | 19.6            | 5          | 9.8             |
| Tres Esquinas | 16      | 65.8            | 7       | 29.2            | 1          | 5.0             |
| Tulumayo      | 31      | 75.6            | 9       | 21.9            | 1          | 2.5             |
|               |         |                 |         |                 |            |                 |

A large majority of family respondents were favorable to Europeans in all localities with the single exception of Hda. Delicias. The largest number of affirmative answers were found in Tingo Maria, the most urban locality of those studied. On the other hand, Panao reported the largest number of negative answers, which must be related to the more dominant Indian population.

The question may be raised as to what groups in the population might be more strongly prejudiced against foreign colonists. It would be reasonable perhaps if those with low economic and social status might feel more averse toward foreign colonists on the basis that they would be competitors for the economic "pie." Table 119 shows how the percentage who answered "no" to foreign colonists is related to income by locality. The highest percentage of negative responses were reported among low-income families in six of the nine localities containing low-income families. Furthermore, in no instance did the percentage of negative responses for the high-income families exceed the percentages in the other income classes. There seems, therefore, to be a noticeable tendency for prejudicial opinions on European colonists to be associated with low-income families.

A comparison of all families in Panao who reported prejudicially on Europeans shows the following significant facts. Although the 53 prejudicial families comprise a third (32.9 percent) of all families they include about half of all families reporting that they cannot read, that sleep on the ground, that go barefoot, that use poncho and chullo, and who report Quechua as their mother tongue.

On the other hand, the median age of the prejudicial heads was practically identical with the average for Panao (43 years) but their length of residence was considerably less, an average of 23 years compared with 33 years for all families.

Reasons reported by the families for opposing European colonists may be stated broadly as follows:

TABLE 119

PERCENTAGE OF FAMILIES ANSWERING "NO" TO THE QUESTION:  
 "DO YOU THINK PERU OUGHT TO ACCEPT EUROPEAN  
 COLONISTS?" BY INCOME AND BY LOCALITY

| Locality      | High income | Middle Income | Low income |
|---------------|-------------|---------------|------------|
|               | Percent     | Percent       | Percent    |
|               |             |               |            |
| Juanjui       | 12.7        | 24.7          | 30.7       |
| Panao         | 33.3        | 19.9          | 60.5       |
| Tingo Maria   | 14.9        | 21.5          | --         |
| Afilador      | 20.0        | 16.3          | 22.2       |
| Hda. Delicias | --          | 40.0          | --         |
| Las Palmas    | 11.7        | 26.3          | --         |
| Naranjillo    | 28.6        | 9.1           | 33.3       |
| Shapajilla    | 16.7        | 15.7          | 42.9       |
| Tres Esquinas | --          | 21.4          | 57.1       |
| Tulumayo      | 7.7         | 29.2          | 25.0       |
|               |             |               |            |
|               |             |               |            |
|               |             |               |            |

1. In Panao 12 percent of all respondents feel that native families should be considered first for future colonization areas. (See Table 120.) An additional 10 percent believe that foreigners will take advantage of Peruvians. This latter opinion was not expressly reported in Tingo Maria but six percent of the respondents in Juanjui felt this way.
2. About four percent of all families in Juanjui felt that Europeans would bring problems with them. Less than two percent felt this way in Tingo Maria. On the other hand, about eight percent of the families in Panao were of the opinion that Europeans were unaccustomed to Peruvian conditions and this fact would make for problems of adjustment.

TABLE 120

FAMILIES DISTRIBUTED ACCORDING TO THE REASONS THEY GAVE FOR ACCEPTING OR REJECTING  
COLONISTS FROM EUROPE NOW, BY PUEBLO

| Reason                                      | All         |       | Juanjui |       | Panao |       | Tingo Maria |       |
|---|-------------|-------|---------|-------|-------|-------|-------------|-------|
|   | communities |       |         |       |       |       |             |       |
|   | No.         | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All reasons                                 | 813         | 100.0 | 300     | 100.0 | 161   | 100.0 | 352*        | 100.0 |
| They will bring skills and much labor       | 130         | 16.0  | 66      | 22.0  | 60    | 37.4  | 4           | 1.1   |
| Peru has extensive lands they can cultivate | 35          | 4.3   | 12      | 4.0   | 16    | 9.9   | 7           | 2.0   |
| All the available lands are occupied now    | 3           | .4    | 3       | 1.0   | --    | --    | --          | --    |
| They will bring progress to the selva       | 86          | 10.6  | 82      | 27.4  | --    | --    | 4           | 1.1   |
| Peru is in a difficult situation at present | 10          | 1.2   | 10      | 3.3   | --    | --    | --          | --    |
| They will teach many skills                 | 69          | 8.5   | 46      | 15.3  | 21    | 13.0  | 2           | .6    |
| They will take advantage of Peruvians       | 34          | 4.2   | 18      | 6.0   | 16    | 9.9   | --          | --    |
| They will bring problems, if they come      | 16          | 2.0   | 11      | 3.7   | --    | --    | 5           | 1.4   |
| Peru has many persons who could colonize    | 23          | 2.8   | 4       | 1.3   | 19    | 11.8  | --          | --    |
| Means of colonizing and raising the         |             |       |         |       |       |       |             |       |
| standard of life                            | 6           | .7    | 5       | 1.7   | --    | --    | 1           | .3    |
| A place for them to live                    | 7           | .9    | --      | --    | 7     | 4.3   | --          | --    |
| As much a political as an economic problem  | 1           | .1    | 1       | .3    | --    | --    | --          | --    |
| They are not accustomed to Peru,            | 12          | 1.5   | --      | --    | 12    | 7.5   | --          | --    |
| No answer                                   | 381         | 46.8  | 42      | 14.0  | 10    | 6.2   | 329         | 93.5  |

\* Information was incomplete for Tingo Maria, only 23 replies received to this question. However, detailed data is available from a sample opinion-questionnaire taken by field workers in December, 1946.

Reasons for favoring European colonists may be stated as follows:

1. Between a third and a half of all families in Juanjui and Panao feel that Europeans would bring economic progress and skills that might raise the levels of living of all. A number feel that they would also teach Peruvians many techniques which have been applied in Europe.
2. No direct comparisons can be made with opinion at Tingo Maria since only 23 Tingo Maria respondents replied to this question. However, 56 percent of a sample of farmers taken earlier at Tingo Maria reported that they preferred skilled workers or technicians as European immigrants.<sup>1</sup> This confirms the findings in the other study sites.

Would native families move to areas of agricultural colonization? To test out such a question each respondent at Juanjui, Panao, and in the pueblo of Tingo Maria were asked if they and their families would migrate to rural parts of Tingo Maria if sufficient land were made available to them. Table 121 shows that 58.0 percent of the families in Juanjui replied positively to this question. Less than half (41.6 percent) of all families in Panao said they would take up permanent residence near Tingo Maria if given a chance. Even three-fourths of all families in the pueblo of Tingo Maria would like to have land in the general area.

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Charles P. Loomis, "Trial Use of Public Opinion Survey Procedures in Determining Immigration and Colonization Policies for Bolivia, Ecuador, and Peru." Social Forces, Vol. 26, No. 1, October, 1947, p. 30-5.

TABLE 121

FAMILIES DISTRIBUTED ACCORDING TO THEIR ANSWERS TO THE FOLLOWING QUESTION: "IF YOU  
AND YOUR FAMILY HAD SUFFICIENT LAND NEAR TINGO MARIA, WOULD YOU LIVE THERE  
PERMANENTLY?" BY PUEBLO

| Community   | High income |      |     |      | Middle income |      |     |      | Low income |      |     |      | Total |      |     |      |
|-------------|-------------|------|-----|------|---------------|------|-----|------|------------|------|-----|------|-------|------|-----|------|
|             | Yes         |      | No  |      | Yes           |      | No  |      | Yes        |      | No  |      | Yes   |      | No  |      |
|             | No.         | Pct. | No. | Pct. | No.           | Pct. | No. | Pct. | No.        | Pct. | No. | Pct. | No.   | Pct. | No. | Pct. |
|             | :           | :    | :   | :    | :             | :    | :   | :    | :          | :    | :   | :    | :     | :    | :   | :    |
| Juanjui     | 40          | 56.3 | 31  | 43.7 | 87            | 56.5 | 67  | 43.5 | 47         | 62.7 | 28  | 37.3 | 174   | 58.0 | 126 | 42.0 |
| Panao       | 18          | 42.9 | 24  | 57.1 | 34            | 44.7 | 42  | 55.3 | 15         | 34.9 | 28  | 65.1 | 67    | 41.6 | 94  | 58.4 |
| Tingo Maria | 155         | 74.1 | 54  | 25.9 | 101           | 77.7 | 29  | 22.3 | 9          | 69.2 | 4   | 31.8 | 265   | 75.3 | 87  | 24.7 |
|             | :           | :    | :   | :    | :             | :    | :   | :    | :          | :    | :   | :    | :     | :    | :   | :    |

The most important reason given in all three pueblos for moving to the Tingo Maria area was the belief that the family could thereby improve their level of living. (See Table 122.)

An analysis of the negotiations with the Peruvian Government in regard to immigration of displaced persons reveals many of the obstacles that face any large-scale scheme for settling Europeans. In the face of overwhelming evidence that Peruvians generally desired immigrants from Europe it is nevertheless a fact that the I.G.C. Mission was not able to effect a scheme for settling large numbers of displaced persons in the extensive lands east of the Andes.

Many things of course contributed to this lack of success in respect to agricultural colonization even though the Mission was eminently successful in effecting an arrangement for assisting certain classes of individual workers to migrate to Peru. In the first place, it was particularly unfortunate that the negotiations coincided so closely with a period of acute political crisis revolving around the administration of Pres. Bustamante and the tug-of-war between the Apristas on the one hand and the Conservatives on the other. There is no doubt that the Apristas had by far the large majority of citizens on their side while the Conservatives had the control of much of the government bureaucracy. Pres. Bustamante continually tried to compromise the two centrifugal forces and in the end this policy neutralized the administration of government.



TABLE 122

FAMILIES DISTRIBUTED ACCORDING TO THEIR REASONS FOR WANTING OR NOT WANTING TO SETTLE  
PERMANENTLY AROUND TINGO MARIA, BY PUEBLO

| Reason                                  | All<br>Communities |       | Juanjui |       | Panao |       | Tingo Maria |       |
|---|--------------------|-------|---------|-------|-------|-------|-------------|-------|
|   | No.                | Pct.  | No.     | Pct.  | No.   | Pct.  | No.         | Pct.  |
| All reasons                             | 813                | 100.0 | 300     | 100.0 | 161   | 100.0 | 352         | 100.0 |
| Has other interests                     | 125                | 15.4  | 103     | 34.3  | --    | --    | 22          | 6.2   |
| Better transportation                   | 24                 | 3.0   | 24      | 8.0   | --    | --    | --          | --    |
| To secure personal independence         | 2                  | .2    | --      | --    | 2     | 1.2   | --          | --    |
| More work opportunity                   | 181                | 22.3  | 39      | 13.0  | 6     | 3.7   | 136         | 38.7  |
| Does not like agriculture               | 49                 | 6.0   | --      | --    | --    | --    | 49          | 13.9  |
| Has an affection for agriculture        | 11                 | 1.4   | --      | --    | 11    | 6.8   | --          | --    |
| Better schools                          | 14                 | 1.7   | 14      | 4.7   | --    | --    | 1           | --    |
| Better means of life                    | 228                | 28.1  | 85      | 28.3  | 42    | 26.2  | 101         | 28.8  |
| Desires land                            | 6                  | .7    | --      | --    | 6     | 3.7   | --          | --    |
| Difficult to accustom oneself           | 48                 | 5.9   | --      | --    | 48    | 29.8  | --          | --    |
| More favorable climate                  | 23                 | 2.8   | 7       | 2.3   | --    | --    | 16          | 4.5   |
| Living is very dear                     | 4                  | .5    | --      | --    | 4     | 2.5   | --          | --    |
| Would not have necessary resources      | 14                 | 1.7   | 4       | 1.3   | 10    | 6.2   | --          | --    |
| Less favorable climate                  | 7                  | .9    | 2       | .7    | --    | --    | 5           | 1.4   |
| Nearer to Lima                          | 3                  | .4    | 2       | .7    | --    | --    | 1           | .3    |
| Too many diseases                       | 4                  | .5    | --      | --    | 4     | 2.5   | --          | --    |
| Present situation does not allow change | 38                 | 4.7   | 15      | 5.0   | 23    | 14.3  | --          | --    |
| No answer                               | 32                 | 3.9   | 5       | 1.7   | 5     | 3.1   | 22          | 6.2   |

This "dead center" situation was not helped any by the assassination during the course of negotiations of one of the influential editors of La Prensa, a leading conservative paper published in Lima.

However, the government seemed completely incapable of mobilizing the necessary local capital, technical planning skills or sufficient political support for large-scale agricultural colonization enterprises. Apathy best describes the attitude of local capitalists and lending institutions toward the investment of large amounts of venture capital in undeveloped lands. They were much more interested in Lima real estate and urban housing.

A contributing factor to governmental ineffectiveness in planning agricultural colonization is the multitude of agencies, both within and without the government, which have some attenuated responsibility for colonization. But without purposeful leadership and a system of communication between them, there is no clear out responsibility for carrying out an agreed-upon program. Even the Direccion de Colonizacion y Asuntos Orientales, the agency of the government most concerned with the problems of colonization, was more preoccupied with programs of agricultural research and extension than with colonization.

For all of Peru's long history of concern over immigration and colonization the Republic is still without a realistic policy in regard to European immigration. Considerable vacillation occurs when responsible individuals are faced squarely with what to do about it. For one thing, there appears to be no facing up to the fact that large numbers of Indian people living in the highlands

might legitimately have a first claim on any colonization opportunities for improving their level of living. Any agricultural colonization plans for Peru cannot ignore some consideration of the question of how and where the Indian population fits into the scheme. It seems inevitable that standards of living of European colonists and native peoples must rise or fall together.

The great problem of high transportation costs is in part due to the fact that little or no attempt has been made to increase the number and scale of local markets, particularly in the highlands where more than half of the Peruvian population lives. Emphasis on export crops, such as rubber, barbasco, tea, etc., has not been conducive to development of production for local consumption and generally rising standards of living. In respect to coca, however, there exists innumerable local sierra markets for the leaves. The country not only needs farmers and laborers but individuals with a sense of enterprise and business who would relate the needs of all the people of Peru to the natural resources available. Thus, the dislikes expressed by many people toward immigration of businessmen, professional people, and non-Catholics works continually against the development of any small-business or industrialist classes. Instead, what insignificant numbers are allowed to enter Peru are so selected and controlled so as not to disturb or upset the prevailing business, religious and political organizations. Actually, new modes of life are required.

The Vatican Mission, which closely preceded the I.G.C. Mission to Peru, was very influential in government circles.

Its adverse report on the possibilities of immediate colonization was used by the government to delay colonization schemes.

A long history of colonization failures prior to 1938 has left its mark upon the thinking of many Peruvians, resulting in what might be termed an "inferiority complex" in regard to frontier development, so that the comparative success in Tingo Maria has only partially served to counteract the aura of pessimism surrounding agricultural colonization. On the other hand, the failures of Pozuzo, Chanchamayo, and Perene have introduced a degree of caution into all planning which is conducive to a more realistic approach to the problems of settlement.

One fundamental fact stands out in respect to any scheme for settling large numbers in Eastern Peru: There is no large area of accessible lands available for the taking. Instead any large-scale settlement project would require first of all the building of roads as well as the freeing of land for appropriation by new settlers. In some cases expropriation of lands would be necessary.

#### Land Resources Including Climate

However, no less than 80,000 hectares could be made available for colonization in the Huallaga Valley. Informed persons are agreed that the largest and best potential land area for new settlement is located immediately below Tingo Maria on both sides of the Huallaga River. Careful reconnaissance by land and air indicate an area of land ranging from 10 to 15 miles wide on each side of this river. The second possibility is to open up the

Monson River Valley by building a road to the upper reaches of this valley, connecting with the sierra provinces of Huari and Llata in the Department of Ancash. Both regions are areas of potential labor supply which might more easily be induced to travel to Tingo Maria were there a good road. Most of the labor demand is met at present by laborers coming from Huanuco and Pano but the supply is insufficient. Soils in the Monson Valley are reported to be of good quality but much more limited in area than in the Huallaga Valley. The road, although of great potential use to both the present settlers and future colonists, would have less strategic importance than the extension down the Huallaga River. There is at present a well-traveled trail leading from Tingo Maria up the Monson.

The third possibility for colonization is to settle 500 to 1,000 families along a road to be constructed from a point beginning at the cemetery of Tingo Maria up to Utopa and the Divisoria where it would join up again with the Pucallpa Highway. Such settlement would have an advantage of settling foreign colonists in close proximity to nationals thus facilitating the exchange of information and ideas between the two groups.

Of these three possibilities it seems clear that the opening of the Central Huallaga Valley offers the greatest opportunities for the following reasons:

- (1) A road down the Huallaga River has great strategic importance very similar to the Tingo Maria-Pucallpa Highway since it would eventually open up an area

(San Martin, Moyobamba, Yurimaguas) which has been settled for centuries and has need of markets;

(2) Soil specialists who have reconnoitered the area report favorably on the capacity of the valley soils to produce plantains, oranges, cube, rubber, oil palms, coca, coffee, sugar cane, cotton, tobacco, mangos, pineapples, corn, beans, yuca, peanuts, aji and coconut palms;

(3) The climate is the modified tropical kind found generally in the Tingo Maria zone of settlement.

Localizing the area of potential settlement, the Central Valley of the Huallaga River may be defined as all that territory at a width of 20 kilometers on each side of the Huallaga River extending from the upper limit of balsa transportation to the upper limit of steam navigation. Thus it extends from Las Palmas at an altitude of about 700 meters to Yurimaguas at an altitude of 182 meters. For almost 100 kilometers the river flows slightly west of north from Tingo Maria falling in altitude as much as 200 meters. At Juanjui, approximately 215 kilometers from Tingo Maria, the altitude is 320 meters and constitutes the point farthest west on the Huallaga. From Juanjui the river turns eastward in a great arc to about the same longitude as Tingo Maria, passing through a range of mountains and finally breaking forth into the true Amazon plain near Yurimaguas. It is perhaps this latter range of mountains which breaks the valley into two distinct climatic regions: (1) The rain-forest region between

Tingo Maria and Cayumba (approaching Juanjui), a distance of about 200 kilometers; (2) the wet-and-dry region from Cayumba to the mountains 80 kilometers south of Yurimaguas, a total distance of about 175 kilometers.

The rain-forest region has rain more or less distributed throughout the year. The wet-and-dry region has heavy rainfall but there is a marked seasonal antithesis. Thus, it has a relatively dry season nearly free from rain, during which crops can be harvested and preserved. However, the entire valley experiences a rainy season from January to May or June and a "dry" season from July through September. In the region north of Juanjui, where cattle are raised on considerable scale, pastures suffer from drought during the dry months creating a serious problem.<sup>1</sup>

The soils around Juanjui are light and sandy on hilltops and slopes but much heavier in the valley bottoms which is just the reverse of conditions in the Tingo Maria area. Isolated spots of heavy clay-loam were found north of Juanjui, definitely too heavy for good crop production.<sup>2</sup>

Platenius reports that between Tingo Maria and Juanjui the change in the flora of the selva is barely noticeable, palms of various kinds appear in increasing numbers and the trees are not quite as high as farther south.<sup>3</sup> Below Bella Vista the areas converted to pastures are on the increase and the woody growth

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<sup>1</sup> Hans Platenius, La Hoya Central del Huallaga, Direccion de Colonizacion y Asuntos Orientales, Ministerio de Agricultura, 1947, p. 2.

<sup>2</sup> Ibid. p. 3

<sup>3</sup> Ibid. p. 4.

on the slopes gradually becomes reduced to brush. However, the tall trees of the selva baja make their appearance at Yurimaguas.

The population of the central valley is not uniformly settled over the area. From Juanjui south to Tingo Maria the density of population is less than one inhabitant per square kilometer and in 1940 the Census reported only 11,451 inhabitants in this entire area of which it is estimated that 2,000 are jungle Indians. Most of the population is concentrated in the northern wet-and-dry region where there are at least six cities of more than 3,000 population. For this reason the region between Tingo Maria and Juanjui promises most for future settlement although there are a number of extensive areas in the drier region to the north. For example, Eilif V. Miller and Robert Pendleton, soils technicians, report that near San Martin around the mouth of the Biabo Valley are 25,000 to 50,000 hectares of level cultivable land, with topography suitable for machinery and an adequate source<sup>1</sup> of water for irrigation.

Settlement throughout the valley is dictated by the available water supply for family use. Most of the farm units vary in size from 5 to 20 hectares, although there are at least 14 plantations along the right margin of the river and 13 along the left margin between Tingo Maria and Juanjui. It is customary for farmers to live most of the time in the town and spend a

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<sup>1</sup>  
Reported in unpublished report of the soils of the Huallaga Valley based on a detailed study of the region in 1945.



certain amount of time on their farms to plant, cultivate, and harvest the crops.

Colonization of the Huallaga Valley requires that a road be constructed from Tingo Maria through Uchiza, Tocache, Juanjui, Sapasoa, and San Martin to Yurimaguas. This road would eventually link up with the Jaen-Moyobamba highway at San Martin. First, a bridge must be built across the Huallaga at the airport of Tingo Maria to reach the left bank of the river. The Army has built a small footbridge at the site of the proposed highway bridge and this could be useful in early stages of colonization.

Certain private claims exist to the land from the proposed bridge to the Cuchara River. But from the Cuchara River to Uchiza there are apparently no valid property claims that might impede settlement. Beyond Uchiza as far as Juanjui there are only a few private claims to land on the left bank and although there are more claims on the right bank, still there is a large proportion of the land available for settlement. It is usually easy in the jungle of Peru to negotiate arrangements with claimants to land whereby they give up a large proportion of their land holdings in lieu of building a road, which enhances thereby the property they retain. Fortunately, there appear to be fewer land claims between Tingo Maria and Juanjui than between the latter town and Yurimaguas. Few people in the valley have valid land titles, perhaps a minority only having turned in requests for titles.

### Crops and Livestock

Bananas, yucas, oranges, and sugar cane are the principal crops grown in the Naranjillo neighborhood north of Tingo Maria. The Supte River which constitutes the northern boundary of this neighborhood is a potential colonization area in its upper part but the amount of land is limited. After passing hacienda "Shapajilla" (Prato's farm) the valley widens considerably at the confluence of the Tulumayo River which enters from the east. This successful hacienda of 1,400 hectares has about 200 hectares in coca, the main crop. Other crops grown include oranges, grapefruit, corn, sugar cane, and a few bananas.

Going down the Huallaga from the Tulumayo, rubber soon becomes an important crop on the hillsides. But bananas persist and cube (barbasco) too, is important. The plantations in the Uchiza region specialize in coca which is sold for human consumption in the sierra and is marketed by trail to the town of Tayabamba. The high terraces seem to be best suited for the growing of rubber and cube all the way down the river. Rice is not grown to any considerable extent in the valley. Cotton is grown in scattered plots near Uchiza and Juanjui. High grade tobacco is grown in the Naranjillo neighborhood, and San Martin, and Lamas far to the north, have considerable production.

Sugar cane can be harvested in about eight months in the Tingo Maria area contrasting with 24 months on the coast of Peru. Most of the cane is converted into alcohol (aguardiente) for local consumption. The Dyer farm in Naranjillo has a small still which serves the community.

Few cattle are raised in the rain-forest region but there are rather large herds in the area between Bella Vista and Pilluana in the north. Hogs are the most numerous livestock raised in the valley and serve as the principal source of meat for home consumption. Chickens, ducks, and turkeys are raised in considerable numbers and large numbers of turkeys are marketed in Iquitos and Lima. Horses, mules, donkeys, and sheep are relatively scarce in the rain-forest region.

Three types, or sizes, of farms prevail in the valley:

- (1) small farms called chacras, under 15 hectares; (2) medium-size farms called fundos, 15 to 100 hectares more or less;
- (3) large farms or haciendas, over 100 hectares. Five hectares of cultivated land is about the limit one family can work without other labor supply. Even then some labor must be hired for peak periods.

Not all the crops that can be grown are adapted to the needs of colonists because some require two to eight years to produce. Bananas are the most important fruit grown in the Tingo Maria zone and are currently commanding a good price on the Lima market. However, it is difficult to say how long banana prices will remain high so as to allow farmers a good profit. Bananas give returns during the first year and have the added advantage that they can be inter-planted with corn and yuca. Only a superficial land clearance is required for mixed planting. One hectare of ground cleared and planted to bananas, interplanted with corn and yuca will cost approximately \$200 on which the first year's returns will be \$250, a net profit

of \$50. The second year, net income should be about \$600 per hectare. Corn, planted alone, should yield net income of \$75 per hectare while yuca may surpass \$100 per hectare. Diseases of bananas are not prevalent in the area and can be avoided by replacing the plants every five years and through land rotation.

Oranges have only recently been introduced into the Tingo Maria area and consequently no cost of production figures are available. Already, 12,000 orange trees have been grafted to resist gomosis. Complete clearance of the land is required for oranges but interplanting with corn, yuca, and coffee, for the first two years, is possible. The total cost of clearing and setting out one hectare of oranges is estimated at about \$150.

Cube has been a profitable crop during the war years but because of its long production period (three to three-and-a-half years) it is ill-adapted to the average colonist's farm unless he has sufficient capital to see him through. The net return at the end of the third year should approximate \$900 per hectare, an average of \$300 per year. Thereafter, of course, the returns would average about \$900 or more per hectare.

Sulphate of cocaine, used medicinally, is derived from the coca plant which grows well in the Huallaga Valley. The coca leaves are masticated by most of the highland Indians producing a narcotic effect. Coca can be interplanted with yuca in the first year and in this way one hectare will yield a net return to the farmer of about \$150 even in the first year. However, the cost of clearing and planting a hectare of coca

will be about \$250 the first year. Some of the most successful large farms in the region specialize in coca.

Coffee is produced in limited quantities, mostly for home use. Tea requires special conditions and is grown mostly on big plantations. Production begins after three years which means that a farmer must have a large amount of capital to get into the tea production. It is estimated that the cost of developing one hectare of tea is \$450.

Rubber undoubtedly offers some possibility for the colonist if it can be undertaken in the form of a smallholder's enterprise and combined with other crops. Rubber production requires larger amounts of labor and the tapping of the rubber trees demands a skill that is not easily learned. The history of the Ford rubber plantation in Brazil provides an illuminating case. From the beginning of this generously financed enterprise, shortage of suitable labor delayed its development and prevented its expansion. Even at the end of 1943, 65,000 rubber trees remained untapped at the Ford plantation of Belterra because of insufficient labor.<sup>1</sup> Each shiringuera (rubber collector) can cover six hectares of rubber trees. Rubber returns an average of \$150 annually per hectare but does not come into production for at least five or six years' time. Interplanting with bananas, coffee, castor beans, root crops, and yuca is possible. The cost of developing one hectare of rubber trees for three years approximates \$230.

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<sup>1</sup>

New York Times, November 14, 1943, p. 46.

Rice should not be overlooked as a crop for colonists to grow notwithstanding the fact that it does not yield in large amounts. It usually costs less than \$60 to put in a hectare of rice and the net return should approximate slightly over \$30. Sugar cane can be planted only if the proper steps are taken to process it into alcohol or sugar. Cinchona (quinoidine) is impractical from the standpoint of the colonist because it requires eight years for the tree to come into production.

It is apparent that the return per hectare that might reasonable be expected for the first year varies from \$50 for bananas mixed with corn and yuca to \$150 for coca. By the third year, however, the return per hectare varies from \$75 for corn to more than \$900 for cube. Thus the first three years of colonization are crucial ones and unless there is careful planning of the individual farmer's program over at least three to five years, plus adequate money for family living, the colonist must inevitably fail. The colonist must make enough money to repay a reasonable part of the capital investment in his farm and provide an adequate standard of living for his family. He is incapable of doing this without cash crops.

The principal food products of the valley are fruits, nuts, vegetables, specialty crops and a few grains. Heavy starchy foods such as plantains and bananas are important staples. Pig meat and fish provide most of the protein. The diet is deficient in green leafy vegetables and even citrus fruits. Production of coconuts, or oil palms, could be increased to provide more oils. On the whole the native diet contains more

carbohydrates than is necessary and too little protein. The diet is monotonous and the tendency is to use highly spiced foods and to use large quantities of alcohol and coca.

At the same time, a single cash crop is undesirable because local produce is too directly in competition with other sources closer to the major centers of consumption. This situation may at any moment place local products at a disadvantage in the market place. This is particularly true for bananas, cube, rubber, tea, coffee, and corn.

