

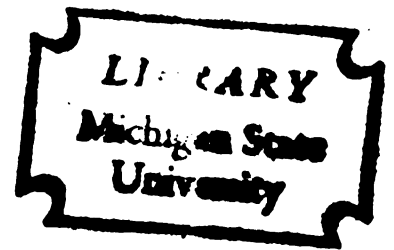
THE HAMMOCK INDUSTRY OF YUCATAN, MEXICO:
A STUDY IN ECONOMIC ANTHROPOLOGY

Dissertation for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY

ALICE LITTLEFIELD

1976



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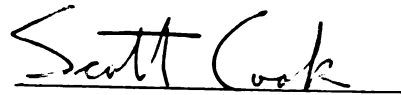
THE HAMMOCK INDUSTRY OF YUCATAN, MEXICO:
A STUDY IN ECONOMIC ANTHROPOLOGY

presented by

ALICE LITTLEFIELD

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ABSTRACT

THE HAMMOCK INDUSTRY OF YUCATAN, MEXICO: A STUDY IN ECONOMIC ANTHROPOLOGY

By

Alice Littlefield

This study analyzes the relations of production and distribution in the Yucatecan hammock industry in the context of the ongoing process of capitalist economic development and class differentiation in Yucatan. Hammock-weaving provides an example of artisan activity organized in terms of the putting-out system, a system which has historical parallels in eighteenth and nineteenth century Europe, and one which is becoming more common in Mexican handicrafts under the impact of tourism. The emergence of this system and other forms of merchant control is viewed as a process intimately linked with the proletarianization of the rural population and the characteristics of capitalist development in the region.

The study is based on fieldwork in Yucatan carried out from August of 1971 through July of 1972. The first four months were spent interviewing hammock merchants and dealers in Mérida and making visits to various communities specializing in the weaving of hammocks. The last eight months were devoted to an intensive study of hammock production in Cacalchén, a community of 4,256 inhabitants located in the heart of the henequen-growing region.

Chapter 1 provides a general discussion of the characteristics of artisan production in Mesoamerica and their relationships to economic developments of the nineteenth and twentieth centuries. Variations in the organization of craft production are viewed as determined by the extent of land concentration, the relations of production existing in agriculture, the availability of labor, the spread of mechanization, and the nature of the market.

Chapter 2 summarizes both the historical and the contemporary patterns of craft specialization and production in Yucatan. Although some writers have described craft specialization as relatively insignificant in the region, it is clear that it has become increasingly important in recent years. Further, there are significant continuities with the past, particularly in regard to the impact of long-distance trade.

Chapter 3 attempts to identify and analyze the factors determining the local distribution of craft activities in contemporary Yucatan, with special attention to demographic, agricultural, and economic variables. Craft specialization emerges as an activity strongly associated with low income. The analysis suggests that characteristics of the natural environment may be less important in explaining local variation in craft activity than historically based systems of land tenure, population concentration, and distribution of wealth.

Chapter 4 describes the relations of production in the hammock industry which link merchants, middlemen, agents, and weavers; and analyzes the distribution of returns among these participants. The

concept of the rate of surplus-value is applied to the problem of measuring the degree of exploitation of the direct producers by the middlemen and merchants. The relations of production and distribution in the hammock industry are a part of, and are also influenced by, the structures of ethnic and class stratification existing in the region.

Chapter 5 provides a general description of the community of Cacalchén, analyzing the characteristics of households involved in hammock-weaving and the factors affecting levels of productivity. The contributions of hammock-weaving to the household economy and the standards of living of the weavers are examined through the detailed analysis of the income and expenditures of five households.

The concluding chapter places the hammock industry in the context of the process of capitalist economic development and class differentiation in Yucatan, and attempts to draw some comparisons and contrasts with systems of craft production elsewhere in Mexico and with systems which existed during the early industrial period in Europe. It is concluded that although bearing similarities to the European situation, the developmental potential of industries organized in this way in Yucatan is limited by the nature of dependent capitalism and of the regional class structure.

THE HAMMOCK INDUSTRY OF YUCATAN, MEXICO:
A STUDY IN ECONOMIC ANTHROPOLOGY

By

Alice Littlefield

A DISSERTATION

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1976

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CHAPTER 1

INTRODUCTION

A perusal of the ethnographic literature makes clear that there is a characteristic pattern of craft production common to many parts of Mesoamerica. The major features of this pattern, appearing repeatedly in monographs on the area, consist in: (1) community specialization in particular crafts, (2) production by domestic units, (3) the combination of craft activity with (and often its accommodation to) subsistence agriculture, and (4) the distribution of craft products through local or regional systems of periodic markets (Foster, 1948; Tax, 1952; Nash, 1966). The antiquity of handicraft specialization in the region is also clear, revealed in the debris left by pre-Columbian workmen, the evidence of ancient trade networks pieced together by archaeologists, and the descriptions of conquistadores and missionaries of the early colonial period. To be sure, some of the ancient crafts have largely disappeared, such as the making of stone tools and weaponry, while others have incorporated European elements. Nevertheless, it is probably safe to say that the four major features of the contemporary system, as outlined above, have existed since pre-Conquest times in at least some parts of the region.

Perhaps for this reason there has been a tendency in the anthropological literature to treat craft production in Mesoamerica

as a relatively static aspect of Indian tradition. This tendency reflects also the prevalence of synchronic and functional approaches in the discipline as a whole. Some of the older studies in the diffusionist tradition have been concerned with identifying the origins of particular traits as either European or indigenous, and more recently applied anthropologists have adopted diffusionist assumptions about how modernization will take place. But these approaches, although they purport to be concerned with change, shed little light on our understanding of the development or decline of craft specialization as an economic phenomenon, or the role it may play in different modes of production or different periods of economic evolution, including the ongoing transition from pre-capitalist to capitalist modes of production. Rather, artisan production and the market systems through which their products are distributed seem to be seen as features of a timeless tradition, lacking in dynamism, and, depending on one's sentiments, either as obstacles to modernization and development or quaint but doomed victims of the spread of industrial manufacturing (Nash, 1966, 1967; Aguirre Beltrán, 1967:152).

The development of theories of dependence, underdevelopment, and internal colonialism by such writers as Frank (1967, 1969), dos Santos (1970), Cardoso (1972, 1973), and others have called into question many of the views heretofore taken for granted in economic anthropology, and raised new questions about how particular peasant-artisan modes of production articulate with, and indeed to some extent are determined by, the needs of the dominant capitalist economy. At the same time, there has been a shift in economic anthropology

from an emphasis on exchange to a greater concern with production. Also, a new interest in evolutionary issues has been generated, particularly a concern with the transition from pre-capitalist to capitalist modes of production, and the forms that the relations of production and distribution assume in this process (Cook, 1971; Godelier, 1972; Meillasoux, 1972; Sahlins, 1972; Terray, 1972). In terms of these evolutionary issues, then, how are we to understand the role of artisan specialization in contemporary Mesoamerican society?

Regional Patterns of Craft Specialization

Handicraft production as a community specialization and its association with periodic market systems seem to be most characteristic of highland regions of Mesoamerica with dense populations. These systems have been described in some detail for the highlands of Guatemala (Tax, 1937; McBryde, 1947; Bunzel, 1959), the highlands of Chiapas (Nash, 1961; Laughlin, 1969), the Oaxaca Valley (Parsons, 1936; Malinowski and De la Fuente, 1957; Cook and Diskin, 1975), and the Tarascan region of Western Mexico (West, 1948; Foster, 1967). A similar pattern appears to exist to some extent in other parts of the highlands.

By contrast, a rather different picture emerges for the lowlands. There, community specialization is apparently uncommon and periodic markets are less important.

While the general outlines of this highland-lowland distinction are clear, the reasons for it have received little consideration

beyond some ideas put forth by Tax two decades ago in Heritage of Conquest (1952). There, drawing conclusions from his studies in Guatemala, he suggests that community specialization is accounted for largely by ecological diversity. In areas with considerable topographical variation, semi-tropical and temperate climates exist in close proximity. Nearby communities differ in the crops and animals which can be raised and in the natural resources available for transformation, creating a situation where each locality can produce those things for which it is best suited and obtain its other needs through trade. A related factor, Tax suggests, is population density: a community lacking sufficient cultivable land to support its population will be forced to rely on such supplementary or alternative economic activities as craft production, migratory labor, or intensive cash cropping.

Lowland areas, on the other hand, tend to be more homogeneous ecologically and less densely settled, with presumably greater self-sufficiency:

In homogeneous lowland regions each family and community tends to produce what it consumes, and the same thing; whereas in areas of variegated topography and altitude, there tend to be local differences in resources, hence production. Such considerations may generally explain differences between rural Indian economic life in Yucatan and in highland Guatemala (1952:44).

Within the highland regions, however, factors other than ecological ones are also assumed to play some role:

Handicraft arts are passed from parents to children, so that continuance is assured in each community while the endogamous tendencies of each tend to keep them exclusively in communities where they have started (46).

. . . Except for maize, there is no interest in being self-sufficient; Indians [of highland Guatemala] generally prefer occupations that will bring the most cash with which to buy what they please. The whole question of reasons-for-specialization may be tied up with this fact: nobody thinks it worthwhile to try to make a mat, basket, pot, or chair for his own use--thinking is done in terms of commerce (51).

In summary, then, Tax's argument is that ecological diversity and population density give rise to specialization, which in turn gives rise to trade and markets, the complex as a whole persisting through local tradition and habit of mind. Nash adopts the same position in his analysis of the economic systems of Mesoamerican Indians (1966, 1967).

The issue of how specialization and markets come into being is an evolutionary one and a definitive answer requires comparative historical analysis beyond the scope of this research, but certain problems are immediately suggested in attempting to assess Tax's theory. First, trade and specialization apparently existed in the Maya lowlands in prehistoric times, and may even have been the basis of political power (see the discussion in Chap. 2). Community specialization and markets are also found in Yucatan today. Second, although Tax argues that regional and community specialization give rise to trade and markets, there is some reason to believe that the reverse is closer to the truth: that is, that trade gives rise to specialization. Although Tax characterizes the highland markets as Indian markets, he later states "there can be no doubt that a large part of the market is a response of the Indians to Ladino customers" (1952:55). Indeed, the picture he presents on this point is worth quoting at some length:

It is not simply that some Indians are more ladinoized and have taken over Ladino ideas . . . but also that opportunities for entrepreneurs big and little are increased a hundred-fold by the presence of Ladinos. . . . Thus Panajacheleños wouldn't have a chance, nor a motive, to learn how to grow strawberries for the tables of Ladinos. Thus the Pedrana women, or the Maxeño women either, wouldn't have a sudden boom in cash receipts from tourist-bought textiles. . . . For that matter, without Ladinos the economy would be on much less a cash basis to start with. . . (56).

The most striking effect of a population of Ladinos on the economy of a community . . . is that the local market becomes more important. . . (57).

Clearly, economic specialization among Indians is conditioned by ethnic and class relations and cannot be adequately understood in terms of the somewhat mechanical ecological approach Tax suggests. But market relations are only a part of the picture. The historical process by which ladinos or mestizos have appropriated Indian lands, undermining the subsistence base of the indigenous communities and pushing them into wage-labor and production for the market, would have to be included in the explanatory framework (Pozas and Pozas, 1971; Stavenhagen, 1969). Tax himself hints at the importance of this process:

. . . where land is communally owned it cannot be sold to Ladinos or to Indians of other towns. San Marcos has apparently not lost an inch of its milpa land, and the people are relatively wealthy and grow all the maize they can without worrying about land; on the other hand Santa Catarina has lost a good portion of its land to Ladinos and a little to other Indians; and now the town has to subsist in large part on what it can earn from fishing and from working by the day (1952:61).

From a certain point of view, then, Indian communities can be seen as reserves of cheap labor providing workers for the plantations and producing goods desired by ladinos or tourists. To phrase their shortage of land in terms of "population density" is to mask the

inequalities in land distribution, both within and between ethnic groupings, which condition economic activities.

Of course, not all craft specialization in Mesoamerica is dependent on the non-Indian market. Some items (metates, certain kinds of pottery and textiles) may be consumed largely by Indians. Nor did craft specialization originate with the subjugation of Indians by Europeans; we know that it played an important role in the economy of the ancient civilizations. Nevertheless, if we are to understand the growth, persistence, and/or decline of craft specialization in contemporary times it cannot be as a natural outcome of ecological diversity, nor as an atavistic survival of Indian custom, but as an aspect of the economy having its particular place in the social division of labor brought into being by the expansion of Western capitalism. As subsistence cultivators are forced into production for the market by the diminution of landholdings they also become consumers in the market: production for use is laid aside as production for the market increases. The market relations among weavers, potters, and metateros are determined increasingly by the dominance of capitalist relations of production in the society as a whole.

From this point of view, the emergence of craft specialization in Yucatan, a region of supposed ecological homogeneity, is not a unique or inexplicable phenomenon, of a totally different order from that to be found in the highlands. Both regions have been subject to a greater or lesser extent to the general processes of capitalist development, including class differentiation into a

bourgeoisie based on private ownership of the means of production (including land), and a stratum of landless or semi-landless rural workers (these classes frequently forming along ethnic lines). Indeed, the degree to which the peasantry has been proletarianized has been obscured to some extent by the tendency for the major effects of class differentiation in the countryside to be felt outside the peasant community (Galeski, 1972:114-115). The landless laborers often leave the peasant village permanently, while the semi-landless seek temporary wage work elsewhere. Likewise, accumulation of wealth appears to be minimal because much of it leaves the community in the form of rent, interest, and merchant's profits. Thus the peasant village often appears to be a relatively classless society of independent small-holders engaged in subsistence agriculture and simple commodity production. But this fiction can be maintained only by ignoring the community's relationships with the larger society.

The process of capitalist development is uneven and locally varied, such that its effects on handicraft specialization appear to exhibit no consistent trend. Some craft activities are succumbing to competition from factory-made goods, others are growing and changing in response to increasing demand, others have sprung up seemingly overnight in response to the vast tourist market. In what follows I shall attempt to identify what I see to be some of the major factors accounting for the variations from region to region and craft to craft.

Sources of Variation

1. Extent of land concentration. As has been mentioned above, communities heavily engaged in handicraft production tend to be ones with an inadequate land base for subsistence agriculture. In addition, within the community those with the least land tend to rely most heavily on craft production, and vice versa (Diaz, 1966; Cook, 1970). Thus, where an adequate land base and communal ownership coexist one would expect to find little reliance on artisanship. In apparent contradiction, however, artisan production is also minimal where the process of land concentration has assumed an extreme form--that is, the large plantation or hacienda. Some of the reasons for this are discussed below under (2).

In Mexico, the liberal reforms of the nineteenth century discouraged communal ownership of land by Indian villages and instituted private property, leading to widespread alienation of Indian lands as mestizos and foreigners sought to invest in plantation agriculture. The Mexican Constitution of 1857 prohibited the holding of land by religious and civil groups. This measure was intended to break up the large holdings of the Church, thereby creating a class of small independent farmers. But the prohibition against land-holding by civil groups also resulted in the partition of village lands as private property among those who worked it. The new proprietors frequently lost their holdings to creditors, land speculators, and nearby haciendas. Meanwhile, the former Church lands also passed, largely undivided, into the hands of large landowners (Simpson, 1937; Whetten, 1948).

The concentration of land in the hands of a few reached its epitome under Porfirio Diaz. A law of 1883 authorized acquisition of unused public lands (terrenos baldíos) by individuals and land companies. Many of the lands declared empty or unused under this scheme belonged in reality to Indian villages which had never acquired legal title. New laws of 1889 and 1890 required the indigenous communities to divide their lands and establish titles of private ownership. In this situation the Indians became easy prey to the land speculators. By 1893 more than 10 million hectares of Indian land had passed into the hands of the large landowners under this legislation. Other schemes of the Diaz period provided for the leasing of large areas of land under timber and mining concessions, and for irrigation concessions which deprived villagers of their water rights (Gutelman, 1974:33-37). Womack (1970) provides a number of examples of the techniques, legal and extra-legal, used by sugar planters in Morelos to wrest lands away from the villages. By 1910, more than 92 percent of rural families in every state but one owned no rural property whatsoever (Simpson, 1937:32-33), while 88 million hectares, representing 44 percent of the cultivable land of Mexico and most of the lands of good quality, were held by 10,000 haciendas (Gutelman, 1974:40).

The effects of this process of land concentration on craft production would constitute an interesting problem for historical analysis. The relationship of increased textile production to the enclosure movement in England has been well-documented (Polanyi, 1957; Mantoux, 1961; Thompson, 1963; Landes, 1969), but there is

a significant difference between the two cases. Many of the large estates in England were turned over to sheep production, an activity requiring little labor. By contrast, the large estates in Meso-america in the late nineteenth century often raised labor-intensive crops such as sugar, coffee, or cotton. These plantations drew heavily on the Indian villages for permanent and seasonal labor, much of it involuntary. Apparently, the lands of the peasants were sometimes seized not because they were desired for cultivation, but in order to force the inhabitants to work on the owner's plantations elsewhere (Gutelman, 1974:43).

2. Organization of production in agriculture. The peasant who owns a small holding or has rights to communal lands presumably has a greater choice of economic activities than the landless agriculturalist. But even where land is concentrated in one or a few hands, production relations may still assume a variety of forms: land may be let out for money rent or on shares to peasant producers with little or no land of their own. Under this arrangement the domestic organization of production is preserved and the peasant may retain considerable independence (unless obligated by contract or debt, as frequently happens, to produce a given crop in a given quantity). Under these circumstances, he and his family may presumably utilize any labor not absorbed in the cultivation of his plots in supplementary economic activities, including craft production. This is less likely to be the case in those instances where the cultivator's right to till a subsistence plot depends on the provision of labor services to the landowner.

In the lowland regions of Mesoamerica large estates have tended to be monocrop plantations oriented toward an export market, in which the agricultural producer relates to the land solely as a wage-laborer. In some areas, workers are hired only seasonally, spending the remainder of the year cultivating subsistence plots in their own communities. Those estates with a permanent labor force have often exhibited many of the characteristics of total institutions, where labor is exploited to the maximum and every aspect of the workers' lives is controlled rigidly by the owner or overseer (Beckford, 1972). The worker has little or no opportunity to engage in production on his own, and in any case the absence of a middle stratum of prosperous peasants and petty bourgeoisie leaves the would-be artisan with a very restricted market for his products.

3. Availability of a supply of free labor. In the sense in which the term is usually used, a labor force is deemed "free" to the extent that it is not forced (through institutions of serfdom, slavery, etc.) and to the extent that it is separated from access to the means of production and has thus no way of relating to the productive process except through the sale of its labor-power.

Up until the present century the laws of both Guatemala and Mexico upheld systems of debt peonage which were the basis of plantation agriculture and which inhibited the free movement of labor (Gutelman, 1974). In Yucatan a de facto system of slavery existed in the henequen zone until 1915 (Rodriguez, 1966), and is still referred to by the rural population as la época de esclavitud (the time of slavery). Debt peonage also existed elsewhere in Mexico

in the pre-revolutionary period, particularly in the Central Plateau (McBride, 1923), the Valle Nacional of Oaxaca (Turner, 1969), and in the plantation regions of Morelos and Veracruz (Womack, 1970; Turner, 1969). In Guatemala in the latter part of the nineteenth century labor was secured through the system of mandamientos, whereby Indian villages would be ordered to provide a certain number of laborers to the plantations for 20- or 30-day periods. This was later replaced by a system of debt peonage wherein the obligation to work off accumulated debts was passed on from father to son. In 1934 debt peonage was replaced by an anti-vagrancy law requiring landless and semi-landless Indians to work a certain number of days on the plantations each year. This law was in effect until 1945 (Whetten, 1961).

In Europe the freeing of the peasantry from traditional ties of serfdom is seen as a key factor in allowing the growth of domestic industry and handicraft production which preceded the industrial revolution. In Russia, artisan activity apparently flourished in the aftermath of the abolition of serfdom in the 1860's (Lenin, 1964). Whether a comparable process followed the abolition of debt peonage in Mesoamerica is not clear from the ethnographic studies. In Mexico the combination of the freeing of labor with the redistribution of lands and the reinstitution of communal tenure after the Revolution of 1910 would seem to have encouraged agricultural rather than artisan activity. Even so, most ejidatarios received plots too small to provide for their subsistence and continued to depend on wage labor or other supplementary economic activities.

The effect of these historical changes on handicrafts remains to be investigated. In any case, for rural handicraft production to flourish labor must not only be freed from traditional obligations of serfdom or debt peonage, but must exist in forms and in quantities which cannot be absorbed either in capitalist agriculture or in urban industry. Several kinds of underemployed rural labor fit into this category, but women and juveniles are particularly likely to find themselves in this situation. Employment opportunities for these groups are few and the wages they can command are minimal. Craft production provides an alternative which, when performed at home, has the additional advantage of not conflicting with other domestic obligations such as child care. It is not surprising, then, that a large number of craft activities depend heavily or exclusively on the labor of women and children.

4. Spread of mechanization. In countries undergoing secondary development the latest in machine technology may exist side-by-side with ancient hand methods. The effects of this situation are contradictory, but the ruin of handicrafts is not always the automatic consequence. While some hand-made items have been replaced by cheap industrial manufactures, it is necessary to distinguish between the displacement of individual artisans and small workshops by cheap manufactured goods brought in from outside, and the adoption of aspects of modern technology by the artisans themselves. The use of electrically powered carpentry tools in Paracho has been described by Kaplan (1960). In weaving and pottery, chemical dyes or glazes are now purchased rather than spending precious time making natural ones.

Much "hand" embroidery is actually produced through skillful use of the treadle sewing machine. Transport by truck and bus, the availability of corn mills, and electric lighting have considerably increased the number of hours which can be devoted to craft production. (The increase in output is not necessarily, of course, accompanied by an increase in the real income of the artisans.)

Obviously, there are limits to how far the artisan's work can become mechanized before it loses its handicraft character altogether. In any case, the persistence of hand methods will depend to a considerable extent on the cheapness of labor. Where cheap labor is in abundance hand-made goods can often be produced more cheaply than machine-made ones.

5. Changing nature of the market. Craft activity obviously cannot flourish unless there is a demand for its products, and in Mesoamerica production has been enormously stimulated and its internal characteristics greatly altered by the growth of the tourist market. It is probably impossible to estimate the proportion of craft production which depends on tourism, but three general situations can be delineated in terms of the nature of the market:

a. Production of items consumed primarily by the peasant population (certain kinds of pottery, metates, baskets, net bags, hand-woven cloth for Indian costumes). This type has already declined considerably in some areas as the consumption of mass-produced goods increases. In those areas where it persists, it tends to take the form of simple commodity production by household units which also cultivate the land, and marketing involves few

middlemen. The apparent lack of dynamism in these industries reflects the poverty of the peasant population whose restricted incomes limit their consumption. As some of these items become drawn into the tourist trade changes in the organization of production and marketing follow.

b. Production of items for an expanding middle stratum of petty bourgeoisie, prosperous peasants, and better-paid workers. Furniture-making in Paracho and shoe-making in Yucatan (Thompson, 1970) seem to fit into this category. Compared with type (a) above, industries of this sort seem to have greater potential for evolving into true capitalist enterprises employing mechanization, wage labor, and a more complex division of labor within the production process. Marketing increasingly involves the operations of middlemen and much of the output is produced under contract for dealers. Under the impact of competition these enterprises tend to increase in size and diminish in number, losing their handicraft character and taking on that of industrial manufacturing.

c. Production of items for tourists and for export to foreign dealers. A number of traditional Indian crafts have been absorbed into this market, changing considerably the organization of production and marketing. While similar in some ways to type (b), there are significant differences. First, the tourist market is generally more lucrative for dealers and tends to attract considerable amounts of merchant capital. Second, the large scale of the tourist and foreign markets tends to encourage the concentration of marketing in a few hands, since the larger dealers can more easily

maintain large inventories, handle the problems involved in acquiring export licenses, deal with customers in a foreign language, etc. Third, in spite of the large amount of capital attracted and the size of the profits, the growth of mechanization is inhibited by the fact that in many cases it is precisely the hand-made nature of the article which attracts the tourist buyers. This means that the organization of production into workshops and factories is also inhibited in many cases. Instead, dealers tend to assure a steady supply by contracting with producers, often extending credit or provisioning materials through a putting-out system. Sub-contractors are used, who may in turn employ their own agents. Although continuing to work in the home, the artisan loses his or her independence and becomes a piece-rate worker dependent on the merchant.

In any given industry elements of all three types outlined above may coexist and overlap. To date, the ethnographic literature has tended to concentrate on type (a) situations to the exclusion of the other two. While Mexico may be unusual in terms of the volume of tourism, other countries also produce craft goods on a large scale for the U.S. market (e.g., India, the Phillipines). The organization of production and marketing in handicraft industries reflects the emergence of this international system of stratification and the dependent position of these countries within that system.

In summary, the evolution of artisan production in Mesoamerica has been conditioned by the extent of land concentration, the organization of production in agriculture, the growth of free labor, the

expansion of mechanization, and the nature of the market. All of these interact among themselves and, in turn, reflect the nature and rate of capitalist development in the larger society. The unevenness of this development and its particular local characteristics result in regional variation in the organization of production and marketing in handicraft industries. The differences between the highlands and lowlands in this regard reflect in part the historical process whereby penetration of the lowlands by capitalist agriculture, attendant upon improvements in land and marine transport and the expansion of U.S. and European capital, tended to take the form of monocrop plantation agriculture producing commodities for export and depending on quasi-slave labor.

In terms of the explanatory framework adopted here, craft activity in Mesoamerica is seen not merely as a survival of pre-capitalist economic forms, but as an activity whose persistence and development in contemporary times are to be explained in terms of the general processes of class differentiation and division of labor under capitalist development, and the subsumption of pre-capitalist modes of production by capitalist ones. In this sense the economic evolution of craft production in Mesoamerica has its parallel in the early industrial period in Europe. Unlike Europe, however, Mesoamerica holds a position of dependence in a world system dominated by already developed industrialized countries. As a result, only a few of its industries have experienced an indigenous "industrial revolution" exhibiting the various stages from simple commodity

production by peasant-artisans to the mechanized capitalist enterprise with a complex division of labor.

Research Objectives

The aim of the research was to investigate the hammock industry of Yucatan in light of the scheme outlined above. The hammock industry was chosen for study for a number of reasons. First, it is one of the most widespread and economically important craft activities in Yucatan today, and one which has grown rapidly in response to increased tourist and domestic demand. Traditionally, hammocks were produced for use in each village using locally available henequen fiber. The spread of hammock weaving as an important local specialization and source of cash income is largely a recent phenomenon (within the past two decades) and relies not on raw materials of local origin but on manufactured cotton yarn.

Second, the hammock-weavers do not operate as independent artisans, purchasing materials and selling finished products in a competitive market-place, as is characteristic of peasant-artisans described for other parts of Mesoamerica. Rather, the bulk of the industry is organized as a putting-out system: women in rural villages receive yarn on consignment, weave hammocks at home, and receive piece-rate wages for their labor. This system does not represent a gradually growing economic dependence of formerly independent artisans on middlemen, as seems to be the case among weavers in Tlaxcala (Nutini, 1968) and potters in Jalisco (Diaz, 1966). Rather, the bulk of the weavers are women who have been recently recruited into the industry.

Putting-out systems have been described for many parts of Europe in the earliest stages of the industrial revolution, but little attention has been given them in the ethnography of Mesoamerica. It is my belief that such arrangements are becoming increasingly common in the region as the tourist and export markets expand.

Third, weavers involved in the hammock industry are found both in the peasant villages of the southern part of the state, oriented toward subsistence maize cultivation, and in the villages of the northwest, long dependent on the cultivation of henequen for export. The latter region is characterized by large plantations and large state-controlled collective farms; subsistence cultivation is relatively insignificant. The similarities in the organization of hammock production in these two regions suggest the importance of supra-local processes in stimulating the spread of the industry.

The overall aim of the study, then, is two-fold. First, it provides a detailed description of artisan production of a type (the putting-out system) and in a region (Yucatan) largely neglected in the literature on craft specialization in Mesoamerica. Second, it attempts to analyze the growth and characteristics of the hammock industry in the context of the ongoing process of capitalist economic development and class differentiation in Yucatan.

Methodology

My first acquaintance with hammock production in Yucatan came in the course of a brief visit to the community of Cacalchén in the summer of 1970, in connection with a field training program jointly

sponsored by Michigan State University and the Instituto Nacional de Antropología e Historia. In August of 1971 I returned to Yucatan to begin a year-long study of the hammock industry. The first four months were spent interviewing merchants and dealers in Mérida (the capital and largest city of the region) and making periodic visits to Cacalchén and other communities involved in hammock production in order to map out the network which linked city merchants, small-town dealers and agents, and the weavers. From January to August of 1972 I lived in Cacalchén and focused on an intensive study of hammock production in that community. Cacalchén was an attractive choice for a number of reasons. The community is one of the largest producers of hammocks in Yucatan, with participation in the industry growing rapidly in the past 20 years. Also, it is located in the heart of the henequen zone, thus providing an opportunity to observe artisan activity as an adjunct to monocrop plantation agriculture among a proletarianized rural population.

During my residence in Cacalchén, several research techniques were used. A survey of 105 households involved in hammock weaving provided information on the characteristics of weavers, rates of pay, levels of production, and the relationship of weaving to other economic activities. Several people working as agents, distributing hammock materials for merchants, were also interviewed. Participant-observation and informal interviewing provided general ethnographic information about the community.

Detailed household budgets were kept for five selected families over a two-month period. These budgets provided quantifiable

data for clarifying the importance of hammock weaving in the domestic economy, as well as data on consumption patterns. The frequent contact with these five families while gathering the budget data also helped to overcome some of the problems involved in establishing contacts and rapport in a class-stratified community of over 4,000 people.

While residing in Cacalchén I continued to conduct periodic interviews with hammock merchants in Mérida and middlemen in other towns in order to derive estimates of the quantity of production in different towns and to delineate local variations in the organization of the industry.

Plan of the Study

Chapter 2 provides an historical context for this study by summarizing past patterns of craft specialization and production organization in Yucatan. Patterns of artisan production in contemporary Yucatan are also described, pointing out certain continuities with the past. Chapter 3 attempts to identify and analyze the factors responsible for the local distribution of craft activities in contemporary Yucatan. In order to test the general propositions of previous writers about ecological stimuli giving rise to craft specialization, an effort was made to relate the participation in craft production of Yucatecan communities to demographic, agricultural, and economic variables.

Chapter 4 describes the relations of production in the hammock industry which link merchants, middlemen, agents, and weavers,

and analyzes the distribution of returns among these participants. Chapter 5 provides a general description of the community of Cacalchén and analyzes the data provided by the household survey and the intensive study of five families.

The concluding chapter places the hammock industry in the context of the process of capitalist economic development and class differentiation in Yucatan, and attempts to draw some comparisons and contrasts with systems of craft production elsewhere in Meso-america and with systems which existed during the early industrial period in Europe.

CHAPTER 2

ARTISAN PRODUCTION IN YUCATAN: HISTORICAL CONTINUITIES AND DISCONTINUITIES

Introduction

Yucatan has traditionally been regarded by ethnologists as a region of ecological and cultural homogeneity where craft specialization and markets have been relatively unimportant, particularly by contrast with the nearby Maya highlands. Redfield, for example, writes:

Among the Maya peoples of the highlands of Guatemala there is an important regional specialization of production and an extensive interchange of native products in large fixed markets, all this apparently ancient and independent, in large part, of factory manufacture and of international commerce. In Yucatan, on the other hand, local agricultural products are few; native markets as distinguished from stores are almost nonexistent; and most of the manufactured products bought and sold have been manufactured in Merida or in Mexico or the United States. Although it may have been different in pre-Hispanic times, the Maya villagers have little commercial heritage (1941:156).

Considerable evidence now exists to indicate that the situation was not always thus, and in recent years craft specialization has been assuming increasing importance in the peninsula.

The pages which follow present a brief history of economic organization and artisan activity in the lowland Maya region. This historical review focuses on the issues of specialization and trade, and attempts to assess their importance during the various epochs for which data are available. The nature and quality of the evidence

are highly variable, and the conclusions or interpretations offered here are necessarily rather tentative for much of the period covered. Nevertheless, a number of continuities and discontinuities stand out.

The latter part of the chapter describes craft production in contemporary Yucatan, and the forms of organization to be found in its various branches.

Classic Maya Civilization

Although the characteristics of Classic Maya civilization are still the subject of much debate, it is clear that trade played an important role in provisioning the Classic Maya sites with certain necessities locally unavailable, as well as providing a great variety of luxury goods (Rathje, 1971, 1973; Tourtellot and Sabloff, 1972). Data from numerous lowland Maya sites are now sufficient to allow a fairly detailed picture of the principal items traded and their probable points of origin. It is evident that well-organized trade networks linked the lowlands with the highlands of Mexico and Guatemala, as well as linking together various lowland regions.

A consensus has developed among scholars that this long-distance trade played an important role in Classic Maya civilization, some authors going so far as to argue that it constituted the primary basis of elite power (Rathje, 1971; Webb, 1973). Rathje's argument, briefly summarized, is that the core area of the Classic Maya civilization, the Petén, was dependent on the importation of certain items (salt, obsidian, hard-stone metates) essential to the subsistence economy, but that they lacked rare or unique resources to offer in

exchange for these necessities. Rathje argues that "the only scarce resources that lowland core areas have to market for strategic goods are the by-products of superior socio-political organization" (1971:278). Thus they developed craft specialties, exporting polychrome pottery, finely worked ornaments of jade and shell, and possibly such perishables as decorated textiles, carved wooden objects, featherwork, and so on. The export of esoteric knowledge (calendrics, glyphic writing, stone carving) is also assumed to have played its part.

The importance of craft specialties has also been emphasized by Thompson. In discussing trade between the lowlands and the highlands, he asserts:

. . . one is struck by the rarity of manufactured products among highland exports. These are largely confined to lava metates and manos, the working of which was far from intricate. On the other hand, lowland exports, although they included many raw materials, embraced many artistic and skillfully worked products such as worked jade and flint, polychrome pottery, and finely woven textiles. This confirms the general archaeological picture that in the arts the lowlanders were streets ahead of their highland cousins (Thompson, 1970:158).

This finding is particularly interesting in view of the commonly held assumption that the homogeneous environment of the lowlands discouraged specialization. It seems likely that the production of these craft exports was in the hands of full-time specialists (Sanders, 1973:348), but there is less agreement concerning the importance of craft specialization and organized trade on the local level, particularly in utilitarian goods for peasant use. Tourtellot and Sabloff are of the opinion that it was little developed:

We . . . postulate that in the uniform environment of the southern lowlands, there was neither local differences in

basic useful substances, nor local specialization in production. There is no evidence for economic specialization of communities, and little evidence for full-time specialization within them (1973:131).

Sanders points out that there is no evidence at Tikal of craft barrios of the sort discovered at Teotihuacan, and the one structure tentatively identified as a market is remarkably small for a community of Tikal's supposed size (1973:353). On the other hand, the items most likely to have been locally traded are perishable goods such as foodstuffs, forest products, and cotton textiles, and these have not been preserved for the archaeologist to discover. This is certainly the case for the important items of trade at the time of the Conquest. Also, most utilitarian ceramics have yet to be analyzed closely enough to shed light on the question of local specialization.

Scientific data are scant concerning micro-environmental variability in the lowlands and its significance for agricultural potentials, but there are indications that the assumption of environmental uniformity may require considerable modification. Certainly the lowlands do lack the dramatic topographical variation of the highlands. There are, nevertheless, significant variations in access to marine and riverine resources, soil types, amount of rainfall, and vegetation. Stevens indicates significant variability in soils in terms of texture, laterization, leaching, drainage, acidity, thinness, stoniness, erosiveness, and mineral content (1964:299-305). Shimkin points out that annual precipitation varies from 114 inches in Puerto Barrios, Guatemala, to 35 inches at Campeche on the Gulf of Mexico (1973:275-76). Local variations in the duration of the dry season also must have affected agricultural possibilities.

In a recent re-evaluation of the cultural ecology of the Lowland Maya, Sanders admits that the area "is not quite as homogeneous an environment as some writers, including the present author, had considered" (1973:335-336), and goes on to suggest that under conditions of increasing population density, "minor ecological variations become important and patterns of local specialization are encouraged, even in an area of relatively homogeneous environment" (350). In response to increasing numbers, centers such as Tikal may have shifted to shorter fallowing periods and placed greater emphasis on craft production, thus becoming dependent on trade for the acquisition of forest products and supplemental foodstuffs from outlying communities, as well as dried or salted fish from the coast. Extensive remains of terraces and raised fields in the Rio Bec region are testimony to the development of intensive cultivation techniques in the Late Classic (Turner, 1974). Significantly, Sanders argues that the extent of craft specialization would be affected by the emergence of social class distinctions as well as by demographic pressures.

The evidence would seem to indicate that there were full-time specialists producing craft goods, but it is possible that these individuals were not numerous. If, in fact, craft specialization was limited to items of elite consumption intended for long-distance trade, while utilitarian objects were produced by each community for its own use, then it seems likely that craftsmen were attached as dependents to members of the elite rather than working as independent commodity producers selling their products or their labor power in

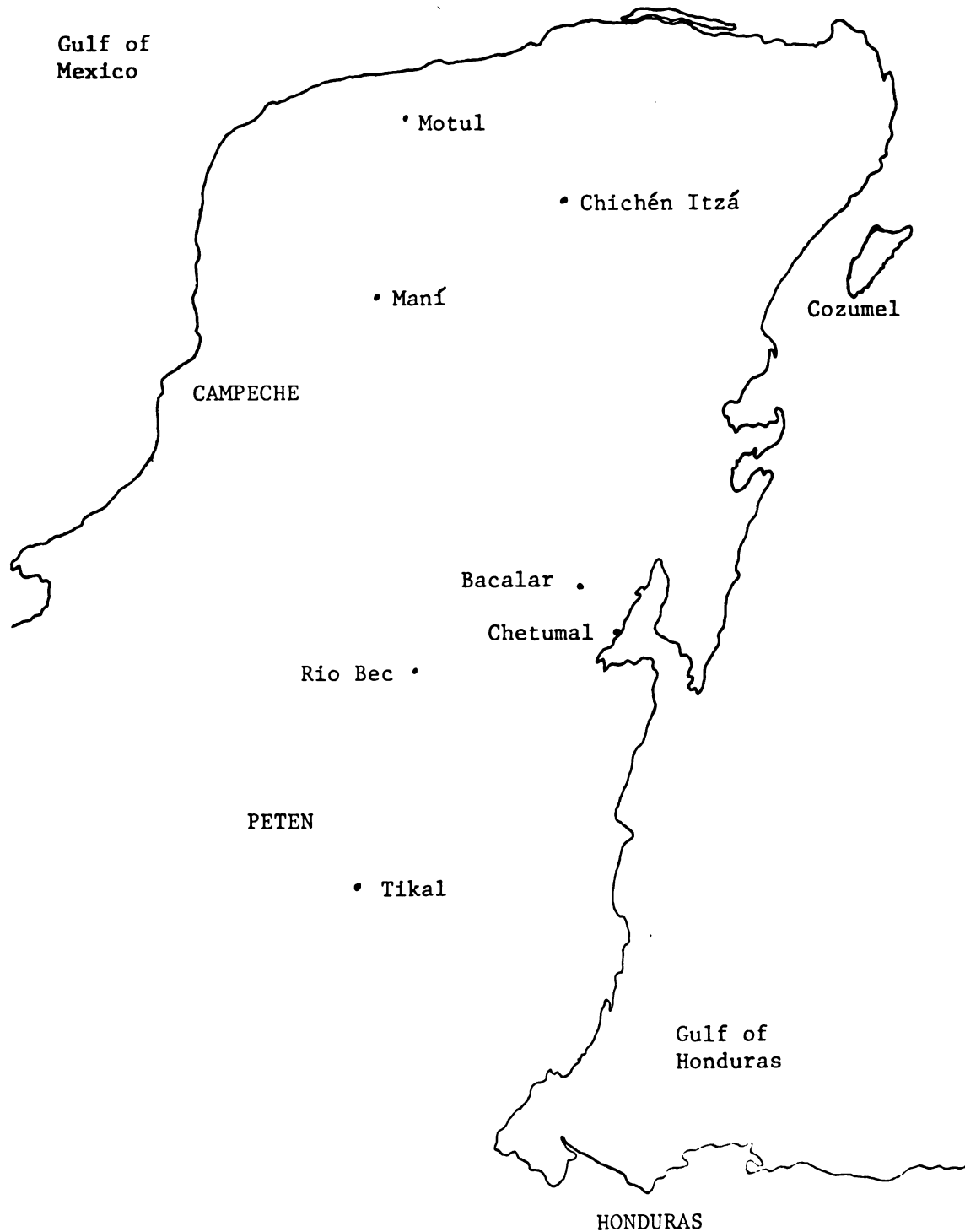


Figure 1.--Mayan sites of the Classic and Post-Classic periods.

accord with market principles. In the absence of evidence for market sites, most writers have assumed a redistributive system controlled by the elites and perhaps organized along lineage lines (Culbert, 1973). The possibility of some local market exchange, however, cannot be excluded on the basis of presently available data.

The Postclassic

After the decline of Classic Maya centers in the southern lowlands about the tenth century A.D., trade routes and centers shifted to the northern lowlands, to the Tabasco coast and northern Yucatan. Rathje and Sabloff hypothesize that during the early Postclassic, Toltecs or Mexicanized Maya invaded northern Yucatan and established a large trading empire based at Chichén Itzá (1973:227). The shift of population away from the land-locked southern lowlands to the northern coastal areas was apparently accompanied by a parallel shift from overland trade routes to water-borne trade. Certainly by the time of the Conquest the bulk of long-distance trade was transported in large sea-going canoes, and the Maya (although politically fragmented by this time) were in control of this trade from the Tabasco coast to Honduras. Important ports or points of transshipment included Xicalango on the Tabasco coast (the eastern terminal for Aztec-Culhua traders), Cozumel, and Bacalar (Thompson, 1970; Roys, 1957).

Cotton mantles, wax, honey, salt, flint knives, copal incense, and feathers were exported from Yucatan to Mexico and Honduras in exchange for cacao, stone beads, and objects of gold and copper.

Slaves (usually captured in warfare) were also an important commodity, taken to Honduras and Tabasco and exchanged for cacao. Throughout the region, cacao was in use as a form of money, exchangeable for most other items. Imports from the highlands included objects of obsidian and hard-stone metates (Thompson, 1970; Tozzer, 1941).

Locally, salt and fish from the coast were exchanged for game, fruit, and maize from inland communities. Patterns of local specialization are somewhat obscure, aside from the concentration of salt production and fishing along the north coast. Apiculture was especially important in Chetumal and Cozumel (Roys, 1957). Copal trees were grown in a few restricted localities, especially Sinsimato (exact location unknown, but possibly close to the present-day Colonia Yucatan) and Maní (Tozzer, 1941; Roys, 1957). Copal incense was an important trade item and was used for ceremonial purposes, as was black wax, which occurs only in the vicinity of copal trees (Tozzer, 1941:75, 197). The production of cacao and vanilla was concentrated in the southeastern part of the peninsula.

Though cotton was apparently widely grown, there is also mention of cotton vendors going from one town to another (Tozzer, 1941:62,200). Several of the early observers commented on the multi-colored mantles, huipiles, and loin cloths produced in large quantities for trade. Motul appears to have been an especially important center for the production of textiles. Weaving was done by women, and probably was not a full-time specialty.

Many questions remain about the nature of the economic system. Landa described specialization, trade, and markets as follows:

The trades of the Indians were making pottery and carpentering. They earned a great deal by making idols out of clay and wood, with many fasts and observances. There were also surgeons, or to be more accurate, sorcerers, who cured with herbs and many superstitious rites. And so it was with all the other professions. The occupation to which they had the greatest inclination was trade, carrying salt and cloth and slaves to the lands of Ulua and Tabasco, exchanging all they had for cacao and stone beads, which were their money; and with this they were accustomed to buy slaves, or other beads, because they were fine and good, which their chiefs wore as jewels in their feasts; and they had others made of certain red shells for money, and as jewels to adorn their persons; and they carried it in purses of net, which they had, and at their markets they traded in everything which there was in that country. They gave credit, lent and paid courteously and without usury (Tozzer, 1941:94-96).

Although this excerpt suggests a monetized market economy in which large quantities of goods were produced as commodities for market exchange, it could also be interpreted as suggesting an economic system rather like that of the Trobriand Islanders. Roys (1957) finds evidence of important markets, but we do not know how large they were, how often they met, nor whether they specialized in long-distance trade only or included significant amounts of local trading. Within local communities, reciprocity was apparently important:

The Indians have the good habit of helping each other in all their labors. At the time of sowing those who do not have their own people to do their work, join together in groups of twenty, or more or less, and all together they do the work of all of them [each doing] his assigned share, and they do not leave it until everyone's is done. The lands today are common property, and so he who first occupies them becomes the possessor of them. . . . They also joined together for hunting in companies of fifty more or less, and they roast the flesh

of the deer on gridirons, so that it shall not be wasted, and when they reach the town, they make their presents to their lord and distribute the rest as among friends. And they do the same in their fishing (Tozzer, 1941:96-97).

Fish was salted, dried, or roasted and then taken inland "twenty or thirty leagues for sale" (190). Salt, on the other hand, was extracted by expeditions sent to the coast for this purpose:

Four or five months after the rains are over, when the lagoon is somewhat dry, the Indians formerly had the custom of going to get salt. . . . They had for this purpose their places marked out in the lagoon itself. . . . And they were accustomed not to make this harvest of salt without the permission of the lords who in those places had most right by proximity. And to these all those who came for salt made some small offering, whether of the salt itself or of things from their own lands. . . (189).

More distant communities acquired salt through trade.

Tribute to the lords was also paid in other forms, as indicated in the following passage:

. . . all the town did their sowing for the nobles; they also cultivated them [the fields] and harvested what was necessary for him and his household. And when there was hunting or fishing, or when it was time to get their salt, they always gave the lord his share, since these things they always did as a community (87).

It is not clear whether the lords were able in this manner to accumulate sufficient surpluses to use in external trade. Juan Bote, encomendero of Teabo, wrote in 1581 that the tribute formerly given to the Tutul Xius, the rulers of Mani,

was very little--chickens, maize, honey, and some cotton clothing, as each could or wished to give--more the ceremonial recognition of their lordship than tribute (Colección de Documentos Inéditos, 1898:287-88; my translation).

Tozzer finds evidence that slave labor was employed in the fishing industry (190), and it is possible that slave labor may have been used in other productive activities as well.