Although few farmers in the valley have milk cows it is desirable that future colonists have one or two each. Cebu cattle are being crossed with Jerseys at the Agricultural Experiment Station at Tingo Maria to provide a type of cattle that is resistant to heat and tropical insects, but there is a general lack of all breeding stock.

For the following reasons, the Tingo Maria-Uchiza-Juanjui region offers the most favorable opportunities for settlement with European agricultural colonists:

- (1) It is near the most developed frontier area in Peru and consequently has sufficient social and economic density for a push beyond the fringe;
- (2) Good transportation and communication is near at hand;
- (3) The area is accessible to the large urban market of Lima and when roads are opened up to the north more markets will be forthcoming;

- (4) There are considerable extensions of good land without which colonization is impossible;
- (5) It is an area in which Europeans would be required to make the least adjustment so far as climate is concerned;
- (6) People are making money at the present time and the land "invites";
- (7) A nucleus of organization for carrying out a colonization scheme already exists, with its resources of trained personnel, machines, and power;
- (8) The facilities of the agricultural experiment station are available to help the colonists;
- (9) An agricultural extension service is already functioning;
- (10) It is a part of a much larger strategic plan for developing the entire middle Huallaga River Valley.

Because of these things it is reasonable to assume that a colonization scheme would have reasonable chances for success.

In making any decision in regard to the desirability of bringing in immigrants to settle this area it should be emphasized that this decision should be made with a full understanding of the conditions which the refugees face in Europe. Life for the refugee's family would be hard and the standard of living must necessarily be low in the colony but it does offer some hope for the future and a reasonable chance to bring up a family in relative freedom.



## Estimated costs of colonization of the Tingo Maria-

Juanjui region:

Road Construction

S/. 16,000,000

Peruvian road engineers estimate that one kilometer of road in the high jungle costs S/. 80,000. Length of road to be constructed is 200 kilometers.

Administration

500,000

This should amount to 10 percent of the total cost of the project.

Transportation

400,000

Cost of transporting a family of five from Callao to Tingo Maria about S/. 200.

Public Services

500,000

Health, education, agricultural extension, labor recruitment and protective services are necessary.

Land Clearance

8,000,000

Engineers estimate that complete land clearance costs S/. 800 per hectare. Each farm to have 5 hectares of cleared land or a total of 10,000 hectares.

Houses

8,000,000

Using native materials, a house can be built for about S/. 3,000; outbuildings, toilet, well, laundry and bathing facilities, S/. 1,000.

Livestock and Poultry

3,000,000

Each family to have one or two milk cows, a few pigs and chickens estimated cost about S/. 1,500 per farm.

Tools and Implements

1,000,000

Essential tools and implements, S/. 500 per farm.

Total cost of project..... S/. 37,400,000

The total estimated cost of the project to settle 2,000 families, or 10,000 persons, is S/. 37,400,000 or \$5,750,000. Thus, the cost per family is \$2,900. The farmer should be able to repay over a long period of time the cost of land clearance (S/. 4,000), the cost of buildings (S/. 4,000), livestock and poultry (S/. 1,500), and tools and implements (S/. 500). These credits amount to S/. 9,500 (or about \$1,500) which represents approximately half the capital investment. The remainder of the investment cost should be born by the Peruvian government and the United Nations amounting to S/. 17,400,000 or about \$2,700,000.

## Annex 1

Translation by A. F. Loveday of the confidential and preliminary report of the Mission of the Vatican Assistance Committee (La Comision Pontificia de Asistencia).

22 November 1946

The Vatican Assistance Commission is an international affair. It is interested in studying the problems of colonization and emigration and in setting up organizations of social and religious assistance for the emigrants.

The Vatican Mission sent to Peru to study the problem of colonization and emigration composed of

Monsignor Aurelio Torrazza  
Professor Vittorio Ronchi  
Doctor Leonida Macciotta

remained in that country for fourteen days carrying out the following program:

1. Visits to regions in the interior by Professor Ronchi;
2. Visits to the industrial zones by Monsignor Torrazza and Doctor Macciotta;
3. Negotiations with authorities, corporations, private people, officials and others with knowledge of colonization and emigration.

The program was completed in twelve days.

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### Visits to the Industrial Regions

The visit to the industrial regions of the coast of Peru from Ancon to Trujillo and to the haciendas of Chiclin and Casa Grande has been of the greatest interest. More time was dedicated to a visit to the works of Chimbote and the study of the construction of hydroelectric plants in Santa. During the visit many requests for laborers and industrial workmen were made by mechanical shops and private people in Trujillo.

After discussion we have arrived at the following conclusions:

a. It is impossible to send through the medium of the Vatican Commission of Assistance the people asked for by the agriculturists of the coast on account of the mixed occupation of these people who are neither countrymen nor industrial laborers. Their wages do not appear to us to be sufficient for their work.

b. The various requests by private people for chauffeurs, mechanics, etc. will be forwarded to the Committee of Assistance set up by the Cardinal Archbishop of Lima.

c. We have taken careful note of the requests for laborers for the city of Chimbote because the region is completely healthy and free of malaria. The climate can be considered better than any other region. The position of the city on the sea makes communications easy with Trujillo and Lima and there is also the road. There are also great possibilities for labor in the construction of the port and of the offices, houses for workmen, construction of railways, and also in the fishing and tourist industries.

The Mission considers that there should be sent to Chimbote as an experiment a small contingent of families of laborers but, of course, always with the necessary guarantees that their contracts will be fulfilled and with complete liberty for the Vatican Mission to organize their social and religious assistance.

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#### Visit to the Naval Arsenal of Callao

The Commander of the Arsenal of Callao has presented a request of forty families of skilled laborers who would be able to instruct his workmen. The conditions appear favorable and it is to be hoped that a group of Italian workmen can be found. The Vatican Mission recommended that only twenty-five families should be sent as an experiment.

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#### Negotiations with Authorities Corporations and Private Persons

As a result of many conversations the following conclusions were reached;

a. There is a very keen desire on the part of the Peruvian Government to receive immigrants for the colonization of the country.

b. There are a considerable number of requests by companies and private people.

- - - -

The Vatican Mission reports that in Peru there are enormous possibilities for colonization and emigration. Colonization and emigration should only be considered under its social aspects and must not be considered a commercial operation.

The Vatican Assistance Committee is prepared and offers gratuitous assistance in order that the colonization and emigration to Peru shall be carried out in the safest and worthiest manner.

Translation by A. F. Loveday of the statement made by Professor Ronchi of the Vatican Mission before the Peruvian Council of Immigration and Foreign Matters (Consejo Nacional de Inmigracion y Extranjeria del Peru).

Lima, 19 November 1946

(Certain irrelevant parts of the report are omitted from the translation.)

1. As you request a simple impression - not a definite decision - we have no difficulty in declaring to you the impressions which we have gained in our visits in our conversations with politicians, financial experts, economists, technicians and officials.

2. Our Mission has merely an exploratory character for investigation of the possibilities of immigration which Peru can offer to people from Europe. Consequently, our study will be limited and if we are criticized on account of our only having visited the country superficially, we must state that this was necessary for the objects of the Mission.

3. As regards the industrial part of our work, the visits of Monsignor Torrazza and Dr. Macchiotta to the industrial region and our interviews with the Corporation of Santa and others has enabled us to draw our conclusions.

4. Our visits to the colonization zones of Chanchamayo and Jaen were very interesting. Both regions are situated about 300 kilometers from the sea to the east of the highest part of the Cordillera in the Amazon Valley between 200 and 400 meters above sea level. This region has good conditions of fertility for the development of agriculture. The two zones are completely different in their agricultural aspects. Chanchamayo has very similar characteristics to the virgin forests with a hot and damp climate, exuberant vegetation and a relative colonization activity realized by colonists who have had to labor against tremendous difficulties in the past. This colonization's activity has diminished and shows a decadence on account of the want of labor.

The territory undoubtedly has certain favorable elements for European colonization when certain basic problems such as communications, health welfare and other indispensable services have been established. The second zone of Jaen also consists of fertile lands along the banks of the River Marañon and its tributaries (according to statistics of the Minister of Agriculture its surface is 80,000 hectares). The climate is warmer than that of the first zone but it is dry for its precipitation is under 800 millimeters while the precipitation in Chanchamayo is more than 2,000 millimeters. The region is very backward from an agricultural point of view and no attempt at European colonization has been made in it.

We consider that the conditions of this territory are favorable for a great scheme of agricultural colonization and that it should be possible to cultivate cereals and breed cattle in addition to the normal tropical cultivation.

In our surveys by airplane we flew over the virgin forests and then through Amazon territory about which it is impossible to measure or express its possibilities in the future.

5. In order to make possible and immediate any colonization and speaking frankly, we are obliged to say that we do not consider that the time has yet come to bring Europeans to any of the zones we have visited on account of the following motives:

(a) The colonists would have great difficulty in establishing a situation in which they could be sure of good conditions of living.

(b) On account of the absence of the most indispensable conditions of civil life (houses, health assistance, schools, means of communication).

(c) On account of the uncertainty of the future of these territories.

We consider that it is not convenient under present conditions to bring families of colonists on account of lack of houses and the other facilities mentioned above. However, the potentialities of a future and advantageous colonization are evident on account of the fertility of the lands.

7. Colonization in Peru and especially in the forest regions has not yet been developed by the necessary concrete plans and studies which are necessary for colonization by European settlers. Such concrete plans based on past experience and studies already made should be undertaken. It appears to us that the Peruvian Government has already started in this direction in the most logical and practical manner by setting up the experimental station of Tingo Maria which is at present a guide to all students of such problems and will be more so in the future; by the creation of autonomous corporations with a semi-government control for the economic development of the country. In this respect we would refer to the Corporacion Peruano del Santa and the Corporacion del Amazonas which have a definite program of development of colonization and have projects which will necessitate the immigration of European technicians; by the development of communications, of irrigation and the cooperation of the air services.

It is very important, although it may appear superfluous, to call attention to the principal difficulties which have to be eliminated before arriving at good conditions of living and these are climatic conditions, communications and the necessity of a scheme for marketing the products which the agricultural organizations produce.

As regards the climate, it is evident that it is necessary to combat the terrible disease of malaria and protect the people from the many dangerous insects.

On the other hand it is necessary to safeguard the economic success of the agriculture companies without which colonists would be unable to possess a reasonable standard of living.

As regards communications, it is evidently necessary to join the ports of the coast with those of the Amazon and the colonization regions by constructing adequate roads for the transport of men and merchandise. For example, no project of colonization in Chanchamayo can be considered without a radical improvement in the roads from Tarma to Oxapampa which were built before there were any motors so that they may be able to transport men and merchandise at any period of the year. It is also necessary in our opinion that railways should be built, chiefly because a railway is safer and can be used at any period of the year by day and night and allows the circulation of the poorer classes of people and the poorer classes of merchandise.

9. We have tried to set forth the most important pieces of this problem but we do not in any way venture to give council to the Peruvian Government. We think that the colonization problem is not far from its solution on account of the present activities of the State and the corporations and the private enterprises. We consider that the State should construct the important roads of communication and the organizations controlling the civil life of the people, that the corporations should prepare the general scheme of colonization and receive such concessions from the State as regards roads, canals, etc. On the other hand the State should concede lands free of charge or at a very low price to the corporations and private concerns with the object of settlement and colonization so that the colonists may undertake their activities in favorable conditions. It would appear that the corporations and private concerns should be responsible for the selection of the settlers and their transportation to the regions that they are to colonize.

The colonists should have small but suitable houses and have possession of a cleared portion of land in which they could produce the food necessary for their sustenance.

The corporations and private organizations should advance to the settlers the necessary means for their sustenance and for tools, seed, etc. and make certain that they should be able to produce and save in order to pay back the loans advanced by their employers.

As regards economic and technical conditions, the following factors must be taken into account:

(a) That the land to be cultivated should have a proved fertility and be of sufficient size to be worked by each family unit.

(b) That in addition to this land there should also be some additional land dedicated to cattle grazing and forests.

(c) In general, sufficiently large areas should be given to the colonists to assure them good possibilities for themselves and their descendants.

(d) On the other hand, care should be taken to prevent excessive destruction of the forests which has caused grave damage in the past. In the case of Chanchamayo it is our opinion that the extent of forest land given to the colonists should not exceed 60% as against 20% destined for colonization and grazing and 20% for general production.

In fact, it is evident that the corporations and companies should maintain a technical control over the colonization and develop the associations in such a way that the settlers can acquire the necessary prime materials and distribute their products. It would be still better if the employing companies could receive the payment of all that the settlers owe them in produce destined to be exported as in this way the settlers would be encouraged to intensify their cultivations. Although everything indispensable should be provided, it is necessary to avoid any form of gratuitous assistance to the settlers who must be encouraged to understand their obligations. The settler should be able to obtain the reward of becoming a property owner and of insuring his future prosperity by his work, his savings and industry.

10. It is especially important to choose the immigrants well.

11. By harmony and cooperation between the State, the corporations, the private companies and the colonists, we have no doubt that Peru will be able to face her great problem of colonization for her vast territories at present undeveloped. To help this work we believe it is possible to bring to Peru technicians, doctors, engineers, agronomists, agriculture experts, artisans, industrial workmen and agricultural workmen and especially Italians whose future is especially of interest to our Mission.

12. It is evident that our impressions regarding the internal and forest regions are considerably modified as regards the coastal regions where the conditions are much more favorable and in which there are not so many difficulties to stand in the way of colonization.

13. The above are the opinions of the three members of the Mission and refer particularly to the technical and agrarian opinions made in the regions themselves by Professor Ronchi.



Annex 2

Memorandum to the Ministerio de Relaciones del Peru

The mission desires, if possible, to receive some answers to the following:

1. As regards individual or family immigration.

(a) Numbers, categories, race and religions of immigrants desired?

(b) Numbers comprised in each family?

(c) In case of agriculture, are small holders or labourers required and, if the former, what would be the size of holdings and what is the estimate of money required for each family unit to be self supporting? It is desirable to have this under the headings of -

transport

clearing

live stock

equipment

housing

initial maintenance till self supporting

(d) How long will it be before the immigrant becomes self supporting.

(e) Current conditions of employment and wages?

2. As regards group settlement or colonization.

It is understood that the Peruvian Government considers it premature to study or discuss any immigration of this sort but the following information is very much desired by the Inter-governmental Commission: for future use and instruction.

(a) Location and size of various regions for colonization?

(b) Climatic conditions?

(c) Communications and transport?

(d) Products of each region?

3. General.

(a) Basic features of land legislation?

(b) Government loans, interest and amortization?

(c) Taxation conditions?

(d) Acquisition of citizenship?

(e) Housing conditions?

(f) Government services for Health and Insurance?

(g) " Agricultural services (educational and experimental)?

(h) Reception, initial maintenance and training of immigrants?

Annex 3

ORGANIZATION OF THE NATIONAL COUNCIL OF IMMIGRATION AND ALIENS

It is necessary for national progress to increase the human capital by organizing and carrying out an adequate immigration policy.

Present world conditions, which show a migration from over-populated European countries and those devastated by war, are appropriate for developing this policy, which should be guided by a clear appreciation of the economic and social conditions of the country, as also by the scope for immigrants in the different fields of work.

The National Council of Immigration & Aliens was created by the Supreme Decrees of 26th June 1936 and 15th May 1937, which drew up its by-laws; one of the objects being the study of the immigration problem in Peru and the presentation of information or suggestions.

This council, in its original form as appointed by the above decrees, has scarcely operated, nor has it carried out the objects of its foundation.

For this reason it is necessary to reconstitute this entity so that it should draft a plan for the reception of immigrants as quickly as possible.

With the vote of approval of the Cabinet, it is decreed that:

1. The National Council of Immigration & Aliens should consist of the following:
  - 1.) The Minister of Foreign Affairs, who should act as President.
  - 2.) The Director of Immigration and Aliens, who should act as Secretary.
  - 3.) The Director General of Works.
  - 4.) The Coordinator General of Agriculture.
  - 5.) The Director of Colonization and Eastern Lands (Montana).
  - 6.) The Director of Industries.
  - 7.) The Director of the Legal Department of the Ministry of Foreign Affairs.
  - 8.) A delegate of the Lima Chamber of Commerce.
  - 9.) A delegate of the National Agrarian Society.
  - 10.) A delegate of the National Industrial Society.

The Minister of Foreign Affairs may delegate the chairmanship of the National Council of Immigration & Aliens to the Secretary General or the Legal Adviser of the Foreign Office.

2. As well as the objects defined in the Supreme Decrees

of 26th June 1936 and 15th May 1937, the National Council of Immigration & Aliens is especially commissioned:

- a) To study and present to the Government within forty days after the inauguration of the Council a plan for immigration covering the possibilities of immediate reception of immigrants, the basis on which they should be selected, as also the steps to be taken for the development of an immigration policy on a big scale.
  - b) To study the technical and financial organization of immigration in its various aspects.
  - c) To revise the existing legislation on immigration, and to put forward to the Government the reforms it considers necessary.
3. The National Council of Immigration & Aliens reconstituted under this Decree is to meet within ten days after its publication and may function with a half plus one of its members.
  4. The Direction of Immigration & Aliens will place at the disposal of the National Council of Immigration & Aliens the personnel and material which this work may require.
  5. Articles 64 and 65 of the Immigration Regulations of 15th May 1937 and the Supreme Resolution No. 504 of 24th June 1937 are hereby annulled.

Given at Government House, Lima, on 10th May, 1946.

(Signed) J.L. Bustamante y Rivero  
E. Garcia Sayan

Translation

Annex 4

Ministry of Agriculture

Lima  
December 1946

To the Director of Colonization and Eastern Affairs.

From the Head Director of the Center of Colonization of Tingo Maria.

Subject Letter from the Inter Governmental Committee of  
Refugees dated 29.11.46.

Reference My report to the Minister of Foreign Affairs in  
October 1946.

In accordance with your request, I have the pleasure to make a brief reply to the questions set forth in the questionnaire which the Intergovernmental Committee has sent to you.

1.- a) Numbers, categories, race and religions of immigrants desired?

The number of immigrants who could be absorbed, depends on the extent of areas prepared for agriculture. The clearing of the forests and the sub-soil, especially taking into account sanitation and transport.

At the present moment it is impossible to project any immigration except for some thousands of families. This figure could be raised to hundreds of thousands of families when the preparatory work for their reception and location and the creation of farming and industrial credits have been completed.

As regards the categories of immigrants, we require, in the first place, agriculture and industrial workmen, artisans and mechanics as well as individual agriculturists. In the second place, we require industrialists, engineers and doctors, as well as bilingual teachers.

The race of the immigrants should be exclusively white, and preferentially Spaniards, Northern Italians, Belgians, Germans, Yugoslavs, Czechs, agricultural Poles, Hungarians, Finns and Balts.

As regards religion, no distinction should be made in view of the fact that the immigrants, among other motives, are leaving their own countries with a view to preserving their liberty of worship and conscience.

b) Numbers comprised in each family?

In Agricultural Colonization it is desirable that each family should have at least two or three sons, but bachelors could also be admitted as they would probably later form families with Peruvians.

c) In case of agriculture, are small holders or labourers required and, if the former, what would be the size of holdings and what is the estimate of money required for each family unit to be self-supporting? It is desirable to have this under the headings of transport, clearing, livestock, equipment, housing, initial maintenance till self-supporting.

We require immigrants for agriculture not only to fill vacancies in concerns already established, but also families to establish their own land with a view to the development of lands in our eastern forest country.

The maximum extent which can be given to each family will be approximately 20 hectares with an addition of 10 hectares for each son old enough to work. For grazing, this extent can be extended.

Each family will require, on an average, a capital or credit from S/.10,000.00 to S/.15,000.00 in order to establish a farm. This money would be distributed in the following form:

|                  |                   |
|------------------|-------------------|
| Transport        | S/. 600.00        |
| Building         | " 3,000.00        |
| Clearing &       |                   |
| Cultivation      | " 7,000.00        |
| Livestock        | " 1,000.00        |
| Maintenance etc. | " <u>3,400.00</u> |
| Total            | " 15,000.00       |

Against this sum can be placed receipts for the sale of produce, personal labour or domestic service. In order that these receipts should be sufficient to sustain the family, from the cultivation of vegetables, poultry, pigs, etc., there would probably be a delay of from one to two years.

2.- a) Location and size of various regions for colonization?

The valleys of the upper water Marañon (Jaen etc.), upper water Huallaga, upper water Ucayali with its tributaries, Pachitea and the rivers Tambo and Urubamba with their tributaries, upper water Madre de Dios, Isthmus of Fitzcarrald with the upper waters of Purus and Turia, covering an extent of ten million hectares (40,000 square miles). This region has at present no motorized transport except the region near to the road Tingo Maria to Pucallpa and the rivers which adjoin that port, Huallaga and the valley of the upper waters of the Ucayali which only cover an extent of a quarter of a quarter of a million hectares.

## b) Climatic conditions?

The climate is sub-tropical and tropical, with an abundant rainfall (up to 150 inches), but in general, it is suitable to the life of the inhabitants as long as due precautions as regards food and clothing are observed.

## c) Communications &amp; Transport?

There are roads already constructed which connect the Pacific coast with the forest regions. The road to Pucallpa connects river service with the upper waters of the Ucayali and a part of the Huallaga River. The others should be completed as soon as there are new available lands.

## d) Products of each region?

According to the altitude, the industrial plants are:

Peruvian Bark, Tea, Coffee, Cardamom, Cube derry (rotenona), Sulphate of Cocaine, Fruit Trees of different kinds, Palm Oil (Elaeis), Peanut, Sunflower, Cocoa, Vanilla, Tobacco, Jute, and Indian Hemp, Tagua, Rubber, Balata, Gutta-percha and Chicle, Nutritive Plants, Corn, Yuca, Bananas, Rice, Beans, Sweet Potatoes, Waluska, Soy Bean, Indian Corn, Ginger, Tobacco (stem), Saffron, Cattle, Lumber, Industrial and Medicinal Rosins.

## 3. - a) Basic features of land legislation?

Laws 1220 and 8687 with their complimentary rules and decrees.

## b) Government loans, interests and amortizations?

The only institution of any size which gives credits against land, is the Banco Agrícola of Peru, which the Government helps partially with capital. The advances made by the Government to immigrants have been insignificant.

## c) Taxation conditions?

Products from the East have, in the past years, been partially or totally free from taxes, and according to information I have collected, the Government intends to continue the same policy until the East is developed.

## d) Acquisition of Citizenship?

Every immigrant with a satisfactory identity card from his country of origin can easily acquire citizenship and it

is greatly to be desired that he should do so after a short time of physical and mental acclimatization.

e.f g) Housing conditions? Government services for health and insurance? Government agricultural services (educational and experimental)?

The Government maintains hospitals and anti-malaria service in Tingo Maria, San Martin, Iquitos, Pucallpa, and has an experimental agricultural station in Tingo Maria and the Institute of Industrial Chemistry of the East in Iquitos, as well as the experimental station of La Molina on the coast for agricultural experiments and experiments as regards diseases of plants and animals. This station is desirous of giving agricultural and sanitary instruction to the immigrants through the medium of extending their experimental stations. For some years past obligatory health insurance with hospitals has been established in various parts.

h) Reception, initial maintenance and training of immigrants?

Those have not yet been established.

(Signed) Sven Ericksen.

QUESTIONARIO DEL SEÑOR MINISTRO DE RELACIONES

EXTERIORES REFERENTE AL PROBLEMA DE LA INMIGRACION

EN AL PERU.-

1.- Region o regiones mas apropiadas, en su concepto, para ser colonizadas, teniendo en consideracion todos los factores correspondientes, tales como vias de comunicacion, clima, altura, area disponible para la agricultura o susceptible de ser cultivada, diversidad posible de produccion, proximidad a centros poblados y de consumo, etc.

1.- Para escoger las regiones mas apropiadas para una inmigracion en nuestro Pais, debemos contemplar por una parte sus suelos para cultivos, sus riquezas forestales y del subsuelo, su energia motriz, su topografia y su clima, factores que son independientes de una accion gubernativa, y por otra parte el volumen de las obras de vialidad y sanidad que son fundamentales para abrir una colonizacion moderna, debiendo, ademas, contemplarse sus conexiones existentes de transporte motorizado con la costas maritima y fluvial y con los centros y regiones actualmente pobladas del pais. Otro punto decisivo es la disponibilidad de tierras sin desequilibrio de la economias actual o su regimen legal. Necesitando la Sierra y la Costa desde este punto de vista una estudio especial, que el suscrito no ha hecho, se limita la absolucion del cuestionario solo al desierto selvatico de nuestro Oriente, campo practicamente ilimitado para una colonizacion por inmigracion con sus 30 millones de hectareas, pobladas hoy por monos de un millon de nacionales y nacionalizados.

Suelo.- Desde el punto de vista de la fertilidad del suelo se distingue la cuenca calcarea del Huallaga, viniendo despues el curso superior del Marañon, el Alto Ucayali y afluentes con las cuencas del Tambo y Urubamba enlazandose via Itsmo de Fitzcarrald con la cuenca del gran Madre de Dios, Alto Yurua y Alto Purus, formando todas estas cuencas en las estribaciones arcillo-arenosas de los Andes, una region en su mayor parte ondulada, a veces abrupta, alta, bien drenada y libre de pantanos e inundaciones prolongadas, muy adecuada para una gran variedad de cultivos, superior a los llanos de arcilla pesada del Bajo Ucayali y Amazonas con sus afluentes septentrionales que durante las epoca de las lluvias se convierten en lagos que cubren una gran extension de sus orillas.

Subsuelo.- Toda la region, exceptuando algunos miles de hectareas en la cuenca del Unini en el Alto Ucayali, encuentrase cubierta



por la selva virgen, acentuandose la riqueza forestal al pie de los Andes y en el llano Amazonico. En lo referente a la riqueza del subsuelo, se distinguen las cuencas del Ucayali y del Madre de Dios, desde sus rios cabeceros en Paucartambo hasta el Istmo de Fitzcarrald y al noreste del rio Manu, por sus extensos yacimientos petroliferos; algunas regiones del Madre de Dios, Huallaga, Pachitea y Aguaytia por los lavaderos de oro. En lo referente a energia hidraulica indican los mismos nombres de montana alta y llano amazonico que solamente en la primera se hallan las diferencias de nivel suficientes para aprovechar las innumerables caidas de agua sin necesidad de largas y costosas transmisiones de fuerza.

Clima..- En lo referente al clima se presenta la region oriental interandina y al pie de los Andes (montana alta), por su temperatura media menos alta y su regimen de lluvias mas uniforme que las del llano amazonico, como la mas aparente para la aclimatacion de inmigrantes europeos, aunque esto no significa una exclusion del llano para una colonizacion, ya que la experiencia ha demostrado que el calor y la humedad, aun excesivas, no son adversas a la salud si la alimentacion, la ropa y las viviendas corresponden a las exigencias que este clima impone a la fisiologia humana. Hasta se puede aseverar que las lluvias torrenciales y las tempestades electricas en las selvas favorecen la conservacion de la energia nerviosa mas que un clima sin estos factores como el de la Costa, y la adaptabilidad de los europeos de todas las naciones se demostro plenamente en la explotacion del caucho en los albores del siglo y continua como otra prueba palpable la poblacion cosmopolita de Iquitos. El limite entre el llano amazonico y la montana alta, cuyo preponderante rol en un inmigracion fue primero senalado en 1906 por el medico Dr. Luis Pesce, fino observador y asiduo estudioso de nuestro Oriente, puede en armonia con el fijarse por los siguientes puntos desde el norte hacia el sur y este: Piedra Liza en el Tigre (confluencia con Pintoyaco), Pongo de Manseriche en el Maranon, Pongo de Aguirre en el Huallaga, Banos en el Pachitea, Cumaria en el Alto Ucayali, las fronteras en el Alto Yurua y el Alto Purus y el Acro, Itauania en el Alto Madre de Dios y Astillero en el Tambopata.

Vialidad..- En esta vasta region debe fijarse la atencion inmediata solo en las secciones que conectan o pueden conectarse en un futuro proximo por carreteras con los centros economicos del pais y con el centro organizador de la inmigracion en Lima, tanto para su progreso agricola e industrial como para imprimir y conservar el caracter peruano en ella. Actualmente no existen sino la carretera a Pucallpa en el Ucayali, a Chanchamoyo y Oxapampa en la cuenca del Pachitea, a Satipo en la cuenca del Apurimac y las de Paucartambo, Marcapata y Aricoma hacia el Alto Madre de Dios, Inambari y Tambopata, sin penetrar a rios navegables sino la de Pucallpa, lo mismo que la carretera al Maranon que todavia no esta concluida. Pero todas las tierras advacentes a estas carreteras estan ya ocupadas, exceptuando pequenas extensiones de las Pampas del Sacramento, y para dar tierras a los inmigrantes

acostumbrados a transporte por ruedas es indispensable prolongar estas carreteras y construir carreteras laterales, tal como lo propuse en 1943 a la Direccion de Colonizacion para preparar la inmigracion de postguerra en lo referente a Tingo Maria, donde se ha comprobado por la colonizacion oficial la habitabilidad de ella y la posibilidad de una evolucion economica en gran escala. Estas nuevas carreteras podrian construirse rapidamente por los mismos inmigrantes, bajo la direccion del Gobierno y por cuenta de el. Mientras tanto se puede ofrecer de inmediato transporte motorizado hasta los mismos lotes por distribuir en gran escala, solamente en las margenes del Alto Ucayali, Urubamba y Tambo y sus afluentes hacia el Istmo de Fitzcarrald en el este y los Andes del Centro en el oeste, introduciendo lanchas fluviales de tipo adecuado, en conexion por la carretera de Pucallpa con los centros comerciales de la Sierra y Lima y por el mismo Ucayali con el comercio de Iquitos.