Existing evidence would seem to indicate that the economy of the Postclassic was one in which communal production and redistribution within each province or principality coexisted with a not unimportant market system. Whether peasants and craftsmen produced for the market on their own initiative or were controlled in this matter by members of the elite is not clear. Landa's observations suggest that market exchange included local trade as well as long-distance trade, and that tribute and slave labor were used by elites for commercial purposes as well as for their own subsistence and for internal redistribution. Merchants and nobles were often the same persons, and merchants were held in high esteem in Maya society.

The Colonial Period

On the whole, Yucatan presented the conquistadores with limited commercial opportunities compared with other parts of New Spain. It lacked precious metals, and the soil and climate were unsuitable for most European crops. After the conquest of the peninsula in 1542, encomiendas were granted and a system of tribute established. This institution allowed the Spaniards to tap the surplus production of the Indian communities, and the encomienda became the basis for Spanish commerce.

The most important tribute items were maize and cotton cloth. The first was a dietary staple for Indian and European alike. The second became a significant export item.

Until 1552, the tribute paid by each married couple consisted of 1.5 mantas of cotton cloth per year, plus chickens, pots, chile,

wax, maize, and other subsistence items. According to Roys, coastal communities were assessed tributes of salt and fish (1957).

The reassessment of 1552 cut these in half, each tributary unit of man and wife being required to pay 3 piernas of cotton cloth (1 manta = 4 piernas) and other items equalling a total value of 24 reals or 3 pesos (Hunt, 1974:298-99).

In 1581 the encomendero of Teabo, Juan Bote, wrote:

The tribute which the Indians of these provinces at present give to their encomenderos is, every four months, one length of cotton cloth of four varas in length and three cuartas in width and one pound of wax, and at the end of the year one-half fanega of maize, one native fowl, and other items--garlic, beans, honey, pots, griddles, ropes, water buckets--all of which are given to the said encomenderos as tribute. With the cloth and wax we Spaniards pay the debts which we owe to the merchants for the goods they have given us, and they send them to New Spain to sell and with the proceeds bring to these provinces the goods which we need. This is the trade which the Spaniards and natives have in these provinces at the present which sustains and maintains them (Colección:291-92; my translation).

In 1583 the tribute was further reduced to two piernas, and standardized to include only three items: cotton cloth, maize, and chickens. Total assessment per unit was 19 reals, including one for the municipal treasury. These new rates persisted throughout the seventeenth century (Hunt, 1974:198-99).

Since the tribute was paid in kind, its actual market value varied but was usually much higher than the official valuation. This was particularly the case with the mantas, which were the primary exportable item obtained through tribute.

Many encomenderos also acquired private cattle ranches, particularly in the areas immediately surrounding Mérida, Campeche,

and Valladolid. A limited number of native workers were employed on these ranches, but land was plentiful during this period and the activities of cattle ranches impinged little on the life of the Maya villages. The cattle produced meat for consumption by the Spaniards and hides for export to Cuba. Other exports during the Colonial period included salt, wax, sisal cordage, logwood (used for dyes), indigo, and cochineal.

Encomenderos were not the only exploiters of Indian labor. The priests also collected tribute from the Indians consisting of two piernas of cotton cloth from each woman and two pounds of wax from each man annually, plus an egg from each child every Thursday (Hunt, 1974:301). In addition, the encomendero was required to pay 10 percent of his gross in mantas for the support of the priest. The priest could also exact labor from the Indians for the church and his own building needs. In 1636, Tixkokob paid a priest approximately 1,400 pesos from a population of 3,140. The Franciscan monastery in Izamal had an income of 2,000 pesos, as did those of Tekax, Mani, and Ticul. Motul brought in 1,579 pesos. This compared with 3,000 to 4,000 pesos for the richest encomiendas (Hunt, 1974:311-12).

Another institution which tapped the surplus production of the Indian communities was the repartimiento. In Yucatan, this term referred to a form of trade in which the Indians were forced to buy Spanish goods in exchange for cotton cloth and corn. The repartimiento went hand in hand with military activity. The governor maintained military contingents in the settled areas along the frontier, presumably to defend them against the unpacified Indians. In actuality,

they served his economic aims. The capitanes a guerra forced barter of this type on the native population:

Under certain circumstances, they were given raw materials such as thread or cotton to be manufactured into cotton cloth to pay for the goods they received. The system could involve primarily the distribution and sale of goods, or only its cottage manufacturing aspects (the cutting of dyewoods or fine woods was substituted wherever they were obtainable), or both. In any case, the repartimiento was a form of forced tribute separate and distinct from the encomienda (Hunt, 1974:467).

These expeditions often had the dual purpose of exacting tribute and capturing runaways from the pacified areas. The tribute subsidized the paid military positions of the capitanes as well as preconditioning the frontier Indians for conquest and encomienda.

Such exactions were also made in thoroughly pacified areas already under encomienda. In 1690 the Indian cacique of Tixkokob was jailed on the charge that he had not been able to deliver in its entirety the tribute for that year; his accusers included the capitán a guerra as well as the administrator of the encomienda (Hunt, 1974: 479).

Commerce from pueblo to pueblo, carried on by Spaniards, mestizos, blacks, and pardos (mulattoes) began early in the colonial period. They bought up corn, cotton, wax, and mantas, the same articles sought by encomendero, priest, and military officer. The wills of these merchants often list the debts which were owed to them by the Indians. Whether obtained through tribute or trade, corn and mantas were sold in Mérida to the highest bidder, or shipped on to Veracruz or Havana.

Spanish merchants often employed slaves (frequently women) brought in from Cuba, as agents in the countryside. These individuals

also traded on their own accounts, and sometimes purchased their freedom.

Aside from the cattle estates, the basis of the Spanish colonial economy was the surplus agricultural and craft production extracted from the Indian village. Encomendero, estate owner, merchant, and military officer were often the same person or members of the same family; through these various means the Spaniards maintained a monopoly on commerce, both between villages and with other regions. The intensity of these various activities, including trade, tribute, and cattle raising, seems to have been closely related to proximity to Mérida, with lesser centers at Valladolid and Campeche.

Directly or indirectly Indian labor supported the entire structure.

They tilled the fields of their pueblos, from which the encomenderos obtained, as tribute, by far the major part of the food which maintained them and their families, they wove mantas and other textiles, tended the livestock on the haciendas, labored in the construction of public buildings, churches, monasteries, private dwellings, and roads. They worked on the haciendas and in such industries as the Spaniards established. They provided the means of transport where pack animals and wheeled vehicles could not pass. They also served the Spaniards in their homes as servants and provided the labor each Spanish municipality required for public service. They likewise served the churches and monasteries and gave the labor for the agricultural, pastoral and other activities the friars carried on (Chamberlain, 1966:336).

Especially during the early colonial period, when depopulation from European diseases was accompanied by heavy demands for labor to construct churches and monasteries, these burdens must have imposed severe hardships on the indigenous population. The frequent complaints about runaways are some evidence of this.

The labor of women was equally or more important than that of men, since women produced the valuable mantas. There were various attempts over the years to gather native women into workshops but these seem to have had little success. More commonly, merchants advanced goods to the Indians, the debts to be paid off in corn or mantas, or cotton was given out to be made up into cloth and returned to the merchant. As we shall see, this method of organizing production has its parallel in the hammock-weaving industry of the present day.

Little information is available about local specialization during this period. Cotton cultivation was apparently concentrated in the region surrounding Valladolid; merchants bought it up there and sold it in villages closer to Mérida. Some communities specialized in the cultivation of henequen, using the fiber to make rope, net bags, and hammocks (Strickon, 1965).

There are remarkable continuities in agricultural and craft production from the pre-Columbian period. Maya villagers continued to practice milpa agriculture using largely pre-Columbian slash-and-burn techniques. Though few European cultigens were adopted, chickens, pigs, and some cattle were raised by Indians for their own use. Cacao, presumably from Tabasco and Chetumal, continued to serve as money and was used for everyday purchases in Yucatan (Moreno Toscano, 1968).

The encomienda system lasted longer in Yucatan than elsewhere, but over time commerce and cattle-raising assumed greater importance as economic bases for the creole class. Both were stimulated by the gradual but steady growth of the European population.

When the encomienda system was finally abolished in Yucatan in 1785 the cattle estates had already established a system of debt peonage with both resident and non-resident peons. The resident peons worked full-time for the owner; the non-residents worked one or two days a week in return for the use of water from the hacienda's wells or a piece of land controlled by the hacienda (Strickon, 1965; Reed, 1964).

The decline of cotton cultivation and weaving in Yucatan began toward the end of the colonial period.

The Bourbon reforms crippled the industry, the abuses of which were known and lamented. After free trade was permitted in 1778, cheaper foreign cloth began to displace the Yucatecan; suppression of the encomiendas in 1785-86, payment of tribute by cash rather than goods, and amelioration of repartimiento practices following 1787 all helped to reduce output of native cloth to negligible amounts (Cline, 1947:50).

The indigenous patterns of trade and marketing among Indian communities seem to have been replaced in the colonial period by a system of trade and tribute dominated by Spaniards and their mulatto and mestizo agents. As we shall see, there are certain continuities in this process down to the present day.

Whether local Indian markets disappeared quickly or persisted for some time is not clear from the evidence. Some local trade among Indians must have persisted if they were to meet their tribute obligations. But the Spaniards apparently gained control of the more lucrative items and trade routes.

The Independence Period

The early years of independence in Yucatan, from the 1820s to the 1840s, were a period of economic experimentation in which new

agricultural and industrial enterprises were launched. This was a response both to the disruption of traditional trade relationships with Spain and Cuba, and to increasing competition in the world market for Yucatecan products. British Honduras and Honduras were producing logwood more cheaply than Campeche; and Argentine beef and hides invaded the Cuban market (Cline, 1947).

Nevertheless, there were important continuities with the past. John L. Stephens, in his Incidents of Travel in Yucatan, presents a table listing the products of each district, circa 1841. Livestock-raising was still the most widespread activity; hides, tallow, and dried beef were important products in the districts of Mérida, Izamal, Sotuta, Teabo, Tekax, Valladolid, and Tizimin. Salt continued to be extracted in coastal areas, while forest products such as logwood, timber, resin, and gum copal are mentioned for Campeche, Tizimin, and Bacalar. Rice was also grown in the Campeche region.

Cotton remained a significant crop in Valladolid and Tizimin (perhaps stimulated by the textile factory to be described shortly). In this region and the neighboring district of Izamal traditional dyes including cochineal, indigo, and achiote were produced. Vanilla, wax, and honey were among the other products of this area.

The crops which assumed increasing commercial importance during this period were sugar and henequen. At the time of Stephens' visit henequen had become an important crop in northwestern Yucatan, while tobacco and sugar were raised throughout the south and east. Molasses and rum were being processed in Tekax, Bacalar, and Tizimin.

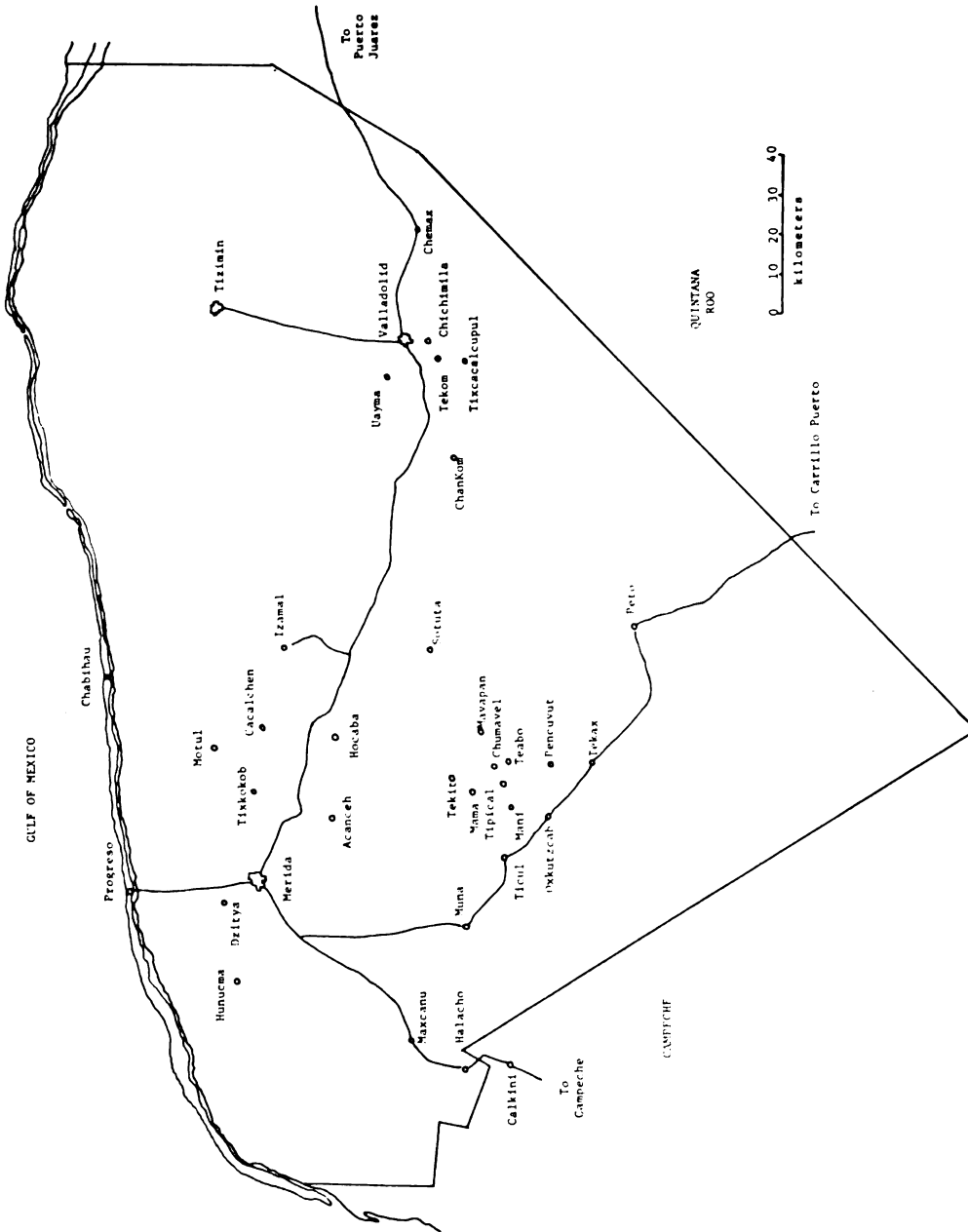


Figure 2.--Craft-producing communities and major highways in contemporary Yucatan.

Only a few crafts and manufactures are mentioned. Cotton textiles were made in Valladolid and Tizimin; cotton laces in Tekax, Teabo, and Ichmul. A stone-working tradition persisted in Tekax, which was the source of flints and grindstones. Straw hats were made in Mérida, Tekax, and Maxcanu; cordage and other henequen products in Mérida, Izamal, and Teabo; cigars in Mérida and Tekax. Mérida also produced leather goods, guitars, and logwood extract.

Stephens' list is obviously incomplete in some respects. Maize is not mentioned at all, nor is pottery or woodworking. The sources of his information are not given, but the items listed seem to be those which were most significant to creole commerce and enterprise. Throughout his travels in Yucatan, Stephens refers to sleeping in hammocks, but they are mentioned as a product only for Ichmul.

Despite various attempts during the colonial period to establish local markets, they were either absent or unimportant during the nineteenth century. Stephens describes a fair which he attended in the pueblo of Halacho, an annual event of eight-days duration held in conjunction with the observation of the patron saint's fiesta.

The village of Jalacho lies on the main road from Merida to Campeachy, and, next to that of Yzamal, its fair is the greatest in Yucatan, while in some respects it is more curious. It is not attended by large merchants with foreign goods, nor by the better classes from Merida, but it is resorted to by all the Indians from the haciendas and villages (1963:110-11).

Among the items for sale were mirrors, rings and necklaces, cotton, toys and trinkets, sweets and eatables. It is not clear from the reference if the cotton was raw or manufactured. Most of the Indians

in attendance appear to have been peons from nearby haciendas.

Grains of cacao circulated among the Indians as money:

Every merchant or vender of eatables, the most of whom were women, has on the table a pile of these grains, which they were constantly counting and exchanging with the Indians. There is no copper money in Yucatan nor any coin whatever under a medio, or six and a quarter cents. . . . The medio is divided into twenty parts, generally of five grains each, but the number is increased or decreased according to the quantity of the article in the market, and its real value. As the earnings of the Indians are small, and the articles they purchase are the mere necessities of life, which are very cheap, these grains of cacao, or fractional parts of a medio, are the coin in most common use among them (114).

The cacao must have come into Yucatan from Tabasco, as in pre-Columbian times.

Aside from this excerpt, Stephens does not report visiting any other fairs or markets, although he attended religious fiestas, dances, and bull-fights in a number of communities.

One of the economic experiments launched during this period was a cotton textile factory, the 'Aurora,' established in Valladolid in the 1830s. Although the factory employed 53 workers and 64 woodcutters (to provide fuel for its steam engines) and produced satisfactory cloth and thread, it eventually succumbed in the face of numerous difficulties. Cheap British cloth, smuggled in from British Honduras, undersold the Aurora throughout the peninsula. The Aurora's owner, Baranda, looked to Tabasco and Veracruz for markets, but after 1844 cloth from Yucatan was treated as a foreign product at Veracruz, and subject to tariff. With the death of Baranda in 1845 and the advent of the Caste War in 1847, the Aurora ceased operations and never revived (Cline, 1947).

During the Caste War the region around Valladolid was severely depopulated, and cotton cultivation must have diminished accordingly. With the availability of cheap British cloth, hand-weaving continued to decline. Redfield and Villa Rojas (1934) found that weaving on backstrap looms was entirely extinct in the Chan Kom area by 1930, although it had been common in the region 75 years earlier. Thus an early attempt to transform Yucatan's principal handicraft into a mechanized industry failed.

Sugar production, along with the processing of molasses and rum, likewise declined in the aftermath of the Caste War. In fact, it was the expansion of sugar production which was largely responsible for the Maya revolt of 1847. The plantation system which accompanied sugar cultivation had pressed ever more heavily on the labor and land resources of the Indian villages, especially in the frontier regions. Although the Indians were eventually put down, at one point they controlled four-fifths of the peninsula, including all of the sugar-producing areas. The sugar frontier was abandoned as a consequence and the industry never again assumed the importance it had briefly enjoyed (Strickon, 1965).

The fate of henequen was different. Henequen had the advantage of being admirably adapted to the arid northwest, the area farthest removed from rebellious Maya and closest to the creole center of control in Mérida. Always grown on a small scale, it now came to their economic rescue. The first corporate henequen plantation had been established in 1830, and numerous experiments aimed at mechanizing the extraction of fiber had followed. By the 1850s

workable machinery had been invented and steady improvements followed. By the 1880s, when the McCormack reaper came into widespread use in the United States, Yucatan was prepared to provide good quality fiber for binder twine at a reasonable price. Mechanized cordage factories were established in Mérida, and henequen soon became the basis of Yucatan's export economy (Cline, 1947).

The capital- and labor-intensive nature of henequen production was even greater than that of sugar. Large investments were required for processing machinery. In addition, returns on initial plantings could not be realized for several years, since the plant is not ready for harvesting until the seventh year. Henequen cultivation also requires large amounts of labor, and this requirement is fairly continuous throughout the year rather than seasonal as with sugar. The henequen plantation based on commercial capital, fixed labor, and mechanical rasping machinery became established in the 1850s and 1860s and maintained its basic characteristics until the Revolutionary period. These characteristics included the use of debt peonage to attract and keep a resident population of laborers who lived in virtual slavery (Turner, 1969).

During this period the peninsula lost its earlier character of relative self-sufficiency and became dependent to a much greater extent on international capital (many plantations were financed by North American interests) and international markets. These plantations were basically capitalist enterprises in spite of their retention of many seemingly feudal characteristics in the relationships between owners and peons.

Although debt peonage had existed in Yucatan since early colonial times, it was during this period that the Yucatecan plantation became a 'total institution' in the sense in which this term is used by Beckford (1972). Workers could neither marry nor change employers except with the owner's consent. They could not leave the plantation premises without permission, and on many plantations they were actually locked in at night. Their material needs were supplied (inadequately) through the tienda de raya (plantation store) where goods at inflated prices were charged against the peon's account, building up a debt which he could never hope to pay. Many plantations had their own chapels, so that the workers did not leave the plantation even to hear mass (Turner, 1969).

The effects of these developments on artisan activity must be largely surmised. As the henequen plantations grew in size and number, absorbing the so-called terrenos baldíos, the Maya villagers were faced with an increasing scarcity of land for milpa cultivation. One effect of land encroachment was to force many villagers to work on the plantations. It is possible that increased artisan production may also have occurred as a response to this situation. According to the accounts of travelers, Tixkokob, in the heart of the henequen zone, was heavily involved in hammock production by the 1880s (Irigoyen, 1974:26) and continues to be known for this activity at the present time. On the other hand, the resident peons on the plantations would not have had the time or opportunity for such activities.

The mechanization of the various phases in henequen processing, from extracting fiber to spinning twine and rope to weaving bags, did not entirely displace the hand skills traditionally used in these tasks, since they are still known throughout the region today.

The henequen boom was a period of rapid improvement in means of transportation. The new port at Progreso was constructed and narrow-gauge railways were pushed out into the countryside in every direction from Mérida. In many areas this must have made cheap factory-made goods more easily accessible. Even so, the poverty of the rural population and the control of the tienda de raya hampered the development of local trade and commerce.

Artisan Production in Contemporary Yucatan

The henequen boom of the late nineteenth and early twentieth centuries created an agricultural pattern which has persisted, with but slight modification, to the present. The semi-arid northwest is devoted almost entirely to henequen cultivation. It is a monocrop economy, dependent on export, and the population of the region is likewise dependent on the import of its food supply.

The eastern and southern parts of the state are devoted to maize cultivation, carried on in the traditional manner by Indian milperos. It is their surplus production which helps to feed the population of the henequen zone. In the east, livestock are an important adjunct to maize cultivation, and have been for some time (Redfield, 1950). Improvements in transport have stimulated cattle

production, particularly in the Tizimin-Valladolid region, and livestock from the area now reach markets in central Mexico as well as in northwestern Yucatan. In the south, citrus production has become an important cash crop as a result of deep-well irrigation projects.

Honey continues to be an important product throughout the peninsula and is exported to Europe, the United States, and Japan. In the villages near Mérida, fruits, vegetables, poultry, and eggs are produced for the growing urban market, but as yet no significant dairy industry has developed.

Fluctuations in the world market for hard fibers and chronic underemployment in the henequen zone have led to attempts to diversify crops, but with the few exceptions noted above henequen and maize continue to account for the great majority of the state's agricultural production.

In recent years fishing has achieved greater importance, but industry remains little developed in the peninsula. Large mechanized industries appear only in Mérida, and with the exception of the cordage factories operated by Cordemex, they are devoted almost entirely to the processing of foodstuffs (bread, cookies, cooking oils, soft drinks, beer) for local consumption. Most needs for manufactured goods are met through importation from central Mexico.

By far the most significant change in Yucatan's economy in recent years has been the increase in tourism, particularly since the completion of highways in the early 1960s linking the peninsula to the rest of Mexico. Tourism is now the peninsula's second most important industry, topped only by henequen in economic value.

These trends have had diverse effects on handicraft activity. Access to cheap factory-made goods has led to the decline of some crafts. Others have become reoriented toward the tourist market, and innovations intended to appeal to tourists have become common. New patterns of local specialization have emerged, although certain continuities with the past may be noted.