En prevision de una rapida extension de esta inmigracion hacia el Istmo de Fitzcarrald debe prepararse esa region con una carretera del Cuzco bifurcando en Acanacu (100 Kms. del Ferrocarril del Sur) de la existente de Paucartambo hacia el norte, en una extension de 200 kilometros, para conectar, tambien, con los departamentos del Sur la importantisima region suavemente ondulada de las cuencas del Yurua y Purus, carretera que en su primera parte, junto con la prolongacion de la carretera de Paucartambo al Alto Madre de Dios (Itauania), recorreria la region preferida por los Incas para cultivos tropicales, principalmente los de coca, como lo demuestran los vestigios de sus construcciones viales.

Resumiendo la anteriormente dicho, considero que una proxima inmigracion europea debe iniciarse en la region de Tingo Maria, Alto Ucayali con partes de las cuencas del Pachitea, Tambo Y Urubamba; con consturccion de carreteras laterales en las partes altas de Tingo Maria, y ampliarse con las carreteras de Paucartambo al Istmo de Fitzcarrald y el Alto Madre de Dios, y con una carretera en la margen izquierda del Huallaga hacia San Martin, Moyobamba y Bagua, con bifurcacion a Yurimaguas.

Variedad de productos.- La superficie disponible para la agricultura en estas secciones de nuestro Oriente, libre de inundaciones y de topografia aceptable, puede estimarse en diez millones de hectareas cultivables y, permitiria por su variedad de altitudes, la explotacion de casi todas las plantas tropicales y subtropicales del mundo, tanto las industriales, que deben sostener la economia de la poblacion, como las alimenticias. En todo el territorio crece espontaneamente pastos nativos una vez eliminado el bosque o se puede sembrar gramas o leguminosas escojidas para el ganado vacuno que alli tiene un excelente desarrollo, tanto

para carne come para leche, ya constatado por criadores particulares en las diferentes cuencas desde un siglo atras, y por la experimentacion oficial en Tingo Maria desde 1938, Entre las plantas colonizadoras de las altitudes mayores (1,000 a 2,000 mts.), se distinguen el te, la quina y el cafe, pudiendo con ventaja importarse el cardamono de la India o Java (*Elettaria cardamomum*). Por pedido del Gobierno hizo el experto mundial del cultivo del te, E.C. Elliot, en 1943, un estudio del suelo y del clima de la Cordillera Divisoria en Tingo Maria, hallando condiciones optimas para empresas tealeras. Tomando en consideracion que todos los miembros de una familia tienen ocupacion en el cultivo y la manufactura del te, es esta planta eminentemente colonizadora. Para abrir la region para un cultivo de miles de hectareas de te, debe construirse una carretera abrazando esta region alta y casi fria, que solo ella puede dar albergue a miles de familias dotadas del credito necesario. Asociados con el te pueden plantarse arboles de quina de la mejor semilla conocida (*Cinchona Ledgeriana*), del semillero oficial de Punizas. El cafe de las alturas de Huanuco, como tambien el de Chanchamayo, con tradicionales por su calidad, y facilmente vendibles aun en los mercados mundiales en competencia con Ecuador, Colombia y Brazil. En las altitudes de 700 a 1,000 metros pueden cultivarse con ventaja, ademas, del cafe que todavia alla se produce aromatico, las insecticidas y medicinales como cube, derry (rotenona) y coca (sulfato de cocaína), lo mismo que arboles frutales que, segun su especie, pueden prosperar en todas las regiones. En las altitudes menores hay un campo vasto para el cultivo de la palmera *Elaeis*, el Maranon, el girasol y el mani para fabricas de aceite; el cacao, la vainilla, grama de citronella (*Andropogon nardus*), el tabaco, el yute y sobre todo el canamo de india de crecimiento asombroso, para fabricar los millones de sacos que necesita la mineria, etc, tagua, el jebe, la balata, la gutapercha y el chicle, sin olvidar la cana de azucar para el consumo de la region. Para aumentar la lista de los cultivos para el mercado mundial podria importarse de Asia la palmera de Sagu (*Metroxylon*), clavo de olor (*Caryophyllus aromaticus*), la nuez moscada (*Myristica fragrans*), canela (*Cinnamomum ceylanicum*), pimienta negra (*Piper nigrum*), alcanfor de Formosa y balsamo del Peru de Honduras (*Myroxylon Pereirae* o *Peruiferum*), que todos necesitan las mismas condiciones de vida que ofrece nuestra region propuesta. Entre las plantas alimenticias, de las cuales algunas tambien pueden cultivarse con fines comerciales, merecen mencionarse las tradicionales maiz, yuca, platanos, arroz, frijoles, camotes, waluska y ademas la soya, trigo Addley, Jinjibre, Palillo, azafran y toda clase de verduras, pudiendose cultivar, tambien, papas en las alturas, y en los bajos algunos tuberculos silvestres e importar la gigantesca *Discorrea alata* de Java. Del cultivo de la yuca podria nacer la industria del almidon y tapioca, y del platano la harina.

Las maderas de la region fluvial pueden explotarse para los aserraderos de Pucallpa e Iquitos, y en las regiones demasiado lejos para el comercio de la madera bruta pueden instalarse industrias de muebles, pisos, enchapados, etc., y con las fibras

de la palmera chambira, del bombonaje, tejidos y sombreros, de liana tamshi muebles insuperables de mimbre. Pero se sobre todo en la industria petrolera donde podrian crearse grandes centros que, en un futuro, absorberian en gran escala los productos agricolas, especialmente los alimenticios. La creacion de centros industriales serian tanto mas importantes para la colonizacion agricola por cuanto las distancias a los centros poblados de la Sierra y la Costa, excluyen de su comercio los productos de poco precio por unidad de peso, mientras que esos centros les darian impulso. Mientras que ellos se establezcan, tienen los inmigrantes que concretarse a los productos de alto valor como el te, el cafe, el cacao, la quina, el cube, la coca (sulfato); el jebe, la balata, la guta percha, el chicle, aceites y productos de lecheria, vainilla y especias tanto nativas como de plantas importables, y ocasionalmente algo de druta cuando las cotizaciones lo permitiesen.

2.- Numero y calidad de colonos que requeriria la region recomendada, especificando las siguientes características: a) raza; b) nacionalidad; c) religion; y d) oficio o profesion.

2.- La region indicada, desde el Huallaga hasta el Alto Madre de Dios, puede albergar unas 200,000 familias calculando una concesion de 50 hectareas termino medio para cada una de 4 o 5 miembros. En el caso de no ser asi pueden juntarse varias formando un circulito cooperative para con exito dominar la selva y progresar en su trabajo, ya que se ha visto que el hombre aislado y solo, lo vence la exuberancia de la vegetacion.

Referente a las nacionalidades y razas mas adecuadas, debo primero combatir la creencia muy comun de que los europeos del sur serian mas resistentes en los climas tropicales que los del norte. En realidad reciben los habitantes de los paises con inviernos largos y frios una suma anual de calorías mayor que los habitantes que solo sufren inviernos cortos y relativamente suaves, porque los primeros no pueden subsistir en el invierno sino con calefaccion en sus casas y ropa de lana y pieles para su estadia al aire libre, calefaccion que generalmente se mantiene a 18 o 22 centigrados; mientras que los habitantes del sur, de inviernos suaves, no necesitan ni hacen una defensa rigurosa contra un descenso en la temperatura a 5 o 10 grados, raras veces y solo por cortos dias hasta mas abajo de 0, frio que soportan dentro de sus casas por costumbre sin necesidad de una calefaccion especial, por cuya razon se ven las casas de campo alla sin estufas como en nuestra Sierra. De esto se puede concluir que la temperatura media del inmediato ambiente alrededor de un habitante del norte de Europa es mas alta que de uno del sur., lo que trae consigo una aclimatacion mas rapida de los primeros por depender ella no de las temperaturas maximas durante el ano sino de la temperatura media anual del ambiente inmediato, indicador del calor total exterior que recibe el organismo durante el ano. Asi se vio

hace anos un aviso del Brasil pidiendo operarios de campo con una indicacion de preferencia por los negros y los suscos. Mas importante que el origen del inmigrante son sus costumbres alimenticias, no debiendo un hombre del norte en un clima tropical continuar su consumo de grasas en la misma medida que la exigida por un clima polar.

Mirando a la inmigracion que hubo en Argentina, Uruguay y el Brasil, parece que los italianos del norte, vascos, asturianos, gallegos, alemanes, ingleses, suizos, yugoeslovos, checoslovacos, capesinos polacos, escandinavos y finlandeses han contribuido mas eficazmente a la prosperidad colectiva; lo mismo que los belgas en el Africa ecuatorial y los holandeses en Asia insular y tropical. Tomando en consideracion el estado actual de Europa parece que los mas deseosos de emigrar son italianos, alemanes, belgas, checoslovacos, balticos de Estonia, Letonia y Livonia, y talvez, tambien, subditos húngaros, finlandeses y yugoeslavos entre los deseables, debiendo en ellos incluirse a los espanoles que, aparte de que han demostrado ser trabajadores y de empresa, tienen la gran ventaja de la lengua.

De preferencia deben aceptarse agricultores y madereros, aunque para la formacion de los nucleos de colonos tambien debe haber artesanos como carpinteros, herreros, albaniles, constructores de carros y embarcaciones, trabajadores de carreteras: picapedreros y barreteros, panaderos, zapateros, sastres, motoristas y mecanicos. Deseable es, ademas, que aparexcan entre los inmigrantes tambien capacidades industriales en cada grupo nacional que entre sus connacionales puedan organizar empresas, sin olvidar la necesidad de interpretes y maestros de escuela bilingues para la peruanizacion de los grupos.

No debe hacerse distingo alguno referente a las religiones en vista del aprecio que tienen los europeos por la libertad de culto y de conciencia.

3.- Medidas preparatorias que deben adoptarse para recibir inmigrantes en el puerto peruano correspondiente.

3.- Refiriendome a lo expuesto en el primer punto, para la la recepcion de los inmigrantes solo deben considerarse los puertos del Callao y Iquitos por ahora, siendo conveniente considerar solo el primero mientras la afluencia de inmigrantes no demande una descongestion del transporte de ellos por la carretera a Tingo Maria y Pucallpa.

Es indispensable organizar un hotel de inmigrantes en el Callao o varios segun la intensidad de la inmigracion, en buenas condiciones higienicas, donde las familias puedan esperar su envio al interior, espera que no debe pasar de un mes para no disminuir su entusiasmo e impaciencia por principiar cuanto

antes a laborar su futuro en su país de adopción. La alimentación durante esta espera debe ser por cuenta del Gobierno. La administración de este hotel, que subordinara al Consejo Nacional de Inmigración, debe estar en conexión con las autoridades marítimas del desembarque, con la Dirección de Extranjería, el Director General de Investigaciones y con el Director General de Salubridad para la clasificación legal, política, fisiológica y mental de los inmigrantes, y debe estar asesorado permanentemente por un médico con asistentes sociales y enfermeros, por intérpretes y profesores que enseñen las primeras palabras de castellano y algunas nociones de la geografía y la organización política legal del país. En el Registro de ellos debe también anotarse sus profesiones y sus recursos económicos para, de acuerdo con ellos, determinar el destino conveniente para su progreso y bienestar.

A cargo de esta administración debe estar también una organización de carros para su transporte, en conexión con los puntos convenientes donde deben comer y pernoctar. Según el sitio donde se les destinen por el Consejo Nacional de Inmigración, deben antes de su salida del hotel de inmigrantes, estar provistos de ropa adecuada y mosquiteros, además de su carnet de identidad y documentos legales, siendo deseable la pronta nacionalización de los elementos clasificados como satisfactorios, si así pidieran.

4.- Medidas preparatorias que deben adoptarse para llevar a los inmigrantes del puerto de desembarque a su destino, indicando la ruta más corta y económica y los medios de locomoción por emplearse.

4.- Para contestar a esta pregunta es necesario definir la región a donde se puede enviar a los primeros contingentes de inmigrantes mientras se preparan otras. Si como se ha insinuado, se escoge la costa fluvial del Alto Ucayali, Urubamba y Tambo con afluentes, debemos ante todo organizar una flotilla de lanchas fluviales para el transporte de personas y carga desde Pucallpa (o eventualmente desde Iquitos), hasta los diferentes núcleos en las márgenes de estos ríos que se escogieron, con hoteles adecuados a la región, tanto en Pucallpa como en los núcleos que allá se formarían anticipadamente con almacenes de los artículos de primera necesidad para la manutención y las labores.

En el transporte de Lima a Pucallpa (846 kilómetros), si se utiliza el tren a Cerro de Pasco y la carretera desde allá adelante, debe contratarse la movilidad por omnibus y camiones en Cerro de Pasco o Huanuco, si el Gobierno no pone sus propios carros, para que los inmigrantes inmediatamente puedan continuar hasta Huanuco (420 Kms.), para evitar el scroche, donde se les alojara en casas contratadas para este fin. Como es difícil hacer el viaje en un día desde Huanuco a Pucallpa (426 Kms.) por

el estado imperfecto de las carreteras en las Pampas del Sacramento y cuyo mejoramiento inmediato se impone, se llevara a los inmigrantes hasta Tingo Maria (555 kms. desde Lima), donde debe construirse un alojamiento para pernoctar, en vista de la escasez de habitaciones que en ella es cronica desde que se fundo, por la continua afluencia de gente tanto de la region de los rios como de la Sierra.

En el caso de que fuera posible consturir la carretera lateral en la region tealera de Tingo Maria (Km. 614), utilizando una parte de los inmigrantes como contratistas, deberia alla construirse un campamento general para su recepcion y vida temporal mientras se pudiera distribuir los lotes a medida del avance de la construccion de la carretera.

En la misma posicion queda el problema si se realizaran las prolongaciones de las carreteras y sus ramificaciones laterales de la Merced internandose en la cuenca del Pachitea mas alla de Oxapampa; de Satipo hacia el Ene y Tambo y de Acanacu hacia el Istmo de Fitzcarrald por un parte y al Alto Madre de Dios por otra, utilizandose para el transporte carretera desde Lima o el tren hasta la Oroya o Concepcion, respectivamente, en los dos primeros casos, y vapor hasta Mollendo y tren hasta el Cuzco en el tercero, continuando por la carretera de Paucartambo y la de Santa Ana al Bajo Urubamba.

En esta conexion creo importante insistir sobre que el transporte de los inmigrantes se efectue en la epoca de relativa sequia, tanto porque las carreteras en esa epoca estan menos sujetas a desperfectos, como por resultar la llegada en la epoca de lluvias en una esteril espera del tiempo seco para emprender los rozos del bosque, en preparacion de los campos de cultivo y para construcciones de casas. Es decir, los inmigrantes deben recibirse en la selva durante los meses desde abril hasta agosto, salvo el caso de los que deseen contratarse en obras de vialidad o sanidad.

Para el servicio oficial y los casos de emergencia, y aun para la conveniencia de transportar los inmigrantes mas rapida y comodamente que por las carreteras, debe en cada nucleo de colonos construirse un campo de aterrizaje o por lo menos en cada seccion.

5.- Medidas preparatorias que deben adoptarse en las zonas que se van a colonizar, para ponerlas en condiciones de recibir a los inmigrantes (caminos, acondicionamiento o preparacion de lotes, centros urbanos, saneamiento, asistencia medica y social, etc.

5.- El primer punto en una colonizacion es la distribucion de las tierras, para lo cual es altamente conveniente, por

no decir indispensable, tener un mosaico aereo de la region por poblar, con el fin de poder definir la lotizacion segun limites arcifinios entre los lotes en la mayor escala posible, establecer las secciones principales en las que debe dividirse una region extensa y los nucleos convenientes en cada seccion. Es absolutamente necesario entregar los lotes previamente demarcados con hitos y plantacion de arboles caracteristicas en los limites. Para la demarcacion y la exploracion se necesita organizar grupos de ingenieros civiles y topografos competentes para evitar en lo posible errores que mas tarde puedan producir desavenencias entre los poseedores, en un numero que depende de la intensidad de la corriente inmigratoria. Si no hay suficiente numero de ingenieros civiles disponibles, se puede pedirlos de los paises de emigracion.

Es fundamental la expedicion del titulo de propiedad, una vez que un inmigrante se haya decidido a quedarse en el lote que se le designe, con el fin de que se sienta seguro de su trabajo y para de este modo arraigarlo en la tierra que labra. Los lotes no deben tener una extension mayor de 100 hectareas, y en general no tener sino entre 30 y 50 hectareas, salvo para la ganaderia que podria exigir extensiones mayores. La extension depende de la planta colonizadora que va a sostener al inmigrante, siendo en te, por ejemplo, suficiente con 30 hectareas para una familia por el gran costo de una plantacion de esta planta.

Cada nucleo puede componerse de por ejemplo 100 lotes y cada seccion de 1,000, debiendo cada nucleo tener sus caminos de transporte de herradura de union entre su centro con los lotes, y los nucleos dentro de una seccion ser unidos por carreteras sino lo estan por rios navegables. En cada seccion se planeara una urbanizacion y en cada nucleo se reservara una superficie para una pequena aldea y sitio para los edificios publicos para la organizacion administrativa y civil que debe hacerse para la proteccion de los inmigrados y para guiarlos en sus trabajos y construcciones en la region para ellos nueva y desconocida. En cada seccion debe existir un hospital con un departamento de asistencia social y una Iglesia de la confesion de la mayoria de los habitantes dentro de la circunscripcion, mas un Centro Escolar secundado en cada nucleo por una o varias escuelas segun las distancias, que a su vez depende de la forma del territorio. Como centros urbanos se podria senalar provisionalmente algun lugar cerca de la confluencia entre el Tambo y el Urubamba, Puerto Raymondi, Puerto Bermudez en el Pachitea y mas tarde un lugar en el Istmo de Fitzcarrald, de donde podrian irradiar carreteras hacia el alto Yurua, Alto Purus y los Andes de Coronima, hacia las cabeceras del Yavari.

La region propuesta aqui para albergar los primeros millares de familias esta libre de inundaciones prolongadas de los rios y libre de los extensos pantanos poblados por la palmera aguaje, que constituye una plaga en el llano amazonico para la



agricultura y un obstaculo para el saneamiento sistematico, que en la montana alta se facilita por su sopografia ondulante, asi como se facilita alla tambien la obtencion de agua potable de buena calidad. El saneamiento debe extenderse paulatinamente por los nucleos y las secciones a medida de la afluencia proxima de pobladores, y sobre todo es necesario un cuerpo de medicos con asistentes para instruir a los inmigrantes en las precauciones indispensables referente a la manera de vivir y alimentarse; las vacunas convenientes y el modo de evitar las epidemias, pudiendo en esta labor extenderse el servicio de Asistencia Social ya existente en el Ministerio de Salud Publica en coloboracion con los hospitales, postas sanitarias (en los nucleos) y escuelas que se crean, educando para este fin miembros de las diferentes nacionalidades conocedores de la idiosincracia de sus compatriotas.

Para la asistencia religiosa oficial tenemos actualmente los dominicos en el Madre de Dios y Urubamba y los franciscanos en la hoya del Alto Ucayali.

En cada nucleo debe con anticipacion, antes de la llegada de los inmigrantes, hacerse grandes desmontes, por lo menos de cien hectareas cada uno, para sembrio de plantas alimenticias con el fin no solo de proporcionar comida a los que llegan, sino tambien para proporcionarlos semilla para sus propios sembrios. Una vez llenado su objeto, pueden estos desmontes publicos utilizarse para las construcciones publicas y como pastales para vacas lecheras, indispensables para el bienestar de los ninos de los inmigrantes, pudiendo la cria de ganado lechero alla servir para distribuir animales a las familias.

6.- Medidas para facilitar al colono que carezca de autonomia economica los medios de subsistencia y asistencia que sean necesarios hasta que llegue a adquirir esa autonomia.

6.- Lo verdaderamente colonizador es el capital, como se ha podido ver en la colonizacion espontanea del sur del Brasil, en Uruguay y en la Argentina, donde los Bancos del Cafe, Trigo y Carne, han provocado la inmigracion y el progreso admirable a la vista de todo el mundo. Especialmente interesante para nosotros es el Brasil, cuya naturaleza es semejante a la de nuestro Oriente, con sus cafetales contandose en kilometros cuadrados en lugar de hectareas ocupando los claros dejados por la eliminacion del bosque virgen. La funcion del Estado es en primer lugar una sistematica distribucion de las tierras, su saneamiento y vialidad, instalacion de los organos oficiales de proteccion, vigilancia y ensenanza, todo lo cual quedaria en letra muerta sin el sosten economico que necesita cada familia desprovista de capital propio para la explotacion de los recursos naturales del pais, las que probablemente formaran la mayoria de los inmigrantes. Por esto es fundamental para el arraigo de los inmigrantes la forma-

cion de un Banco de Colonizacion o un incremento considerable del capital del Banco Agricola del Peru con estatutos que permitan conceder un crédito agrícola con mas oportunidad que actualmente y a plazos de minimo diez anos y el interes mas bajo posible. Si se funda un Banco distinto del actual Banco Agricola, debe imitarse la organizacion del control de este. En todo caso debe la direccion del capital estar asesorado por un grupo de agricultores e ingenieros agronomos conocedores de la region, debiendo las sucursales tener una cierta autonomia en la concesion de prestamos. Calculando en \$/. 10,000.00 el capital minimo que necesita una familia que cultiva un lote de 50 hectareas, debe el Banco tener disponibles minimo \$//10,000.00 por cada millar de familias inmigradas sin capital propio.

En el caso de que el Banco se formara con capital particular, seria necesario que el Estado garantizara los prestamos, sin perjuicio de la prenda agrícola corriente, garantia que estaria a su vez respaldada por la nueva riqueza nacional que el trabajo de los inmigrados crearia bajo el control de la inversion de los fondos prestados.

En ningun caso conviene hacer donativos a los inmigrados, exceptuando el transporte de instalacion, uso de maquinarias, ensenanza y asistencia medica y social, lesivos a su espiritu de empresa y de independencia economica, Lo unico que necesitan es tierra y credito agrícola, mas la proteccion del Estado en lo referente a sanidad y vialidad para labrar ellos mismos su futuro bienestar. La inmigracion no debe convertirse en una carga excesiva para el Estado, sino como un medio de elevar su potencialidad economica y etnica.

7.- Tipos de poblaciones provisionales y definitivas de los centros de colonizacion. (viviendas, escuelas, hospitales, iglesias, centros de recreacion y de cultura etc.)

7.- El tipo de poblaciones definitivas en la region selvatica deben ser el de Tingo Maria, con un barrio commercial y otro residencial con casas separadas con pequenos jardines dejando espacio para una buena aireacion, reservandose espacio para los edificios de la administracion colonial, guardia civil, correos y radio, municipio, Centro Escolar, hospital, almacenes cooperativas, planta electrica, centros de recreacion y cultura (cine y Biblioteca) con campos de deporte, mercado, y en las afueras un campo de aterrizaje. Escojido el punto debe levantarse el plano urbano con su demarcacion en el terreno, efectuandose inmediatamente el drenaje completo del area urbana e instalandose en seguida agua y desagüe. Las calles deben ser anchas para convertirse en alamedas con el tiempo y su enripiado en el centro se hara a medida de la afluencia de habitantes.

Desde el comienzo debe instalarse un horno de ladrillos y tejas y un pequeno aserradero con taller de carpinteria para

las construcciones y los muebles. Las casas publicas deben ser de ladrillos y tejas o calamina, y para los particulares en los barrios principales, es mas ventajoso seguir este sistema en lugar de recurrir a la madera, que es de costosa conservacion si no se usan las incorruptibles que a medida del avance de los rozos tambien son costosas, y que siempre estan sujetas al peligro de incendios, que antes de que sea suficiente la poblacion como para organizar su sistema de bomberos tendran que ser devoradores. En los barrios secundarios tendra siempre que permitirse construcciones de canas con barro, pintadas con cal, y techo de tejas o madera en el estilo de Pozuzo. Casas con techos de hojas de palmera pueden usarse solo en poblaciones espaciosas con gran superficie en los lotes, minimo 1000 metros cuadrados, y con plantaciones de arboles frutales y platanos entre las casas para formar cortinas de fuego. Lo principal en las construcciones es la exclusion de la humedad del suelo, lo que en las construcciones primitivas en las selvas, desde tiempos inmemoriales, se ha conseguido con pilotes altos que sostienen el piso de chonta o madera dejando el aire circular libremente bajo el, pero que en casas definitivas de ladrillo se conseguira con plataformas fundamentales algo mas altas que el suelo.

En las poblaciones provisionales, que deben planearse en analogia con lo anteriormente dicho, con drenaje, agua y desague contruidos desde el principio, son suficientes per de pronto una oficina de administracion, puesto de Guardia Civil, correo y radio, posta sanitaria, escuelas, capilla y oficina de caminos y eventualmente puerto, un centro de recreacion y campo deportivo, mas en puntos convenientes campo de aterrizaje. En estas poblaciones, que seran el tipo para los nucleos en su mayoria, pueden aminorarse las exigencias respecto al material de construccion, pero debe si insistirse sobre la amplitud de la extension de los lotes, prohibiendose aglomeraciones de casas.

8.- Tipos de contratos recomendables para la concesion gratuita del suelo en tierras de montana, por el Estado, o para la transferencia del suelo a titulo oneroso, con facilidades de pago en otras zonas del pais.

8.- Para que la construccion de las carreteras y las obras de sanidad no graven al Fisco, deben las tierras fecundizadas por la inversion del Gobierno en ellas, venderse a un precio que las cubra, precio que evidentemente debe variar con su distancia de la via motorizada que pase en su cercania. Por otro lado importa el establecimiento de plantaciones perennes en la region selvatica, una inversion tan considerable que un aumento insignificante en ella por el pago del terreno no influye apreciablemente en su economia, no pudiendo considerarse una adjudicacion gratuita como ayuda real en la formacion de una hacienda alla. Pero tomando en consideracion que el primer ano de un colono se pierde en los sembrios alimenticios y que las plantas perennes en su mayoria necesitan de 3 a 5 anos para principiar su produccion anual en

escala comercial, deben los primeros años ser exentos del pago, y después de ellos iniciarse con cuotas durante 20 años si el colono así desea, sin perjuicio de la expedición del título de propiedad tan luego que se declare decidido a cultivar la tierra, quedando su terreno en hipoteca para el cumplimiento del pago total.

Por estas razones no conceptuo conveniente la adjudicación gratuita, una forma que, además de los recelos por favoritismos y arbitrariedades a que podría dar lugar, no corresponde al espíritu de empresa de los que emigran de su país en busca de un nuevo campo y mejor bienestar en el país adoptivo.

El tipo de contrato debe, pues, ser ligeramente diferente de los actualmente usados en la Colonización Oficial de Tingo María con pago a plazos. Un terreno abandonado durante un año debe ser recejible por el Gobierno y debe permitirse transferencias de terrenos aun administrativamente antes de la expedición del título de propiedad.

9.- Dimensiones que deben tener las propiedades individuales o familiares de colonización, teniendo en cuenta que deben proveer a la subsistencia del colono y su familia, y permitirle hacer un provecho económico suficiente para la adquisición progresiva de la tierra y para el pago de los avíos de producción que reciba.

9.- En la distribución de las tierras debe considerarse el número y la edad de los familiares del inmigrante, sus antecedentes, profesión y eventualmente su capacidad económica. El término medio adecuado parece ser de 30 a 50 hectáreas con la adición de 10 hectáreas por cada hijo u otro miembro de la familia. A los hombres solos deben en lo posible agruparse en empresas cooperativas con unas 10 a 20 hectáreas cada uno, ya que es conocido que al hombre solo lo vence la selva, y no debe contarse con una inmigración en la región de mano de obra nacional, ni con los autóctonos escasos. La distribución original queda pronto cambiada por las diferentes capacidades de trabajo y veremos como en los otros países colonizados, crecer algunas haciendas mientras que otras desaparecen absorbidas por otras, pero debe darse a todos en lo posible las mismas condiciones iniciales.