In the pages which follow I will attempt to describe briefly the distribution of craft specialization in Yucatan today, as well as the organization of production and marketing within the various crafts. A good part of the information related here comes from personal observations and travels in Yucatan, as well as interviews with shop owners and dealers in Mérida and other towns. Bastarrachea, in an unpublished report (1971), provides information on local specialization in a number of crafts. Published works touch only lightly on the subject, although Thompson's recent study of Ticul (1970) gives considerable data on handicraft production in that community. In addition, I have made use of conversations with other anthropologists, and with friends and acquaintances in Mérida in compiling the information presented here. Given the absence of systematic studies and the dearth of published information, the picture which follows must be considered partial and incomplete.

The most widespread and commercially important craft activities in Yucatan today are the embroidery of huipiles (native dresses) and the weaving of hammocks, both of which are traditional skills. There is an expanding demand for both items from the permanent population as well as from tourists. Virtually everyone in Yucatan

sleeps in hammocks at least a part of the time. Even those who can afford beds find them too hot in the summer months. Whether made of henequen, cotton or nylon, the hammock is ubiquitous, and only once did I hear of a family so poor that they had to sleep on the floor.

The demand for embroidered huipiles likewise shows no signs of declining. They are worn by about half the women of Yucatan as the daily costume, and often the only type of dress which they have ever worn. It is true that in each generation a part of the mestizo¹ population changes its dress and habits and becomes catrín (the local term for one who adopts European-style dress), but the mestizo population is nevertheless larger in absolute numbers than it was a generation ago. It is probably safe to predict the persistence of the traditional huipil for some time to come. Even the women of middle and upper class families, families which have always been gente de vestido (people of European dress), usually own a number of huipiles: ordinary ones for casual wear, plus an elegant terno for fiestas and folk dances. The tendency to use huipiles for casual wear has increased as Yucatecans have observed that North Americans readily do so.

There are close parallels in the organization of production of these two items, huipiles and hammocks. In the rural communities many families make these items for their own needs. For huipiles, ordinary white cotton cloth called popelina and embroidery thread are purchased and the work is done at home, normally on a treadle sewing machine. The older cross-stitch embroidery (xoc bil chuy in Maya, hilo contado in Spanish) has been replaced in everyday wear by

floral designs which are created on the machine. Women who do not have their own machines may borrow the use of a machine from a relative, but more often they purchase the materials and commission a woman with a machine to do the sewing and embroidery. Occasionally simple garments are sewn by hand.

In the case of hammocks, there are several alternatives. If the hammock is made of henequen, the cord used in its construction may be either purchased, or spun by a number of methods. In some areas the fiber is still extracted from the leaves by hand. The leaves are firmly attached to an inclined board, and the fiber is rubbed out with a slender sharp-edged stick (Redfield and Villa Rojas, 1934). When dried, the fibers can be twisted into cord by rubbing them together on the thigh. This method of spinning is still fairly common even in the henequen zone, though it is usually done only by older people. Informants agree that it produces the best cord. In the henequen zone the fiber is extracted by large power-driven rasps. Small amounts of the resulting fiber may be purchased locally and spun on a large hand-cranked wheel. This requires two people, one to feed the fiber, moving backward as the cord elongates, and the other to turn the wheel. If the family owns its own loom or bastidor and has the requisite skill, the hammock may be made at home. Alternatively, a bastidor may be borrowed, or someone else may be commissioned to make the hammock. In any case, a hammock made of henequen costs little, and can be quite durable if well-constructed.

Increasingly, however, the rural population is acquiring hammocks made of colorful cotton cord. In this case, the materials must be purchased, but the method and tools of manufacture are identical.

In addition to domestic production for use, large numbers of huipiles and hammocks are made for sale. Occasionally, the artisans purchase the materials and then sell the finished products themselves. More frequently, the materials are provided by middlemen or their agents, and the artisan is paid a piece rate. This is particularly the case with that part of the production destined for the tourist market. Residents of the region, both rural and urban, often commission a person of known skill to make a hammock for them.

It is difficult to estimate what proportion of the production of these two items reaches the tourist or export market. In relationship to hammocks, this question will be treated more thoroughly in Chapter 4. With huipiles I have no valid information, but the proportion is certainly increasing as dealers develop new contacts and customers in foreign countries.

Although there are people in every community who are skilled in embroidery and in hammock-weaving, some communities have begun to engage in commercial production on a significant scale. Bastarrachea's data indicate that huipiles are especially important in Acanceh, Halacho, Izamal, Mani, Maxcanu, Sotuta, Teabo, Tekit, Tekom, and Ticul. These are communities where large numbers of women are involved in embroidering huipiles for sale or in making huipiles for merchants.

Henequen hammocks are produced for sale in Chemax, Chichimila, Tekom, and Tixcacalcupul in eastern Yucatan (Villa Rojas, 1969), although the Mérida market for these hammocks is supplied largely by the nearby town of Tixkokob. Tixkokob is likewise the most important source of cotton hammocks, but numerous other communities produce them on a significant scale, particularly Cacalchén, Chumayel, Izamal, Mayapan, Pencuyut, Teabo, Tekit, Tipical, and Calkini (the last just over the border in the neighboring state of Campeche). It is interesting to note that the communities mentioned by Villa Rojas as traditionally specializing in henequen hammocks are not significantly involved in supplying the market for cotton hammocks, which is concentrated in Mérida. The latter draws its supply from communities which are closer to the city, many of which have taken up hammock production as a specialty within recent years.

Thompson's study of Ticul (1970) provides a fairly extensive picture of handicraft industries in that community. He estimates that about one-third of the town's labor force works in shoe-making, hat-making, or pottery. Although differing in important respects, all three of these industries share a similar pattern of organization. Artisan-entrepreneurs, working alone or with several employees, purchase their raw materials, and often sell their products themselves.

Shoe-making is the most important of Ticul's artisan industries, and also its newest. It received its stimulus during World War II when foreign supplies of shoes were cut off, and now employs about 500 workers in approximately 50 shops, and another 100 workers

laboring at home. Simple cutting and sewing machinery is used, and capital investment may go as high as 100,000 pesos. Leather is usually purchased pre-dyed and the work is divided between cutters and solers. Both are paid by the piece and earnings run about 90 pesos per week.

While the owners of the smaller shops work alongside their employees, the larger entrepreneurs are engaged full-time in purchasing and marketing. Shoes from Ticul are sold in Mérida, Campeche, Chetumal, Villahermosa, and even Mexico City. Some small shoemakers sell to larger ones or to independent purchasing agents. About 15 percent of the workers have their own tools and work at home under the putting-out system. In this way, the entrepreneur can reduce overhead, particularly the social security contributions which he must make for those who labor in the shop (1970:71-84).

Hatmaking in Ticul dates back to the turn of the century. The palm-fiber, secured locally, is plaited into long strands by women of the region who work at home and are paid by the piece. These strands are then sewn into hats on a heavy-duty pedal sewing machine. There were 300 hatmakers in Ticul in 1968, most working alone or in small shops of four or five workers. As with shoemaking, hatmaking in Ticul was stimulated during World War II, but prices and wages have not kept pace since. In part, this is because purchasing agents based in Mérida rigidly control the market. The women who braid the strands receive 2.2 pesos for a 30-yard piece, while the hatmaker himself earns only about 10 pesos daily (Thompson, 1970:84-89).

Most palm-leaf hats are destined for consumption by the rural mestizo population. There is little demand from the urban population or from tourists.

Pottery production in Ticul is a traditional mestizo craft and generally a family activity involving men, women, and children. About 40 families are engaged in the industry. The potters either excavate their own supplies of clay and temper from nearby deposits or buy them from independent suppliers. In either case, a fee is collected by the landowner. The resultant wares are sold all over the peninsula, frequently by the potters themselves. Potters earn only 10-20 pesos daily, from which they must cover the cost of materials, including wood for firing the kiln (Thompson, 1970:92).

In response to growing tourist demand, however, a number of potters have begun to employ hired labor, transforming their patios into workshops with several kilns. Busloads of tourists now come out from Mérida to tour these shops and make purchases. Ticul pottery is also sold in gift shops and market stalls in Mérida.

None of these three industries is restricted to Ticul. Shoemaking is also practiced in Hunucma, although on a smaller scale. Palm-leaf hats are made in Tekax, Mérida, and Calkini. The first two were known for hat-making in Stephens' time (1963, Vol. 1:272), while today Calkini produces the finest hats, of a material known as jipi-japa (Villa Rojas, 1969; Thompson, 1970). Pottery-production, which once must have been much more widespread, is now restricted to a few communities, among them Maxcanu, Mama, and Uayma (Bastarrachea,

1971; Villa Rojas, 1969). Only Ticul, however, can be said to produce it on a commercially significant scale.

Woodcarving, so important in pre-Columbian times, is not very significant today. Wooden chocolate beaters are made on pedal-driven lathes in the village of Dzitya, north of Mérida. Some of these, bearing the legend 'Recuerdo de Yucatan,' are sold to tourists in the Mérida market. Since there are no forests in the Dzitya area, the woodworkers buy their raw materials from suppliers in the eastern part of the state (Bastarrachea, 1971). Numerous carpentry shops in Mérida turn out furniture for the urban population; village carpenters make simpler furniture to order for their rural customers.

The traditional hollow-log drums and ceremonial masks are apparently no longer made anywhere in Yucatan, although these items were found to be still in use in the village of Dzitnup, near Valladolid, in 1971.

Baskets are the specialty of Halacho. Located on the Mérida-Campeche highway, residents of this village set up roadside stands to sell to tourists. Halacho baskets are also sold in the Mérida market. Most baskets are produced by family units from raw materials which are purchased in Campeche. They often include a few strips which have been dyed in bright colors with aniline dyes. All members of the family work on the baskets, and earnings are fairly low.

Throughout rural Yucatan, numerous articles are still made for domestic use rather than for sale. These include bowls and other utensils made of gourds, baskets for various purposes, and items made of henequen. One community, Hocaba, specializes in the latter,

producing such items as rope, harness, carrying bags, and mecapales (straps which pass across the forehead, used for carrying burdens on the back). Recently, artisans in Ticul and other communities have begun to make items out of henequen for the tourist market, such as colorful place mats and wall hangings.

Most rural communities have a few craft specialists who produce on order to meet local needs. These include the sandal-makers who turn out the traditional alpargatas worn by the mestizo population, and the tailors and seamstresses who turn out European-style clothing.

Stone-working seems to have largely disappeared, although one metatero was located in a village near Valladolid by Bastarrachea and his colleagues in 1971. I also encountered an individual in Oxkutzcab in 1972 who was attempting to produce imitations of pre-Columbian pieces for the tourist trade. In this case, the pieces were honestly presented as imitations; how many are surreptitiously engaged in producing supposedly authentic pieces is unknown.

Some new innovations have recently appeared. The art of macramé was introduced in Mérida in 1971, and a cooperative was launched to produce belts and purses for the tourist market. This move was soon imitated by others. In 1974, residents of the small coastal community of Chabihau began to make jewelry and small decorative pieces, such as animal figures, out of shell. A cooperative was also organized in this instance (Royer, 1975).

Discussion

In summary, five general patterns may be noted for the organization of production in Yucatecan handicrafts. The first involves production for use within the domestic group. Huipiles, hammocks, baskets, gourd utensils, and articles of henequen are still made in this way by a significant part of Yucatan's rural population. The second pattern involves production by specialists, scattered throughout the peninsula, who serve the needs of their fellow villagers and generally make items to order, with the customer often providing the raw materials. This system applies to the same items listed above, but also includes sandalmakers, carpenters, and tailors.

A third pattern consists of production for sale by individual peasant-artisans or their families, working without hired labor. This pattern pertains to pottery, hats, chocolate beaters, and Halacho baskets. In each of these cases there is significant local specialization, and the producer may be separated from the consumer by one or more middlemen.

A fourth pattern involves production for sale by small-scale entrepreneurs employing several workers, at piece rates, in small- or medium-sized workshops. These workshops may involve substantial capital investment, as with shoemaking, or very little as with pottery. In either case, mechanization has not proceeded far enough to remove the hand-made element from the product. Again, there is significant local specialization in shoes, hats and pots, and middlemen are involved in buying up and reselling the goods.

The fifth pattern consists of production through a putting-out system, in which merchants or their agents provide raw materials to be worked up at home, with wages based on piece rates. This pattern is prevalent only in the case of huipiles and hammocks, but these are by far the most significant craft activities in the region in terms of both numbers of producers and economic value of the product. While production for use of these items is widespread, production for the tourist market is concentrated in certain communities. The distribution of these items frequently involves a number of middlemen (small-town merchants, city buyers, U.S. importers).

The factors influencing the pattern of organization in any particular industry include the nature of the market, the difficulty of the skills involved, and the kinds of capital investment required.

Where the market is restricted to the rural poor, production for use or simple commodity production by small peasant-artisans is common, and inter-community trade is limited. In general, increasing demand on the part of the urban middle class or tourists seems to have the effect of encouraging the growth of enterprises, the concentration of production, the appearance of middlemen, and the emergence of local specialization.

In those cases in which sizeable capital investment in specialized equipment is required, as with shoemaking, the small shop employing some wage labor appears to be the common pattern. By contrast, the putting-out system is most common in those cases where the ratio of variable to fixed capital is high and relatively unskilled part-time labor can be utilized. This particular complex

of factors is characteristic of the hammock industry. No high level of skill is required for weaving the most common types of hammocks, but the cost of wages and factory-made materials for a single hammock may be greater than the cost of the loom. Given the existence of a high demand for the product, the emergence of middlemen who not only buy and sell, but organize production by controlling supplies of materials and seeking out cheap labor, is a logical outcome.

Although the ratio of variable to fixed capital is not as high in the case of embroidered huipiles, the treadle sewing machine is apparently a common enough article of domestic use in Yucatan that an adequate supply of women can readily be found to make up the materials provided by middlemen. Recent government programs have encouraged the purchase of sewing machines under easy time-payment plans.

It is interesting to note the parallels between the contemporary putting-out system and the organization of textile production during the colonial period. In both cases the existence of a foreign market encouraged merchants to actively organize production in the countryside, controlling the supplies of materials and employing agents to distribute them to female artisans. Now, as then, the controlling merchants tend to be persons of European culture, while their agents in the countryside are often mestizos. In the colonial period the encomienda and repartimiento could be used directly to coerce production from the native female population; today it is market relations--under-employment, poverty, and the threat of

starvation--which provide the stimulus for women to participate in underpaid artisan activity.

The patterns of craft production developing in Yucatan today are both new and old. The items produced, the local specialties, vary from one period to another. Through all the periods reviewed here, however, existence of foreign markets and long-distance trade have been significant determining factors.

In the pre-Columbian period the production of textiles and other items was encouraged by active trade with the Aztecs and with Honduras. After the Conquest trade routes and markets shifted to include Cuba. At the present time, the United States provides a significant demand for craft items, both through importers in the U.S. and tourists who journey to Yucatan. The importance of events and conditions outside the peninsula in influencing local agricultural patterns has been pointed out by Strickon (1965). The same conclusion is implied for artisan production.

It appears from this review that ecological conditions, understood as the characteristics of the immediate natural environment, do not in themselves go far toward explaining the emergence of specialized artisan production nor the form of its organization. They may, however, have an impact on its local distribution, a question to be taken up in the next chapter.

Footnotes--Chapter 2

¹In Yucatan, the term mestizo refers to persons who speak Maya and wear the traditional native costume consisting of long white huipil for women and white shirt and pants for men.

CHAPTER 3

PATTERNS AND DETERMINANTS OF LOCAL CRAFT SPECIALIZATION IN CONTEMPORARY YUCATAN

Whatever the situation in the past, it is clear that local specialization in craft production has become increasingly important in Yucatan in recent years. To a significant degree, this development reflects the growth of the tourist market and improvements in the means of transport. Increased domestic demand has also been important in certain cases. Nevertheless, these changes do not explain why certain communities have become significant producers of craft goods while others have not.

As was pointed out in Chapter 1, students of the Mayan highlands have explained local specialization in crafts as (1) a response to ecological variation, each community having somewhat different resources; (2) a consequence of local monopolies over the acquisition of traditional skills, reinforced by village endogamy; (3) a response to poor soils or other factors limiting agricultural potential; and/or (4) a response to increasing population density and resultant land scarcity. In the latter two cases, it is argued that people are forced to seek alternatives to subsistence agriculture, such as craft specialization or seasonal migration. Similarly, the relative underdevelopment of local craft specialties in Yucatan has been

attributed to supposed ecological homogeneity and low population density.

The role of ecological variation is somewhat ambiguous in these formulations. On the one hand, it may be taken to mean that areas specializing in crafts are those with a unique natural resource which can be transformed into a craft product, such as clay for pottery or stone for metates. On the other hand, it may mean that local variations in rainfall, soil fertility, irrigation possibilities, and the like are expressed in variations in agricultural yields such that some localities find it more difficult than others to subsist by agricultural activity alone.

If we take the former interpretation and attempt to apply it to Yucatan the results are not very enlightening. Pottery production in Ticul makes use of local clays, but some areas with clay deposits have largely ceased to make pots. The basket-makers of Halachó get their supply of palm-leaf strips from areas farther south in Campeche. Wood-carvers in Dzityá find supplies of wood in eastern Yucatan, since no suitable woods are locally available. Henequen fiber is certainly not unique to any locality in Yucatan. Today, a considerable number of crafts use materials processed or manufactured in Mérida or outside of the state. Consequently, this approach does not go far toward explaining the patterns of local specialization to be seen in Yucatan today.

In some cases, present-day patterns of specialization reflect the continuity of traditional skills in particular communities. This does not, however, seem to be the general trend. Several craft

specialties constitute recent developments. In the case of hammocks, while part of a regional tradition, much production today comes from communities which have taken up the activity in recent years (in Cacalchén, some 20 or 25 years ago; in Teabo only 5 or 10 years ago).

With regard to the development of cottage industries in Europe, there appears to be basic agreement among demographers and economic historians that such industries developed in regions and places characterized by a land-poor peasantry, and that in these places population growth tended to be more rapid than in areas without domestic industry (Fisher, 1973; Landes, 1965). In eighteenth century Flanders, population increase was significantly higher in locations with poor soil, small land-holdings, and reliance on the linen industry (Deprez, 1965). Similar findings are reported for parts of the Netherlands (Van Bath, 1968) and Bohemia (Klima, 1974), while Hinshaw, Pyeatt, and Habicht (1972) appear to have found hints of such a pattern in the Lake Atitlán region of highland Guatemala. Arnold (1975) argues that poor agricultural conditions and pottery production are associated in the Ayacucho Basin of Peru.

My informants in Cacalchén and Teabo, two important centers of hammock production in Yucatan, were consistent in reporting that these communities had poor agricultural resources by comparison with their neighbors. In Teabo, it is not uncommon for peasants to make their milpas far away in Quintana Roo because of the poor yields and scarcity of land at home. In Cacalchén, there are generally no ejido lands available for making milpa, since most are devoted to henequen production. Most milperos in that community are owners

of private plots. Others can plant corn in newly cleared henequen fields, between the rows of young henequen plants, but because of the short fallowing period on such fields the yields are low. It is also clear that ejidatarios in Cacalchén earn less than those in some of the other nearby communities; the salary rates paid by the various ejidos are a common subject of comment and comparison. Some of the merchants engaged in putting out hammocks attributed Cacalchén's heavy involvement in weaving to the poverty of its inhabitants.

The association of domestic industry with population growth found in the studies referred to above presents a problem as to the direction of causality. Presumably, people in 'overpopulated' areas will be seeking ways to supplement agricultural incomes, while merchants and entrepreneurs will be seeking supplies of cheap labor to increase craft production and meet a growing market for such products. On the other hand, craft production may reinforce population increase: since children often can begin to contribute to family income at an early age, greater family size may be encouraged (Fischer, 1973). It is likely that effects on fertility might vary somewhat from one craft activity to another, in accord with the importance of female and child labor. Nash (1961), for example, found that pottery production in Amatenango was limited by the presence in the household of small children, since female labor was divided between child care and pottery production. In such cases, additional births would not necessarily be encouraged in spite of the later advantage of additional child labor.

It is possible that reliance on craft production allows earlier marriage, since young couples do not have to be provided with land for cultivation. This alone could result in higher rates of natural increase. Coontz (1957) argues that in the European situation demand for unskilled labor was crucial in determining inter-rural fertility differences. Early industrialization magnified the demand for the labor of women and children. Later, however, women's domestic roles ceased to be productive, and children became an economic liability rather than an asset.

The association of crafts with landlessness suggests that the pattern of landholding may be as important as absolute density or natural ecological conditions: if land is concentrated in the hands of a few people, and devoted to livestock-raising or some other labor-extensive form of production, 'land scarcity' may occur regardless of population density or soil fertility.

Methodology

In line with these arguments, we would expect to find local craft specialization developing in Yucatan in areas of poor agricultural yields, low income, increasing population density, and/or increasing land scarcity. In order to investigate whether or not this is in fact the case, several indicators of demographic, agricultural, and economic characteristics were developed for measuring local variation, using statistical data on municipios readily available from government agencies. These indicators were then tested for relationship with craft production.

The municipio is a local government unit comparable to the county or township in the United States. In Yucatan municipios range in population size from 570 to 35,647 (excluding Mérida, the capital city) with a mean of 4,917.9. Only 13 of the 105 municipios, or 12.4 percent, exceed 10,000 persons. The municipios are also diverse in land area, ranging from 39.6 to 4,132.4 square kilometers. However, more than half have less than 200 square kilometers, and only 6.6 percent exceed 1,000.

Most of the municipios in the henequen zone are characterized by highly nucleated settlements with the bulk of the population residing in the cabecera (equivalent to the county seat). This is less true in the maize zone, but even there a marked tendency toward nucleation appears. People live in villages and hamlets, but not as a general rule in scattered homesteads. In this sense municipios can be regarded as communities rather than arbitrary aggregates of population, although it is occasionally the case that an outlying settlement will be more closely tied economically to the cabecera of a neighboring municipio than to that of its own.

Given these limitations, the municipio was deemed a suitable (though not ideal) unit for the study of local variations in craft specialization.

Participation in Craft Production

Using my own data and that of Bastarrachea (1971), as well as other published and unpublished sources, 53 out of a total of

105 municipios were classified as to the extent and type of local specialization:

1. Participation in craft production insignificant; only a few individuals involved (11 municipios).
2. Participation in craft production moderately important; evidence of local craft specialty which is marketed extra-locally, but probably involving fewer than one-third of the households (17 municipios).
3. Participation in craft production very important; evidence of one or more local craft specialties which are marketed extra-locally, one-third or more of the households probably participating in craft production (17 municipios).
4. Other type of specialty dominates the local economy: citrus production, truck gardening, fishing, or salt extraction (8 municipios).

Where possible, the opinions of other anthropologists were sought as to the accuracy of the classification of particular municipios. The decision to classify as (2) or (3) was made conservatively: where there was some information on a local craft specialty marketed extra-locally, but little indication as to its importance in the local economy, the municipio was classified as (2). Fifty-two of the 105 municipios could not be classified because of insufficient information. In testing for relationships with demographic, agricultural, and economic variables, municipios classified as (4)--other type of specialty--were excluded from the sample, and the first three categories

used as an ordinal scale, leaving a total of 45 municipios (see Appendix A).