En las cifras indicadas se ha dado amplio margen a la subsistencia de las familias, ya que con una hectárea de plátanos, una de yuca, maíz, frijoles, otra de arroz y un par de hectáreas de pasto para ganado lechero, unido esto a un poco de avicultura, tiene ampliamente una docena de personas adultas abundante nutrición, quedando un margen considerable de tierra para los cultivos industriales que permiten completar sus necesidades de carne y ropa y satisfacer su anhelo de formar un capital, educar a sus hijos y otras aspiraciones.

10.- Proporción que debiera tener la población peruana en la región colonizada, a fin de crear entre ella y los inmigrantes el necesario vínculo de cooperación que fomente en las colonias por crearse, la afirmación del sentimiento nacional y territorial.

10.- Lo deseable sería que la mitad de la población fuese peruana, pero tratándose de una inmigración en alguna escala parece difícil de mantener esta proporción por el relativamente poco interés que existe en la Sierra y la Costa por radicarse en la región para personalmente vivir en ella y establecer el deseable vínculo de cooperación natural en colonias por formarse. Por esto son las escuelas, la asistencia social, cultural y religiosa en vasta escala, de primera importancia en la educación de los sentimientos peruanos en los inmigrantes, despertando su cariño por la tierra que los sustenta, su lengua y tradiciones, sobre todo en los niños.

Para facilitar esto debe evitarse la formación de grupos vastos de una sola nacionalidad, favoreciendo la mezcla de ellos una necesidad y obligación de adoptar como lengua universal entre sí el español, para lo cual también sería muy útil atraer emigrantes españoles para intercalar con los de otras nacionalidades.

11.- Cree usted factible promover el interés de los capitalistas nacionales para la organización de empresas privadas de colonización, y en caso afirmativo, en que forma debiera, a su juicio, contribuir el Estado a los fines de tales empresas.

11.- Llegó a Tingo María el magnate industrial Axel Wenner Gren, demostrando gran interés en intervenir económicamente en la colonización pero no estaba muy satisfecho del camino actual de acceso vía Oroya y Cerro de Pasco, que debía cambiarse por Huacho-Oyon-Ambo, que disminuye la ascensión con 600 metros y acorta la distancia. Sin embargo estaba planeando un Banco de Colonización con un capital de cincuenta millones de soles, cuando fue puesto en la lista negra durante la guerra y se retiró del Perú, por cuya nación sintió una simpatía preferente entre las sudamericanas.

Este incidente, lo mismo que otro que tuve con el famoso creador del monopolio mundial de los fosforos, Ivan Kruger, referente una colonización del Alto Madre de Dios, demuestra que existen capitalistas que tienen anhelo de crear, y no solo el de aumentar indefinidamente sus caudales. Así existen sin duda capitalistas nacionales con un interés patriótico de engrandecer su País y extender los límites de su población efectiva a coincidir con los límites internacionales, sembrando al mismo tiempo el bienestar e independencia económica de millares de familias, creando riqueza agrícola y nuevas industrias, como también obteniendo una justa renta de sus inversiones

Una empresa colonizadora debe fundar sus entradas en el pago de los terrenos, que hacen los compradores, en la comision que dara el manejo de sus productos y las industrias conexas, el comercio con los articulos fundamentales que necesitan los colonos y la ganancia del movimiento bancario con ellos; pero la seguridad de estos pagos y comisiones, la misma venta de los terrenos, dependen del progreso y el bienestar de la colonia, que a su vez depende de las facilidades y la generosidad con que se le trata. Estas facilidades consistirian en la entrega de los lotes demarcados, otorgar creditos agricolas y proporcionar la ensenanza agricola, maquinarias para facilitar los trabajos, vehiculos para transporte, centrales industriales para ciertas plantas etc.

En vista de la inversion fuerte que representa todo esto debe el Gobierno otorgar las concesiones de colonizacion gratis una vez demostrado el capital efectivo para realizar la colonizacion. Al Gobierno tocaria la construccion de la vialidad, las obras de sanidad que son bienes nacionales, escuelas y asistencia medica social y cultural con hospitales y los cuerpos oficiales de proteccion. Los centros urbanos y los campos de aterrizajes deben tambien ser oficiales o edificios a cuenta del Estado.

La forma de colonizar el Oriente por empresas particulares fue muchas veces ensayada por el Gobierno en el pasado sin exigir garantia para la ejecucion ni de las obras fundamentales para su exito, y todas ellas fracasaron mostrandose ser simples especuladores, con excepcion de la pequena region de Villa Rica en el centro del pais cerca de la famosa colonia tirolesa de Oxapampa. En esa epoca estaba la vialidad en su primera infancia o no existia, ni se habian estudiado las plantas colonizadoras que debian sostener la colonia, pero desde entonces se ha avanzado considerablemente en la cuestion de la colonizacion del Oriente como para infundir esperanzas de exito, especialmente si se escoje regiones con plantas de productos mundiales definidas y climas soportables para los inmigrantes.

Otra forma para la participacion de capitales particulares seria la formacion de un Banco de Colonizacion, dejando al Estado la ejecucion de la colonizacion misma conforme a lo antes indicado. En todos los casos debemos recordar que el capital oportuno es el nervio sin el cual no puede tener exito la traida de inmigrantes para el Oriente.

Tingo Maria, octubre de 1946

Sven Ericsson.

Translation

MINISTERIO DE RELACIONES

EXTERIORES Y CULTO

Lima - Peru

No. (PI)

Lima, January 27, 1947

Reply to Delegate of  
Intergovernment Refugee  
Commission

Arthur F. Loveday Esq.,  
British Representative of the Mission  
of the Intergovernment Refugee Committee

On behalf of the Intergovernment Refugee Committee you addressed to the Director of Colonization and Montana Lands in the Ministry of Agriculture, on November 29 and December 9 last, two communications setting out the points on which it is desired that the Peruvian Government express an opinion, in relation to the contribution it is able to make to the undertaking for which the Committee has been organized.

From the above communications it is gathered that the Committee would be disposed to defray the traveling expenses of refugees from Europe to Peruvian ports and that, were the Peruvian Government to present an acceptable plan to the Committee for emigration on a large scale, the Committee would be prepared to study a money contribution to the expense of receiving and settling said refugees in Peru. The Committee would also provide a part guarantee for the basic initial cost of an agricultural settlement, by this being understood that the Committee would assume a portion of the responsibility for loans made to emigrants through Peruvian Banks or directly by the Government itself.

The Peruvian Government has studied with great interest the possibility of furthering the labours for which the Refugee Committee has been constituted and, taking into account at the same time its own interest in receiving appropriate human capital, presents its points of view by means of the present letter to the British Representative of the Committee now in Lima.

As the members of the Mission who have come to Peru have been able to appreciate by direct personal observation, this country is not in a position to immediately receive and provide accommodation for large groups of foreign settlers; nevertheless, Peru can offer special facilities for doing so in relatively short periods, since it has available the fundamental elements for every work of colonization; lands and organization.

Lands. We refer specifically to the lands of the State domain situated on the Eastern watershed of the Andean Ranges, the so-called Montana Region that enjoys special conditions of fertility, salubrity and geographical situation, essential for its populating and economic development.

Within these zones the Government has already dedicated to "Internal Colonization" important sectors that are demonstrating their possibilities as a zone for settlement; Tingo Maria, Satipo, Villa Rica and others being exponents of this assertion. A demographic and economic survey of the Tingo Maria Settlement shows that, in less than seven years, more than seven thousand persons have made their home in that zone, in which there formerly existed no more than 10 inhabitants; that there are more than 20,000 hectares being worked, with a capitalization of Thirteen Million Soles between crops, livestock, installations and so on.

Organization. The land factor, considered separately under its aspects of productivity and situation, is, however, of scanty importance for a colonizing undertaking until the problems of accessibility and population have been solved, as proved by the immense undeveloped zones existing today in Brazil, Ecuador, Colombia and other countries. The solution of these problems is what we call "colonization organization," and includes the network of roads, sanitation, and works of Social, Civic and Religious Assistance.

Our official settlements comprise the following factors of organization:

- a) Trunk roads communicating the settlement with the great populated centres; motor-roads, railways and airlines.
- b) Secondary roads for communication between the different sectors and districts of the settlement.
- c) Health services constituted by a Central Hospital, Sanitary Posts, and campaigns for the control of and provision of medicine for endemic tropical diseases.
- d) Milk dispensaries and school breakfasts for the settlers' children.
- e) Primary Grade Schools.
- f) Parish Priests, Churches, Gendarmes, etc.
- g) Radio and Postal Services.
- h) Playing Fields.
- i) Co-operatives for consumer goods, transportation, production and so forth, in which the State plays a principal part.
- j) Habilitation of plants, seeds and implements.
- k) Technical aid and divulgation of working methods.
- l) Formation of populated centres, with pavements, streets, and lighting maintained by the State.

For the planning, execution and functioning of these



Services, the Government can count upon specialized technical bodies, with the personnel and equipment required for developing the activities of regions of this kind; civil and sanitary engineers, agronomists and land surveyors of the Ministries of Public Works and Agriculture; equipment for building roads for transport, with repair and maintenance shops, light and power plants, visiting health and agricultural teaching brigades, nurseries and experimental farms that, while solving problems of farming and of crop and livestock sanitation, at the same time provide settlers with the plants and breeding stock indispensable for their installation.

These, then, are the important elements of land and organization that the Government is able to offer, as its contribution to fulfil the dual purpose of settlement of its land and part solution of the war refugee problem.

The only contribution remaining for the Intergovernment Refugee Committee is the economic aspect, which includes long-term investments, since the whole of the expenditure incurred would be reimbursed by the settler himself, who is the recipient of the direct benefits.

These expenses or investments refer to those that would have to be undertaken:

- a) In branch roads in our settlement centres, for the purpose of bringing into operation zones adjoining existing national settlements. As an illustrative figure it may be said that every kilometre of branch road, whose cost of construction can be calculated at more or less D/60,000.--, brings into a condition to be developed a zone of approximately 600 hectares, which would represent a cost of S/.100.-- per hectare that could be regarded as the value of the land.
- b) In the installation and upkeep of the settler pending the sale of his first crops, that can be computed as worth around S/.3,000.--.
- c) In the farming and livestock loans represented by the credits that have to be granted the settler for his buildings and the prosecution of his farming and livestock activities.

For the administration of these colonies it would be convenient to establish a State Corporation which would attend to the selection of zones, the subdivision of the land, and the ways of communication; also the preliminary work of reception of the settler from the landing port to the parcel or allotment which is to be his future property, granting the necessary credits and prescribing the terms of payment and the instalments for reimbursement of all expenses incurred on his behalf.

The settler himself could take part in the bulk of this work, thus enabling him to become acclimatized and better acquaint-

ed with the region until the moment in which he would commence to work his own plot.

In giving consideration to the foregoing it must be taken into special account that in addition to the zones mentioned the Peruvian Government is disposed to facilitate in the manner described settlement of the large area in the possession of the Peruvian Corporation, in the form of concession, in Paucartambo and Chanchamayo. Attached is a copy of a memorandum prepared by the Corporation on the subject. The cession of land by the Corporation to immigrants and the arrangements to which it would be subject, would be a matter for agreement with the Corporation, on the basis of State intervention in and support of any such negotiations.

Equal consideration must be given to the organization already created by the Government for introduction into the country of technicians and especially trained labour, in which the diplomatic and consular missions of the Republic in Europe are assisting. Under the system in operation persons or firms residing in Peru and desirous of receiving that class of human capital, file their applications in Lima with the Foreign Office and in the rest of the Republic with the Prefects acting in the Capitals of Departments. Simultaneously, our diplomatic and consular officials are forwarding to the Foreign Office, on especially prepared blank forms, the applications of persons wishing to emigrate to Peru.

There would be no objection to including in this system, already in practice, the refugees in whose lot your Committee is interesting itself; for which it would only be necessary that refugees satisfying the condition of being technicians or specialized workmen fill up similar forms for consideration and opportune action by the Foreign Office here.

In conclusion, the Peruvian Government would like to state that it has at present in preparation and under study a Bill for the object of creating an organization for colonization purposes, which would possess ample funds of its own to carry out an immigration and colonization scheme on a vast scale over a long period of years.

Given the exceptionally favourable conditions offered by Peru for colonization, particularly in the regions mentioned in which the Peruvian Government has invested an enormous fund of preliminary labour and a substantial sum of money, we trust that the Intergovernment Refugee Committee will have no objection to aiding, with the economic and other means within its reach, a scheme that, under agreement with the Peruvian Government, complies with the purpose for which the Committee has been formed. To this end, the Foreign Office will be very pleased to receive any

observations thought fit to make, in reply to the present communication, by the members of the Mission of the Intergovernment Refugee Committee now in Lima.

Yours truly,

E. Garcia Sayan.

# El Perú ha celebrado un acuerdo con el Comité Intergubernamental de Refugiados para el ingreso de inmigrantes al país

Comunicado del Departamento de Coordinación de Política Inmigratoria.

Del Departamento de Coordinación de Política Inmigratoria del Ministerio de Relaciones Exteriores se nos ha enviado el siguiente comunicado:

Como resultado de las negociaciones que se han venido llevando a cabo entre el Ministerio y los Representantes del Comité Intergubernamental de Refugiados con sede en Londres que han estado recientemente en Lima, el Embajador de la República en la Gran Bretaña, siguiendo instrucciones que la Cancillería le impartió oportunamente, ha firmado un acuerdo con dicho Comité, destinado a favorecer la venida al Perú de las personas que tiene a su cargo ese organismo internacional.

Como es sabido, el Comité Intergubernamental de Refugiados, del cual forman parte 35 países, inclusive el Perú, fué organizado a iniciativa de los Gobiernos del Reino Unido y de los Estados Unidos de América con el objeto de encontrar destino a los seis millones de personas que quedaron desplazadas a causa de la última guerra. De este número quedan aún por colocarse 850 mil refugiados y personas desplazadas, que en su mayoría se encuentran en Alemania, Austria e Italia y, en grupos aislados, en otros países de Europa.

La composición, por nacionalidad, de estas 850 mil personas es como sigue: 400 mil polacos, 70 mil lituanos, 100 mil latvianos, 30 mil estonios, 75 mil yugoslavos y 175 mil pertenecientes a otros pueblos. Del total, una gran mayoría, que llega al 75%, profesa la religión católica.

Dentro de ese gran número de refugiados se encuentran personas de todas las ocupaciones, profesiones y especialidades, y por lo menos 250 mil de ellas son especialmente aptas para la agricultura, la ganadería y el trabajo de campo.

El acuerdo recientemente firmado por el Embajador en la Gran Bretaña con el Comité Intergubernamental de Refugiados establece que el Gobierno del Perú indicará al Comité, dentro de un plazo de 60 días, el número y la calidad de personas que está dispuesto a recibir y para cuya selección se designará una comisión compuesta por representantes de ambas partes. Queda entendido, igualmente, que el Comité tendrá a su cargo el transporte, alimentación y cuidado de los emigrantes seleccionados, desde el punto de origen en Europa hasta el puerto de desembarco en el Perú. La recepción y manutención de los inmigrantes hasta los lugares designados para su empleo serán por cuenta del Gobierno peruano.

El Convenio a que se refiere este comunicado proporciona al país la oportunidad de obtener profesionales, técnicos, obreros especializados, trabajadores agrícolas, personal docente y elementos para todo empleo, inclusive el doméstico, sin gasto alguno de transporte o manutención hasta su llegada a territorio peruano. El Gobierno considera que ello envuelve la solución del problema de la gran escasez de capital humano que experimentan todas las actividades productivas del país, y que su debido aprovechamiento por las industrias y por los particulares ayudaría en forma eficazísima a promover el desarrollo de las fuentes de producción y el crecimiento del potencial material del país. Encarando, pues, a todos los posibles intereses a utilizar esta oportunidad que se les ofrece y que el Gobierno se compromete a resguardar llevando a cabo, por medio de los comisionados que nombrará al efecto, una rigurosa y adecuada selección de las personas que deben emigrar al Perú.

Las empresas o particulares interesados en recibir elementos de los ya mencionados, deben presentarse, a la mayor brevedad posible, al Ministerio de Relaciones Exteriores, Departamento de Coordinación de Política Inmigratoria, con el objeto de llenar los formularios en que indiquen el número, calidad y condiciones del personal que estén dispuestos a recibir y cuyos servicios el Gobierno contratará por cuenta de ellos y de acuerdo con el Comité Intergubernamental de Refugiados, en Europa.

Un registro semejante al que funciona en el Ministerio se encuentra abierto en todas las Prefecturas de Departamento, en donde los interesados podrán presentar sus pedidos en los formularios que les serán proporcionados para ese efecto.

Lima, 7 de marzo de 1947.

Annex 8

Translation.

AGREEMENT BETWEEN THE GOVERNMENT OF PERU AND THE  
INTERGOVERNMENTAL COMMITTEE ON REFUGEES

The conditions consigned herein are a summary of the memoranda exchanged between the Government of Peru and the Mission of the Committee:

The agreement is divided into three separate parts, each of which can be the subject of a complete arrangement.

- I. Individual immigration for technicians, specialized workmen, domestic servants and other persons.
- II. Immigration to the Tingo Maria and Perene agricultural zones.
- III. Immigration on a large scale to other colonization zones.

I. INDIVIDUAL IMMIGRATION FOR TECHNICIANS, SPECIALIZED WORKMEN, DOMESTIC SERVANTS AND OTHER PERSONS

This agreement is an extension of the organization already created by the Peruvian Government by means of its diplomatic missions in Europe.

Selection. The Government of Peru shall provide the London Committee with lists of its immigration requirements by professions, with the numbers it estimates could be incorporated in the country in 1947. For its part the Committee shall get into touch with the representative of the Peruvian Government in Europe appointed for purposes of selection. The Government of Peru shall simultaneously transmit the necessary orders for the selection of persons fulfilling the necessary conditions.

It is understood that all individuals selected, including the members of their families, shall be provided with free visas and all facilities for entry into Peru, including those of a legal nature and exemption from import duties for the introduction of their personal effects.

Transportation. The London Committee shall make itself liable for the transportation, feeding and care of the immigrants selected, from the point of origin in Europe to the landing port in Peru.

Reception and Settlement. The reception and upkeep of immigrants in the landing port in Peru to the place appointed for their employment shall be a matter for responsibility of the Peruvian Government.

The Committee shall subsidize each immigrant with the sum of Ten Dollars for his out of pocket expenses, and shall also contribute up to Ten Dollars per head to the reception centre.

Estimates for 1947. Within two months the Peruvian Government shall indicate the number of specialized workmen, servants or other persons, plus the members of their families, that it is in a position to receive during 1947.

## II. IMMIGRATION TO TINGO MARIA AND PERENE AGRICULTURAL ZONES

Financing. The present situation as indicated in the Government's letter of January 27 of this year, appears to prohibit the immediate carrying out of any project of this kind, on account of the need of new suitable legislation.

However, should the Government or the Peruvian Corporation at any time during the Committee's existence, find themselves in a position to cope with the necessary capital investment and expenditure, a fresh study shall be made of an agreement on the lines expressed in Paragraph I, in regard to

Selection  
Transportation  
Reception and Settlement.

## III. LARGE-SCALE IMMIGRATION TO OTHER COLONIZATION ZONES

It will be futile to discuss an agreement on immigration on this scale for the time being, due to the need of fresh legislation and the formation of a new Corporation, and to the lack of a definite date for the coming into operation of the O.I.R.

Nevertheless, it is desired to leave on record that the technical members of the Mission, with the courteous and friendly cooperation of the Government, have surveyed some of these regions with a view to gathering information, and that it is the wish of both the Government and the Committee to restudy the matter at an early date, when the O.I.R. has commenced to function.

Furthermore, for the effects of a later agreement, it is left on record that, according to technical calculations of the Peruvian Government, the cost of settling a family on 30 hectares of land would be approximately:

|                                     |                      |
|-------------------------------------|----------------------|
| Roads . . . . .                     | S/ .3,000            |
| Clearing and Cultivating the Land . | 4,000 (first 5 hec.) |
| Constructions . . . . .             | 3,000                |
| Cattle and Implements . . . . .     | 1,000                |
| Upkeep during initial period . . .  | <u>2,400</u>         |
|                                     | <u>13,400</u>        |

For purposes of this calculation, a family of three persons is presumed and their food during 8 months, taking into account that after the fifth month there would be a crop of some produce or other for their subsistence and industrial crops after twelve months.

It is understood that, due to the presumed formation of the O.I.R. this year, the Committee will be unable in its agreements to commit itself to projects not in operation before next June 30, though it is believed that the O.I.R. will subsequently extend any scheme initiated before that date.

The present agreement shall be submitted for ratification to the Directors of the Intergovernmental Committee on Refugees in London, for its eventual subscription by the Peruvian Ambassador in London and the Committee.

January 20, 1947

Annex 9

Copia de un articulo escrito por Dn. Alberto Schlaefli, colono de Oxapampa sobre la historia de esta colonia i otros datos

Oxapampa, 30 de Agosto de 1941

En honor a los fundadores de Oxapampa i a la labor de los 50 anos transcurridos, hare un resumen, a la ligera, de los puntos mas sobresalientes cuya historia esta mas ligada a la de Huancabamba i Pozuzo.

Entre los anos 1837 i 1840, Dn. Jose Rufino Cardenas logra instalarse en Huancabamba siendo tronco de la familia mas numerosa que hoi la puebla. Este hombre valeroso i energico, logra interesar por la montana de Huancabamba a muchas de las personalidades de Pasco como Dn. Esteban Bravo i Dn. Jose Gregorio Rivera (1856-57) estos ultimos i, ademas interesa al entonces Prefecto de Junin, Dn. Bernardo Bermudez, para que la introduccion de los colonos autroalemanes destinados al Pozuzo, se efectuara por el valle de Huancabamba. Para esto consiguieron abrir un camino que siguiendo el divorcium de las aguas de Huancabamba i Acobamba (Inganizu), arrancaba de la Hda. Espiritu Pata, pasaba por Santa Barbara i Shuiba i se quedo paralizado en Patacocha, por cuanto que los habitantes de Huamuco consiguieron que los colonos a que me refiero, se introdujeran por las Hdas. Alcas i Acobamba.

Sabemos que en el ano 1857 llego a las playas peruanas una parte del contingente total de colonos que deberia traer el Baron de Schultz. Del total de 10,000 colonos que debia traer Schultz, llegaron ese ano 200 al Peru, los cuales pasaron a Pozuzo luego de abrir, personal mente, una senda entre Santa Cruz i Acobamba (lo que duro 2 anos).

Sabemos, tambien, que en 1867 llego a las playas peruanas una parte del contingente total de colonos que deberia traer Scotland. Del total de 5,000 colonos que debia traer Scotland llegaron ese ano al Peru 100 personas, las cuales pasaron al Pozuzo por Huanuco i Panao.

Ambos contingentes: el de Schultz i el de Scotland, quedaron en Pozuzo abandonados a su propia suerte, en medio del bosque, sin conexion con el exterior i sin caminos.

En 1870 al 1875 don Jose Rufino Cardenas, don Esteban Bravo i otros, en su afan de conectarse con el Pozuzo, emprendieron la abertura de una trocha que partiendo de la Hda. "Palma Pampa", por Yanachaga, "Piripinto" i "Cajon-Pata", llega al Pozuzo, camino por el cual empezaron a emigrar colonos del Pozuzo, para radicarse en Huancabamba.

Entre estos emigrantes de Pozuzo a Huancabamba, se contaba un senor



noble baron -- Ernesto von Milenbruck -- alrededor del cual empezo a vislumbrarse la salida de muchas personas del Pozuzo hacia tierras mas hospitalarias.

El baron von Milenbruck, comisionado por la familia Muller, compra a la senora Vda. de Adicoa, rica minera de Pasco, sus terrenos en el Tingo de Huancabamba i una vez conseguido esto, sale de Pozuzo con su familia i se radica en el vecino pueblo de Paucartambo. Entre tanto, la familia Muller, compuesta de 4 mozos pertenecientes a la primera colonia i de cuya energia i laboriosidad habla mui bien el Rvdo. Padre Bernardino Gonzales en sus memorias, sale tambien del Pozuzo i se radica asi en Huancabamba. Estos Muller eran: Matias, Humberto, Conrado i Walter, que emigraron con sus familias.

A estos emigrantes siguieron posteriormente Tomas Schauss, Jose Heindinger, Eliseo Schrader, Jose Muller, Francisco Ruffner, Andres Zavanik, Juan Hanndey, i algunos mas. Estos ultimos, no pudiendo conseguir terrenos propios, los arrandaban a los hacendados i a la vez prestaban sus servicios, como que todos eran con oficio: artesanos, mecanicos, carpinteros, curtidores, zapateros, etc.

Entretanto el senor Milenbruck, que residia en Paucartambo, anorando posiblemente los dias grandes del virreynato, junto a la residencia del que fue gran senor i dueno de estas tierras, Senor de Sandoval, Conde de las Lagunas, donde como buen noble venia estudiando lo que estos habian hecho por estas tierras de Dios i que se las tenia como lugares donde Sandoval i los suyos trabajaban explotando oro; asi vino a conocer a los familiares del Cura Camara, Parraco que fue de Paucartambo, estos ofrecieron al Senor Milenbruck, venderle sus terrenos en Chontabamba i a la vez enseñarle un lavadero de oro, de donde dicho cura i sus familiares habian sido expulsados por los salvajes indios Amueshas quienes habian quemado i destruido todo, salvando milagrosamente la vida. (anos 1880 al 1885).

Milenbruck inmediatamente se vino a Huancabamba i como ya residia la familia Bottger en esa, les manifesto su proposito de conocer Chontabamba donde se le habia dicho de lo grande i hermoso de la que brada, interesando asi a un grupo que estuvo compuesto por el mencionado Milenbruck, Pablo Bottger, Eliseo Schrader i Juan Handle, Esta expedicion se emprendio en el ano 1889.

Llegaron, siguiendola izquierda del Churubamba, al para je Gramazu en donde encontraron un Convento que habia sido fundado por el Padre Tomas Hermoso, el ano 1879. Con halagos i regalos a los indios Amueshas i guiados ya por estos indios, atravesaron el valle que estaba densamente poblado, no habiendo kilometro en que no se encontraran casas i chacras de indios.

La sorpresa de los expedicionarios no tenia limite al contemplar el extenso valle que se les presento a la vista: asi pasaron propiamente dicho el valle de Oxapampa, entrando al de Chontabamba insensiblemente i efectivamente pudieron precisar el lugar donde tuvo sus pro piedades el citado cura Camara. Ubicandose de inmediato el senor von Milenbruck en el centro de esta valle puso a su chacra el nombre "Victoria" Regresados estos, inmediatamente convinieron en comisionar a don Enrique Bottger para que insinuara a los colonos del Pozuzo se trasladaran al valle de Oxapampa, comprometiendose a la conquista de latribu i correr con la tramitacion i expedienteo para que llegaran a ser duenos de tierras, en un lugar de clima mas benigno i de posible porvenir mas halagueno.

He ahi fundada e iniciada la colonizacion de Oxapampa. Enrique Bottger merece el bien de la Patria; cumplio ampliamente su cometido, las autoridades del Cerro de Pasco le prestaron amplio apoyo i asi mismo la Prefectura de Junin, radicada entonces en Tarma, destacandose mui especialmente el subprefecto de Pasco Dn. Evaristo Chavez Rey.

Enrique Bottger sufrio si grandes contratiempos cuando pretendio trasladar al total de los colonos del Pozuzo. Huamco se opuso energicamente i los Pozuzi nos menos aventureros siguieron haciendo su vida vegetativa.

Los esforzados, los que no tuvieron temor a la lucha, se vinieron i estos primeros fueron: Jorge Hassinger, Augusto Gustavson, Kolle i otros, quienes iniciaron rozos i sembrios (ano 1890).

En agosto 18 de 1891 sales de Pozuzo las primeras familias, compuestas por los hermanos Mayer, Loechle, Gustavson, Hassinger, Kolle, Waller, Lercher, Richle i Jaeger, haciendo un total de 46 personas.

En el ano 1892 se vienen la mayoria de los que se halla ban diseminados en el valle de Huancabamba a excepcion de los hermanos Muller. Siguen viniendo e incrementando la poblacion elmentos nacionales, los que se radican en el valle de Contabamba.

En este ano la colonia recibe un gran beneficio: el senor Genaro Sanchez Menendez i su suegro, anciano ya, Dn. Rufino Cardenas, deciden abrir, como que lo efectuan por sus propios recursos i operarios dirigidos por el senor Augusto Rubio, un camino a Chanochamayo, el que lo conectan en Sogorno, siguiendo el antiguo camino incaico i que fuera utilizado en el tiempo del Coloniaje, el historico "Cerro de la Sal."

En 1895, Oxapampa recibe un nuevo contingente de familias que vienen de la costa ilusionados por las maravillas que pintaba el entonces Director de la Colonia don Jorge Hassinger. Estos fueron: Claudio Girbao i familia, Mauricio Moses, Jose Vogel i Senora,

Rodolfo Schlaefle i familia, i en 1896, de Huancabamba los tantas veces mencionados Muller.

La extension del valle o valles ocupados comprendia en 1896 de las orillas del Santa Cruz, valle Cantarechu, hasta San Daniel Pasando por Oxapampa i el valle de Chontabamba, registrandose 82 propiedades que sumaban 5,650 hectareas, a las que habia que agregar las que fueran adquiridas anteriormente, como ser los terrenos del Convento de Quillazu, Victoria de Millenbruck, Santa Rosa de Muller i al gun otro que hace mas de 6,000 Has. en total contra 1960 que sumama el total de hectareas de nuestra primera flamante colonia del Pozuzo.

#### Desarrollo de la Colonia

Esta tuvo las mismas penalidades que el Pozuzo i la mas seria fue el peligro que encierra vivir rodeado de indios semi-salvajes: los amueshas que historicamente resultan ser los mas feroces.

Hay que recordar que en el ano 1896 hubo una amenaza de sublevacion, formandose entonces con este motivo la guardia urbana que estuvo compuesta por toda persona que podia portar una arma. Con esto hay que recordar que muchos caballeros de Cerro de Pasco obsequiaron armas, las que llegaron a ser hasta 30 carabinas.

Debe hacerse recuerdo de esta pintoresca guardia de mozos de porte marcial que lograron imponer un cierto respeto. El jefe de ellos fue don Jorge Hasinger, el instructor don Federico Jaeger-hijo de un oficial aus triacolos eferecicios comunes se hacian provistos de escopetas; todos tenian a gala ser el mejor tirador de la colonia, el que mejor marcaba, el paso, etc. Las marchas se hacian al son de acordeon itamboril. No habia fiesta religiosa, misa solemne o algun matrimonio que no estuviese acompanado por el pequeno regimiento oxampampino i en la hora culminante del acto, se producía la respectiva salva de fuego al unisono. Esta fue nuestra defensa i cierto respeto para los extranos.

#### Camino

El esfuerzo personal de los colonos fue el unico medio de quedar en contacto con el exterior. Al principio de la colonia pudo limpiarse i mejorarse el camino incaico de Culebramarca con el apoyo de la comunidad de Pasco, mandada por las autoridades de la provincia i dirigida por el senor Enrique Bottger i Conrado Muller, sirviendo de sobreestantes i trabajadores a la vez todos los vecinos del lugar.

### Salubridad

Los primeros medicos fueron el senor Conrado Muller, aficionado a la homeopatia i su senora esposa Manuela Alvarez, especializada en la curacion de heridas. Sucedieron a estos la senora Federica de Schlaefle, la que durante mas de 30 anos se dedico a curaciones. Debe hacerse notar que el capital humano fue defendido constantemente i no pasaba ano, en que no se hiciera venir ovacuna antivariolica, siendo asi que la mortalidad infantil fue casi nula.

### Instruccion

Desde los primeros dias de la colonia fue esto una preocupacion constante. El senor Mauricio Moses la daba particularmente i el senor Ernesto Millenbruck fue el primer preceptor nombrado por el Municipio del Cerro de Pasco, en mayo de 1897 i, como visitantes e inspectores de la misma don Conrado Muller i don Rodolfo Schlaefli.

La vida social se desarrollaba en un ambiente de cordialidad constante; las nuevas familias que llegaban, trataban de enseñar la confeccion de trajes de la epoca los que--aun de simple olandilla--iba mejorando la estetica de la oxapampina, llegando al grado en que se le encuentra hoy.

### Ingenieros

Se recuerda con gratitud al senor Augusto Gustavson, hombre inteligente que trazo los primeros linderos; los primeros caminos con gradiente suave i finalmente construyo los primeros puentes solidos sobre arena deleznable. En conjunto hay que reconocer construcciones de casas de madera, maquinaria para elaborar azucar, como trapiches; poladoras de cafe, etc. Todo--salvo--de manos de estos primeros colonos sin necesitar para ello el hierro, ni aun los clavos.

Nota: Nos han dicho ahora--Stbre 15 1943--que antes usaban clavos de "chonta" sea una palmera muy dura.--O. Garibaldi. P.--Ch. Loomis.

### Vision del Futuro

Se tiene que reconocer que los primeros habitantes de Oxapampa calcularon muy bien i muy acertadamente i con todo desprendimiento reservaron para la formacion del pueblo de Oxapampa 180 Ha en el centro del valle, como dice la R.S. de 4 de mayo de 1899, que habiendo dejado sus lotes ya rozados i trazados, el lote n° 0 denominado "Santa Rosa" para la formacion del pueblo.

En el transcurso del tiempo, los primeros colonos lo defendieron, como suele decirse, a Capa i Espada, i asi pudo llegar, libre de las ambiciones latifundistas, a nuestros tiempos: queda a los actuales seguir defendiendo este patrimonio, que fue reservado para la formacion de unagran ciudad.

Segunda Parte  
1900 a 1903

En los primeros anos del presente siglo, Oxapampa recibe un nuevo impulso con la llegadade un grupo de familias que deben ser citadas, puesto que ellas remozaron la colonia. En 1901 llega la familia de Julio Fieck compuesta de 12 personas. Mas adelante Alejandro, i Roberto Jhonson - Hnos. Valerin-Juan Piskulisch i familia — varios otros Eslavos i Espanoles; Leopoldo Krausse, de espiritu colonizador, quien fundo en 1923 la colonia de "Villarica"; en 1925 vienen Otto i Ernesto Muller i familias.

En 1909 el agente municipal de Chontabamba sigue que sus colegas citados en la R. S. de 4 de mayo de 1899, tnte. gobernaor, Juez de Paz i Agente Municipal de Oxapampa, practiquen la distribucion de los terrenos de la poblacion, la que fue aprobada en R.D. de 13 de enero de 1911, construyendose las primeras casas siendo estas de don Juan Garay, Juan Acosta, Tiburcio Jimenes, Marcos Soco i Alberto Schfleali: esta distribucion fue anuladapor SS. del 10 de marzo de 1913. Una segunda distribucion efectuada por el ingeniero Aug 8 usto Bustamante tambien fue anulada. Finalmente, el 13 de enero de 1928, se aprobo la efectuada por el ingiero Juan E. Zegarra i reglamentada por decreto de 18 de Mayo de 1928. De entonces principia formlamente a edificarse el pueblo; las antiguas casa, como, eran de madera, se empujan para respetar el nuevo plano urbano i se colocana asi a palanca, en su nueva posicion. 1899 a 1928: 30 Anos-para conseguir cimentar el pueblo definitivamente.

El ano 1928 marca para entonces el final de otro ideal: la terminacion de la via Sotil, esta obra fue iniciada o preconizada en el ano 1924 cuando los descubridores del fundo "Suiza" hallan el pas actual denominado "San Gotardo" a los 2,250 m/snm. De esto se conserva una carta, de Mayo 2 de 1905, posiblemente la ultima escrita por el infatigable padre Bernardino Gonzlaes, que murio con la esperanza de que por esta montana se construiria la ruta al Oriente. La obra de este camino se inicio oficialmente el 24 de Setiembre de 1910, cuando unacomision, presidida por - el Agente Municipal de Chontabamba practica un estudio de ella, presentando - a su vez - un plano de la region, comision integrada por Roberto Jhonson, Carlos Verde, Carlos Lagraverre, i Walter Muller: en 1913 la Junta Departamental del Cerro de Pasco presidida entomces por don Domingo Sotil, inicia la obra nombrandose

una Junta Economica que la preside Buenaventura Avila, Cajero Roberto Jhonson, secretario Lugo Santos i 8 inspectores de construccion, estos todos del pueblo de Oxapampa.

La Junta Departamental hasta el ano 1915 gasto como S/o.14,000 en los cuales estan incluidos S/o. 1,000 que fueran obsequiados por Dn Manuel Mujica Carassa. Asi mismo Dn Hector Escar do obsequio los alambre para los puentes.

En Diciembre de 1915 el constructor renuncio a seguir laborando por haberse variado el trazo entre Santa Isabel i Monteverde, sin consulta de la Junta Economica, malograndose asi el perfil de la via. Los trabajos prosiguieron algun tiempo i finalmente fueron suspendidos en el ano 1916. En 1927 mediante la ley vialse reiniciaron los trabajos a partir de Oxapampa terminandose en 1928 mediante una concesion hecha al Sr. Jhon Robertson, otro de los benefactores de esta montana. En 1913 se iniciaron i en 1928 se pudo pasar: Total: 25 anos.

En 1927, el Gobierno del Senor Leguia inicia los trabajos de la carretera desde San Luis de Shuaro hasta Oxapampa. Estos trabajos, dos anos despues, quedaban paralizados. I, en 1931, un grupo limitado de Oxapampinos mediante una R. S. funda la sociedad denominada "Constructora de la Carretera La Union" la que logra construir 7 kilometros i 8 inconclusos: Total: 15 kilometros, punto terminal "Tambo Pituca." El exito parcial de esta obra se debe a los senores Romulo Crovetto i Christian Hachmaister. A este ultimo Oxapampa le debe multiples servicios que no podran ser olvidados i que fueron prestados principalmente ante los poderes publicos en Lima. En 1929 quedo inaugurado el primer tramo de la carretera que debia llegar al rio Pescado en el Palcazu, construccion que llevaban a efecto los senores Krausse i Muller, habiendo trasmontado la cumbre que el Ing Tamayo llamo "Esperanza."

#### Vidareligiosa

En 1896, debido al entusiasmo i cultura de los senores Mauricio Moses i Rodolfo Schlaefle, consiguieron que los colonos edificaran la primera Capilla, que estuvo precisamente en el centro de la plaza.

En 1903, el Rdo. P. F. Buenaventura Yvars Misionero del "Quillazu" trazo i construyo la mas hermosa alameda a lo largo de los terrenos de Quillazu, mejorando asi las comunicaciones con Huancabamba i reedifico el convento. En 1933, la Mision Franciscana Alemana con sus propios recursos i ayuda de los pobladores del distrito, edifica los conventos que hoy adornan este pueblo, asi mismo los locales escolares mas hermosos entre los de la Pvcia. La Iglesia que edifican en este pueblo ha sido subvencionada por limosnas

conseguidas por los mismos en la Republica: el actual Gobierno, el Sr. Eulogio Fernandini i erogaciones lugareñas. Esta obra fue inaugurada en Diciembre de 1940, bendecido por Monsenor Buenaventura Uriarte, siendo padrinos el Jefe del Estado i su esposa. La labor religiosa, educativa i de asistencia social que esta prestando esta mision es imponderable.

El convento de Quillazu que fuera destruido por el terremoto de Julio de 1936 i de 1937, fue igualmente reedificado por el Rvdo. Padre Stecher quien consiguio la creacion de la Escuela de este lugar. Mui destacada accion tuvo en esto el Rvdo. Padre Lopez.

#### Administracion Municipal

El primer Alcalde del Distrito fue el senor Alejandro Jhonson i como este se encontraba ausente desempeno el puesto el Teniente Alcalde don Luis Schrader. El primer alcalde elegido por votacion popular fue don Cristobal Piskulic.

#### Sociedades

Existio una de auxilios mutuos que tuvo poca vida. En 1914 Agosto se fundo el Centro Social Oxapampa, funcionando regularmente hasta 1920 quedando relegado hasta el ano 1932, en que fue reorganizado. Asi mismo existio una sociedad religiosa "Santa Teresita" de la que formaban parte la mayoria de los caballeros i senoras de la localidad. Esta sociedad dio origen a la llamada "Las Hermanas de Caridad" para conseguir una Escuela de Ninas, pedido que la sociedad hizo a Monsenor Irazola. El Rvdo. Padre Reinhard Fisher se hizo eco de este pedido i consiguio la autorizacion de las autoridades eclesasticas para hacer venir a las R. Madres Franciscanas, lo que consiguio ampliandose con enfermeras.

En 1933 principiaron a construir los conventos i con este motivo el pueblo principia a tomar auge.

En 1931 se inicio la construccion del campo de aviacion que quedo paralizada, reiniciandose los trabajos en el ano 1936 efectuandose esta obra con el concurso de los pobladores de la colonia e inaugurandose en Setiembre de 1939.

El ano 1937, el 24 de Diciembre a la una de la Madrugada, Oxapampa i Huancaabamba sufren los efectos del terremoto mas espantoso que se haya registrado. De esta catastrofe resultan 17 muertos i 70 heridos, de los cuales 18 se suma gravedad, para los cuales sin recurso ninguno en principio, se instalo un hospital de emergencia. Recordamos con gratitud el primer auxilio recibido del Rotary Club de Cerro de Pasco que por ser el primero fue tambien el mas eficiente. Jose G. Cobian vivira en la memoria de los oxampinos agradecidos.

En 1937 se inicio por el Patronato Escolar de ese entonces, la construccion del Centro Escolar que fuera suvbencionado en parte por la Sociedad "Santa Teresita," obolosen Kermesses i trabajo bajo personal de don Otto Muller.

Esto es, senores, a grandes rasgos la historia de trabajo, de labor, de civilizacion, que han desarrollado los colonos de Oxapampa, en la cual hemos tenido diasde alegria, como tambien de tempestad. La buena fe, la fuerza de la voluntad i la constancia, fueron las mejores armas para llegar semivictoriosos al dia de hoi.

Oxapampa, agosto 30 de 1941.

firmado: Alberto Schlefle.



COLONIZATION IN PERU. BY ARTURO BRILL.

Since the end of World War two, numerous countries of the European continent have contemplated the possibility of settling considerable numbers of colonists from their respective territories, refugees from the devastated areas of Europe, or admitting groups of displaced persons. With understanding, I have been informed of the plans of our Government to initiate some similar scheme developed by the national Office of Colonization and Immigration. In truth, few countries of the globe combine at this moment as many advantageous conditions for a vast plan of colonization as Peru. We see why:

1. Her vast territories of the lands of the Selva scarcely 400 kilometers from the Capital "Across mountains of the center."
2. Her incredible variety of soils and conditions of climate that combine all types from polar climate to completely tropical.
3. Her tremendous natural regions and vegetation, numerous rivers and water resources.
4. Her laws, which are favourable to immigrants, and her traditional hospitality, and lastly, existence in the country of numerous colonies of different origins whose history and development can serve as examples and guides for establishing new colonies.

Let me now explain my observations in this respect as I have known it. During the last twenty years that I have spent entirely in the montana, the country has shown great force for colonizing the various regions in the montana between Satipo and Tingo Maria. It is well to qualify the success of these efforts, having without doubt had excessive costs and as a consequence are not capable of being repeated on a great scale. We do, however, see colonies that prosper and which cause no drain on the part of the public treasury. All are found in an extended zone at the edge of the montana in the departments of Junin and Huamuco. That is to say, Chanchamayo, Oxapampa, Villa Rica, Pozuzo, Chincheros. The history of Chanchamayo is fully known, characterized in its establishment by the adjoining of the national elements with Italians having earlier taken part in the Perene colony, and subsequently being despatched therefrom. The various products of Chanchamayo that daily flow to the markets of the capital are irrefutable proof of its activity and progress. We will see now a little of the history of the oldest of the colonies of the center. The heroic colony of Pozuzo, little known but worthy. About the year 1855, the government of Marshal Don Ramon Castilla

contracted with a German, Conde Schuetz-Holzhausen to bring to Peru a group of immigrants to establish colonies in the jungle on an imaginary line that runs between Huanuco through Pozuzo and Mairo to Pachitea. Undoubtedly the Marshal had in mind a route of penetration that would unite the Pacific with the Atlantic. To-day, nearly a century later, as a result of the admirable vision of the great Statesman and patriot, this has come to pass. Schuetz-Holzhausen came to the montana to choose the site destined for the colony.

At first establishing that the upper course of the river Huancabamba "Chontabamba - Chorobamba" was populated by hostile Amueshas and the lower course of the Pozuzo by Lorenzo indians, he chose a point between where were living some sierra indians who had escaped from the haciendas of the Huanuco valley. Schuetz-Holzhausen, after studying the characteristics of the region and after having found some rackish water from which salt could be manufactured and finally establishing that colonists could make a living in the area, returned to Europe to collect the colonists.

He reasoned that although the climate differed, topographically the area he had chosen was similar to the Tyrol of Austria and Italy, Switzerland, Bavaria and the Vonarelberg and Renania. Walking from village to village in these countries, that untiring pioneer selected the required people from amongst the most robust and vigorous countrymen. He cautiously investigated their backgrounds, aptitudes and habits, explaining carefully to them that they must expect suffering. Probably also, he contacted a priest who would devote the rest of his life as an apostle of the new colony. It would take long to describe all that happened on the voyage. By the end of 1857 more than 300 persons had arrived at Pozuzo. Making the great trip from the coast almost entirely by foot and having to construct a route to Santa Cruz by themselves, thus did they advance. In this they were employed about 18 months. Most of this has been forgotten, especially what was done in the middle of the jungle, having no protection or means of repelling attacks from the savages. But they were establishing their unity, learning to saw wood by hand for their houses, to tan leather, to weave cloths from cotton, to domesticate birds of the jungle in place of chickens. They built a small church, making it themselves foot by foot and using what was on hand. More even, they learned to construct suspension bridges without the aid of an engineer, and finally they explored the neighbouring jungle to which a group transferred to the valley of Oxapampa, founded here 53 years ago, and to-day the colony prospers and the town is the capital of the province of Oxapampa. Clearly this is an example of camaraderie between the national elements and the people from Europe who arrived later.

In 1926; an epidemic of malaria swept the people of Pozuzo,

which did not yield to treatment. The infant mortality was alarming. I myself quickly became a victim of the disease. There were none of the drugs to combat the disease and I spent several months in the sierra and Oxapampa where, owing to the proximity of the tributaries of the river Intaz, I began to reconnoitre. Seeing the abundance of fertile lands of sufficient elevation as to render the place free from malaria, I shortly after went to Pozuzo and convinced a number of colonists to travel to the larger and more sanitary zone of the montana, much nearer markets and with greater commercial possibilities. As the valleys of the Palcazu were nearly inaccessible, they decided to establish themselves in the upper Intaz valley which is to-day known as the flourishing colony of Villa Rica. There arrived a total of 16 families from Pozuzo in the year 1928. To-day I have the satisfaction of seeing them happy and prosperous. Their sons enjoying the benefit of education and the colony in contact with the Central road by means of a branch road from San Luis to Villa Rica. We founded another small colony, offshot of the Pozuzo colony, Chuchuras, around the river Palcazu where a small group of Austrians and Germans have been established for half a century and where now they and their children maintain their small properties in a flourishing state without roads other than a track to Huancabamba and another to Puerto Bermudez and with the navigation of the river palcazu by canoes to Pachitea. The greatest accomplishment of the colonists at Chachuras consists in having experimented with cattle adapted to the jungle, with the result that it can be said that cattle can be raised in the selva. Also they experimented with rubber, producing some experts in this crop.

In view of what I have previously summarized, I believe that the following is important. All those who desire to colonize the valleys of the montana must bear in mind the difficult conditions under which the colonists of Pozuzo, Chanchamayo, Oxapampa etc. labored, and as a consequence, if it is intended to bring in colonists under the same procedure, they should know the mountains of Austria, Switzerland and Northern Italy, or be displaced Sudetens. And having passed the early years of my life among them, I can appreciate the exceptionally hard conditions that they will be required to meet. I have seen them reforest many side hills of barren earth with almost super human strength. They have carried manure and water to the young trees. I have seen them root up weeds from among the stems and replace them by clover so as to be able to maintain a small cow. So it was with the original colonists of Pozuzo, Oxapampa, etc. Many times during a very dry summer their crops of maize, wheat, potatoes, vegetables and fruit were ruined. At other times, hail storms destroyed their crops, but they always looked to the future with the same optimism, happy and confident of the future.

And so I know by experience of the tremendous battle for life in our Selva. Also I know that some day the green ramparts of our jungle will be broken down, and this rich region of Peru will be opened up as indeed was envisioned nearly two centuries previously by the great Alexander von Humboldt "This country will one day be the cradle of a new civilization and of a new people. Without doubt we ought to be able to maintain easily in this great extension of our Eastern lands, a population of one hundred million." We have for example, France or Germany that do not have an area more than the single department of Loreta, without doubt having in the same area forty five to sixty millions of population respectively and this where the land produces only six months in the year.

When resorting to European countries for immigrants of sufficient numbers, we should take into consideration the characteristics of the Italians of Calabria or Spaniards of Mancha or the Pyrenees, for they are not adapted to the humid climate of our Selva or aspire to be mountaineers. For them there are good zones on the coast. Sechura and any regions of the Sierra where they can work under analogous conditions to their home land. Undoubtedly they have considered the setting up of a Colonization Company. Therefore let us examine more important factors of such a project. We see now the most important things. Cost of Colonization, appropriate sites for settlement and methods to be employed. Naturally, the country at this moment cannot spend much money in works of colonization, so that there have to be new even revolutionary methods. Not by spending huge sums of money on propaganda, the greater part of which will not be repaid to the country. No! A commission of experts should go to select the colonists in the regions and among those elements most convenient for each case. Looking into their antecedents, aptitudes and aspirations and informing them fully of the conditions under which they will work. The immigrants with sufficient resources can then select whatever place in the Republic or colony founded by the State they wish to settle. Those with few resources, and they constitute the majority, necessary will go to a colony set up by the State or a development colony. Now the State or the Company must provide the colonists with food, lodging and passage, which should not be difficult. By organization of the colonists, in a few days after their arrival, they would commence clearing the jungle. Others would start transporting the logs to a saw-mill, others would constitute the workers of the saw mill that would produce in a few days abundant wood. In this way, a few days after their arrival, they would be repaying the state the cost of their passages etc. and later on, the price of the land that has been allotted to them. Furthermore, by utilizing the wood most suited for commercial use and the making of paper, the remainder being converted into vegetable carbon, or perhaps

subjected to distillation and the production of vegetable tar. Limbs and leaves would remain in the clear areas to form manure. After the roots of the trees had been taken out by explosives and tractors, the cleared area would be ready for cultivation by mechanical means and the large scale production of all the needs of the colony met. Rice, yuca, sugar cane, sweet potatoes, cotton, pea nuts, soya, sorghum and garden stuff would be planted. The work in the hill slopes must be very carefully planned and the old methods should not be used, care being taken to avoid soil corrosion at the time of taking out the timber and remainder for cellulose, the soil will first be sown with maize, yuca and bananas. Among the first crops to be planted will be young trees of hevea "caucha", in rows of 10 meters by 8 meters between trees and in this way will be able to form a gigantic national reserve of rubber so essential to our transport. At the end of the year there will be sufficient maize, yuca and other crops and at the end of the next year, bananas. After harvesting the maize, three rows of robust coffee will be planted at 2.20 meters between the rows of rubber trees of a kind that will disappear after six years little by little.

LA COLONIA DEL CHANCHAMAYO

MEMORIA PASADA POR EL INGENIERO ITALIANO

SR. FELIX GIORDANO.

AL ENCARGADO DE NEGOCIOS DEL REINO DE ITALIA SENOR DON HI

POLITO GARROU.

Sobre la excursion que hicieron ambos en Mayo ultimo, a la Colonia del chanchamayo, con el fin de estudiar las condiciones del lugar.

L I M A

IMPRENTA DEL ESTADO, CALLE DE LA RIFA NO 58

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El sumario cuya copia textual se inserta en este informe, corresponde exactamente al que se anota en la Memoria.

LA COLONIA DEL CHANCHAMAYO. - (PERU)

Carta del Ingeniero Felix Giordano al Encargado de Negocios del Reino de Italia Don: Hipolito Garrou.

I. - EXCURSION AL CHANCHAMAYO. - Luego de indicar su situacion geografica, hace mencion del clima i dice que es "caliente i humedo, muy apropiado para los ricos productos tropicales" i que estas "virgenes regiones se hallan surcadas por una red de rios navegables".

Indica a esta regiones "como el solo campo en el cual esta republica (El Peru) puede con el tiempo dar un gra desarrollo a la produccion de su suelo i acrecer su poblacion".

FERROCARRIL DE LA OROYA. - Se refiere a la avanzado que se encuentran los trabajos de este ferrocarril, pues solo faltaba 50 kms. para llegar a la Oroya; que el senor Meiggs, constructor del ferrocarril, encontraba algunas dificultades en dicho trabajo. Indica que ha recorrido muchos ferrocarriles dificiles del Globo, pero "este peruano cuando se halle debidamente concluido, se llevara la palma, tanto por la elevacion que ha alcanzado, cuanto por la larga serie de dificultades que con tanta destreza ha vencido".

SUBIDA A LA CORDILLERA. - En el recorrido ha encontrado muchos italianos, que en la epoca de trabajo en el ferrocarril a la Oroya ganaban buenos salarios (5 a 6 soles diarios-ano 1875) pero que ahora que hay poca actividad, ya se han ausentado los italianos i solo quedan chinos i cholos (!!!) que solo ganaban un sol diario i que "son bastante habiles".

En Casapalca, por el clima, la cebada se cultiva pero sin que llegue a madurar, pues hay que cortarla verde para pasto. Que el arbol del "sauco" crece abundante i muy desarrollado. Indica que el concepto de "legua", considerada como medida de longitud, es muy variada i diversa en el Peru, no siendo siempre la misma distancia lo que con ello se quiere indicar. Menciona al naturalista Raimondi, para senalarlo como quien tambien habia advertido que en el Peru, la idea de "legua" varia en lo que se refiere a distancia de un lugar del Peru a otro.

Observo tambien que los habitantes de estas regiones usaban la sustancia llamada "champa" especie de turba superficial para suplir a la lena, lo mismo que el estiercol de las llamas. Nos refiere que la puna es desierta, pero que de trecho se encuentra con "flores i cactus de la especie mamillaria". Observa "pacer muchos rebanos de ovejas i bueyes". Que los unicos productos de estas regiones tan desiertas en hombres,

son lana i cueros i el queso; a donde vive "muy economicamente las llamas que se emplean con tanta ventaja en el Peru en el transporte de mercaderias". Dice tambien que en su recorrido, ha encontrado "numerosos restos de antiguas oficinas (haciendas de beneficio) en las que se elaboraban los minerales argentíferos, per "que hoy estan abandonadas" por lo difícil de los trabajos, escasez de vetas o naturaleza de los minerales. Enuncia que en Yauli, se ven trazas de "un ligero manto de carbon intercalado con calcareos". Hace luego una descripcion geologica del terreno que ha visitado.

OROYA. - En esa epoca (1875) encuentra el viajero al pueblo de la Oroya, como "un pueblecito miserable i de pocas casas i en donde la cebada madura; que hay hierba medica (alfalfa), papas blancas i algunas hortalizas".

TARMA. - (12.5.1875) En la bajada hacia Tarma observa arboles de sauco, pequenos campos de cebada, maiz, habas, alfalfa, papas i "chozas de indios cuya tez, como es general en la sierra, es menos terrosa i mas colorada". Tarma es de clima excelente, atmosfera templada i tranquila i hay sementeras de maiz, cebada papas, alfalfa i frutos propios de la region i europeos. Como planta s naturales indica, muchos cactus (opuntia de la cochinilla i el agave americano o maguey). Se bebe aguardiente proveniente de la region del Chanchamayo. Observa que es "notable la proporcion de familias cultas que residen".

BAJADA AL CHANCHAMAYO. - (15.5.1875) Es cuenta apropiada la ubicacion del pueblo de Acobamba, en la desembocadura de un extenso valle i en terrenos bien cultivados. En el camino que recorren son frecuentes (lasrecuas) las recuas de bestias cargadas de productos de la region (aguardiente, sacos de cafe i tablones de madera rosada).

COLONIA DE LA MERCED. - (17.5.1875) En las haciendas por donde passaron, observan los viajeros, cultivos de cana de azucar i de cafe. (En la Hacienda El Naranjal, observa como se han "empleado ya cerca de 30 de los miserables chinos que se dicen comprados, es decir, que han venido contratados de Macao i que son tan numerosos en las haciendas de la Costa".

Los cultivos en la region del Chanchamayo-dice el autor-son en parte "los mismo que los de la Costa; tales como maiz, arroz, camote, yuca, frutas como banano, pinas, chirimoyas, papayas, limones". Falta por el contrario trigo, cebada, alfalfa, papas blancas, vina etc.

Dice en su relacion el autor, que el Fuerte de San Ramon, tenia como objeto, impedir los ataques de los chunchos (naturales en



estado salvaje) i que ya en esa fecha los chunchos no atacaban por estar avanzado el proceso de colonizacion. (1875).-

La colonia de La Merced "se hallaba regida por un comandante militar, residente en el lugar, mas desde hace poco, el dicho comandante ha sido exonerado de la gestion de la Colonia, la que ha sido confiada a un Director Civil, quedando el militar unicamente encargado de la defensa contra los chunchos.