Although the resulting sample of 45 municipios was not randomly selected, some claim can be made that it is representative of those Yucatecan municipios which are characterized by an agricultural economy. Fifty-two percent of the municipios in the henequen zone are included, and 38 percent of those in the maize zone. Excluding Mérida (the principal urban area), the non-sample municipios are not significantly different from the sample municipios for most of the variables tested.¹ The variables chosen to test relationships with extent of participation in craft production are discussed below, along with the reasons for choosing the particular indicators and the sources of data used.

Demographic Variables

The demographic variables used to test the relationship with extent of craft production were:

1. total population, taken from the 1970 national census;
2. population density, expressed as persons per square kilometer, taken from the 1970 national census; and
3. percent population increase from 1960 to 1970, calculated from the respective censuses.

Population density and population increase were used because of the arguments of previous writers that they are positively related to participation in craft production. In this case, persons per square kilometer is used as an indicator of land scarcity. Total

population was also used because of the assumption that division of labor and provision of specialized services would increase with community size.

Agricultural Variables

Statistics on agricultural production, available from the offices of the Secretaría de Agricultura y Ganadería in Mérida, were used to develop the following measures of agricultural productivity:

1. average annual yield per hectare of henequen, in kilograms, 1957-1970;
2. average annual yield per hectare of maize, in kilograms, 1961-1970;
3. average annual per capita value of henequen production, in pesos, 1967-1970; and
4. average annual per capita value of maize production, in pesos, 1967-1970.

Statistics on henequen and maize were chosen because they are the two crops most widely cultivated in Yucatan and thus the best ones available for comparing local differences. Rather than taking the yields for a single year, the average for a 10-year period was calculated for maize. Since local rainfall patterns are variable and unpredictable from year to year, communities with high yields in one year may have low ones in the next. The time period for calculating averages for henequen was increased to 14 years because, while henequen is less sensitive to drought, the life of the

plant extends over some 25 years, with production of fiber occurring only after the seventh year and reaching its highest levels between the tenth and fifteenth years (Manero, 1966:39). Most of the henequen-producing municipios have fields in various stages of development, but yields may vary significantly from year to year as new fields come into production and old ones begin to decline.

Since the average market price for these two crops was also indicated for recent years, the per capita value was calculated. This was done because it is quite possible that a community may have high yields of one or both of these crops, yet lack adequate land to support the population. Consequently, it was assumed that a measure of per capita value would more accurately represent the ability of the local population to support itself from agricultural resources.

Since henequen production in Yucatan is thoroughly controlled by government agencies, the SAG statistics on henequen production can be assumed to be highly reliable. Although there are persistent rumors about sosquil de luna (black market henequen fiber) being sold to private growers by the ejidos, such sales would likely take place within municipios and would not affect municipal totals significantly.

The statistics on maize production are less accurate. Experienced SAG personnel conduct annual surveys of the number of hectares planted, make estimates of yields based on local inquiries, and calculate total production by multiplying yields by hectares planted. It is probable that some maize production, particularly

for subsistence, escapes the notice of these inspectors, but the extent of such under-reporting is not known.

An additional factor which may be of some significance is not revealed by these data: degree of land concentration. A fair amount of the land in the henequen zone is still held in large units of up to 200 hectares, usually the remaining property left to the haciendas after land reform. The profits from henequen production on these ex-haciendas are drained out of the rural areas, since almost all of the owners live in Mérida. In such cases, figures on the per capita value of henequen production may be somewhat misleading. In the maize zone there are few haciendas, but data on Chan Kom would suggest that inequalities in land ownership make it difficult for some persons to get access to cultivable land (Goldkind, 1965, 1966). Unfortunately, I know of no easily available statistics on local variations in the degree of land concentration.

Other Economic Variables

Two additional variables were included as measures of the relative wealth of the various municipios:

1. percent reporting incomes of 200 pesos or more monthly, of the economically active population 12 years and over declaring incomes, taken from the 1970 national census; and
2. percent of the population 10 years of age and over who are literate, taken from the 1970 national census.

Although it is likely that some respondents under-report their incomes to the census taker, there is little reason to expect

that the residents of one locality respond more inaccurately than those of another. Consequently, the measure of income used here provides a scale of relative wealth, and allows a test of whether participation in craft production is associated with low income.

The measure of literacy is used as an indirect measure of wealth. Not only does higher income allow more children to go to school for a longer period, but literacy also improves economic opportunity. In addition, participation in craft production may have a negative effect on literacy rates because of the utilization of child labor.

Using extent of participation in craft production as the dependent variable, cross-tabulations were constructed using each of the other nine variables as independent variables. Since the cross-tabulations involved a combination of ordinal and interval data, the interval data were grouped and Kendall's tau was chosen as a test of relationship.

Demographic Characteristics and Participation in Craft Production

The results of the testing of the demographic variables are given in Tables 1 to 3. It can be seen that while participation in craft production has a fairly direct relationship with population size, the expected relationships with population density and population increase did not emerge.² Both of the latter show a curvilinear pattern: craft production was likely to be high both in low-density and high-density municipios, but not in medium-density ones. Likewise, craft production was likely to be high both in municipios with

Table 1.--Participation in craft production by population size.

Participation in Craft Production	Population Size			
	0-2,499 (N=12)	2,500-4,999 (N=17)	5,000-9,999 (N=8)	10,000 or more (N=8)
Low	33.3%	35.3%	.0%	12.5%
Moderate	41.7	35.3	50.0	25.0
High	25.0	29.4	50.0	62.5
Totals	100.0%	100.0%	100.0%	100.0%

Kendall's tau c = .2800, significance level = .0027, N = 45

Table 2.--Participation in craft production by population density.

Participation in Craft Production	Persons Per Square Kilometer		
	1-19.99 (N=21)	20-39.99 (N=12)	40 or more (N=12)
Low	23.8%	25.0%	25.0%
Moderate	33.3	58.3	25.0
High	42.9	16.7	50.0
Totals	100.0%	100.0%	100.0%
Kendall's tau b = .0061, significance level = .4759, N = 45			

Table 3.--Participation in craft production by percent population increase, 1960-1970.

Participation in Craft Production	Percent Population Increase, 1960-1970			
	Decrease (N=5)	0-19.99% (N=20)	20-29.99% (N=16)	30% or more (N=4)
Low	.0%	40.0%	18.8%	.0%
Moderate	60.0	25.0	50.0	25.0
High	40.0	35.0	31.3	75.0
Totals	100.0%	100.0%	100.1%	100.0%

Kendall's tau c = .1037, significance level = .1517, N = 45

a population decrease and in those with a high population increase. Particularly surprising is the finding that all of those municipios experiencing a population decrease also participate in craft production to a moderate or greater extent.

Because of the generally higher population density in the henequen zone, and because it was noted that those communities with a population decrease were to be found largely in the maize zone, the two zones were tested separately. Although the number of cases in each group is small (26 for the henequen zone and 19 for the maize zone), the results indicate some interesting differences between the two zones (see Tables 4, 5, and 6). The relationship between population size and craft production appears as much stronger for the henequen zone, while demonstrating no significant relationship in the maize zone. The relationship of craft production with population density remains insignificant for both zones, while that with population increase takes on a positive, though not highly significant, relationship for the henequen zone.

These results suggest that for contemporary Yucatan total population size and percent of population increase have value as predictors of participation in craft production in the henequen zone, while none of the demographic variables tested is able to predict participation in craft production for the maize zone.

Agricultural Characteristics and Participation in Craft Production

The agricultural variables were analyzed separately for the henequen and maize zones, since henequen production is minimal in

Table 4.--Participation in craft production by population size, by zone.

Participation in Craft Production	Population Size			
	0-2,499	2,500-4,999	5,000-9,999	10,000 or More
HENEQUEN ZONE:	(N=5)	(N=11)	(N=6)	(N=4)
Low	60.0%	36.4%	.0%	.0%
Moderate	40.0	36.4	50.0	25.0
High	.0	27.3	50.0	75.0
Totals	100.0%	100.1%	100.0%	100.0%
Kendall's tau c = .5281, significance level < .0001, N = 26				
MAIZE ZONE:	(N=7)	(N=6)	(N=2)	(N=4)
Low	14.3%	33.3%	.0%	25.0%
Moderate	42.9	33.3	50.0	25.0
High	42.9	33.3	50.0	50.0
Totals	100.1%	99.9%	100.0%	100.0%
Kendall's tau c = .0083, significance level = .4790, N = 19				

Table 5.--Participation in craft production by population density, by zone.

Participation in Craft Production	Persons Per Square Kilometer		
	1-19.99	20-39.99	40 or more
HENEQUEN ZONE:			
	(N=8)	(N=7)	(N=11)
Low	25.0%	28.6%	27.3%
Moderate	25.0	71.4	27.3
High	50.0	.0	45.5
Totals	100.0%	100.0%	100.1%
Kendall's tau b = .0000, significance level = .5000, N = 26			
MAIZE ZONE:			
	(N=13)	(N=5)	(N=1)
Low	23.1%	20.0%	.0%
Moderate	38.5	40.0	.0
High	38.5	40.0	100.0
Totals	100.1%	100.0%	100.0%
Kendall's tau b = .1325, significance level = .2011, N = 19			

Table 6.--Participation in craft production by percent population increase, 1960-1970, by zone.

Participation in Craft Production	Percent Population Increase, 1960-1970		
	Decrease	0-19.99%	20-29.99% 30% or more
HENEQUEN ZONE:			
		(N=11)	(N=13) (N=2)
Low		45.5%	15.4% .0%
Moderate		27.3	46.2 50.0
High		27.3	38.5 50.0
Totals		100.1%	100.1% 100.0%
Kendall's tau b = .2665, significance level = .0233, N = 26			
MAIZE ZONE:			
	(N=5)	(N=9)	(N=2)
Low	.0%	33.3%	33.3% .0%
Moderate	60.0	22.2	66.7 .0
High	40.0	44.4	.0 100.0
Totals	100.0%	99.9%	100.0% 100.0%
Kendall's tau c = -.0166, significance level = .4582, N = 19			

the maize zone and maize production of secondary importance in the henequen zone.

The Henequen Zone

In the henequen zone, a slight negative relationship was found between henequen yields and participation in craft production (see Table 7). As predicted, however, the negative relationship with per capita value of henequen production was much stronger (see Table 8), suggesting that per capita measures of agricultural productivity are better predictors of participation in craft production than area measures of productivity.

By contrast with henequen, maize yields showed a strong positive relationship with participation in craft production for the henequen zone (see Table 9). This finding is not surprising given the negative correlation for the sample as a whole between henequen yields and maize yields ($-.3523$, $p = .024$) and between per capita values of henequen production and maize production ($-.4051$, $p = .013$). The negative correlations reflect rainfall gradients which make henequen more suitable for the arid northwest and maize more suitable for the south and east. It is also possible that there is greater reliance on supplemental maize cultivation in those municipios of the henequen zone which have low henequen yields. In municipios with good henequen yields less attention need be given to milpa cultivation.

The per capita value of maize production was uniformly low throughout the zone: less than 100 pesos annually in all but one case.

Table 7.--Participation in craft production by average annual yield per hectare of henequen, in kilograms, 1957-1970, henequen zone.

Participation in Craft Production	Henequen Yields, Kgs. Per Hectare		
	250-499.9 (N=1)	500-749.9 (N=11)	750 or more (N=14)
Low	.0%	9.1%	42.9%
Moderate	.0	54.5	28.6
High	100.0	36.4	28.6
Totals	100.0%	100.0%	100.1%

Kendall's tau b = $-.3053$, significance level = $.0113$, N = 26

Table 8.--Participation in craft production by average annual per capita value of henequen production, in pesos, 1967-1970, henequen zone.

Participation in Craft Production	Per Capita Value of Henequen, in Pesos				
	0-249.99 (N=5)	250-499.99 (N=9)	500-749.99 (N=6)	750-999.99 (N=2)	1,000 or more (N=4)
Low	.0%	11.1%	16.7%	100.0%	75.0%
Moderate	60.0	22.2	66.7	.0	25.0
High	40.0	66.7	16.7	.0	.0
Totals	100.0%	100.0%	100.1%	100.0%	100.0%
Kendall's tau = 0.5370, significance level < .0001, N = 26					

Table 9.--Participation in craft production by average annual yield per hectare of maize, in kilograms, 1961-1970, henequen zone.

Participation in Craft Production	Maize Yields, Kgs. Per Hectare			
	0-249.99 (N=1)	250-499.99 (N=9)	500-749.99 (N=12)	750 or more (N=4)
Low	100.0%	44.4%	16.7%	.0%
Moderate	.0	33.3	50.0	25.0
High	.0	22.2	33.3	75.0
Totals	100.0%	99.9%	100.0%	100.0%
Kendall's tau c = .4172, significance level = .0009, N = 26				

For this reason, no attempt was made to test the relationship with craft production for the henequen zone.

The Maize Zone

The relationship between participation in craft production and maize yields was in the predicted direction, although not significant (see Table 10). Craft production and per capita value of maize production likewise failed to show a significant relationship (see Table 11).

These results may be due to sources of error such as inaccuracies in the reporting of crop production in the maize zone, or the small number of cases in the zone (only 19 municipios). It is also possible that livestock raising (primarily cattle and hogs) may contribute more to agricultural incomes in the maize zone than maize production.

Other Economic Characteristics and Participation in Craft Production

A strong negative relationship was found between participation in craft production and percent reporting incomes over 200 pesos monthly (see Table 12). Where incomes are high, craft production is low, and vice versa. These findings suggest that if craft production constitutes an activity aimed at compensating for low incomes from agriculture, it compensates very inadequately. When the two zones were analyzed separately, the relationship was weakened somewhat for the henequen zone, but strengthened for the maize zone (Table 13). This is a rather curious finding, in view of the assumption that

Table 10.--Participation in craft production by average annual yield per hectare of maize, in kilograms, 1961-1970, maize zone.

Participation in Craft Production	Maize Yields, Kgs. Per Hectare	
	500-749.99 (N=12)	750 or more (N=7)
Low	16.7%	28.6%
Moderate	33.3	42.9
High	50.0	28.6
Totals	100.0%	100.1%
Kendall's tau c = $-.2216$, significance level = $.0806$, N = 19		

Table 11.--Participation in craft production by average annual per capita value of maize production, in pesos, 1967-1970, maize zone.

Participation in Craft Production	Per Capita Value of Maize, in Pesos			
	0-99.99 (N=7)	100-199.99 (N=5)	200-299.99 (N=4)	300 or more (N=3)
Low	.0%	40.0%	25.0%	33.3%
Moderate	57.1	20.0	50.0	.0
High	42.9	40.0	25.0	66.7
Totals	100.0%	100.0%	100.0%	100.0%

Kendall's tau c = $-.0914$, significance level = $.2816$, N = 19

Table 12.--Participation in craft production by percent reporting incomes over 200 pesos monthly.

Participation in Craft Production	Percent Reporting Incomes Over 200 Pesos Monthly				
	0-19% (N=7)	20-39% (N=15)	40-59% (N=8)	60-79% (N=12)	80-100% (N=3)
Low	.0%	20.0%	.0%	50.0%	66.7%
Moderate	28.6	33.3	75.0	25.0	33.3
High	71.4	46.7	25.0	25.0	.0
Totals	100.0%	100.0%	100.0%	100.0%	100.0%
Kendall's tau c = -.4252, significance level < .0001, N = 45					

Table 13.--Participation in craft production by percent reporting incomes over 200 pesos monthly, by zone.

Participation in Craft Production	Percent Reporting Incomes Over 200 Pesos Monthly				
	0-19%	20-39%	40-59%	60-79%	80-100%
HENEQUEN ZONE:					
	(N=2)	(N=10)	(N=6)	(N=5)	(N=3)
Low	.0%	20.0%	.0%	60.0%	66.7%
Moderate	50.0	30.0	66.7	20.0	33.3
High	50.0	50.0	33.3	20.0	.0
Totals	100.0%	100.0%	100.0%	100.0%	100.0%
Kendall's tau c = $-.3994$, significance level = $.0014$, N = 26					
MAIZE ZONE:					
	(N=5)	(N=5)	(N=2)	(N=7)	
Low	.0%	20.0%	.0%	42.9%	
Moderate	20.0	40.0	100.0	28.6	
High	80.0	40.0	.0	28.6	
Totals	100.0%	100.0%	100.0%	100.1%	
Kendall's tau c = $-.4321$, significance level = $.0031$, N = 19					

there is greater reliance on cash income in the henequen zone than in the maize zone.³ It may, however, reflect the greater number of alternative sources of cash income available in the henequen zone, particularly in those localities within commuting distance of Mérida. Or, it may simply reflect the greater overall poverty of the maize zone, as measured by this variable.

As expected, the relationship of literacy to participation in craft production was negative, although the relationship was not a strong one (see Table 14). When the two zones are analyzed separately, however, the relationship again becomes stronger for the henequen zone and disappears for the maize zone (see Table 15). The latter result is somewhat unexpected, given the fairly strong correlation between percent literate and percent reporting incomes over 200 pesos monthly (.5865, $p = .001$). Again, it may be that in the henequen zone, literacy opens up economic opportunities which are not present in the maize zone (such as work in Mérida). The finding may also reflect the generally lower educational levels in the maize zone as well.

Discussion

Of the variables tested, the one which appears most promising as a predictor of participation in craft production for Yucatan as a whole is income. Where incomes are low, artisan activity is likely to be high, and vice versa. In addition, population size and population increase show positive relationships with artisan activity for the henequen zone, while per capita value of henequen

Table 14.--Participation in craft production by percent of the population 10 years and over who are literate.

Participation in Craft Production	Percent Literate		
	0-49% (N=4)	50-69% (N=27)	70-89% (N=14)
Low	25.0%	14.8%	42.9%
Moderate	50.0	40.7	28.6
High	25.0	44.4	28.6
Totals	100.0%	99.9%	100.1%

Kendall's tau b = $-.1535$, significance level = $.0639$, N = 45

Table 15.--Participation in craft production by percent of the population 10 years and over who are literate, by zone.

Participation in Craft Production	Percent Literate	
	0-49%	50-69% 70-89%
HENEQUEN ZONE:		
Low	(N=16)	(N=10)
	12.5%	50.0%
Moderate	43.8	30.0
High	43.8	20.0
Totals	100.1%	100.0%
Kendall's tau c = $-.3965$, significance level = $.0015$, N = 26		
MAIZE ZONE:		
Low	(N=4)	(N=4)
	25.0%	25.0%
Moderate	50.0	25.0
High	25.0	50.0
Totals	100.0%	100.0%
Kendall's tau b = $.1093$, significance level = $.2449$, N = 19		

production, henequen yields and literacy rates show the expected negative relationships. These findings are presented in summary form in Table 16.

With regard to the henequen zone, the results tend to confirm the arguments of previous writers that people turn to artisan production because of inability to adequately support themselves through agriculture. The failure of the maize zone to demonstrate the expected relationships suggests that additional factors need to be considered in explaining patterns of local specialization in that region. There, access to roads and to suppliers of materials may play a more significant role, since transport in general is less developed there than in the henequen zone. Transport may be especially important in crafts such as hammocks and huipiles, where urban merchants are actively seeking out rural workers willing to supply them with finished products. In recent years the network of roads has expanded rapidly in Yucatan, so that communities in the maize zone are beginning to enjoy easier communication with Mérida and with other towns. It is to be expected that trade and commerce will increase accordingly.

One way to test for such a relationship would be to use travel time to Mérida as a variable. Since little accurate information was available on the condition of rural roads or the frequency of public transportation, this was not attempted. However, my own research on the hammock industry indicates the relevance of this factor. The major centers of hammock production are all within a day's round trip of Mérida by public transport. Merchants in these

Table 16.--Summary of values of Kendall's tau for relationships of independent variables to participation in craft production.

Variables	Henequen Zone (N=26)	Maize Zone (N=19)	Total Sample (N=45)
Population size	.5281***	.0083	.2800**
Population density	.0000	.1325	.0061
Population increase	.2665*	-.0166	.1037
Henequen yields	-.3053**		
Per capita value of henequen production	-.5370***		
Maize yields	.4172***	-.2216	
Per capita value of maize production		-.0914	
Income	-.3994***	-.4321**	-.4252***
Literacy	-.3965**	.1093	-.1535

*significant at .05 level
 **significant at .01 level
 ***significant at .001 level

centers in turn have weavers working for them in more distant locations, within a day's journey (in some cases by foot or horseback) of the town where the merchant is located, but sometimes beyond a day's journey to Mérida and back.

The failure of any of the agricultural variables to show the expected relationships with craft production in the maize zone suggests that the measures used here may not be the appropriate ones. Local figures on maize production may no longer reflect reality, since they do not account for seasonal migration to Quintana Roo for the purposes of milpa cultivation. In addition, the writings available on Chan Kom (Redfield, 1950) as well as my own impressions indicate that livestock may be an important cash crop in the maize zone, outstripping maize in value. This would account for the fact that income is strongly correlated with per capita value of henequen production but not with per capita value of maize production. Finally, the accuracy of the maize production figures is somewhat questionable, as mentioned above.

The fact that measures of cash income and per capita measures of productivity proved more useful for predicting participation in craft production than crop yields per hectare suggests that the characteristics of the natural environment may be less significant in explaining local variation than historically based systems of land tenure, population concentration, and distribution of wealth. To take Cacalchén as a case in point, the crop yield figures for this community are very close to the means: 633.6 kgs. per hectare for henequen and 712.5 kgs. per hectare for maize. But its population

density is nearly twice the mean for all municipios (55.53 persons per square kilometer) and only 16 percent of its employed population report incomes over 200 pesos monthly. This would indicate caution in utilizing ecological explanations which focus on natural environmental characteristics alone.

The slight relationship between rates of population increase and participation in craft production suggests that conditions in twentieth-century Yucatan are not strictly comparable to those of eighteenth-century Europe. For one thing, Yucatan's economy as a whole, and its export sector in particular, is dominated not by cottage industry but by henequen production. Transportation, communication, and public health services are more highly developed than in eighteenth-century Europe, and industrialization has proceeded rapidly in recent Mexican history (albeit not in the Yucatecan countryside). The result is a much higher rate of population growth than occurred anywhere in the world 200 years ago, and a sizeable trend toward rural-urban migration with the consequent concentration of a large proportion of the population in large urban areas. If we accept the proposition that out-migration is a viable alternative to craft production for communities with insufficient agricultural resources, we may find in this an explanation for the slight association between population increase and participation in craft production in Yucatan.

Finally, it may be pointed out that while the organization of cottage industry by merchants was a 'progressive' phenomenon in the economic setting of eighteenth-century Europe, in the sense of having led to the more complex organization of production under the

factory system, the same cannot be said for present-day Mexico. Here cottage industry and the factory system exist side by side, in large part producing different kinds of goods for different markets and utilizing different categories of labor. In other words, cottage industry is not where the major action is in Yucatan today, in terms of the total picture of incomes, distribution of wealth, capital formation, and economic expansion. It is only a part of the total picture.

Footnotes--Chapter 3

¹The demographic variables were the only exceptions. The means for both groups and the results of the difference-of-means test are:

Variable	Sample Municipios (N=45)	Non-sample Municipios (N=60)	Value of Z
Population size	6108.222	4025.217	2.152*
Population density	27.441	18.491	2.367*
Population increase	14.713	22.754	-2.913*
Henequen yields	739.847	692.621	1.444
Maize yields	645.378	635.219	0.308
Per capita value of henequen	545.913	373.516	1.691
Per capita value of maize	90.848	146.653	-1.856
Income	43.467	51.600	-1.783
Literacy	65.200	65.900	-0.299

*significant at .05 level

²The three demographic variables show the following inter-correlations: population size with population density, .1023, $p = .252$; population size with population increase, .4331, $p = .001$; population density with population increase, .4027, $p = .003$. Pearson's correlation was used to measure these correlations.