Nos refiere luego que los inmigrantes de La Merced tienen poco tiempo de establecidos, pues el decano de ellos, es un aleman que tiene catorce meses; los franceses llegaron en junio del ano 1874 i que de ellos italianos ninguno tiene un ano de residencia. Los colonos se encontraban con buena salud i se mostraban llenos de esperanza. Que en la actualidad (1875) se concede a cada colono "un lote de terreno de 1000 metros por 500 metros, es decir el equivalente a cincuenta hectareas, que es ahora el area que se concede a cada colono por reglamento". Nos informa tambien que vio algunas cabanas de chunchos (naturales de la region en estado salvaje) a quines se les habia desalojado "por la fuerza poco antes".

20.5.1875. - Observo unas cabanas abandonadas por los chunchos i en una de ellas "se encuentra una herreria suigenaris. Estos chunchos (naturales del lugar), que no son en realidad del todo salvajes, extraen el fierro directamente del mineral que se encuentra en algunas localidades en las montanas vecinas" i aun el autor de, a Memoria, alcanzo a divisar a cierta distancia, los humos provenientes de una de esas herrerias i obra de los chunchos. Hacian de fierro: hachas, podadoras, martillos etc. Dice que los insectos en estas epocas, no les ocasionaron molestias; no vieron ni moscas, ni mosquitos etc; pero que si los hay en epocas de lluvias.

El recorrido de las haciendas que son numerosas, muestra los trapiches "movidos por ruedas hidraulicas" pero inaparentes i deficientes. En algunas haciendas, habian ya maquinas a vapor de 10 caballos de fuerza. "Parece que en estas montanas, las posiciones elevadas son muy ventajosas i tal vez mas que en los bosques de los valles a donde el suelo es por demas arenoso".

De regreso, ya en la Sierra (del Peru) observo como algunas plantas para el tratamiento de minerales de plata, alimentaban sus maquinas con el estiercol de llama, combustible que da mucho poder calorifico i cuyo precio es de "tres reales quintal, que corresponde a treinta francos la tonelada metrica".

## II. - CONDICIONES FISICO - ECONOMICAS DE LA COLONIA I SUS ACTUALES NECESIDADES. -

Topografia i naturaleza del terreno. - Se encuentra "sobre la vertiente oriental de los Andes, que mira al gran costado amazonico". Esta surcada por el rio Chanchamayo que tiene dos afluentes caudalosos, el Oxapampa a la izquierda i el Tulumayo por la derecha

i por "varios rios menores que juntandosele a l grueso afluente del Paucartambo que viene por la izquierda, pierde su nombre de Chanchamayo, convirtiendose en Perene".

Luego el autor hace mayores descripciones geograficas un poco imprecisas i solo dentro de la consideracion del calculo visual; indica que las tierras de la region son muy fertiles i que hay tambien materiales para construccion, tales como piedra de cantera i que tambien se encuentra tierra para ladrillos. Deja establecido que no hizo un estudio especial sobre minerales, pero que si hay a la no mineral de fierro (exido magnetico) i salgema. En el llamado Cerro de la Sal, la salgema "se encuentra en un banco de notable espesor, hasta de treinta varas".

AGUA DE LOS RIOS. - "No es necesario preocuparse mucho de irrigacion, es una region que esta dotado de clima lluvioso durante cinco o seis meses del ano i que el resto del tiempo es muy humedo". En todo caso la irrigacion seria faftible sin mayor costo. La fuerza motriz puede emplearse para los molinos de viento, digamos de pilar arroz, para aserrar madera etc. Por la abundancia de maderas, recomienda el uso de estas como combustible. Considera como posible utilizar la fuerte pendiente del Chanchamayo i el volumen de sus aguas, para lograr una caida de agua de potencia muy fuerte.

CLIMA. - "Seria de bastante importancia, tanto desde el punto de vista agricola e industrial, como de la salubridad de la Colonia, el poseer nociones precisas sobre las condiciones meteorologicas de la region, es decir sobre la temperatura, humedad, lluvias, vientos dominantes, asi como de algunos fenomenos fisiologicos que de ellos dependen."

Nos dice el autor que el clima es mas o menos tropical, modificado por la altura (700 a 1200 sobre el nivel del mar). Se distinguen solo dos estaciones, la de las lluvias de noviembre o diciembre hasta abril a la que llaman, estacion de invierno; i la estacion serena i seca de Mayo a noviembre que aqui - dice el autor - se llama: estacion de verano. Enseguida hace continuas observaciones acerca de las lluvias, de la humedad atmosferica, de la temperatura en la noche, en el dia etc. "Respecto pues a la temperatura i al clima, considerados en la generalidad, el Chanchamayo estaria en condicion media de las mas favorables para las fecundas producciones i para la vida organica."

Nos informa que al tiempo que relata (1876) no ha habido todavia un colono que se hubiere enfermado como consecuencia de la insalubridad local.

Pudo observar en La Merced un caso de "paperas" (coto, enfermedad) que es una efeccion endemica en la region, aunque benigna i sin mayores consecuencias para el paciente. (Indica que Raimondi,

naturalista italiano que hizo estudios sobre el Peru), (atribuye esta enfermedad a la falta de sal en el agua). Dice que esta enfermedad "no se presenta en los sitios en donde el agua contiene sal.

"Notare que el europeo i los blancos en general, cuando son trasportados aun clima tropical, pueden vivir bastante bien, con la condicion sin embargo de tener una vida mas o menos comoda i precavida; y si es agricultor, con circunscribirse a los trabajos ligeros del hortelano."

Nos hace saber que a la larga el europeo, no resiste si tiene que realizar los trabajos del campo sujeto a la accion del sol i de la humedad. Que no solo es peligroso por las fiebres u otras enfermedades que pueden sobrevenirle sino que "una lascaritud que despues de algun tiempo invade su cuerpo, va poco a poco creciendo, acompanada de disenterias, afeccion del higado" i lo va debilitando, pudiendo causarle la muerte. Esto proviene del clima caliente u humedo de algunos lugares. Los colonos emplean las razas de color que son mas resistentes que ellos, tales como negros africanos, indigenas i algunos chinos.

ANIMALES. - El autor nos remite a la obra que sobre la fauna i la flora del departamento de Loreto ha presentado el naturalista italiano Raimondi.

En los bosques hay varios cuadrupedos, venados, el "pecari" o jaba-lí de la montana, el hormiguero, el armadillo, etc. Son escasos los monos, pero hay el gato montes i un pequeno tigre; el vampiro; no son raros los reptiles, los hay; bandadas de papagayos; mariposas. Hay peces en los rios. Se ha encontrado tambien insectos de peligro, pues son nocivos aunque no son frecuentes. Se presentan moscas i mosquitos en la epoca lluviosa; "niguas (pulex penetrans) que mortifican los pies de los colonos. Escasez de garrapatas, etc.

En lo que se refiere a los animales domesticos, se adaptan con facilidad los bovinos i vacunos, chanchos, pollos etc.; hay produccion de huevos en abundancia.

VEGETACION. - Hay muchisimas plantas utiles. Se observan plantas de "dimensiones colosales", hay araliaceas "de grandes flores", ficus de varias clases, los "bombax" (llamados "barrigones"), urticaceas. Las plantas si no dan "buena madera tienen una parte util", de algunas se saca un tipo de sogas de canamo que la remplaza; fabricacion de balsas, para lo que hay una madera liviana llamada "guampo" (cheiros tomun. platonoides) i al palo de balsa (ochroma piscatoria). Hay tambien un tipo de planta que produce algo así como una especie de algodón que se emplea en diversos usos caseros. Algunos ficus producen una especie de goma elastica; no hay por aqui arbol del caucho (sifonia elastica de la familia de las euforbiaceas). Las acacias dan una mader

resistente i una corteza para el curtido del cuero; hay tambien nogal, cedro (cedrela odorata o talvez cedro braziliensi), coaba, palo peruano (de madera roja en el corazon i blanquizca en el exterior); palo santo (guayacum santum) que crece muy poco. Hay palmeras en abundancia ("umiro" "yarina" "marfil vegetal" que se emplea en la fabricacion de botones, punos de baston, objetos diversos). Tambien crece la "bombona" de donde se obtiene la paja para los sombreros de Panama (panama hats). Todas estas muchisimas variedades de palmeras dan productos de alguna utilidad. Hay tambien "cana brava" (gimneriumsagitate) que se emplea en construccion.

Hay tambien en la region del Chanchamayo, muchas plantas de uso medicinal asi: el quino-quino que es la planta que produce el "balsamo del Peru", sarzaparrillas, achote (condimento i tinte). Es posible la exportacion de maderas a Lima.

CULTIVOS QUE SON POSIBLES EN LA REGION DEL CHANCHAMAYO. - No tienen perfecta aclimatacion: el trigo, cebada, vina, papas, alfalfa. Deberia ensayarse el cultivo de la morera. Se cultiva bien el maiz, arroz, aji, frejoles, legumbres, tabaco, camotes, cana de azucar, cafe, cacao, vainilla etc.

MAIZ. - Es un cultivo que exige poco cuidado en la region del Chanchamayo, crece con rapidez i madura en cuatro meses. Se puede hacer varios cultivos en el ano (como promedio se obtiene 1000 kilogramos por hectarea).

ARROZ. - Se puede sembrar en esta region cualquier variedad de arroz.

YUCAS. - Llamada tambien "manioca" (atropha manihot) (euforbiacea) de raices tuberosas. Se utiliza para la alimentacion i es de produccion abundante.

CAMOTE. - (batata edulis) Alimenticia.

FRUTAS. - Platano, pina, granadilla, palpta (palta), papaya, chirimoya etc. Muchas frutas de origen nativo i de origen europeo.

CANA. - Se ha empezado el cultivo de cana. Se prepara en la region del Chanchamayo aguardiente de cana ("canazo"). En el cultivo de cana, hay un ancho margen para la compensacion de capitales invertidos. Aqui es suficiente 10 meses para que se cultive la cana, cosa que en la Costa requiere de 18 meses a dos anos por cosecha. Se puede cultivar doce o quince veces la cana, sin renovar o remover el cultivo, sin hacer rotar el cultivo i ademas no es necesario de irrigacion como ocurre en la Costa.

CAFE. - Conviene el cultivo por razon de clima i por la naturaleza del terreno i es de muy poco costo su cultivo. Un solo hombre puede mantener sin dificultad el cuidado de hasta 12 mil plantas. Economicamente es un cultivo muy remunerado.

CACAO. - La produccion de este cultivo rinde hasta 1500 kilos por hectarea con un rendimiento de S/.600 a S/.800 (soles) por hectarea (ano 1875). El gasto de cultivo i cosecha es insignificante. Se puede obtener un beneficio liquido de hasta mil soles por hectarea. La planta puede durar en cultivo de 25 a 30 anos.

TE. - Indica que no se cultiva, pero que el clima i la exposicion de los colonos del Chanchamayo (colinas apropiadas) muestran que pueden convenirles este cultivo. Recomienda experimentacion.

TABACO. - Es una produccion de facil expendio i en el Chanchamayo produce muy bien.

Recomienda tambien el cultivo de vainilla i pimienta.

CHUNCHOS. - Salvajes que todavia ocupan los alrededores del Chanchamayo (en esa fecha, 1875). Son gente que concen algo de agricultura por obra de anteriores colonizaciones (En tiempo de la Colonia, epoca de la dominacion espanola).

#### SITUACION ECONOMICA DE LA COLONIA EN MAYO DE 1875.-

La asignacion de terrenos se hacia mediante el decreto de 18 de abril de 1853; por el que se otorgaba gratuitamente los terrenos a los colonos. En el decreto de 17 de setiembre de 1872 se crea la Sociedad de Inmigracion Europea, con un subsidio anual de cien mil soles. En 22 de enero de 1873, se concedio autorizacion al prefecto de Junin para "conceder permiso provisorio para rozar en el termino de seis meses; pasados los cuales los postulantes que no hubiesen empezados sus trabajos, perderan sus derechos". El autor se queja de que no haya concordancia en la legislacion de la inmigracion i ningun principio normativo para las leyes sobre inmigracion.

En la Colonia del Chanchamayo se tenia como norma para la distribucion de tierras: 1) Conceder permisos provisionales para tomar posesion de las tierras (500 por 1000). 2) Haber desmontado las dos terceras partes de ese terreno dentro de los seis meses de la decha del permiso i. 3) Caduca el derecho pasados los seis meses i no se hubiese hecho trabajo alguno; en caso de haberse trabajado los dos tercios se daba posesion definitiva i propiedad, previa verificacion en el terreno.

La Sociedad de Inmigracion ayudo al colono pagando su pasaje hasta la misma Colonia del Chanchamayo i ademas entregandole implementos

(Vease Memoria de los trabajos de la Sociedad de Inmigracion Europea -año 1875-) (Lima-Biblioteca de la Universidad Mayor de San Marcos-Folletos Peruanos).

Entre las reglas que se establecieron en la Colonia estan:

- 1) Cada colono se obligaba a trabajar cuatro dias en el mes, en beneficio de la Colonia;
- 2) Mantener en buen estado el trecho del camino que pase por su lote de terreno;
- 3) El colono pedia las herramientas directamente al Director de la Colonia;
- 4) Los sujetos ociosos i daninos serian expulsados de la Colonia;
- 5) Los colonos no podian enajenar sus terrenos sin el conocimiento de la autoridad de la Colonia.

Muchos colonos "demostraban su sentimiento, por no haber venido con capital propio por pequeno que fuese, porque esta falta" las ocasiona algunas dificultades.

El autor recomienda pra el mejoramiento i desarrollo de la Colonia del Chanchamayo, lo siguiente:

- 1) Direccion energica i regular.
- 2) Mayor seguridad contra las tribus enemigas.
- 3) Estudio preliminar con mapa del terreno colonizable.
- 4) Arreglo i seguridad de las comunicaciones.
- 5) Procurar capitales para los colonos i mano de obra barata.

DIRECCION. - Energica i honrada aparente para un pais no explorado ni estudiado; que esta direccion sea suficientemente remunerado.

Toda obra colonizadora debe estar precedida de un estudio completo sobre la region, tanto desde el punto de vista geografico, como desde el punto de vista economico.

COMUNICACIONES. - Debe considerarse dos tipos de comunicaciones.

- 1) Un servicio carretero entre los diversos punto de la colonia; una especie de red interna que comunique todos los centros de la colonia y.
- 2) Un servicio de carreteras entre la Colonia i los centros que sirven de mercado para los productos que se obtienen en la Colonia i para que a la vez sirva como medio de comunicacion a fin de que los colonos puedan obtener los implementos que necesitan para sus labores.

SUBVENCION DE CAPITAL A LOS COLONOS. - El autor encuentra grave, para el desenvolvimiento de la Colonia del Chanchamayo, el que los colonos, no cuenten en los comienzos, con un capital individual propio. Encuentra satisfactorio que aqui en el Peru, los colonos reciban el terreno sobre el que van a trabajar, completamente gratis, a diferencia de lo que ocurre en otros paises (año 1875). Entregar los terrenos completamente gratis i solo para limpiarlos de desmonte i empezar a trabajarlos, tiene

sus ventajas i sus desventajas. El colono en el primero de los casos tiene que contar con un pequeno capital para iniciar su obra. La ayuda exonomica que el Estado preste al colono debe garantizarse por un tiempo determinado, para evitar ~~que los~~ cambios de gobierno - o algun otro impedimento de la politica gubernamental de inmigracion, ponga a los colonos en dificultades por falta de la oportuna ayuda economica i entre tanto quede la "Colonia reducida a su propia ventura i recursos".

Hace luego algunas observaciones sobre la forma de vida que ha de llevar el europeo en estas tierras; "no trabajar demasiado al sol i en la humedad".

PROMOCION DE LA LLEGADA DE MANO DE OBRA ECONOMICA. - Es necesario que el colono cuente con operarios "baratos i resistentes a los rigores de la atmosfera tropical". Que los naturales del lugar no son aparentes para operarios, por debiles i escasos; que esa circunstancia determino el ingreso de negro s esclavos primero i luego el cooli chino (se refiere al ingreso de negros esclavos i chinos a la costa peruana, para remediar la escasez de mano de obra).

Nos dice tambien que el colono europeo, solo puede fijarse en las partes altas de la region del Chanchamayo i que la raza blanca no puede dar ni tiene mano de obra barata. El autor cree (error) que el gobierno peruano ha solucionado en parte esta escasez de mano de obra, trayendo i facilitando la traida de chinos. (Tambien senala que ya en esa epoca, 1875; hubo oposicion a esa medida del gobierno peruano, de traer asiaticos para solucionar el problema de la escasez de mano de obra.) Senala que el tipo de cooli chino, es el tipo mas degradado del Asia, saturada de vicios, "sombra de hombres debilitados por los vicios i por la miseria", que no eran agricultores que es lo mas grave. (El autor dice que el chino libre es distinto en todo esto al cooli chino.)

"INTERROGATORIO HECHO A VARIOS COLONOS ITALIANOS EN LA MERCED (CHANCHAMAYO) EL 19 DE MAYO DEL PRESENTE AÑO (1875) SEGUN EL FORMULARIO DICTADO POR EL SENOR ENCARGADO DE NEGOCIOS DE ITALIA."

Dice el autor haber interrogado a siete personas i que las preguntas hicieron en presencia de "todos" los italianos i que la opinion de todos ellos concuerda con la hecha a uno de los siete.

En que se ocupa en la Colonia? El interrogado dice que empezo por labrar un terreno que despues tuvo que abandonar por pertenecer a otros; que luego le asignaron otro terreno el que lo esta labrando en compania de un hermano.

Si tienen terrenos asignados i en donde? Si los tienen con

título definitivo? Responde que se le ha asignado un lote i que espera el título definitivo. Que la mayor parte de los colonos estan en la misma condicion respecto de los terrenos que poseen. Que el trabajo de rozar el lote es muy pesado; tienen necesidad de la ayuda de peones, pero que estos resultan de salario caro (salario muy alto) i ellos (los colonos) no pueden satisfacerlo.

Cuales son sus impresiones acerca de la salubridad, valor agricola del terreno, i facilidades para la vida? El colono responde que no se queja del clima, que lo encuentra bueno i no da sufrimiento. Lo que le incomoda son las hormigas. Generalmente ha habido poco necesidad de asistencia medica. El terreno los encuentra bueno i es una ventaja que se encuentra en una colina (se referia a su lote???). El terreno rinde en abundancia i "con prontitud". Los viveres un poco caros a excepcion de la carne.

Si recibe regularmente el subsidio de cinco reales i por de medio de quien? Que lo recibian primero por medio del Comandante i posteriormente por medio de Director de la Colonia. Que el subsidio llegaba con regularidad; que en caso de tardanza en la remesa, el Director les formulaba vales que tenia aceptacion i circulacion en la Colonia.

La Direccion de la Colonia contaba con algunos animales de carga para su uso, que ademas tenia bueyes. Lo que no existe es animales domesticos i que son necesario.

Que utiles agrarios tiene i cuales desearian poseer?

Poseen utiles agrarios sencillos (hachas, picos, lampas). Piden herramientas de preferencia de "fabricacion americana". Si tienen necesidad de semillas, cuales i en que tiempo?

Las semillas pueden obtenerse en la Direccion de la Colonia i es necesario pedir las con anticipacion. Desearian obtener hortalizas.

Lima 15 de junio de 1875. (firmado) FELIX GIORDANO

FIN

POR LA SINTESIS: JOSE A. YOVERA ZAPATA.



MEMORIA DE LOS TRABAJOS DE LA SOCIEDAD DE INMIGRACION EUROPEA.  
EN EL AÑO DE 1875.

Presentada por el Infrascrito Presidente AURELIO DENEGRI

LIMA

IMPRESA DE "LA OPINION NACIONAL", CALLE DE JUNIN  
(ANTES SAN JOSE) No. 66.

1876

En el preambulo, el autor -Aurelio Denegri- explica las causas que han retardado la presentacion de la "Memoria de 1876".

Entre otras causas el Autor menciona el haber estado ocupado en formular "El Reglamento de Colonizacion".

Luego senala como primeros inconvenientes a los trabajos de la Sociedad de Inmigracion Europea: a) falta de pasajes baratos de Europa al Peru; b) escasez de caminos transitables; c) dinero necesario.

La baja de la moneda peruana impedia conceder pasaje libre al inmigrante. ( ? ) El colono estaba casi siempre imposibilitado de pagar el minimo de 450 francos i esto se agravaba si tenia que viajar con sus familiares. Por estas dificultades se suspendio la traida de inmigrantes. Luego informa que los esfuerzos de la Sociedad, habian logrado el establecimiento de 2.600 inmigrantes.

El autor se propone rendir cuenta de los trabajos de la Sociedad en el año 1875. Senala que se ha llevado al inmigrante a terrenos de la montana del Peru, porque en la Costa, las tierras irrigadas no estan al alcance del colono; por la falta de agua en la costa, el alto costo del cultivo, por ser los terrenos de la montana lugares feraces, todas estas circunstancias dificultan el establecimiento del inmigrante en la Costa. Dice que entre irrigar nuevas tierras en la Costa para dedicarlas a la inmigracion (colonos) o llevarlos a la Montana para entregarles tierras feraces, abundantes en productos naturales i de facil comunicacion fluvial es mejor escoger lo segundo.

INMIGRACION EUROPEA. - Afirma el autor, que la Republica brinda ventajas al inmigrante europeo, que este luego de un tiempo solicita la venida de sus familiares i allegados; que los pasajes fueron pagados por el Gobierno en el primer semestre de 1875; pero que luego dificultades fiscales obligaron a la suspension de este pago; que esto se reflejo en la cantidad de inmigrantes que llegaron

Posteriormente; así en el 1er semestre arribaron 850 inmigrantes (1875) i en el segundo semestre arribaron solo 12 inmigrantes con pasajes cubiertos por la Sociedad (Sociedad de Inmigracion Europea) i setenta i dos mas por sus propios medio.

PASAJE DE INMIGRANTES. - El Gobierno atendia los pagos del pasaje de los inmigrantes, para que estos viajasen gratuitamente. Por cada pasaje pagaba el Gobierno Noventa soles (en bonos de Tesoreria); esto ocurrio hasta la primera mitad del ano pues luego el pasaje solo podia obtenerse por 18 libras esterlinas.

Por las dificultades que tenia el Gobierno, para abonarles a los inmigrantes los pasajes de Europa al Peru se abandono este sistema, ofreciendosele en cambio al inmigrante espontaneo, ventajas de alojamiento (en compensacion a los gastos de pasaje cubiertos por el inmigrante).

El Gobierno invirtio en el primer semestre de 1875, en el pago de pasajes a los inmigrantes S/. 110.814.00 (soles peruanos).

DISTRIBUCION DE LA INMIGRACION. - Indica que en la Costa, la agricultura por sus nodalidades, no ofrecia al colono (inmigrante) aliciente para trabajar como jornalero (obrero agricola que trabaja a salario diario) i no podia el Estado prepararles tierras para establecerlos independientemente. Muchas dificultades, determinaron que la llamada "Casa de Asilo" retuviera bajo su proteccion hasta mas de 200 personas con el consiguiente gasto extraordinario i la queja de los connacionales de los inmigrantes ya radicados, al ver la humilde situacion de sus paisanos; mas la queja de los naturales i pobladores de los lugares ya habitados, que influenciados por personas mal intencionadas culpaban a estos recién llegados, de hechos i delitos jamas cometidos por ellos; esto obligo al Supremo Gobierno al inmediato trabajo de instalacion en la Colonia del Chanchamayo que restablecio la calma.

Nos dice el autor de la Memoria, que varios colonos regresaron a Italia, pero llevando consigo "sumas de dinero relativamente importantes" i que el exito de la Colonia, se justifica por la muchisimas solicitudes de los colonos para hacer traer a sus familiares.

Las condiciones morales de los inmigrantes las califica de buenas i diceque inclusive muchos elementos nocivos, volvieron a ser utiles a la Sociedad (no cita hechos concretos).

En el cuadro No. 8 se indica (La Memoria que comentamos esta ilustrada con 40 cuadros i la mencion que hacemos corresponde al cuadro de igual numero en la Memoria) los inmigrantes que sabian leer i escribir.

Resumen del Cuadro No. 8.-

| COLONOS:      | H   | M  | Ninos | Ninas | menores de<br>10 años.- |       |
|---------------|-----|----|-------|-------|-------------------------|-------|
|               |     |    |       |       | Ninos                   | Ninas |
| SI saben leer | 267 | 38 | 25    | 9     | 64                      | 51    |
| NO saben leer | 334 | 86 | 27    | 15    | -                       | -     |

"La Casa de Asilo" se clausuro al suspenderse los embarques de inmigrantes.

Los Cuadros No. 9 - 10 i 11 muestran el numero de inmigrantes alojados en la Casa de Asilo i los gastos ocasionados en su alimentacion.

Resumen del Cuadro No. 9.-

Movimiento en la "Casa de Asilo" hasta Junio de 1875.

|           |              |            |
|-----------|--------------|------------|
| Italianos | 851          |            |
| Espanoles | 35           |            |
| Franceses | 17           |            |
| Alemanes  | 1            |            |
|           | <u>TOTAL</u> | <u>904</u> |

Resumen del Cuadro No. 10.- Casa de Asilo

Gastos generales de Enero - Diciembre de 1875 .....S/. 1.387,55

Resumen del Cuadro No. 11.- Casa de Asilo

Gastos de mantencion a Inmigrantes .....S/. 5.965,60  
por el ano 1875

FUNDACION DE LA COLONIA. - Indica las ventajas de la localidad escogida (Chanchamayo). Se hace la siguiente pregunta : Es la propiedad territorial el atractivo mas poderoso para la inmigracion? En caso de que la respuesta sea afirmativa, entonces, "el territorio que ofresca abundantes tierras, de ventajoso cultivo i que puedan cederse gratuitamente es, a no dudarlo, el aparente para fijar inmigrantes". Si se asegura este primer requisito, aparte de la salubridad, el (aturo) autor de la Memoria recomienda tambien, aproximar la Colonia a una ciudad de recursos, que sirva de mercado para los productos que se producen en la colonia i para que a su vez el colono pueda aprovisionarse de los implementos i medios para su desarrollo i subsistencia. La Colonia del Chanchamayo esta unida a ciudades que pueden ser mercados de sus productos (Tarma, Oroya, Huancayo, Lima) i al mismo tiempo proveerse en dichas ciudades de todo lo necesario para los colonos.

Resumen del Cuadro No. 12. -

Gastos por "Colonia del Chanchamayo". - Ano 1875

S/. 55.617,34 (soles peruanos)

A los colonos se les establecio en la meseta (?) de la Merced, por ser aparente para situar la aldea; se inicio la construccion de casas i luego los trabajos de campo cuando ya se disiparon los temores a los salvajes.

En principio se limito el personal de la Colonia; luego, cuando las condiciones de aldea se afirmaban se enviaron nuevos colonos hasta lograr una vida activa i de progreso en la colonia.

Resumen del Cuadro No. 13. -

Plano i Leyenda del pueblo de "La Merced" de la Colonia del Chanchamayo. -

Este cuadro indica 109 lotes con los nombres de sus ocupantes, incluyendo 25 lotes vacantes.

Resumen del Cuadro No. 14. -

Catastro detallado de "La Merced".

Calles: Ocho.

Manzanas: sin numerar.

Casas: clasificadas en 1ra, 2da, 3ra (todas dentro de la categoria de 3ra).

Tipo de construccion: cana, adobes, cana-adobes. Techo de "Umiri", paja de junco.

Area de construccion: variable.

Genero de ocupacion: restaurantes, hornos, cocinas, cuartel, pulperias, fabricas de tejas, habitacion.

DISTRIBUCION DE TIERRAS. - Empezo luego que los colonos fueron establecidos i la Colonia hizo vida de Aldea. Se tropezo con la falta de legislacion sobre distribucion de tierras. "No es posible disponer de lo que no se conoce. Una buena Ley "de distribucion de tierras para la inmigracion colonizadora, debe siempre preceder la exploracion necesaria". El legislador debe conocer las tierras que va a distribuir mediante la Ley.

Luego el autor hace referencias a la ley de 1832 dictada para la Colonizacion en el Departamento de Loreto. Los propósitos i beneficios de la citada ley han sido burlados i mal interpretados, el espiritu de la ley se ha pospuesto i con ello, se ha dejado de lado los intereses nacionales en beneficio de los privados. En la Colonia de la Merced "nos hemos encontrado repentinamente, en lo desconocido, en lo inexplorado, en lo salvaje, con

propietarios de las tierras". "Apenas el hacha del colono hechaba al suelo un arbol, que los celebres propietarios, a pesar de su pretendida ocupacion no habian sido capaces de cortar" i ya se presentaban para discutir la propiedad de esas tierras personas extranas a lo colonia. Asi en tierras aun salvajes, ya surgian asuntos judiciales sobre propiedad de la tierra que eran obstaculo para los verdaderos colonizadores, no solo por el gasto en los tramites judiciales sino porque se veian materialmente rodeados de terrenos intocables, sin cultivo, por tener duenos desconocidos en la colonia i que ni siquiera rozaban "sus tierras". Debe legislarse sobre este problema para asegurar proteccion a los colonizadores.

ASOCIACION DE LOS COLONOS. - Los colonos deben asociarse para multiplicar sus fuerzas. Esta union ha sido dificil, se han formado multiples companias para luego disolverse i volverse a reunir con personas distintas; ha habido continuas disoluciones de Sociedades i formacion de nuevas. No debe interrumpirse el continuo flujo de inmigrantes a la Colonia, a la vez que se permite que los colonos que no deseen permanecer voluntariamente la abandonen; pero que la colonia se encuentre continuamente concurrida i con numero suficiente de colonos. En la Colonia- escribe el autor de la Memoria - trabajan actualmente (1875) 47 grupos (agrupaciones).

HABITACION DE LOS COLONOS. - En principio los recursos eran llevados desde fuera a la Colonia con gran trabajo i costo de todos. La entrega de dinero en efectivo por la Sociedad (se refiere a la Sociedad de Inmigracion Europea) se recomienda por ser este medio el mas apropiado (a pesar de los abusos a que estaba expuesto). Expone el autor que la experiencia ha confirmado lo saludable de esta disposicion; se le entregaba al colono cincuenta centavos diarios.

Quadro No. 18. - (Resumen)

Distribucion de socorros en la Colonia del Chanchamayo hasta el 31 de Dic. de 1875 ..... S/. 16.303,50; entregados a 244 personas.

Las herramientas i otros implementos se les ha entregado a los colonos de los mas aparentes i de buena calidad. Tambien el cuadro incluye una relacion del costo mensual de especies enviadas a la Colonia (viveres, semillas, pasto, calzado, vestuario, herramientas, utiles para la iglesia, para construccion, para escritorio, maquinarias, bestias, armas, etc., que llegan a un total de S/. 11.542,93).

Cada colono tenia una cuenta corriente i se esperaba que con el producto de sus cosechas, pudiese cubrir las entregas que la Sociedad le hizo para gastos (losque hemos mencionado antes).

Indica en su Memoria el señor Aurelio Denegri que hubo malversacion, pero que el control de la inversion, se vio dificultado por la naturaleza misma de la colonizacion. Sugiere que se nombre una Comision Investigadora para remediar en parte los males derivados de estos trabajos.

CULTIVO DE TIERRAS. - Los colonos eran poco practicos en los trabajos agricolas. La Sociedad fomento el cultivo de productos que tuviesen alto precio en los Mercados para así cubrir los altos costos de produccion i de transporte. Se dedico mayores areas al cultivo del cafe, luego arroz, verduras, maiz, etc.

Resumen del Cuadro No. 16. -

Cuadro de la Propiedad Rustica. Indica hasta 110 propiedades incluyendo el nombre de los Propietarios, el sitio en que esta la propiedad, la extension que ocupa en metros cuadrados, el area sembrada, especificando las sementeras, el tipo de casa que hay en la chacra i de que extension es, el tipo de material, el numero de animales, indicando que clase de animales son. Ademas se anotan las dificultades habidas durante la cosecha i los ataques de los salvajes.

CONSTRUCCION DEL MOLINO. - Por el progreso de la Colonia se penso en la instalacion de aserraderos i molinos para pilar arroz, maiz i cafe. Mientras se hacia la instalacion en grande se envio a la colonia un pilador de arroz i un molino de mano para maiz que segun el autor hasta esa fecha "no han prestado servicio".

Para la construccion del molino se comprobo que habia en la Merced todo el material necesario para dicho trabajo (maderas, ladrillos, cal, carbon, etc.).

Los cuadros No. 19 - 20- 21 - 22 - i 23 se refieren a la construccion de un Molino en el cual se habian invertido ya 10.765,84 S/.

La apertura de caminos contribuye al desarrollo de las Colonias de Inmigrantes i es un estimulo para la llegada de nuevos colonos. Es conveniente solicitar el concurso para la construccion de caminos, de los propietarios de las tierras a beneficiarse. (El Director de la Colonia en la primera reunion en que invito a los vecinos de Tarma, estos declararon que no tenian como contribuir a la obra i que "su tiempo lo necesitaban para atender sus negocios. Surgieron pues dificultades para la construccion del camino (Tarma La Merced-San Ramon) por la incompetencia de los ejecutores, ataques de los salvajes, indios obligados a trabajar, jornal barato i dificultades del terreno.

El Cuadro No. 24 i 25 muestran planos del camino carretero i el Cuadro No. 26 hace una exposicion sobre el camino carretero.

Los Cuadros No. 27 - 28 i 29 presentan los gastos del camino carretero Tarma-La Merced que suman S/. 18.223,12 .

CONCLUSION. - El Autor dice que los resultados obtenidos no pueden apreciarse por el numero de inmigrantes venidos, sino "compulsando los obstaculos fisicos, climatologicos, morales, legales, politicos, sociales i economicos" que estaban interfiriendo la Republica, en su esfuerzo por aclimatar a los inmigrantes europeos i por lograr su rapida absorcion.

El autor cree justificada la inversion en la Colonia del Chanchamayo (1875). El afirma que los inmigrantes son a la vez consumidores i que por ello producen renta al Estado i que como productores aumentan la riqueza publica. Considera el Problema de la Inmigracion como "el unico problema que ofrece garantias de engrandecimiento i prosperidad a la Republica del Peru".

Termina pidiendo la reduccion de los costos de transporte, la construccion de carreteras i que se prosiga la colonizacion del Chanchamayo.

FIN

Por la sintesis: JOSE A. YOVERA ZAPATA

Lima, 6 de febrero de 1947

Translation

MINISTRY OF AGRICULTURE

MEMORANDUM ON COLONIZATION FOR FOREIGN OFFICE  
Individual or Family Immigration

For the time being and in respect of the Satipo region, from 15 to 20 families could at once be received, who would require to be provided with 500 to 800 hectares. Along the Tingo Maria highway we could also receive right away a number possibly the double of those capable of being accommodated in Satipo. In the other zones appropriate for colonization, such as Oxapampa, Villa Rica and Jaen, for the moment it would not be feasible to receive any family without first carrying out a certain amount of preparatory work.

All the settlers we are willing to receive must be of the white race, preferably from the North of Italy, Slavs in general, and Polish, Hungarian and Spanish peasants.

Their religion must be Roman Catholic, groups of one single religion only being receivable in each zone, in order to avoid the disturbances inherent in a diversity of creeds.

Each family, in addition to the husband and wife, could contain two children accompanied by a brother or near relation of the parents. The married couple must not be more than 40 years of age, nor those accompanying them more than 30. The State could offer land to the children on reaching their majority and to the relatives whenever requested, with a view to promoting their economic independence.

In Satipo, Tingo Maria, Jaen, Oxapampa and Villa Rica, it is preferable that immigrants be of the smallholder class, it being noted that they can at any time work for a wage, labor being considerably scarce throughout the Montana. Any artisan will be welcome in any of the above settlements.

The State can grant smallholders or settlers definite titles of ownership to a lot of from 20 to 40 hectares of land, the quantity varying with the number of members in the family and its economic capacity. It can also defray their journey from the port of arrival to their place of residence, it being the general opinion, however, that the State cannot undertake their upkeep, the building of houses or the purchase of equipment and livestock until they become financially independent.

In all the zones mentioned, in the event of the settlers or smallholders starting to cultivate their land immediately after arrival, they will be able to contribute to their own support after six months.



It is estimated that the personal efforts of a family can form the basis for its complete welfare, if helped by a small capital, enabling it to attain economic independence. In the Tingo Maria zone the initial capital ought to be approximately S/. 10,000 or 1,500 American dollars. In Satipo it should be S/. 6,500 or 1,000 dollars, and amounts more or less equal to the last figure for the Jaen, Oxapampa and Villa Rica zones.

It is believed that in a year and a half a settler can become self-supporting and in 3 years be economically independent.

In practically the whole of the Peruvian Montana a farm laborer is paid a daily wage of S/. 4.00 to S/. 5.00. In regard to employees only figures for Tingo Maria are forthcoming, and here 300-hectare farms pay a monthly salary of S/. 500 to administrators and S/. 300 to overseers and foremen. In the rest of the zones an average of salaries paid cannot be given, for the smallholders do not require employees to look after their land.

#### Establishment of Colonizing Groups

Tingo Maria Zone. Here there could be made available an extension of approximately 10,000 hectares, after building the roads necessary to put the land within reach of settlers. This area could be located along the Huanuco-Pucallpa highway, at an approximate distance of 200 Km. from the Capital of the Department of Huanuco, 70 Km. from the Capital of the District of Tingo Maria, and 625 Km. from the Capital of the Republic; and 300 Km. from the Cerro de Pasco-Callao Railroad.

Its climatic conditions are those proper to the tropics, with an abundant rainfall in excess of 140 inches per annum.

Communication is by motorized vehicles and, as stated above in mentioning the location of the area, this is connected with the port of Callao by road, and by road and railway, for a total distance of 625 Km. It is also in communication with the river port of Pucallpa, by a road of some 200 Km.

Tingo Maria possesses a State Air Base and is a central point for several air transport lines in the Montana.

The region, according to altitude, is sown with many valuable industrial plants, such as quina, tea, coffee, cube, coca and tobacco. It also produces various food plants, such as yuca, bananas, rice, annatto and a great diversity of fruits. The livestock industry is enjoying an unexpected boom, while the extraction of timber and natural resins is the foundation of several industries. Industrial plantations of resistant varieties of

rubber are being formed.

Satipo. The 20,000 hectares susceptible of habilitation for establishment of a settlement, are located in the Masamary and Sonomoro valleys. They would require the building of an approximately 30-Km. road joining them with the Concepcion-Satipo-Puerto Ocopa trunk road, more or less facing the mouth of the Rio Negro.

The climatic conditions of this zone are tropical, the temperature running from 26 to 32 C and the yearly rainfall being some 200 mm. or 80 inches.

In addition to the stretch of road to be built, it would be necessary to cover 215 Km. in order to reach the town of Concepcion, which is joined to the Capital of the Republic by railroad and a 295-Km. highway, for the greater part asphalted. Transportation can accordingly take place in motorized vehicles or in a combination of these and railroad.

The food plants produced are maize, yuca, bananas, rice, beans and wheat; and the industrial plants in the region are coffee, cube, coca, tea, tobacco and different kinds of fruit, mainly citric. A large variety of fruit for direct consumption also grows there, the papaw, palta and banana meeting with great acceptance. The prospects for the livestock industry are highly favorable, and among the products to be extracted are timber and the bark of the cinchona.

Jaen. This would be a new zone for settlement. It would be situated in the basin of the upper Marañon in the Province of Jaen, in the valleys draining into that river. An extension of 3,000 hectares could be utilized, in which small irrigation schemes could be carried out with the unlimited amount of water available.

The climate being tropical, there are two definitely marked seasons; a completely rainy one characteristic of the Montana, from December to April, and an equally dry season during the remainder of the year, the latter giving the land a semi-arid aspect. The fertility of the soil is immense.

This zone is in communication with the port of Pimentel and with Chiclayo, the Capital of the Department of Lambayeque, by a 345-Km. road that only rises to 2,160 meters above sea level, passing through the lowest opening in the Andes at a spot known as Porculla.

Transport is wholly motorized and at the end of the road, on the Marañon River, navigation by canoe towards the Amazon basin starts.

The principal products are coffee, cacao and rice, cattle raising playing a predominant part considering that it is only now that the industry is beginning to receive technical guidance.

Oxapampa. This zone, situated in the province of that name of the Department of Junin, would have an approximate area of hectares, ready for immediate settlement. It has a wide network of streams running into the Paucartambo, a tributary of the Perene on the left bank.

The climate is tropical, with a plentiful rainfall, the winter being well defined with relatively low temperatures. The height above sea level is close upon 2,000 meters, which gives the region a mild climate to which arrivals from other districts become readily accustomed.

Oxapampa is connected with the Capital of the Republic by a 118-Km. road passing through Oroya, from where one can journey to Lima by rail. Oxapampa lies 80 Km. from the principal town in the Montana, La Merced, on the above road.

The principal product is timber, huge quantities being at present taken out to the economic welfare of all the small industries. Conditions for cattle raising are of the best, the industry having developed considerably in a primitive form. The State is at present interested in improving the breed of cattle through the introduction of the zebu. Fruit, coffee, cube, maize and beans are the industrial and food products giving the highest financial yield.

Villa Rica. This settlement, the outcome of private initiative, has been successful throughout its 20 years of existence. It is located on the Villa Rica river, also an affluent on the left bank of the Paucartambo River, and is joined to the Oxapampa-La Merced trunk highway by an approximately 20-Km. dirt road, continuing to the Capital of the Republic by the same road as the Oxapampa zone. An extension of roughly 8,000 hectares could be made available in this region.

The general conditions of transport and climate, as well as the products offered by this region, are very similar to those of the Oxapampa zone.

General Information. The legal provisions governing Montana lands, for the Montana as a whole, stem from Law 1220 and its complementary Decrees and, for zones reserved for colonization, from Laws 1220 and 8687 with its Regulations; the Satipo region coming under the jurisdiction of Law 8687 as being a zone already colonized.

For your further information we will say that, generally speaking, Montana lands can be acquired in Peru in three ways:

1. By free assignment of up to 5 hectares to natives lacking all resources.
2. By way of compensation for public works; that is to say, a certain number of hectares are handed over against a work approved and valued by the State.
3. By sale, in accordance with the prices prescribed in both Law 1220 and 8687. The Government is also empowered to deliver free of charge for purposes of settlement up to 30 hectares.

Up to the present smallholders or settlers in the Montana have only received loans of little importance from the Government, reimbursable without interest after a lengthy period, all of them payable in produce. The Agricultural Bank is the only institution that has furnished settler with long-term credits for industrial plants and cattle raising and, in the case of food crops, payable when these are harvested. It is thought that loans to smallholders should be made by a special body of the Agricultural Bank type, but with a wider range of credit to borrowers.

In general, all products of Eastern Peru have been exonerated from taxes, and the Government's policy is to continue in that way.

The procurement of Peruvian citizenship is at present relatively easy, the former obstacles having been restricted.

In the Tingo Maria colonization zone the Government has built a hospital with all modern advances, which has been enlarged by the Inter-American Public Health Cooperative Service, which is now running it with great efficiency. All farms have sanitary services supervised by the hospital, there being a visiting medical-pharmaceutical service which makes a weekly trip through the whole of the settlement.

In the Satipo region there is a hospital also managed by the Inter-American Public Health Cooperative Service, which has "Sanitary Posts" distributed throughout the region mainly engaged in an Antimalaria Campaign.

In Jaen the sanitary service is in charge of a Titular Medical Officer, as also in Oxapampa.

In Tingo Maria and Satipo, both in the Capital of the district and in the villages, there are various schools for primary education. The settlers are guided in their farming and livestock activities by the Colonization Centres established there and by the Tingo Maria Experimental Agricultural Station, the first of which impart the farming instruction necessary to enable the settler to attain success. These bodies are principally preoccupied in cooperating with settlers on comprehensive lines in the improvement of their livestock. For 1947 new Colonization Centres have been created in Jaen and in Villa Rica, through which a greater impulse will be given both to the work of settlement and to the progress of farming and cattle raising in the region.

With regard to the way in which immigrants to the country should be received, provided with initial upkeep and given a training, nothing has as yet been decided. An immigrants hotel should be erected, where they will at the start be provided with board and lodging and, in the case of small groups of settlers, given a course of training at the Colonization Centres.

In conclusion, it is my opinion that what has become a conviction in administrative circles is in reality a duty, which is the concept that every large-scale colonization undertaking should be carried out by State corporations or companies, handling independently all matters of colonization with funds supplied by the Government; bodies on which would be represented the whole of the elements best acquainted with colonization problems in the Montana of Peru.

Lima, December, 1946

Received from Pedro Recavarren C., Director of Oriental Matters, Colonization and Lands of Eastern Peru.

Annex 14

ESTUDIO DE ORGANIZACION SOCIAL EN EL PERU

Familia: \_\_\_\_\_ Calificativo B \_\_\_\_\_  
R \_\_\_\_\_  
M \_\_\_\_\_

A) Questionario \_\_\_\_\_ B) Interrogador \_\_\_\_\_ C) Fecha \_\_\_\_\_  
D) Departamento \_\_\_\_\_ E) Provincia \_\_\_\_\_ F) Distrito \_\_\_\_\_  
G) Centro Poblado \_\_\_\_\_ H) Barrio \_\_\_\_\_ I) Calle \_\_\_\_\_  
J) No. \_\_\_\_\_ K) Otros: \_\_\_\_\_

I. - GENERAL

Cuantos años vive en este pueblo? \_\_\_\_\_ Es Ud. propietario o arrendatario de su casa? \_\_\_\_\_ 1) Numero de habitaciones \_\_\_\_\_ 2) Cuantas personas habitan la casa? \_\_\_\_\_ 3) Que desearia Ud. aumentar en su casa? \_\_\_\_\_ 4) Que distancia hay a la plaza del Pueblo? \_\_\_\_\_ 5) Que tipo de camino conduce al Pueblo? \_\_\_\_\_ 6) Que distancia hay a la Escuela? \_\_\_\_\_

7) Esta Ud. contento con la Instruccion que reciben sus hijos? \_\_\_\_\_ 8) Cuales son los problemas educacionales primordiales para su familia? \_\_\_\_\_ 9) Que debe hacer el Gobierno de inmediato para resolver este problema? \_\_\_\_\_

10) Cuantos miembros de su familia no estan trabajando ahora debido a enfermedad o lesion? \_\_\_\_\_ 11) Que numero de dias ha perdido durante los ultimos seis meses? (Para el Jefe Fam.) \_\_\_\_\_ 12) Que enfermedades se presentan con mas frecuencia en estos lugares y cuales son las medicinas que Ud. toma para combatir las?

| Enfermedad | Medicina |
|------------|----------|
| a) _____   | a) _____ |
| b) _____   | b) _____ |
| c) _____   | c) _____ |

13) Que debe hacer el Gobierno para ayudar a combatir estas enfermedades? \_\_\_\_\_

14) Que distancia hay a la residencia del medico? \_\_\_\_\_ Al Hospital? \_\_\_\_\_

15) Por costumbre o manera habitual, Duarme Ud. en el suelo? (Si o no) \_\_\_\_\_ Anda descalzo? (Si o no) \_\_\_\_\_

Usa ojotas? (Si o no) \_\_\_\_\_ Usa poncho y chullo? (Si o no) \_\_\_\_\_ Usa zapatos? (si o no) \_\_\_\_\_

16) Cuales son los problemas de transporte mas importantes que se deben de resolver de inmediato? \_\_\_\_\_

17) Que debe hacer el Gobierno para resolver este problema de transporte? \_\_\_\_\_

18) Cuantos dias durante el ano, trabaja el Jefe de la familia fuera de su casa? \_\_\_\_\_ Adonde? \_\_\_\_\_

19) Si Ud. y su familia tuvieran suficiente tierra cerca de Tingo Maria, se trasladaria a vivir alli permanentemente? (Si o no) \_\_\_\_\_

Por que? \_\_\_\_\_

20) Piensa Ud. que el Peru deberia aceptar Colonos de Europa ahora? (si o no) \_\_\_\_\_ Por que? \_\_\_\_\_

II HOGAR

- 1) NOMBRE.....
- 2) APELLIDO.....
- 3) SEXO Es hombre o mujer?.....
- 4) EDAD:  
Cuantos anos cumplidos tiene?(para menores de 1 ano, escribir los meses o dias).....
- 5) ESTADO CIVIL:  
Es soltero, casado, viudo, divorciado o conviviente?.....
- 6) POSICION EN EL HOGAR:  
Que relacion, parentesco o dependencia tiene con el Jefe de la familia? .....
- 7) IDIOMA:  
a) Cual es su lengua materna?.....  
b) Que otros idiomas habla Ud.?.....
- 8) INSTRUCCION:  
a) Sabe leer? (si o no).....  
b) Que grado de Instruccion tiene Ud.?.....  
c) Todavia esta en la escuela?.....
- 9) NACIONALIDAD:  
a) Es peruano o de que otra nacionalidad?.....
- 10) OCUPACION:  
a) Esta Ud. ocupado o desocupado en la actualidad?.....  
b) Si esta ocupado puede decir cuanto tiempo tiene en su actual trabajo?.....  
c) Si esta desocupado puede decir cuanto tiempo esta sin trabajo? .....
- d) Como se llama el trabajo, oficio, profesion u ocupacion que tiene?.....
- e) A que se dedica, al negocio?, industria, hacienda, mina, fabrica, empresa, taller, oficina publica o privada, casa o centro de trabajo en que esta ocupado?.....
- f) Es dueño, socio, pariente, colaborador, empleado, obrero, campesino o trabaja por su cuenta? .....
- 11) SIN OCUPACION REMUNERADA:  
Esta al cuidado de su hogar, es estudiante, es rentista, recibe pension de alguna entidad publica o privada, o vive sostenido por otra persona?.....

## 12) HIJOS MUERTOS:

- a) Nombre.....  
 b) Apellido.....  
 c) Sexo: Fue hombre o mujer?.....  
 d) De cuantos años murio?.....  
 e) Cual fue la causa de la muerte?.....  
 f) Donde murio? (lugar, Caserio,  
 Distrito, Prov. Departamento).....

## NOTA:

Incluir a los miembros ausentes de la familia indicando en donde estan viviendo ahora.

III VIVIENDA

## 1) Materiales con los cuales esta construida su casa habitacion:

- a) Techo..... b) Paredes..... c) Piso.....  
 d) Puertas..... e) Ventanas..... f) Cielo raso.....

## 2) Describir las siguientes comodidades caseras:

- a) Clase de luz.....  
 (velas, lamparas a kerosene, lamparines, luz electrica, etc.)

- b) Clase de combustible.....  
 (lena, carbon, kerosene, gas, etc.,)

3) Clase de servicios higienicos:.....  
 (silo o escusado, letrina, bano, nada)4) De donde obtiene Ud. agua para beber?.....  
 (rio, quebrada, manantial, pozo)5) Hierve Ud. el agua antes de beberla?.....  
 (si o no)

## 6) Enseres:

|            |             |                         |           |        |
|------------|-------------|-------------------------|-----------|--------|
| Mesas      | Catres      | Maquinas de coser.....  | Jarras    | Tachos |
|            |             |                         | Platos    |        |
| Sillas     | Cunas       | Maquina de escribir.... | Ollas     |        |
| Roperos    | Tarimas     | Maquina de moler.....   | Tazas     | Bateas |
| Comodas    | Barbacoas   |                         | Tenedores | Vasos  |
| Aparadores | Hamacas     |                         | Cucharas  | Pailas |
| Bancos     | Mosquiteros | Planchas                | Cuchillos | Hornos |
| Radios     | Frazadas    | Teleros                 | Sartenes  | Espuma |
| Relojes    | Sabanas     | Lavatorios              | Cantaros  | deras  |
| .....      | .....       | .....                   | .....     | .....  |



## 7) Instrumentos de musica:

Guitarras \_\_\_ Violines \_\_\_ Bandurria \_\_\_ Quenas \_\_\_ Antaras \_\_\_  
 Bandolinas \_\_\_ Clarinetes \_\_\_ Flautas \_\_\_ Arpas \_\_\_  
 .....\_ .....\_ .....\_ .....\_ .....\_

IV PRESUPUESTO FAMILIAR

## Ingresos de la familia durante el ano:

|   |           |           |
|---|-----------|-----------|
| 1) Sueldos o jornales   |           | S/. ..... |
| 2) Ventas de productos agricolas  | S/. ..... |           |
| 3) Cuanto gasto Ud. en producirlos?   | .....     |           |
| 4) Utilidad liquida o neta  |           | " .....   |
| 5) Venta de productos ganaderos   | .....     |           |
| 6) Cuanto gasto Ud. en producirlos?   | .....     |           |
| 7) Utilidad liquida o neta  |           | " .....   |
| 8) Venta de productos industriales  | .....     |           |
| 9) Cuanto gasto Ud. en producirlos?   | .....     |           |
| 10) Utilidad liquida o neta   |           | " .....   |
| 11) Otros ingresos (regalos, gratificaciones, loterias, etc.,)              |           | " .....   |
| 12) Valor del vestuario confeccionado en la finca                           |           | " .....   |
| 13) Valor de los articulos alimenticios producidos y consumidos en la finca |           | " .....   |
| TOTAL INGRESOS  |           | S/. ..... |

## Egresos de la familia durante el ano:

| <u>Gastos ordinarios:</u>         | <u>Diario</u> | <u>Semanal</u> | <u>Mensual</u> | <u>Anual</u> |
|-----------------------------------|---------------|----------------|----------------|--------------|
| 14) Alimentacion                  | .....         | .....          | .....          | .....        |
| 15) Alquiler de casa              | .....         | .....          | .....          | .....        |
| 16) Combustible                   | .....         | .....          | .....          | .....        |
| 17) Luz                           | .....         | .....          | .....          | .....        |
| 18) a) Vestuario                  | .....         | .....          | .....          | .....        |
| b) Lavado                         | .....         | .....          | .....          | .....        |
| Gastos extraordinarios:           |               |                |                |              |
| 19) Medico                        | .....         | .....          | .....          | .....        |
| 20) Iglesia                       | .....         | .....          | .....          | .....        |
| 21) Transporte                    | .....         | .....          | .....          | .....        |
| 22) Cigarrillos                   | .....         | .....          | .....          | .....        |
| 23) Bebidas alcoholicas           | .....         | .....          | .....          | .....        |
| 24) Regalos                       | .....         | .....          | .....          | .....        |
| 25) Diversiones                   | .....         | .....          | .....          | .....        |
| 26) Litigios o juicios            | .....         | .....          | .....          | .....        |
| 27) Coca                          | .....         | .....          | .....          | .....        |
| 28) Impuestos                     | .....         | .....          | .....          | .....        |
| 29) Libros, periodicos y revistas | .....         | .....          | .....          | .....        |

| <u>Gastos ordinarios:</u> | <u>Diario</u> | <u>5</u><br><u>Semanal</u> | <u>Mensual</u> | <u>Anual</u> |
|---------------------------|---------------|----------------------------|----------------|--------------|
| 30)Otros gastos           | .....         | .....                      | .....          | .....        |
| <b>TOTAL GASTOS</b>       | .....         | .....                      | .....          | .....        |

Ingresos durante el año S/.....  
 Egresos durante el año ".....  
 DALDO LIQUIDO S/.....