³Percent reporting incomes over 200 pesos monthly is strongly correlated with per capita value of henequen production (.5852, $p = .001$) but not with per capita value of maize production (.1104, $p = .238$).

CHAPTER 4

RELATIONS OF PRODUCTION AND DISTRIBUTION IN THE HAMMOCK INDUSTRY

The production of cotton hammocks differs from that of the traditional henequen hammocks in that the supply of cotton cord is concentrated in the hands of a small number of merchants in the city of Mérida. By contrast, henequen cord may be made by the weaver from locally grown henequen, or acquired at very low cost from local producers. The result is a dual system of production: weavers of henequen hammocks typically operate as simple commodity producers, while weavers of cotton hammocks usually work for a merchant who provides them with materials and pays them a piece-rate for the labor performed. The cost of cotton or nylon materials is often too great for the weaver to sustain the investment that would be required to operate independently.

Since no systematic data were collected on the production of henequen hammocks,¹ the focus of this section is on the relations of production and distribution which pertain to cotton hammocks. These relations involve a network of ties linking together city merchants, small-town middlemen, agents, weavers, and venteros ambulantes (travelling salesmen). Before describing the organization of these relations, however, it is necessary to give the reader an idea of

of the equipment, materials, and technical processes involved in making a hammock.

Tools and Techniques

The making of a Yucatecan hammock involves what is, strictly speaking, not a process of weaving at all, but a form of netting (see Figure 3). Unlike the technique used by the Lacandon and the Indians of South America, the Yucatecan hammock is produced by creating a net in which the threads twist around one another rather than being tied in knots. The result is a strong but comfortable framework which stretches to fit the body. The origins of this type of hammock are not known, but it appears to have been introduced into Yucatan in early colonial times, perhaps from the Caribbean (Irogoyen, 1974).

The hammock is made on a large vertical loom called a *bastidor*, consisting of two parallel vertical poles held in position by horizontal cross-bars at top and bottom (see Figure 4). The loom forms a rectangle some 180 to 190 centimeters in height and varying in length in accord with the size of the hammock being made. Each vertical pole has a base to hold it upright, and is slotted to hold the cross-bars. The cross-bars are notched at regular intervals to allow adjusting the distance between the two end poles so as to make hammocks of varying lengths.

In common usage, the length of a hammock is measured in terms of cuartas. The *cuarta* is a traditional measure equalling a hand-span; it tends to vary somewhat in actual usage but is supposed to measure 20 centimeters. Hammocks may vary in length from 8 to 12 *cuartas*

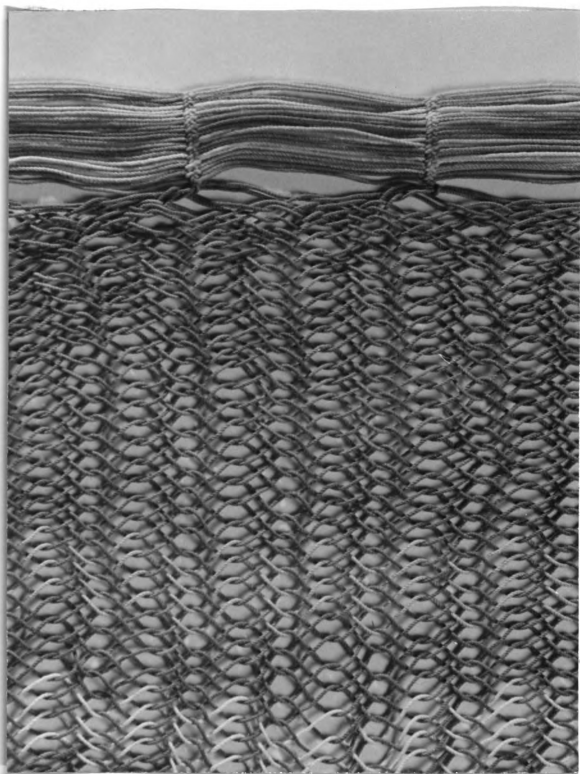


Figure 3.--Netting technique used in the edge (orilla) and body (cuerpo) of the hammock.

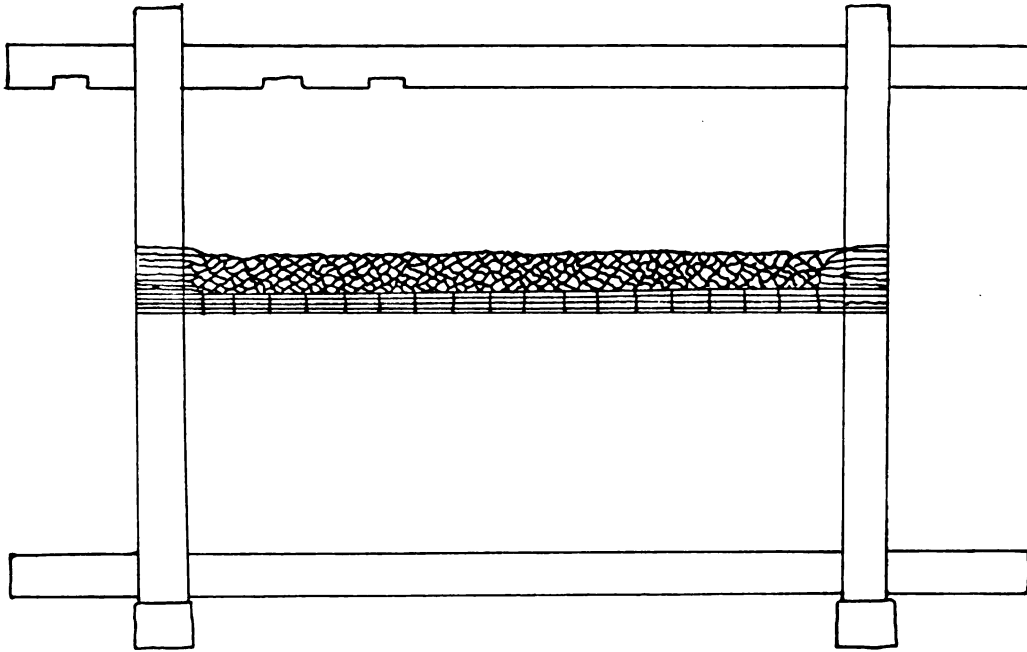


Figure 4.--Loom (bastidor) used to make hammocks.

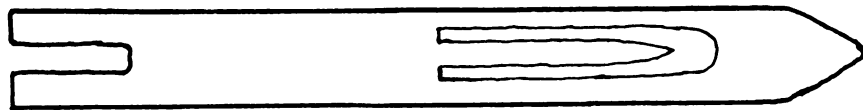


Figure 5.--Shuttle (aguja), approximately one-half actual size.

(160 to 240 cm.), 10 or 11 cuartas being the most common size for an adult.

A wooden shuttle (aguja) completes the equipment needed. This shuttle also varies somewhat in size, from 20 to 25 cm. in length, and has a U-shaped slot around which the cord is wound (see Figure 5). A large shuttle is somewhat more difficult to use than a smaller one, but holds more thread and thus requires less frequent reloading.

The weaver begins the hammock by forming the edge, called the orilla. The cord or thread is wound horizontally five or six turns around the loom, and then knotted together at regular intervals in an equal number of turns around the loom with thread which has been wound on the shuttle. This produces a strip about 3 cm. wide of 20 to 30 parallel threads knotted firmly together at intervals of 6 to 8 cm. (see Figure 3).

Then the body (cuerpo) of the hammock itself is begun. This involves winding a thread continuously several turns (usually 20) around the loom above the completed orilla. This loom thread is referred to as the guía, base, or cuerda. These threads are then linked together, beginning at one end of the loom, by twisting the shuttle thread over one, under two, and back over two and under one. Each such pass of the shuttle is referred to as a mallá. This move is repeated until the other end of the loom is reached. The weaver then turns and works back along the other side of the loom, incorporating an additional loom thread. Each complete turn around the loom is referred to as a vuelta.

The number of mallas in the length of the hammock will vary considerably depending on the total length of the hammock, the type of thread, and the desired density of the net. A hammock of henequen cord will usually have only 15 to 20 mallas, although finer cord may be used resulting in a denser weave. If made of cotton or nylon cord, the hammock will have between 50 and 80 mallas. A hammock of very fine cotton thread may have as many as 110.

A completed section of 20 vueltas with the shuttle is referred to as a franja and contains a total of 80 threads (40 loom threads and 40 shuttle threads). Weavers tend to estimate the progress of the work in terms of the number of franjas completed. A large hammock of fine cord will contain 20 to 25 franjas, depending on the length, while a small one of coarser material may have only seven to nine.

When the body of the hammock is finished, the second orilla is added. Figure 3 illustrates the netting pattern involved in both the orilla and the body.

The next step involves making the arms or brazos by which the hammock is hung. A thicker thread is generally used for this purpose. A number of procedures may be followed, all resulting in the same type of arm. In one of them a stick perhaps 2 cm. in diameter and 55 to 60 cm. in length is tied to one of the end poles of the loom, as shown in Figure 6. Then a shuttle is inserted vertically in the body of the hammock at a distance from the pole equal to one-half the hammock plus one hand-width. The body of the hammock is then tied tightly in a bundle just beyond this point. The thread to be used for the arms is pushed down through the loops at the end, and tied to

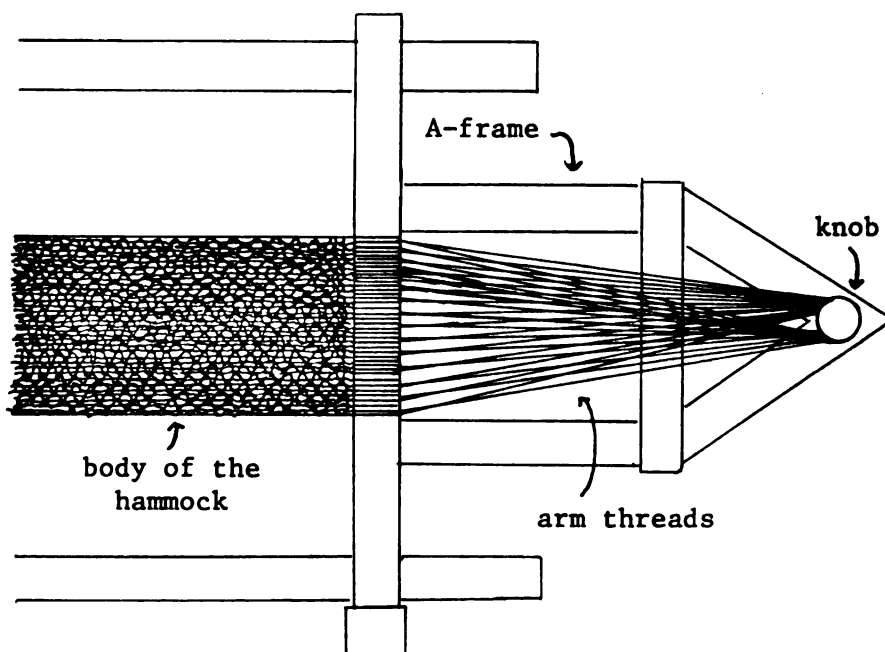
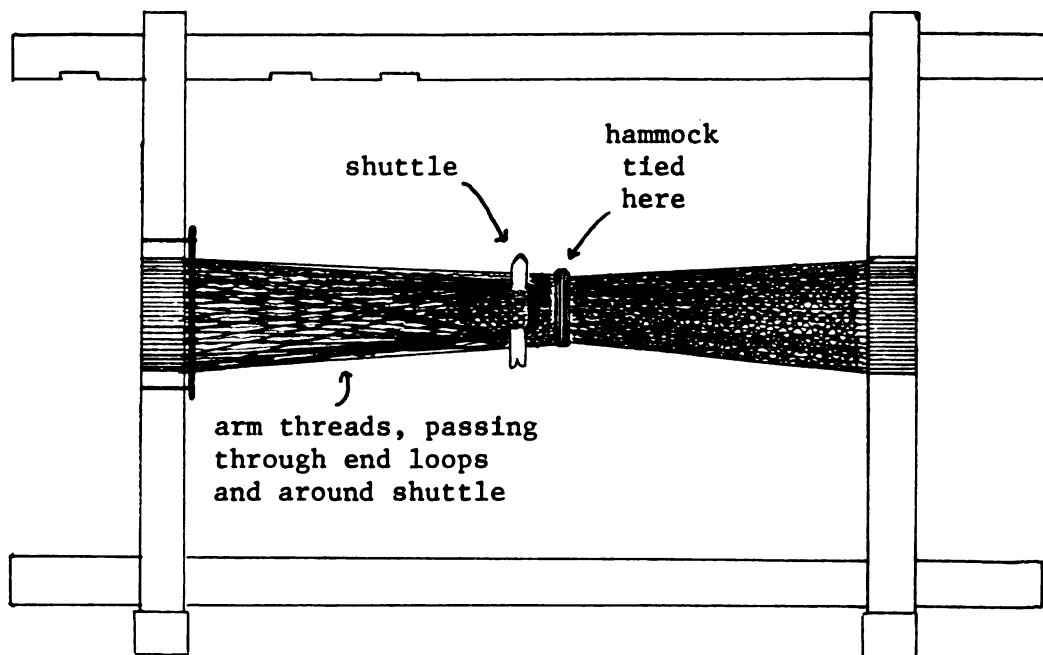


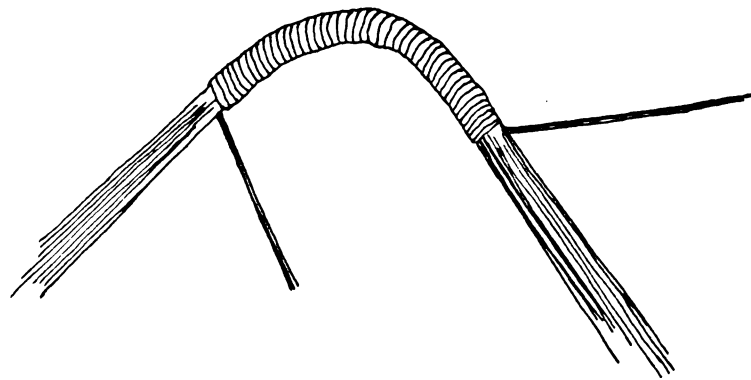
Figure 6.--Two alternate methods for making arms (brazos).

the first loop at the bottom. Then, every four or five loops, the thread is pulled through and looped around the shuttle, passing over the stick. When all the loops have been secured in this manner, the arm threads are tied in a bundle at the point where they pass around the shuttle, and the shuttle is removed. The process is then repeated for the other arm.

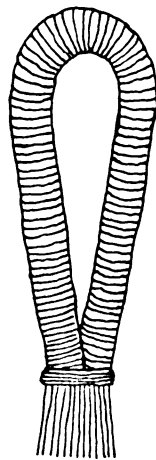
A second technique for making arms involves the use of an A-shaped frame (called an a) which is attached to the end of the loom, extending beyond it (see Figure 6). The loom threads are looped around a knob at its apex. The rest of the procedure is the same as with the first method described. A third technique consists of looping the arm threads over a hook fixed in the wall. Whatever procedure is followed, the important consideration is that the threads in the arms be of equal length so that when occupied the hammock does not sag to one side or the other, or develop an uncomfortable ridge in the middle.

When this step has been completed, the hammock is removed from the loom by removing the top cross-bar and sliding the hammock off the end poles.

The final step involves tying the arm threads in a strong loop by which the hammock will be hung. These loops are called argollas or muñecas (see Figure 7). To do this a long piece of thread is quadrupled and then wound tightly around and around the arm threads for some 10 to 15 cm. either side of the center, the ends being wound several times around both sides and tightly secured.



making the
loop



completed
loop

Figure 7.--Making loops.

Materials and Measurements

Although cotton thread has been in use for about a century (Irigoyen, 1974) to make hammocks for the well-to-do, its use has increased greatly in recent years as a result of increased production and the lowering of prices, as well as the increase in the numbers of people who can afford such hammocks.

During the years following World War I, hammock thread was imported from Europe in two forms: a cord of German make which was also used for fish nets, and a finer English-made thread referred to locally as oso (actually Coats and Clark's Bear brand). In the 1930s production was begun in Mexico (in some cases with the participation of foreign capital) by Hilos Cadena, La Marina, and La Cigüeña. With the advent of World War II, imported thread began to disappear from the market. This encouraged domestic production and several other companies entered the market.

Until recent years, all of the Mexican-made thread used for hammocks came from Mexico City and Puebla, but two factories have now been established in Mérida, both by merchants who have been dealing in hammocks and hammock thread for some years. A third merchant has materials made in Puebla under his own label. All of the producers sell thread in several qualities and thicknesses under a variety of brand names.

The quality of thread is judged by fineness, the number of strands which are twisted together, the tightness of the twist, and the color fastness of the dyes. In addition, the finer threads are polished with a starch solution and wound on spools (called carretes

or tubos), while the coarser thread is sold in skeins (called madejas). This coarse thread is referred to locally as hilo de madeja, while the finer, more expensive thread is called hilera.

It is possible that hammocks for the rich were once made of genuine silk, but today a hammock of seda is made of celanese, a material considered to have little durability. Nylon, by contrast, is very durable and color-fast, but it has certain disadvantages. It is harder to work with than cotton because it is slippery, and all the knots must be fused with heat to prevent ravelling. Also, some people complain that a nylon hammock is less comfortable. In hot weather its lack of absorbency makes it feel sticky, while in cold weather nylon is harder and colder to the touch than cotton. Nevertheless, nylon has increased in popularity in recent years because of its durability and striking appearance.

The cost of a hammock may vary widely depending on the class and quality of the material chosen, the size of the hammock, and the density of its weave. Henequen hammocks are the least expensive and are still used predominantly by the peasant population, although they are increasingly acquiring inexpensive cotton hammocks. A hammock of high-quality cotton thread may cost double or triple one made of a lower-quality cotton. Nylon is generally somewhat more expensive than cotton, although it competes with the better cotton threads.

While the length of a hammock can be measured in terms of cuartas (or centimeters), the width cannot be judged in the same manner because the hammock stretches. Consequently, the most common

method of measuring the capacity of a hammock is in terms of the quantity of thread used in the body. A hammock containing two madejas (variously referred to locally as madejos, cadejos, or trechos) is described as a hammock of dos madejas. These skeins weigh approximately 250 grams, so that the quantity of thread in a hammock can be measured by weighing it. Polished thread is generally sold six tubes to a box, so that a hammock with 12 tubes of hilera in the body is called a hammock of dos cajas (two boxes). The equivalencies involved are shown in Table 17.

Design

A variety of designs can be created by using different colors for the loom thread and the shuttle thread, or by using two shuttle threads of contrasting colors which are then alternated in a regular pattern. Nearly all of the designs, however, involve the same basic stitch and result in the same form of net.

The designs most frequently used are the simplest ones.² For example, jaspeado refers to using a loom thread of one color, with a contrasting color used as the shuttle thread. Thus the loom can be wound continuously without cutting and knotting the thread, and the only delay in weaving occurs when the shuttle must be reloaded. Whenever required, knots are made at the end of the hammock, never in the middle of the body. The second most popular design involves winding on a continuous loom thread in one color and then using two contrasting shuttle threads in alternation, the effect varying somewhat in terms of the number of turns or vueltas made with each shuttle:

Table 17.--Standard measurements of hammocks.

	Number of Madejas	Number of Cajas	Approximate Weight		Length of Body	
			Body Only	Arms Included	Cuartas	Centimeters
<u>Chica (small)</u>	2	1	450-500 gr.	600-650 gr.	9	180
	3	1.5	700-750	925-975	9-10	180-200
<u>Mediana (medium)</u>	4	2	900-1000	1175-1275	10	200
	5	2.5	1150-1250	1500-1600	11	220
<u>Grande or Matri- monial (large)</u>	6	3	1400-1500	1850-1950	12	240

arroz or arroz doble--four vueltas with each color

arroz fino or arrozitos--two vueltas with each color

crucecitas--one vuelta with each color

The designs less frequently used are those which require changing the color of the loom thread frequently and those which require somewhat more complex manipulations:

cintas, franjitas or rayitas--solid-color stripes are produced by winding 10 or so vueltas on the loom in one color and weaving them with a shuttle thread of the same color; then repeating the process with another color.

perritos--consists of three vueltas of the loom thread in one color and three vueltas of the shuttle thread in a contrasting color; the loom and shuttle colors are then reversed for the next three vueltas; the original pattern being resumed with the next three, and so on.

pepita--similar to perritos, but completing only one and one-half vueltas at a time.

cabello de angel--similar to perritos and pepita, but completing only one-half vuelta at a time.

It can be readily seen that these frequent changes in the color of the thread require frequent knotting and changing of shuttles, thus increasing the time necessary to make the hammock.

There are a few designs which require variations on the basic stitch:

plumilla--using contrasting colors in the loom and shuttle threads, the shuttle is pushed consistently to one side with each stitch or malla for 10 vueltas, then consistently to the other side for the next 10. The result is a sort of zig-zag or herringbone appearance.

crepé--instead of doing vueltas the weaver works back and forth on the same side of the loom. This requires the ability to perform the basic stitch in reverse.

petate--three threads are picked up with each pass of the shuttle instead of two.

Of these three designs, plumilla is the simplest and the only one used with any frequency.

In a survey of 105 households involved in weaving in Cacalchén, the number reporting the use of each of these designs was as follows:

arroz	94
jaspeada	88
arrozitos	48
cintas	34
perritos	33
pepita	33
plumilla	31
crepé	8
petate	7
cabello de angel	5
crucecitas	4

As the designs become more complex and time-consuming they are less likely to be used. Respondents frequently stated that they would use more elaborate designs if the pay were better, but as it is they delay the work too much. Also, it is easier for adults to supervise children when the children are given simple patterns to do.

Relations of Production

There are several merchants in Mérida specializing in the sale of both hammock thread and finished hammocks. Typically, these merchants sell the materials to small-town middlemen, often with the understanding that the merchant will buy back the finished hammocks at a prearranged price. If this is the case, the merchant

indicates what kinds of hammocks he wants, in terms of length, weight, density, color, and sometimes design.

The small-town middleman takes the materials and divides them among the weavers, and/or among a number of agents who work for him. In turn, the agents distribute the materials to weavers in surrounding villages. Agents are told what kind of hammock is to be produced, and they transmit this information to the weaver. Neither the agents nor the weavers purchase the materials themselves. Upon completion of the work, the weaver receives a wage from which the agent has taken his commission. Usually, the weaver makes only the body of the hammock. Making the arms takes somewhat more skill and is done by specialists or by the middleman himself and his family.

At this point there are two principal methods of marketing or distributing the finished hammocks. One is to deliver them to the same supplier in Mérida from whom the materials were purchased, as per prior agreement. The other involves the use of *venteros ambulantes* who take the hammocks to Mérida, Progreso, or more distant points for sale directly to the consumer.

The roles of the various participants in the hammock industry and their relations to one another will now be examined in greater detail.

City Merchants

In the central business district of Mérida there are 8 or 10 permanent shops that specialize in selling both hammocks and hammock thread. Most of these acquire their hammocks from regular suppliers

in the countryside. The shops vary considerably both in volume of trade and in degree of specialization. Most, but not all, carry other lines of goods: yard goods, sewing notions, items of clothing. Most rely as much on sales to the local population as to tourists.