#### V AGRICULTURA

- 1) Hacienda, fundo o chacra \_\_\_\_\_
- 2) Condicion:
  - a) Propietario \_\_\_\_\_ d) Partidario \_\_\_\_\_ g) Aparcero \_\_\_\_\_
  - b) Arrendatario \_\_\_\_\_ e) Mejorero \_\_\_\_\_ h) Administrador \_\_\_\_\_
  - c) Sub-arrendatario \_\_\_\_\_ f) Yanacon \_\_\_\_\_ i) Peon \_\_\_\_\_
- 3) Si es propietario, indicar si el fundo lo ha comprado o recibido por herencia: \_\_\_\_\_
- 4) Necesita Ud. operarios para trabajar en su chacra? \_\_\_\_\_  
 (si o no)  
 Que cantidad? \_\_\_\_\_ En que epocas? \_\_\_\_\_ Por cuanto tiempo? \_\_\_\_\_
- 5) En caso de no necesitar operarios, diga Ud. Por que? \_\_\_\_\_
- 6) Credito para el ano agricola de Enero de 1946 a Enero de 1947: \_\_\_\_\_

| <u>Procedencia</u>      | <u>Cantidad</u> | <u>Porcentaje</u> | <u>Objeto del prestamo</u> |
|-------------------------|-----------------|-------------------|----------------------------|
|                         | <u>recibida</u> |                   |                            |
| Del propietario S/..... | .....           | .....             | .....                      |
| " Banco Agricola .....  | .....           | .....             | .....                      |
| " Vecino .....          | .....           | .....             | .....                      |
| De Comerciantes .....   | .....           | .....             | .....                      |
| " Parientes .....       | .....           | .....             | .....                      |
| <b>TOTAL</b>            | <b>S/.....</b>  |                   |                            |

- 7) Vende Ud. sus productos libremente? \_\_\_\_\_  
 (si o no)
- 8) Tiene obligacion de venderlos a las personas que le prestaron dinero \_\_\_\_\_  
 (si o no)
- 9) Desde cuando vive en esta finca? \_\_\_\_\_ Donde vivio antes? \_\_\_\_\_
- 10) Cual es la extension total del fundo? .....  
 Extension actualmente sombrada .....  
       " que se puede cultivar..... (En hectareas)  
       " incultivable .....
- 11) En cuantas parcelas estan divididos sus cultivos? \_\_\_\_\_

| <u>No.</u>  | <u>Superficie</u> | <u>Distancia a la casa</u> | (En caso que el interrogado tuviera otra Chacray en ella otra casa): |
|-------------|-------------------|----------------------------|--|
| 1) .....    | _____             | _____                      | Aque distancia del Pueblo? _____                                     |
| 2) .....    | _____             | _____                      | Va Ud. a vivir alli algun tiempo? _____ En que epoca? _____          |
| 3) .....    | _____             | _____                      | (si o no)  |
| 4) .....    | _____             | _____                      |  |
| Has. _____  |                   |                            |  |
| TOTAL _____ |                   |                            |  |

12) Clase de cultivos, superficie de cada uno y cantidad producida.

| <u>No.</u> | <u>Cultivos</u> | <u>Superficie</u> | <u>Cantidad producida</u> | <u>Observaciones</u> |
|------------|-----------------|-------------------|---------------------------|----------------------|
| 1)         | _____           | .....             | ..... Kilos               | _____                |
| 2)         | _____           | .....             | "                         | _____                |
| 3)         | _____           | .....             | "                         | _____                |
| 4)         | _____           | .....             | "                         | _____                |
| 5)         | _____           | .....             | "                         | ...                  |
| 6)         | _____           | .....             | "                         | _____                |
| 7)         | _____           | .....             | "                         | _____                |
| 8)         | _____           | .....             | "                         | _____                |
| TOTALES    |                 | Has. _____        | "                         |                      |

13) Animales:

|                |      |          |      |          |      |       |      |
|----------------|------|----------|------|----------|------|-------|------|
| Bueyes         | .... | Caballos | .... | Chanchos | .... | Aves  | .... |
| Vacas lecheras | .... | Mulas    | .... | Cabras   | .... | _____ | .... |
| Otros vacunos  | .... | Asnos    | .... | Ovejas   | .... | _____ | .... |

14) Maquinarias y herramientas de trabajo:

|             |      |                     |     |            |     |              |
|-------------|------|---------------------|-----|------------|-----|--------------|
| Tractores   | .... | Desgranadoras       | ... | Hachas     | ... | Rastrillos.. |
| Camiones    | .... | Prensadoras         | ... | Lampas     | ... | Barretas ..  |
| Carretas    | .... | Balanzas            | ... | Machetes   | ... | Azadones ..  |
| Carretillas | .... | Arados de Vertedera | ... | Trozadoras | ... | Picos ..     |
| Otros       | .... | Arados de palo      | ... | .....      | ... | Haces ..     |
| .....       | .... | .....               | ... | .....      | ... | .....        |

15) Que clase de abonos emplea \_\_\_\_\_

(mineral, excrementos de animales, o vegetal)

16) Que cantidad por hectarea? \_\_\_\_\_ Kilos.

17) Están definidos los linderos de su hacienda o fundo? \_\_\_\_\_

(si o no)

VI FACTORES SOCIALES

1) Mencione a tres personas del lugar con quienes tiene Ud. mayor confianza:

| <u>Nombre</u> | <u>Parentesco</u> | <u>A que distancia vive?</u> |
|---------------|-------------------|------------------------------|
| a) _____      | _____             | _____                        |
| b) _____      | _____             | _____                        |
| c) _____      | _____             | _____                        |

2) Mencione a tres autoridades o dirigentes del lugar:

|          |       |       |
|----------|-------|-------|
| a) _____ | _____ | _____ |
| b) _____ | _____ | _____ |
| c) _____ | _____ | _____ |

3) Mencione a tres familias las cuales se visita con mayor frecuencia:

|          |       |       |
|----------|-------|-------|
| a) _____ | _____ | _____ |
| b) _____ | _____ | _____ |
| b) _____ | _____ | _____ |

4) Algunas indicaciones eventuales: \_\_\_\_\_

## VII SALUD

### SINTOMAS

Nombre de las personas  
con sintomas de enferme-  
dad, hacienda la aneta-  
cion conferro a la clave  
al pie.

- 1)DIARREAS (deposiciones sanguinolentas, parasites):.....
- 2)ESCALOFRIOS Y FIEBRES: .....
- 3)LESIONES ACCIDENTALES: .....
- 4)PERDIDA DE PESO INEXPLICABLE: 10 o mas libras desde Julio 1., si es mayor de 18 anos; cualquiera si es menor de 18.....
- 5)PERDIDA DE APETITO:.....
- 6)CANSANCIO INEXPLICABLE: al levantarse en las mananas. ....
- 7)SUPURACION DE UNO O AMBOS OIDOS: acuesa, sanguinolenta, purulenta.
- 8)HEMORRAGIAS NASALES: espontaneas, repetidas. ....
- 9)DOLORES DE CABEZA PERSISTENTES: ....
- 10)DOLOR DE MUELAS: .....
- 11)VISTA DEFECTUOSA: a distancia, de cerca; usa anteojos, infecciones. ....
- 12)ERUPCIONES (Ronchas) O PICAZON DE LA PIEL: escoriaciones. ....
- 13)DOLORES PERSISTENTES DEL PECHO: ....
- 14)TOS PERSISTENTE: excepto debida a resfrios. ....
- 15)ESCUPE SANGRES: o salivas sanguinolentas. ....
- 16)RESPIRACION DIFICIL (disnoa): causada por el menor esfuerzo mientras se esta acostando, durmiendo; asma....
- 17)DOLOR DE ESPALDAS: persistentes o repetidos. ....
- 18)DOLORES PERSISTENTES EN LAS ARTICULACIONES: rodillas,tobillos,hombros,cosdos;dedos. ....
- 19)ULCERAS DE LA PIERNA O PIE: ulcera o ulceras abiertas que no cicatrizan..
- 20)HINCHAZON DE LOS TOBILLOS: persistente o repetida. ....
- 21)VOMITOS REPETIDOS: .....
- 22)DOLORES REPETIDOS O PROLONGADOS EN CUALQUIER PARTE DEL ABDOMEN: vientre, estomago, distencion. ....

23) HERNIA (quebradura) O USO DE BRAGUERO: \_\_\_\_\_  
24) DESMAYOS, TARTAMUDEO, AGOTAMIENTO NER-  
VIOSO; ATAQUES, CONVULSIONES: ..... \_\_\_\_\_

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CLAVE: a) Ningun tratamiento  
b) Prescripciones medicas (Medico)  
c) Remedios caseros (yerbas, etc.,)  
e) Curandero

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WL/snao. \_\_\_\_\_

ESTUDIO DE ORGANIZACION SOCIAL EN EL PERU  
INSTRUCCIONES GENERALES

El Interrogador comenzara su trabajo anotando en las lineas propias de la parte superior de la Cedula, el numero del Cuestionario A); el nombre del Interrogador B); la Fecha C); el nombre del Departamento D); el nombre de la Provincia E); el nombre del Distrito F); el nombre del Centro Poblado G); el nombre del Barrio H); el nombre de la calle I); el numero de la casa J); y otros (indicaciones eventuales) (K).

Para los efectos del Estudio se conoce con la denominacion generica de Centro Poblado, a todo lugar o sitio del territorio peruano en el que varias o muchas personas, sean o no parientes, establezcan sus casas, chozas o campamentos permanentes y vivan habitualmente, en aquellas, dedicandose a una o varias actividades economicas o de otro orden, agricola, ganaderas, pesqueras, mineras, comerciales, industriales etc.

No es necesario que el lugar o sitio tenga escuelas, iglesias o autoridades propias, basta que tenga un nombre particular con el cual se le conozca corrientemente o diferencie de lugares o sitios parecidos y cercanos. No importa que las casas o viviendas de sus habitantes esten separadas por sus respectivos campos de cultivo, de labores o de explotacion, como en las zonas rurales (haciendas, fundos, minas etc.), lo esencial es que constituyan, no obstante ese hecho, un conjunto o grupo de habitantes o pobladores vinculados por intereses comunes de caracter economico-social.

Con este criterio no solamente se consideran Centros Poblados las ciudades, Pueblos, Caserios, Aldeas y Villas, sino igualmente las Haciendas, Fundos, Estancias, Anexos, Pagos, Tambos, Puestos, Parcialidades, Asientos Mineros, Concesiones, Pascanas, Marcas y las Comunidades o Aylllos, cuando estos, constituyen grupos de poblacion independiente de las Villas o Caserios, que llevan el mismo nombre (Comparese Censo Nacional y Ocupacion de 1940 - Republica del Peru - Vol. I, p. 556).

I GENERAL

1. - No necesita instruccion especial.
2. - " " " "
3. - Anotar las mejoras que el Interrogado desearia efectuar en su casa.
4. - En kilometros, cuadras o metros.
5. - Carretera, camino de herradura, trocha, rio etc.
6. - En kilometros, cuadras o metros.
7. - No necesita instruccion especial.
8. - Tomar nota de las principales dificultades educacionales que se presenten, (como falta de escuelas, colegios superiores, Escuelas de Artes y Oficios etc.)

9. - No necesita instruccion especial.
10. - " " " "
11. - Solamente para el Jefe de la familia.
12. - Anotar las engermedades que con mas frecuencia se presentan; a continuacion anotar las medicinas que emplean segun el orden de importancia.
13. - No necesita instruccion especial.
14. - En kilometros, cuadras o metros.
15. - Esta pregunta queda a criterio del Interrogador, quien deducira si debe hacer o no la pregunta segun la condicion de la familia.
16. - Anotar las principales dificultades de transporte que se presentan.
- 17.- No necesita instruccion especial.
18. - Se anotara los dias que el Jefe de la familia trabaje fuera de sus intereses y por el cual obtanga un salario.
19. - Esta pregunta se hara a algunas familias que tienen permanencia temporal o esten de paso en Tingo Maria, teniendo cuidado de hacer la pregunta en orden, Ademas explicar las razones.

## II HOGAR

El interrogador debera comenzar por escribir los datos del Jefe de la familia, en la primera columna de la Cedula, continuando despues el Interrogatorio a cada uno de los miembros restantes que se encuentren presentes, anotando los datos en las columnas siguientes, procurando ver a cada uno de ellos, a fin de apreciar personalmente la exactitude de las respuestas.

Si alguno o algunos de los familiares no estuvieran presentes y no fuera posible obtener sus repuestas directa o inmediatamente, podra el Interrogador anotar sus datos solicitandolos de la persona de la misma vivienda que considero capaz y responsable.

1. - NOMBRE. - No es indispensable escribir todos los nombres que pueda tener cada persona; basta anotar el que usa comunmente.
2. - APELLIDO. - Es suficiente escribir el apellide paterno. Para la mujer casada se anotara el apellido de su esposo.
3. - SEXO. - Es hombre o mujer? - No necesita instruccion especial.
4. - EDAD. - Cuantos anos cuplidos tiene?. Debe exigirse a los interrogados que den su edad exacta; si la ignoran, el Interrogador anotara la que a su juicio tengan. Si la persona estuviera ausente de la vivienda, se procurara establecer su edad por las referencias que puedan obtenerse. Como generalmente las personas procuraran redondear su edad, se recomienda insistir en comprobar la exactitud de la respuesta en los casos en que se declare una edad cuya cifra termine en 5 o en 0.
5. - ESTADO CIVIL. - Es soltero, casado, viudo, divorciado o conviviente? Se recomienda la mayor discrecion para preguntar si una persona que no es casada ha formado familia con una conviviente.

6. - POSICION EN EL HOGAR. - Que relacion, parentesco o dependencia tiene con el Jefe de la familia? - Para la persona cuyos datos figuran en la primera columna, se escribira al contestar esta pregunta: "Jefe". En las demas columnas se anotara segun los casos, el parentesco, relacion o dependencia que las respectivas personas tengan con el Jefe de la familia, por ejemplo: esposa, hijo, nieto, hermano, madre, etc., huseped, pensionista, elojado, sirviente, etc. Cuando en la segunda debe figurar la conviviente del Jefe de la Familia, se escribira "conviviente," repitiendose la respuesta dada a la pregunta anterior (Estado Civil).

7. - IDIOMA. - a) Cual es su lengua materna? - Por medio de esta pregunta se trata de averiguar el idioma o lengua que el Interrogado aprendio hablar primero, o sea, en la generalidad de los casos, la lengua o idioma de sus padres.

b) Que otros idiomas sabe hablar? - Esta pregunta se se refiere a las lenguas o idiomas que una persona sepa en forma que le permita sostener una conversacion.

Se recomienda al Interrogador poner espeicial cuidado en la contestacion a estas preguntas, pues se trata de averiguar la lengua o idiomas originarios del interrogado y la que aprendio hablar posteriormente. POR EJEMPLO: el caso de una persona cuyos padres hablan exclusivamente quechua habiendo aprendido despues castellano. Esta persona debera contestar a la pregunta a): "Quechua" ya la pregunta b): "Castellano."

8. - INSTRUCCION. - a) Sabe leer? No necesita instruccion especial.

b) Que grado de instruccion tiene? Para expresar el grado de instruccion, no es indispensable haber terminado los anos de dicho grado. Para los que hayan estudiado o esten estudiando solamente hasta el tercer ano de Primaria, se anotara "Elemental"; hasta cuarto o quinto de Primaria: "Primaria"; hasta cualquier ano de Media: "Media"; para los hayan seguido o sigan estudios universitarios, se pondra "Superior"; y para los que tengan titulo profesional expedido por el Estado o por algun instituto legalmente autorizado para otorgarlo, se anotara unicamente el titulo, a saber: "Medico", "Abogado", "Dentista", "Farmaceutico", "Comandante", "Teniente", etc.

9. - NACIONALIDAD. - a) Es peruano o de que otra nacionalidad? A las personas ya, al contestar esta pregunta hayan declarado ser peruanas y que por su aspecto y modo de hablar, le parezcan al Interrogador ser extranjeras, debera preguntarseles si son peruanas por nacionalizacion, escribiendo, en caso afirmativo, "nacionalizado."



b) En que lugar del Peru o del extranjero ha nacido? El Interrogador debe procurar que el interrogado contesta con toda precision el nombre del lugar en donde ha nacido. Como es posible que algunas personas lo ignoren, el interrogador les pedira otras referencias, tales como el nombre del distrito, provincia, departamento, del rio o de la ciudad mas cercana, etc.; y escribira cualquiera de estos datos a continuacion del nombre del pueblo. Por ejemplo: "Buena Vista-Rio Sama."

10. - OCUPACION. - a) Esta ocupado o desocupado en la actualidad? Desocupado es el hombre o mujer que en alguna ocasion ha tenido trabajo remunerado, pero que, en la actualidad, pudiendo trabajar, no tiene ninguna ocupacion pagada.

b) Especificar cuanto tiempo se encuentra desempenando su ultimo trabajo.

c) Indicar cuanto tiempo se encuentra sin ocupacion remunerada.

d) Como se llama el trabajo, oficio, profesion u ocupacion que tiene? Toda persona tiene un nombre por el trabajo que desempeña. Por ejemplo: Los que trabajan en Oficinas, se denominan: Contador, mecanografo, amanuense, etc. Los que trabajan en Fabricas, pueden ser: maquinista, electricista, tejedor, tallador, etc. El que maneja automoviles o camiones, se llama chofer. Los que trabajan en construcciones, pueden ser; albanil, sobrestante, adobero, etc. Los que trabajan en el Comercio o la Industria: vendedor, (indicando el ramo) carpintero, curtidor, sombrerero, zapatero, etc. Los que trabajan en la Agricultura: yanacona, companero, aparcero, partidario, mayordomo, caporal, jornalero, peon, sembrador, cosechero, apanador, pastor, posebrero, ordenador, tractorista, etc. Los que se dedican a la pesca: pescadores, etc.

Los ejemplos anotados parecen suficientes; y; en consecuencia, el Interrogador debe exigir que al contestar esta pregunta de la Ocupacion, todos los empadronados respondan concretamente el nombre que tienen por el trabajo que realizan, aunque sea distinto de los ejemplos, de acuerdo con las costumbres del lugar.

Es indispensable evitar respuestas vagas, como agricultor, comerciante, empleado, obrero. En estos casos debe exigirse que el interrogado defina o explique su labor. Por ejemplo: jornalero, vendedor, mecanografo, albanil, respectivamente.

e) A que se dedica al negocio, industria, hacienda, mina, fabrica, empresa, taller, oficina publica o privada, casa o centro de trabajo en que esta ocupado? Esta pregunta tiene por objeto precisar con la mayor exactitud la ocupacion

declarada por los interrogados al contestar la pregunta anterior. Se trata con ella de averiguar la finalidad, interes, giro o dedicacion principal del Centro de trabajo en que cada persona esta ocupada. Debe contestarse con el mayor detalle posible, por ejemplo:

Negocio o industria: Lecheria, Curtiembre, Tejido de Sombreros, Carbonoria, Picanteria Pulperia, Verduleria, Cria de animales, etc.

Comercio: Banco; Compania de Seguros; Venta de abarrotes; Compraventa de .... (indicando el ramo).

Haciendas: Hacienda ganadera; Hacienda azucarera; Hacienda algodonera; Hacienda arrocera; Hacienda de Panllevar etc.

Minas: Mina de oro; Mina de cobre; Mina de sal; Yacimiento petrolifero, etc.

Fabricas: Fabrica de Tejidos; Fabrica de jabones; Desmotadora de algodón, etc.

Empresas: Empresa de ferrocarriles; Empresa de Luz, Empresa de Telefonos; Empresa de Transportes; etc.

Talleres: Taller de carpinteria; Taller de zapateria; Taller de mecanica; Taller de modas o costura, etc.

Oficinas Publicas: Ministerio de Fomento; Ministerio de Salud Publica; Prefectura; Sub-Refectura; Concejo Municipal; Recaudadora, etc.

Oficinas Privadas: Oficina de Comisiones; Estudio de Abogado; Consultorio Medico o Dental, etc.

Casa o Centro de Trabajo: Colegio; Escuela; Cinema o Teatro; Imprenta, etc.

Los que se dedican a servicios domesticos seran anotados en la siguiente forma: "casa particular."

f) Es Dueño, socio, pariente-colaborador, empleado, obrero, campesino o trabaja por su cuenta? El Interrogador debiera considerar al interrogado unicamente en alguno de los siete grupos a que se refiere esta pregunta, sin detallar el nombre de su trabajo ya que ha sido anotado al responder la pregunta 10

Dueño es el propietario de algun terreno, tienda, negocio, taller etc. que trabaja personalmente su propiedad.

Trabaja por su cuenta el que no es propietario y ejerce alguna industria, comercio o trabajo sin depender de nadie.

Pariente colaborador es la persona pariente del Jefe de la Familia que ayuda a este en su trabajo, oficio u ocupacion, sin recibir remuneracion por dicha ayuda, sino aprovechando en comun con la familia los beneficios del trabajo.

11. - SIN OCUPACION REMUNERADA: - Esta al cuidado de su hogar, es estudiante, es rentista, recibe pension de alguna entidad publica o privada, o vive sostenido por otra persona? En esta pregunta deben agruparse las personas que no viven de su trabajo. Cuando por ejemplo, un estudiante, desempeña al mismo tiempo, alguna ocupacion remunerada, no debe figurar aqui como estudiante, sino en la pregunta 10, en las lineas que le correspondan segun su ocupacion.

El Interrogador debe anotar las respuestas en la siguiente forma: "Su casa": Para las personas que estan al cuidado de su hogar, que son generalmente, las esposas o las hijas, que ni en su casa ni en la calle tienen trabajo pagado, y se dedican solamente a quebacoques domesticos. No confundir con los sirvientes. "Estudiante" Para las personas que unicamente estan estudiando.

"Rentista": Para las personas que solamente viven de sus rentas.

"Pensionista": Para los que como consecuencia de un trabajo que desempeñaron ellos mismos o terceras personas (Montepio), reciben pension del Estado o del Centro de trabajo en que estuvieron ocupados, sin ejercer ninguna otra actividad remunerada.

"Sostenida": Para los que, por cualquier causa, no trabajan y viven sostenidos por otras personas.

12. - No necesita instruccion especial.

### III VIVIENDA

1. - Especificar de manera especial, los materiales con los cuales esta construida la casa-habitacion.
2. - No necesita instruccion especial.
3. - " " " "
4. - " " " "
5. - " " " "
6. - Se anotara la cantidad de los enseres que posea de cada uno de los especificados en la Cedula o algunos otros de los que no esten incluidos. Se dejara en blanco las rayas de los enseres que no posea.
7. - No necesita instruccion especial.

### IV PRESUPUESTO FAMILIAR

Siendo estas las preguntas que con mayor dificultad se

obtendran sus respuestas, se recomienda al Interrogador sacar los datos diarios, semanales, mensuales o anuales, por esta razon hemos insertados las columnas correspondiente en la Cedula. Se tendra cuidado que al finalizar los datos obtenidos sean anuales.

#### V AGRICULTURA

1. - Nombre o denominacion de la hacienda, fundo o chacra.
2. - Indicar la relacion que exista entre el dirigente con respecto a la hacienda, fundo o chacra.
3. - No necesita instruccion especial.
4. - " " " "
5. - " " " "
6. - Indicar con exactitud la procedencia, la cantidad, el porcentaje u obligaciones a que se ha comprometido a pagar por el prestamo y, el objeto del prestamo solicitado.
7. - No necesita instruccion especial.
8. - " " " "
9. - Indicar el tiempo transcurrido desde el primer dia que llego a vivir en la finca.
10. - No necesita instruccion especial.
11. - Indicar la superficie que tiene cada parcela sembrada y la distancia que hay a la casa (en kilometros, cuabras o metros).
12. - Indicar cada uno de los cultivos, la superficie que abarca, la cantidad que estima que debe rendir o la que ha rendido en caso de haber sido ya cosechada.
13. - Anotar la cantidad de cada una de las especies de animales que tenga.
14. - No necesita instruccion especial.
15. - " " " "
16. - " " " "
17. - " " " "

#### VI FACTORES SOCIALES

1. - Indicar el nombre, parentesco y la distancia a la casa.
2. - " " " " " " " " " "
3. - " " " " " " " " " "
4. - Para algunas indicaciones eventuales que se quiera hacer.

#### VII SALUD

Preguntar cuantos miembros de la familia estan enfermos, los sintomas que presentan, anotando el nombre de la persona enferma en la linea correspondiente al sintoma indicado, al mismo tiempo se pondra la letra que especifica en la clave de los tramientos, medicinas, prescripciones medicas o remedios caseros con los que se curan.

Tingo Maria, Febrero de 1947

WL/snao.

Tingo Maria

Nosotros llevamos acabo un estudio en Tingo Maria para investigar que condiciones de vida podrian esperar colonos Europeas encaso de efectuanse una colonizacion auspiciada por las Naciones Unidas. Queremos conocer los problemas de vida en la Montana Peruana. Tenemos que comprender el problema del transporte, el problema de ganarse la vida, el problema de la educacion, el problema de la salud, y el problema de agricultura en general.

Los expertos en estadistica de la oficiua de Censo tambien tienen mucho interes en conocer el aumento de la poblacion de Tingo Maria desde el Censo mil novecientos cuarenta, por que el crecimiento de la poblacion es uno de los mejores indicadores de la prosperidad de una ciudad. Sabemos que Tingo Maria es una de las ciudades del Peru con mayor crecimiento de poblacion, debido a los es fuerzas de la colonizacion del Gobierno y sus pobladores.

Actualmente se encuentran en Europa ochocientos mil personas deseosos de convertirse en colonizadores, de los cuales una gran parte podria invertir sus esfuerzos, su experiencia, y su capital en la America del Sur, si se puede planificar cientificaments y tecnicamente tal colonizacion.

Casi el ochenta porceinto de ellos son Catolicos y deseosos de adaptarse ala ambiente de la America Latina, o especialmente del Peru.

No existe hasta esta momento ninguna seguridad de poder efectuarse tal colonizacion en el Peru, pero debemos concentrar nuestros mejores esfuerzos, inspirados en el deseo de ver un progreso para el Peru e insperados, en sentimientos de solidaridad y fraternidad humana para elaborar planes de la colonizacion y encontrar lugares donde los colonizadores pueden vivir, trabajar y educar sus familias en un ambiente de Libertad y decencia.

Este es mi mision en el Peru y con este fin le colaborado con el Dr. Erickson, el Ing. Garibaldi, y el Sr. Noe Alva, para llevar acabo un estudio sobre la cuenca del Rio Huallaga y poder elaborar un informe para el Comite de las Naciones Unidas.

Tengo plana seguridad que tendremos orgullo de nuestra labor, realizada con nuestros modestos esfuerzos, labor que constituye una contribucion hacia la colucion del problema mundial de migracion y que a la vez contribuye a estudiar la realidad del Peru y que puede ayudar a llevar addante un mayor progreso de esta Nacion tan grande.

## Annex 16

### Tingo Maria

#### Translation

The study of Tingo Maria is being made so that we can show to the United Nations what kind of life European colonists might reasonably expect if they were settled in the Montana of Peru. In other words we want to know what the problems of life in the Montana are. We must try to understand the problem of transportation, the problem of making a living, the problem of education, the problem of health, the problem of farming.

The expert statisticians in the Census Bureau are very interested in knowing how much Tingo Maria has increased in population since the Census of 1940 was taken because that is one of the best indicators of how prosperous a town is. We know Tingo Maria has been one of the fastest growing towns in Peru because of the successful government colonization efforts.

There are right now in Europe 800,000 potential colonists who might come to South America if the proper plans for their settlement are made. Almost 80 percent of them are members of the Catholic faith and should fit well the requirements of Peru.

We do not know yet whether any colonists will ever come to Peru but we must try to find some place for them where they can raise their families in freedom and decency. That is why I am in Peru and that is why I have been working with Ingeniero Garibaldi, Sr. Noe Alva and Dr. Erickson to find out all I can about the area of the Huallaga River so that I can report back to the United Nations Committee with real facts.

I think we are engaged on a little job here that we can all look back on some months hence and feel a sense of pride because we will have contributed something to the settlement of a world problem of stranded people and at the same time helped to build the great country of Peru.

Annex 17

Tingo Maria, 4 de marzo de 1947

Oficio # 99-CC

Sr. Wilson Longmore

Refiriendome a nuestra conversacion de la manana de hoy me es grato comunicarle que he hecho fijar en los lugares mas visibles de esta poblacion el siguiente aviso:

" AL PUBLICO DE TINGO MARIA

Habiendo sido comisionado el Sr. Wilson Longmore por las Naciones Unidas y nuestro Gobierno para hacer un estudio de las posibilidades de un nuevo progreso y bienestar en esta region, recomiendo a todos atender a el mismo y sus asistentes, don Noe Alva y otros, con informaciones y facilidades de todo orden para el cumplimiento de su mision, que nos interesa a todos los patriotas anhelantes de un Peru grande.

Tingo Maria, 4 de marzo de 1947

Sven Ericsson  
Jefe-Director del Centro  
de Colonizacion Oficial de  
Tingo Maria. "

Con protestas de mi mas distinguida consideracion.

Dios guarde a Ud.

(Sgd)

Sven Ericsson  
Jefe-Director

---

Envelop addressed to Sr. Wilson Longmore  
E. S. M.

from: Ministerio de Agricultura  
Direccion de Asuntos Orientales  
Colonizacion y Terrenos de Oriente

ESTACION EXPERIMENTAL  
AGRICOLA DE TINGO MARIA

Ministerio de Agricultura  
Direccion de Colonizacion  
y Asuntos Orientales

Tingo Maria, 15 de Marzo de 1947

Memo. 4FF-1-EEA

Del: Director de la Estacion Experimental Agricola de  
Tingo Maria

Al : Auxiliar de Estadistica del Dpto, de Ext. y Educ.

Asunto: Autorizacion para que colabore con el Dr. Wilson  
Longmore en el trabajo de Organizacion Social que se  
esta llevando a cabo en Tingo Maria

Por el presente Memo., queda Ud. autorizado para trabajar  
al lado del Dr. Wilson Longmore, quien, esta llevando a cabo un  
estudio de Organizacion Social en Tingo Maria y que posterior-  
mente se hara en Juanjuy. De dicho trabajo ya tiene conocimiento  
porque Ud. ha venido ayudandolo desde un principio.

(Sgd) Arthur T. Semple.  
Director

cc: Dr. W. Longmore  
Dpt. de Ing. y Serv. Genls.



Annex 19

MINISTERIO DE AGRICULTURA

Estacion Experimental Agricola de Tingo Maria - Oficina Lima

Telegrama No. 660-12-DCAO

Lima, Marzo, 20, 1947

Del: Director de Colonizacion y Asuntos Orientales

A. Crandall -- Tingomaria

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Esta Direccion considera mui importante estudios esta realizando en esa region doctor Wilson Longmore razon por la cual aprueba facilidades personal se le han venido otorgando i apreciara su continuidad bajo control Estacion atravez su Departamento Extension.

RECAVARREN  
Diroriente

(Stamped as below)

Direccion de Colonizacion y Asuntos Orientales

Pedro Recavarren Cisneros  
Director

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