These hammock merchants have been actively involved in organizing and stimulating production in the countryside, and in seeking out new markets. In order to insure a regular supply of hammocks, they make arrangements with small-town middlemen to have the desired quantities and types of hammocks produced. Although they usually sell the materials to these middlemen rather than putting them out, they think of themselves as fabricantes or manufacturers of hammocks.

In addition to the materials sold under these buy-back arrangements, materials are also sold to middlemen who operate independently and to the general public. During the period of study, the middlemen were charged 6.25-7.00 pesos per madeja (depending on the brand and weight), 24-28 pesos per caja of hilera (35-38 pesos for better quality hilera), and 6-6.75 pesos per tube for the cord used for arms.

When the hammocks have been made up, they are returned to the merchant and the intermediary is provided with new materials in exchange, plus cash payments to cover the cost of labor. The going rates paid to intermediaries, in addition to new materials, in 1971-72 were:

48-55 pesos for a hammock of 3 cajas, with arms

40-50 pesos for a hammock of 2.5 cajas, with arms

30-35 pesos for a hammock of 2 cajas, with arms

6.50-7.50 pesos per madeja for a hammock of madejas,
with arms

In expanding their markets, these merchants have followed two basic strategies: producing cheaper cotton cord within the means of more and more Yucatecans, and selling finished hammocks to foreign buyers.

The first tack has led two of the larger enterprises to become involved in manufacturing their own cotton cord, using imported spinning and dyeing equipment of European manufacture for this purpose. One of these factories employs 25 workers and has an output of 2,000 to 3,000 kilograms weekly. The output of the other factory is probably somewhat less, but it can be estimated that together they supply one-half to two-thirds of the total supply. Conservatively estimated, their combined production is worth at least 100,000 pesos weekly, and perhaps as much as 150,000.

The second tack has involved increasing attention to export possibilities, an activity which will be described in greater detail in the section on marketing.

Small-Town Middlemen

Small-town middlemen are concentrated in two areas in Yucatan--the communities of Tixkokob and Teabo--although some operate in other places.³ From each of these centers, materials are distributed to weavers in the center and the surrounding towns and villages. Sometimes the materials are distributed directly to the weavers, but weavers in outlying communities often get materials through agents

who specialize in distributing thread for various entrepreneurs. In this way, intermediaries in Tixkokob supply weavers in Cacalchén, Tixpeual, Nolo, and Yaxkukul. Those in Teabo and the nearby community of Chumayel supply weavers in those two towns as well as in Tipical, Mayapan, and Pencuyut. There are about 20 middlemen operating in Tixkokob and perhaps an equal number in Teabo and Chumayel combined.

When weavers and agents come to the middleman's house or place of business to pick up materials, the madejas or cajas are tied in bundles, one bundle for each hammock. These materials are weighed and the weight, color, and number of cuartas for each hammock are recorded. Sometimes the number of mallas and the design are also specified. When the finished hammock is delivered it is weighed, the length measured, and the work inspected for mistakes. The main risk involved here is that weavers may hold back small amounts of material for their own use, thus short-weighting their suppliers. In order to avoid this, and to maintain quality control in general, middlemen prefer to deal with agents and weavers who are known to be trustworthy. In order to acquire materials, agents or weavers must be personally acquainted with the middleman, or know someone who will vouch for their honesty.

Most dealers discount for underweight, allowing a margin of 10-20 grams per madeja, although one dealer simply cuts off the supply of materials to that weaver or agent, while another returns the hammock and demands that the weaver or agent pay for the

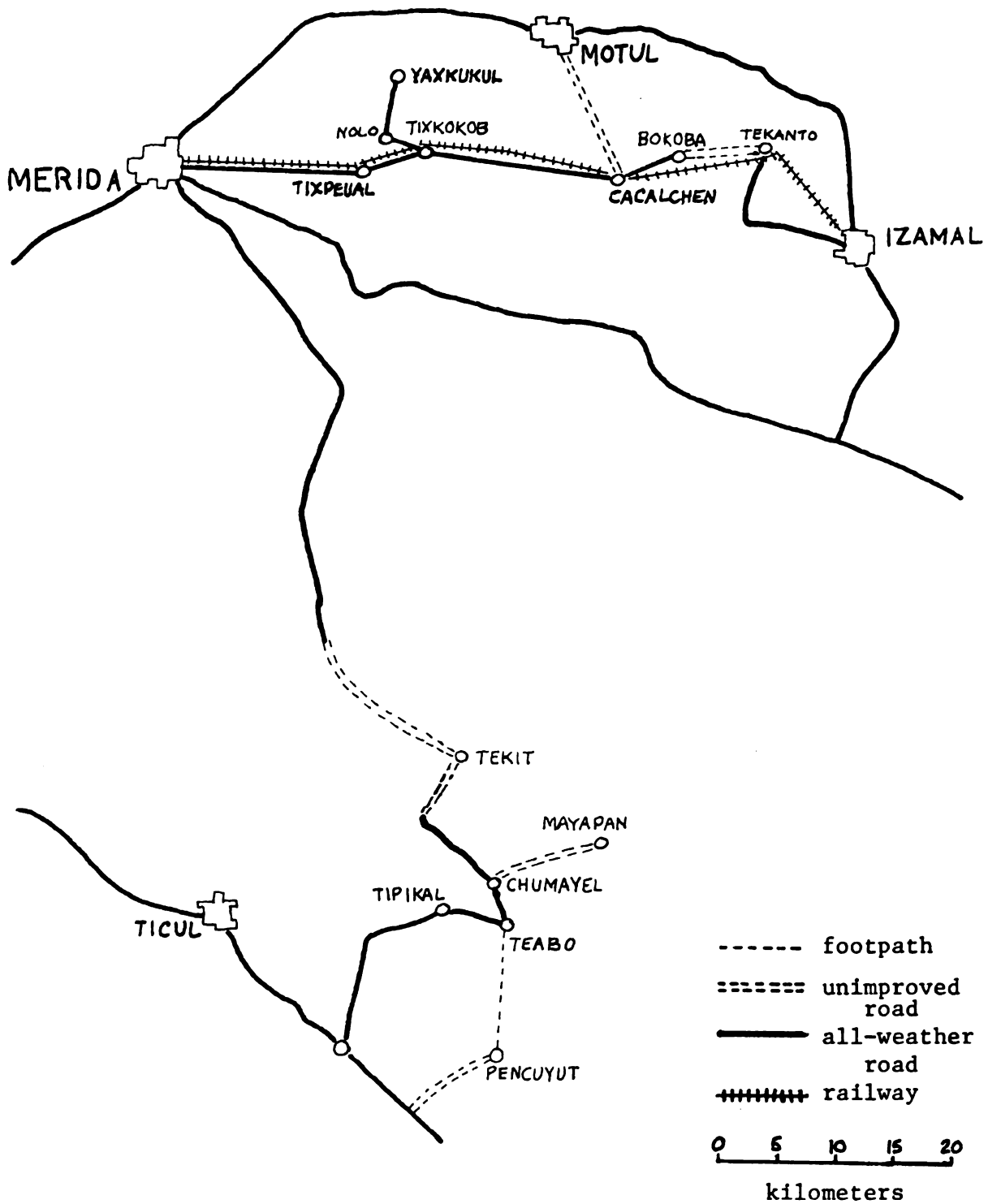


Figure 8.--Communities involved in hammock-production.

materials. Dealers in Tixkokob also discount one peso for each dropped stitch; these are later repaired while the arms are being made.

In general, the middlemen in Tixkokob and Teabo sell their products in somewhat different ways. While both put out materials with weavers, those in Tixkokob tend to employ *venteros ambulantes* for selling their finished products, while those in Teabo usually deal with the large hammock merchants in Mérida. By bypassing the large Mérida merchants, and carrying the product directly to the consumer, those in Tixkokob are able to increase somewhat their own share of the returns. Those in Teabo have not yet developed this pattern; as far as I could tell, nearly all of their trade was with the larger merchants in the city. One intermediary in Teabo did sell a few hammocks directly to an importer in California, but this was unusual.

There is another difference between these two centers: most hammocks made in Tixkokob are made of the coarser and cheaper *hilo de madejas*, while Teabo is more heavily involved in producing hammocks of *hilera*. One explanation for this is the general belief on the part of merchants in Mérida that the weavers in Teabo are more willing to take the extra time and effort involved in producing the more complicated designs and finer weaves involved in more expensive hammocks.

During the spring and summer of 1972, 13 middlemen were interviewed: three in Tixkokob, five in Teabo, four in Chumayel, and one in Tipical. Of the middlemen interviewed, seven had been in the

business for five years or less, five for 8 to 10 years, and one for 43 years. Two of the middlemen in Tixkokob sell exclusively through *venteros ambulantes*, often travelling themselves. The others interviewed deal with the large merchants in Mérida (all but two deal exclusively with one or the other of the two largest city merchants), exchanging finished hammocks each week for new materials and cash payments for the labor.

For the most part, these middlemen buy materials for cash from the merchants in Mérida, although three received at least a part of their materials on credit. The prices charged to these middlemen are generally the same as the retail prices offered to the general public. In fact, one merchant consistently sells *madejas* of 230 grams to the public at 6.50 pesos, while selling *madejas* of 250 grams to his regular suppliers at 7.00, resulting in a slightly higher cost to the intermediary (2.8 centavos per gram, compared with 2.4 centavos per gram). The verbal contract in this case includes guaranteed buy-back: the dealer can sell out to the merchant at any time. Nevertheless, although the merchant's ostensible reason is to maintain quality standards, it would tend to insure his supply; it might be more difficult for middlemen to recover the original cost of the materials by selling elsewhere.

The amounts of capital invested in materials by these middlemen varied considerably. Although some were not willing to talk about this, six of the dealers reported the investments shown in Table 18.

The sources of capital were also quite varied. One man began by making and selling henequen hammocks, made of home-spun

Table 18.--Capital investments in hammock materials by small-town middlemen.

Case	Initial Investment	Investment at Time of Interview
A	429 pesos	
B	450 pesos	
C	822 pesos	2,000-3,000 pesos
D	2,000 pesos	
E	3,000-4,000 pesos	more than 14,000 pesos
F		more than 7,000 pesos

cord. After 10 years of this he bought materials for four cotton hammocks, and began to sell them door to door in Mérida. Gradually, over a period of four years, he saved enough from this activity to invest 822 pesos with one of the bigger dealers in Mérida, becoming one of his regular suppliers. Another middleman began as a *ventero ambulante* in 1929, carrying henequen hammocks to Campeche and Coatzacoalcos (travelling by train and boat). He later became a dealer on his own, and is now one of the largest in Tixkokob.

In the typical case, however, the capital invested in putting out hammocks comes not from working one's way up through the ranks of the industry in this fashion, but from the proceeds of some other activity. Three middlemen were owners of small stores and one of a cantina before entering the hammock business. One got his initial capital by selling several pigs and combining the money with the proceeds from that year's milpa. Another began as a young man by selling several head of cattle which his father had given him. Still another invested part of the proceeds of selling honey in 1972 when the price of honey was particularly good. One man saved money from his wages working as a bartender. Another had worked for several years buying fruit in Oxkutzcab and selling it in Mérida; he shifted his capital from this to hammocks. One had been a *bracero* in California prior to entering the business; it is not known for sure, however, that his capital came from that source.

Just as the profits from other activities may be invested in hammocks, the reverse is also true. One man opened a store with the proceeds of the hammock trade; another set up a corn mill.

At least four of those interviewed learned the trade by working for a relative, then striking out on their own.

Volume varies considerably, from as few as 20 to as many as 200 hammocks weekly. Some of the dealers interviewed were evasive about the volume of business, and in many cases it was not possible to verify their statements in this regard. On one occasion, however, a Merida merchant supplied me with a list of hammocks which had been delivered to him that week by five of the middlemen, four of whom were later interviewed. In these cases, no great discrepancies were found regarding volume and prices.

On this particular occasion, each middleman took new materials in exchange for those delivered, plus cash amounts varying from 389 to 3,291 pesos. Of this money, 72-75 percent can be calculated as representing the wages paid to weavers and agents (a matter to be discussed in greater detail shortly). Weekly profits therefore ranged from approximately 98 pesos to 617 pesos in these five cases. This calculation does not, however, take into account the labor cost of putting on the arms, or the time and money consumed in transporting materials and hammocks. Often, the middlemen themselves make the arms. If not, they pay specialists to do this. These profits, then, are gross rather than net.

Judging by reports of volume from other middlemen, it can be assumed that only six or eight intermediaries in the state make as much as 600 pesos weekly. The average is more likely in the neighborhood of 200 to 300. Nevertheless, these incomes are good ones for rural Yucatan.

During the period of study, the wages paid by these middlemen to weavers (or agents) varied from five to six pesos per madeja, and from 12 to 15 pesos per caja. The wages for hammocks of hilera were somewhat higher in Teabo than in Tixkokob; this reflects the previously mentioned differences in the typical patterns of specialization of these two communities. Teabo produces almost exclusively for the Mérida market, and it is largely in Mérida that the Yucatecan bourgeoisie, the group most likely to buy hammocks of hilera, resides. Tixkokob usually produces for more distant markets, where hammocks are sold to foreign and national tourists as well as to permanent residents. Their customers are, on the whole, less acquainted with hammocks and with the features by which quality is judged. The more expensive hammocks would not compete well under those circumstances.

Agents

Most of my observations of and interviews with agents took place in Cacalchén. Consequently, the discussion which follows concentrates on that community.

While middlemen are usually male, agents are often female. They are much more likely than middlemen to come from the ranks of weavers. Agents perform the task of transporting materials to outlying communities and distributing them among weavers there. A few of them work directly with merchants in Merida, but most work for small-town middlemen.

Agents in Cacalchén, referred to locally as hamaqueras, operate in the following fashion: early Saturday morning they make

the trip to Tixkokob, 17 kilometers distant, either by bus or train, carrying in large cloth sacks the hammocks which have been finished during the previous week. These are delivered to the middlemen who have provided the materials. New materials are picked up and the middleman pays the agent for the labor. Typically, each agent distributes materials for several middlemen, and each middleman supplies several agents. Consequently, delivering the hammocks and collecting the new materials may take most of the morning. When the agent has finished her rounds she may make a few small purchases in the Tixkokob market, and then return to Cacalchén on the next bus. Occasionally 15 or 20 of the hamaqueras will combine and rent a pickup truck for the return trip. This does not cost significantly less than the bus, but saves time, allowing them to arrive home an hour or so earlier. Upon their return, the weavers come to collect their wages and a new supply of materials for the next week.

Because agents often deal with several suppliers and distribute materials to numerous weavers, it is usually necessary to keep written records of the name of the supplier, the name of the weaver, the color and size of the hammock, and any other specifications required by the middleman. Sometimes, the finished hammocks are also tagged with this information by the agent.

The necessity of keeping written records places a limit on the volume of business transacted by those few agents who are illiterate. Literacy has an obvious advantage here. Another limit on volume is imposed by the necessity of insuring that weavers do not short-weight their suppliers. A scale for weighing hammocks costs

approximately 150 pesos. An agent who does not have a scale can distribute materials only to close relatives and friends whom she can trust. Otherwise, her supply of materials from the middleman is endangered. Since the smaller operators earn only about 20 pesos weekly, buying a scale represents a major investment and a decision to expand the scale of operations.

The only other expenditure required of an agent is fare for the bus or train. Bus fare is 2.80 pesos round trip to Tixkokob, and train fare is about half that. One of the larger middlemen in Tixkokob always provides his agents with bus fare.

For most agents, distributing materials is a part-time task. There are a few who devote themselves full-time to this activity, and they spend considerable amounts of time seeking out supplies and recruiting weavers in order to increase the volume of their operations. Some have been active in teaching people how to weave. In Cacalchén, full-time agents distribute materials not only there but in towns farther east on the rail line: Bokoba, Tekanto, and Izamal.

The commission normally earned by agents is 50 centavos per madeja. In some cases they are able to increase this amount. For example, by seeking a supplier in Mérida who might pay 6-6.50 pesos per madeja, an agent could increase her commission by continuing to pay only 5.00 pesos per madeja to the weavers, the going rate for wages. The agent thus has two strategies open for increasing income: increasing the volume of business at the same commission, and seeking suppliers who will pay a bit more.

In either case, the agent is reliant on the good will of suppliers and will try to personalize the relationship in order to increase her share of the supplier's trade, or to insure against reduction when materials are scarce. One way this may be done is by attempting to create ties of compadrazgo with the middleman. This happened in a number of cases between agents in Cacalchén and middlemen in Tixkokob. In addition, however, the agent must develop a reputation for reliability--for being able to produce hammocks of the desired quality within a reasonable time period. Thus agents prefer to work with known weavers, people who can be trusted not to cheat on weight, not to make mistakes, and to complete the work promptly. Inability to guarantee good work and prompt delivery jeopardizes the agent's supply.

One would think that the distribution of materials would be a good way to learn the business, accumulate capital, and become an intermediary. This is apparently not the case. Some of the agents in Cacalchén have worked in this capacity for years; none has yet managed to invest in more than a handful of hammocks. These very small-scale dealers find themselves easily wiped out by any small setback.

One woman began by investing in materials for three hammocks and gradually worked up to seven by reinvesting her profits. Then one of the weavers turned in an underweight hammock, and the city merchant with whom she was dealing refused to buy it back. Selling this one hammock independently caused considerable inconvenience and discouraged the woman from her efforts to become an

entrepreneur. Another small dealer, a man, sold off part of his stock in order to make necessary repairs on his house when the rainy season arrived and the roof began to leak. He then decided that the small number left, only four hammocks, was not worth the trouble. He sold out, keeping one of the hammocks for his family.

Economies of scale are clearly implied here. Going to Mérida costs 5.80 pesos, round trip by bus, or 3.00 by train. Making this trip in order to turn over two or three hammocks is not worth the fare, or the loss of a day's labor time, when more can be earned with less risk by handling a large number of hammocks for someone else.

Weavers

The characteristics of weavers will be examined in greater detail in Chapter 5. Here I shall restrict my remarks to a few general observations on investment, labor time, and wages.

Generally, households involved in weaving own one loom for each weaver, although occasionally looms are borrowed from friends or relatives, or two or more members of the family will work alternately on the same loom. Looms are made by local carpenters and are fairly inexpensive. During the time of the study the cost of a loom was 35 to 40 pesos in the Teabo area and 50 to 60 pesos in Tixkokob and Cacalchén. Shuttles are also made locally, or can be purchased in Mérida for 2.50 to 3.00 pesos.

The length of time required to make a hammock is influenced both by individual skill and by the number of hours which can be

devoted to weaving. Most weavers work only part-time, varying their hours from day to day and week to week. The work requires little concentration once the skill has been mastered, and can be interrupted at any point. Each person in the household may do a few vueltas, although one person may be principally responsible for the work.

Under these circumstances precise estimates are not possible, but it typically takes the better part of a day to weave one madeja. A few individuals are able to complete two madejas in one day, but this is not common. An equivalent quantity of hilera takes somewhat longer, since it is finer and requires more mallas. Few weavers are able to complete a hammock of three cajas in less than two weeks. Even those persons who have the ability and the time find that the sustained effort puts uncomfortable strain on the body, since all weaving is done standing up. Consequently, most people work at weaving only a few hours a day unless there is an immediate need for cash. Frequently, weavers will put forth a burst of effort at the end of the week, working late Friday night or rising early Saturday morning to complete a hammock to be delivered that day. Otherwise, they would have to wait another week to be paid.

Weavers are paid by the piece, rates being fairly constant throughout Yucatan. The major source of variation in wage rates has to do with the weaver's location and the source of the materials. Those who have direct access to middlemen earn more than those who are dependent on agents. During the period of study, weavers in Cacalchén typically received 5.00 pesos per madeja and

12.00 per caja from agents, while those in Tixkokob were paid 5.50-6.00 and 12.50, respectively, by middlemen there. In Teabo, Tipical, and Chumayel, weavers received 5.00-6.00 per madeja and 14.00-15.00 per caja, while those in the outlying communities of Mayapan and Pencuyut received somewhat less.

Table 19 represents the approximate labor times required for weaving hammocks of various sizes, and the corresponding wages. Hourly earnings can be estimated to range from 60 centavos to 1 peso, with only the more skilled falling into the upper end of this range. At these rates, few weavers earn more than 4-5 pesos daily or 20-30 weekly. Wages are low compared to other kinds of work available to the rural population: agricultural labor (about 10 pesos daily) and domestic service in Mérida (150-200 pesos monthly, plus room and board).

As will become clear in the next chapter, weaving does not pay a living wage. That it is done at all is a reflection of the widespread underemployment in rural Yucatan. Hammock-weaving is an activity which can absorb labor time not otherwise employable: the odd hours and moments which women have available between cooking, laundry, and child care; the time available to men after their work in the fields is completed; the otherwise unproductive labor of juveniles.

A few words need to be added about those individuals who specialize in making arms. Nearly all of the hammocks made in Cacalchén are delivered to dealers in Tixkokob without arms. The workers there who put on the arms are paid in accord with the size

Table 19.--Estimated labor times and prevailing wages for hammocks of various types and sizes.

Size and Type of Hammock	Estimated Labor Time Required	Prevailing Wages
2 madejas	12-16 hours	10-12 pesos
3 madejas	18-24	15-18
4 madejas	24-32	20-24
5 madejas	30-40	25-30
6 madejas	36-48	30-36
2 cajas	30-40	24-30
2.5 cajas	37-50	30-37
3 cajas	45-60	36-45

of the hammock, usually 1 peso per madeja or 2.00-2.50 per caja. Those with practice can finish 8 or 10 hammocks of 2 madejas per day, earning from 16-20 pesos. Obviously, this task is considered preferable to weaving.

Seasonal Fluctuations in Production

Fluctuations in production levels are principally determined by demand. During the cool months from November through February sales are slow, with a temporary upsurge corresponding to the Christmas holidays. During the hot months from March through August sales are high.

These variations appear to reflect in part the ups and downs in tourism (highest during the summer months and Christmas holidays) and in part the weather conditions in Yucatan and in other areas where hammocks are sold. Venteros find that sales are slow in the Gulf Coast region during the rainy season, from June to November. Increasingly, production levels reflect export sales to the United States, which peak in the spring and early summer.

In anticipation of these variations, entrepreneurs begin to restrict the supply of materials in July and weavers face difficulties in securing adequate supplies to keep them employed at normal capacity. Thread continues to diminish toward the end of the year, remaining scarce until January. By the end of January dealers are again increasing their supplies to weavers and production resumes at a high level through June.

The larger dealers in Mérida generally build up a sizeable inventory of finished hammocks during the slow months. When

inventories have reached an undesirable level, they tend to lower the prices they pay to producers, or occasionally, to cut off purchases altogether except from suppliers they are especially anxious to keep. When this happens the small-town entrepreneurs who depend on them face considerable difficulty in disposing of their hammocks until sales begin to pick up again.

As sales decline, wages paid to weavers also may decline somewhat. In July of 1972, some of the dealers in Tixkokob lowered wages by 50 centavos per madeja. The major cause of lowered production, however, is the restriction of the thread supply rather than the refusal of weavers to work for lower wages. Even when wages decline there are many weavers who complain about not having enough work. It is clear that many of them accept the lower wages as better than none at all, and some even surmise that merchants lower the wages to force them to produce more. That is, they find that they have to work harder to make the same amount of money.

The agricultural cycle in Yucatan would appear to have little effect on fluctuations in hammock production. In the henequen zone, seasonal variations in labor needs in agriculture are not great, although they increase somewhat during the spring when new fields may be cleared and planted in henequen, and during the rains when the weeds grow faster and cutting them consequently takes somewhat longer. In the maize zone, fields are cleared in the winter and burned in April or May; planting is done in May or June, and weeding is necessary once or twice during June and early July. The period of maximum labor expenditure in agriculture thus overlaps in large

part with the period of maximum hammock production. Since most of the weaving is done by women, whereas agricultural work is performed by men, one would expect little influence of one on the other.

Women and children commonly help with the harvest of the milpa, but this takes place in the late fall when supplies for weaving hammocks are also scarce. It seems safe to conclude that fluctuations in production levels are principally determined by demand rather than labor availability.

One response to these variations is the tendency for relationships among middlemen, agents, and weavers to be personalized. Ties of friendship, kinship, and compadrazgo are utilized by agents and weavers to insure a steady supply of materials during the lean months, and by middlemen and agents to recruit weavers during the months of peak production.

Marketing

As has been mentioned, dealers in Tixkokob typically operate through venteros ambulantes who travel to distant points, most commonly to Chetumal, Campeche, Ciudad Carmen, Villahermosa, and Coatzacoalcos. Some go as far as Belize, Guatemala, and Acapulco; others concentrate their efforts closer to home, in Mérida or Progreso. The dealer provides the hammocks to the salesman on credit, collecting a fixed price after they are sold. The salesman keeps whatever he can get over and above this price. When demand is high he does well, but sometimes he merely breaks even. During 1972 there were complaints that too many venteros had entered the

market, and that competition had driven earnings below previous levels.

Sometimes the middleman himself plays the role of *ventero*, or perhaps the selling will be entrusted to his sons or other close relatives. Some *venteros* spend most of the year away, receiving new shipments in their distant locations and sending back orders and remittances. They may return home only two or three times a year. Others come back every few weeks for a new load. Sometimes, they look for goods which can be transported in the opposite direction and sold at home, thus increasing their proceeds.

A few of the dealers in Tixkokob also sell wholesale, either to merchants in Mérida or to stores in other parts of Mexico. For a time, one sold directly to an importer in New York.

In Mérida, the greater part of the sales are handled by the 8 or 10 largest shops. In addition to these shops, hammocks are sold in small quantities in about two dozen market stalls and small shops which carry a variety of local handicrafts and cater largely to the tourist trade.

In the streets immediately surrounding the city market, 10 or 12 *venteros ambulantes* can usually be found selling hammocks. Most of them commute daily from Tixkokob or other nearby villages where the hammocks are made. A few work on commission for the merchants with permanent shops, taking an armload of hammocks out on the street to sell.

In recent years, the export of Yucatecan hammocks to the United States has assumed increasing importance. This part of the

trade is handled almost exclusively by the two or three largest dealers in Mérida, and during the study period one of these dealers estimated that half of his total sales were going to export.

The selling price of a hammock varies considerably depending on size, quality of materials, where it is sold, and the type of customer. The large shops are more likely to charge fixed prices; *venteros ambulantes* to charge whatever they think the traffic will bear. *Venteros* are not above misrepresenting the quality of their merchandise, particularly to an obviously green tourist. On the other hand, tourists will frequently demand ridiculously cheap bargains, on the general assumption that the seller always asks double what the goods are "really worth." In the absence of shared information, price-making in these situations is erratic and unsystematic; the seller's margin is subject to a large element of chance.

The situation is rather different in the case of sales to native Yucatecans. As customers, they are more knowledgeable about the prices and quality, and are more likely to seek out reputable producers or dealers. The prices prevailing in these shops during the study period are shown in Table 20.

Prices are also fairly uniform in the case of sales to U.S. importers. These customers are likely to shop around and to acquaint themselves with the price, quality, and reputation of various dealers. Competition among these dealers to land export contracts is fairly intense. Nevertheless, there are a number of

factors which operate to create an oligopolistic situation in regard to the export market.

Table 20.--Prevailing prices for finished hammocks, Mérida, 1971-72.

Size	Price, in Pesos
2 madejas	40-50
3 madejas	60-70
4 madejas	80-90
5 madejas	100-120
6 madejas	120-145
2 cajas (equivalent to 4 madejas)	120-140
2.5 cajas (equivalent to 5 madejas)	140-160
3 cajas (equivalent to 6 madejas)	175-200

The larger dealers are, in two cases, also the manufacturers of materials, and this form of vertical integration gives them considerable influence over the supplies and prices of materials. Those large dealers who do not manufacture their own supplies are able to buy cheaply in large quantities from factories in Mexico City and Puebla; they in turn sell to smaller dealers.

Export orders are often quite large, involving hundreds or even thousands of hammocks. Only the larger dealers have the capital and inventories to insure prompt delivery in such large quantities. One dealer claimed to have an inventory of 1,000,000 pesos in hammocks. Related to this are problems of quality control. For

example, one dealer in New York placed an order for 1,000 hammocks, with fairly rigorous specifications as to size, length, weight, colors, and design. The merchant who filled this order had to put out orders to his suppliers for 1,300 hammocks, since many of those returned did not quite meet the specifications of the importer.

The larger dealers are also more familiar with the instruments of international transactions, and because of their business connections usually find it somewhat easier to secure export visas, required for any shipment over 10 hammocks. Some of the small-town middlemen I interviewed expressed the desire to export directly to customers in the United States, but were unaware of the procedures involved or of how to contact potential customers. By contrast, the larger dealers in Mérida make use of advertising, or even take trips abroad in search of markets. They also tend to have at least some facility in communicating in English and are acquainted with the niceties of how to wine and dine potential customers.

It is difficult to estimate the volume of hammocks which are funneled into the export market, but the trade is certainly worth several thousand dollars weekly during the height of the season. Hammocks are shipped not only to the U.S., but to Canada, Europe, and parts of Central America. These large orders tend to be concentrated in the spring and early summer, the warm months in the northern latitudes, and appear to have considerable impact on production levels throughout Yucatan.

Distribution of the Returns

At this point the system of hammock production can be analyzed in terms of the relationship between production and distribution. The particular form taken by the distribution of the product is implied in the relations of production: under capitalism the worker relates to the process of production as labor, the entrepreneur as capital; their shares of the product take the form of wages and profits, respectively (Marx, 1970:200-204). In the hammock industry, the roles of labor and capital are divided among various persons involved in different stages of the process of production.

Capital enters into the system in several ways. The merchants in Mérida invest in an inventory of materials and finished hammocks, investments which may total several hundred thousand pesos. Other costs include maintaining a place of business and hiring one or two full-time employees. The small-town middlemen invest several hundreds or thousands of pesos in the actual production process, usually paying cash for the materials and taking most of the risks of production delays, spoiled goods, and the like. They pay the costs of transporting the materials to the weavers and the finished hammocks to Mérida. In some cases, these costs are shared by the agents who work for the middlemen. Weavers invest 45-65 pesos each in the necessary tools, and provide their own places of work.

Labor also enters the process of production in several forms: the labor of the weavers, the making of arms by specialists, and the making of arms by the middlemen themselves (or their families).

The transport of goods by middlemen and agents also involves an element of labor.

The weavers and arms-makers in this system are laborers; their "capital investment" is insignificant in terms of the total costs of production. Agents are likewise laborers; they carry out the activities of transport and distribution of materials to weavers. Consequently, the returns to weavers, arms-makers, and agents take the form of wages.

The roles of the middlemen are somewhat more ambiguous. Some of them are capitalists only, while others are both capitalists employing wage labor and commodity producers contributing their own labor to the finishing of the product. Hence their share of the returns consists partly of profits and partly of wages.

The role of the city merchants is that of capital only, since they contribute no labor to the production process. But neither do they advance their own capital directly for production. Their relations with the small-town middlemen take the form of commodity exchange: selling materials and buying back finished hammocks. Their role is that of merchant capitalists, rather than industrial capitalists. (The same individuals may, of course, be industrial capitalists with respect to other activities such as the manufacture of materials.)

An estimation of the distribution of returns within this system can be derived by analyzing the costs and mark-ups in a typical case. For an average hammock of four madejas, purchased in Mérida at 85 pesos, the following breakdown applies:

cost of materials	41 pesos	48.2%
weaver's wages	20	23.5
agent's commission	2	2.4
arms-maker's wages	4	4.7
middleman's mark-up	4	4.7
city merchant's mark-up	14	16.5
Total	85 pesos	100.0%

These proportions will vary somewhat from case to case. If agents are not used, the weaver's wages may amount to slightly more. The middleman's share will double if he makes the arms himself. The Mérida merchant's profit varies with his selling price. In the case presented here the middleman has total costs of 67 pesos (not counting transportation) and sells at 71 pesos; his profit is four pesos, or 6 percent. The Mérida merchant buys back the finished hammock at 71 pesos and sells at 85, for a profit of 14 pesos or 19.7 percent (not counting his previous profit on the sale of materials). From the point of view of conventional economics, such costs as rent, taxes, insurance, and the like would be deducted from this amount to arrive at net profit.

In terms of Marxist analysis, the source of all profits is surplus-value, which represents the unpaid labor of the worker. "The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the labourer by the capitalist" (Marx, 1967, vol. 1:218). Whereas the rate of profit in bourgeois economics is calculated in terms of the total capital

advanced, no matter what its composition, the rate of surplus-value is calculated in terms of the cost of labor only.

The value of the product is considered to be made up of three parts: the value of the constant capital (raw materials and means of production), the value of the variable capital (wages), and the surplus-value. In calculating the rate of surplus-value the value of the constant capital is subtracted from the value of the product. Subtracting variable capital from the remainder gives the surplus-value. Then the ratio of surplus-value to variable capital yields the rate of surplus-value, or degree of exploitation (Marx, 1967: 212-20, 303-21, 531-34).

Taking the case analyzed here, and assuming that the costs of materials (constant capital) and labor (variable capital) are equal to their values, the rate of surplus-value can be calculated as follows:

a. selling price less constant capital	30 pesos
b. surplus-value: (a) less variable capital	4 pesos
c. rate of surplus-value realized by the middleman	4/26 or 15.4%
d. rate of surplus-value realized by the merchant	14/26 or 53.8%
e. total rate of surplus-value, or degree of exploitation	69.2%

If the Mérida merchant does not invest directly in production, however, how can his share of the returns constitute surplus-value? According to Marx, "All surplus-value, whatever particular form

(profit, interest, or rent), it may subsequently crystallise into, is in substance the materialisation of unpaid labour" (1967, vol. 1: 534). The storage function of the merchant, although requiring an outlay of money, adds nothing to the use-value of the product, since a hammock which has been on the shelf for some months has no greater value (and possibly less) than one which has just arrived in the shop (1967, vol. 2:136-48).

It is the oligopolistic tendencies among the few large Mérida merchants, with regard both to supplies of materials and to the export market, which allow them to appropriate a part of the surplus-value without contributing capital or labor directly to the production process.

The middleman can increase his share of the product by selling independently rather than through the merchants in Mérida, as a comparison of the following two cases indicates:

	<u>Middleman A, Teabo</u>	<u>Middleman B, Tixkokob</u>
cost of materials	41 pesos	41 pesos
weaver's wages	22	20
agent's commission		4
arms-maker's wages	4	4
Total costs	67	69
selling price	71	80
Profit	4 pesos	11 pesos

Middleman A sells his hammocks back to the merchant who supplies his materials. Middleman B sells through venteros, collecting a fixed price from them. The rate of surplus-value realized by Middleman A is only 15.4 percent, while the rate realized by Middleman B is 39.3 percent.⁴

As previously stated, these calculations assume that the cost of labor-power is equal to its value, an assumption which may not be justified in the case of the hammock industry. "The value of labour-power is determined by the value of the necessities of life habitually required by the average labourer. The quantity of these necessities is known at any given epoch of a given society, and can therefore be treated as a constant magnitude" (Marx, 1967, vol. 1: 519). The data presented in Chapter 5 suggest that the wages paid to weavers are not, in fact, adequate to produce and reproduce the laborer. If the "average family" were to allocate all available labor to hammock weaving, they would not be able to support themselves. The depreciation of wages in agricultural labor in rural Yucatan has pushed the labor of women and children onto the market, but at a rate substantially less than that paid for the labor of adult males. This differential in the average wages of men and of women and children, as well as the depreciation in real agricultural wages in general, allows labor in weaving to be paid less than its value in terms of the conventional "necessaries of life."

The rate of surplus-value, or degree of exploitation, is magnified several times in the case of hammocks exported to the United States. Selling prices in the United States are 200 to 350

percent higher than in Mérida. The same hammock that sells for 80 to 85 pesos in Yucatan brings US\$25.00 in New York, equivalent to 312.50 pesos. The following costs to the importer can be estimated:

price of a hammock of 4 madejas	US\$6.72 (84 pesos)
14% import duties	.94
25% shipping costs	<u>1.68</u>
Total costs to the importer	9.34
selling price	25.00
gross profit	15.66

Of the selling price of \$25.00, 13.1 percent represents the cost of the original materials. An additional 8.3 percent covers the costs of labor, while 1.3 percent goes to the middleman, 3.5 percent to the Mérida merchant, 10.5 percent to import duties and shipping costs, and 62.6 percent to the importer's mark-up. In summary, of the money spent by a consumer in New York, most of it remains in the United States. A smaller share goes to the Yucatecan merchants and manufacturers of materials, while the smallest share goes to the weavers and entrepreneurs working in the countryside.

Expressed in terms of surplus-value:

a. selling price less constant capital and transport costs	250.50 pesos or US\$20.04	
b. surplus-value	223.50	17.88
c. ratio of surplus-value to variable capital	$\frac{223.50}{26.00}$	$\frac{17.88}{2.08}$
d. rate of surplus-value, or degree of exploitation		859.6%

The rate of surplus-value is shared among three entrepreneurs: middleman's share, 15.4 percent; Mérida merchant's share, 50.0 percent; importer's share, 794.2 percent. The shares of the last two are further shared with others in the form of rent, taxes, and the like. The differential in the average value of labor-power between Yucatan and New York allows the importer to realize this enormous surplus-value while still presenting what appears to be a bargain to the consumer.

The Hammock Industry, Ethnicity, and Class

Most of the larger hammock shops in Mérida and both of the factories making hammock materials are owned by merchants of Lebanese descent. Of nine shops for which the relevant data are known, seven are Lebanese-owned. Their entry into the hammock trade is linked with their dominance of the city's retail trade in general. The reasons for this dominance have not been investigated in great detail, but can be explained in part by the characteristics of the original Lebanese immigrants and the nature of Yucatecan society as they found it shortly after the turn of the century.

When the first Lebanese began to arrive in Yucatan, local society was dominated by the large land owners: owners of henequen plantations and descendants, frequently, of the colonial aristocracy. This group, with its feudal trappings, constituted the grand bourgeoisie of regional society. At the other extreme were the masses of the population, the Mayan-speaking agricultural workers, living in debt servitude and creating the wealth which had brought to Mérida an unprecedented epoch of elegance and luxury.

During this period, numerous Koreans and Chinese were brought to Yucatan as contract laborers to work in the fields. The Lebanese came, however, not as contract laborers but as political exiles and as individuals seeking economic opportunity. Lebanon at that time was under the rule of the Turkish Empire, with an Islamic government resented by the Maronite Christians. Many of the Lebanese who came to Latin America were young men evading service in the Turkish army. Latin America was a popular destination for these immigrants, in part because of its population's adherence to the Church of Rome.

The Lebanese came without wealth, but the events of the revolution and the Cardenas years helped to improve the living standards of the rural population and develop a much larger domestic market for manufactured goods of various kinds. The Lebanese took advantage of these opportunities, and gradually came to dominate the retail trade of the region. Many began as itinerant peddlers, then owners of shops in small towns. The profits of these ventures were accumulated and used to launch retail and industrial enterprises in Mérida.

The owners of Mérida's largest hammock shop and thread factory are the sons of a Lebanese immigrant who came to Yucatan in 1914 and began his business career as an itinerant peddler in Teabo, selling cuts of cloth. Their major competitors are a family which owns and operates three hammock stores; the patriarch of this family came to Yucatan in 1920 and went to work as a clerk in his uncle's store in Ticul.

Their success is perhaps attributable, at least in part, to the fact that they came into a two-class system, and that the subsequent economic opportunities in retail business opened up by the revolution and its aftermath were too demanding for an emerging rural proletariat of little means and less experience, and beneath the dignity of the traditional bourgeoisie. The Lebanese (as well as a few Chinese and Italians) moved into this gap and developed a niche of their own in the evolving post-revolutionary society. Their resultant success is both admired and resented by other Yucatecans.

While some Lebanese have made strategic marriages with Yucatecans, they are largely endogamous, maintaining a sense of cultural separateness and pride in Lebanese culture. There is a great deal of emphasis on family ties and family unity; utilization of kin ties is seen as an essential ingredient of business success, and in many cases a conglomeration of legally autonomous partnerships and corporations, each managed by a particular member of the family, are run as a more-or-less unified enterprise. This is not to say that all is harmony within the Lebanese community. Their concentration in the same retail businesses often leads to intense and bitter competition, even among relatives. For example, the two largest hammock dealers in 1972 were not on speaking terms, even though they are brothers-in-law.

Nevertheless, cooperation and financial assistance within the group have been equally important and have contributed to the development of new enterprises, including the ones involved in the hammock trade.

In terms of ethnic origins, the middlemen in Tixkokob are mostly of Hispanic cultural background (locally referred to as gente de vestido), particularly those who deal in large volumes. Of the three biggest dealers, two have Spanish surnames and the third is Lebanese. They live in large and well-appointed houses and some of their children have been educated for the professions.

In Teabo and Chumayel, on the other hand, dealers are more likely to be mestizo. Many were milperos until recent years and some still have small milpas, or milpas which are worked by hired labor. Most live in thatched houses of the traditional Maya style and speak Spanish as a second language. Their wives and daughters typically dress in the traditional huipil.

The former occupations of these middlemen have been referred to previously. Although sometimes having their origins in the peasant or proletarian strata, they have come to constitute a part of the rural petty bourgeoisie. This is recognized in local terminology: middlemen in Tixkokob are referred to by weavers in Cacalchén as capitalistas.

The differences between Tixkokob and Teabo in this respect reflect the differences in the historical experiences of the maize and henequen zones. Class differentiation within the rural community has proceeded further in the former zone, to the point where the distinction between rural proletariat and petty bourgeoisie is one which has existed for many years. Although some mobility occurs, class lines appear to be relatively rigid and largely congruent with ethnic distinctions. In the maize zone, however, class differentiation

in peasant communities is an ongoing process, facilitated by the expansion of the highway network in recent years and increased participation in commerce. In smaller communities of the zone, the emerging petty bourgeoisie are often persons of mestizo identity with roots in the peasant sector.

The agents operating in Cacalchén are in nearly all cases mestizas or mestizos, although a few are catrinas and one is *de vestido*.⁵ They are typically bilingual, with Maya as their first language, and live in Mayan-style thatched houses. Most are also weavers, or once were. The few men involved are all ejidatarios or former ejidatarios.

On the whole, weavers are also mestizas or mestizos. They have been recruited from the existing rural proletariat in the henequen zone, and from the ranks of the peasantry in the maize zone. The characteristics of this group will be examined in greater detail in Chapter 5.

The pattern of ethnic and class organization in the hammock industry reflects the system of stratification prevailing throughout Yucatan, a system which largely restricts people identifiable as mestizo to the lower levels. The weavers and agents are drawn from this group. The middlemen, both mestizo and Hispanic, are part of the petty bourgeoisie of the small towns. The larger dealers in Mérida form a part of the affluent urban bourgeoisie.

The one group which is notably missing from these observations is the traditional grand bourgeoisie of Yucatan. Although suffering temporary reverses during the revolutionary and post-revolutionary

periods, they have been able, to a remarkable extent, to maintain themselves in positions of influence. They continue to control much of the henequen industry and dominate the tourist industry as well (Lee, 1974). They also constitute to some extent a comprador class, representing the interests of multi-national corporations operating in Yucatan. Most controlling positions in government bureaucracies are in the hands of this group, although the power of the regional elite is increasingly challenged by centralized national control. None of the merchants involved in the hammock industry is a member of this traditional elite.

In a larger sense, the system of hammock production represents a pattern of international stratification. The Yucatecan communities which specialize in hammocks provide reserves of cheap labor to satisfy the status pretensions of the relatively affluent masses in the developed world and their desires for handcrafted items of conspicuous consumption. This makes good business for the entrepreneurs in Yucatan who engage in the hammock trade, but it is even better business for the importers in the developed countries. In this sense, the terms of trade conform to an already established international pattern of exploitation.

Footnotes--Chapter 4

¹In Tixkokob, producers of henequen hammocks work on their own account and sell to the highest bidder. Buyers come from Mérida at 4:00 or 5:00 every afternoon and buy from sellers who gather under the arches of the town hall. The cost of materials for an ordinary henequen hammock is about three pesos; such a hammock can be made in one day and sells for 14-15 pesos.

The henequen cord generally in use for this purpose today is produced on large hand-cranked wheels. It is rather coarse and results in a hammock which is loosely woven. Cord which is produced by twisting it against the thigh (corchado a mano) can be made so that it is considerably finer and more durable. This cord results in a more densely woven hammock which may last for many years.

The type of henequen fiber used will also affect the thickness and softness of the cord. Henequen fiber from young leaves in the center of the plant is finer and softer than that from the long outer leaves. There is also a species of agave locally referred to as sisalana (yax-ki in Maya) which is not usually grown commercially; it produces a fiber which is much softer than the commercial variety of henequen. This material is known as lengua de vaca and hammocks made from it are famous for their high quality. The yield of fiber from sisalana is rather low, and the difficulties of securing adequate fiber are such that lengua de vaca hammocks are produced in limited quantities and are quite expensive.

²All of the terms used here for designs are those in common usage in Cacalchén. The same designs may have different names in other communities, or names may vary even among the weavers in the same community.

³Calkini, in the state of Campeche, is an equally important center, but the description here is restricted to the two areas in Yucatan which were the focus of research, and their respective hinterlands.

⁴This analysis raises the question of why the middlemen in Teabo do not sell through venteros. As far as I know, none of them was using this system in 1972. Since I didn't ask them this question, my answer must be speculative. They have entered the business more recently, and it is possible that they have not yet devised a satisfactory way of circumventing the Mérida merchant. Second, their capital reserves may not be great enough to allow waiting longer to realize their gains when they can usually sell back to the city merchants at any time. Third, they are working in a rural zone which is less proletarianized than that of Tixkokob, and consequently

it may be more difficult to hire venteros who are known and trusted. Fourth, the ethnic differences between the two groups of middlemen, described later in this chapter, may play a part.

⁵The distinction between catrín and de vestido is socially important in Cacalchén and other henequen zone communities. A catrina has changed from the huipil to European-style clothing in the present generation; gente de vestido are Hispanic by descent, or have identified with Hispanic culture for several generations. These distinctions are dealt with more extensively in Chapter 5.

CHAPTER 5

CACALCHÉN: A VILLAGE OF WEAVERS

Cacalchén lies 42 kilometers east of Mérida in the heart of the henequen zone. It is the cabecera of the municipio of the same name, and according to the census of 1970 has a population of 4,256. As part of a region closely tied to the international economy, Cacalchén has frequent and intimate interaction with the outside world. For many years the town has been linked to the capital by rail, with two trains daily between Mérida and the oriente. The east- and west-bound trains cross in Cacalchén at about 7:00 A.M. and 4:00 P.M., occasions for local women to sell fruit, panuchos, and other snacks to the passengers. Since 1971 the community has also been connected to Mérida by a smooth all-weather road, and five buses daily make the trip to the city.

The aspect which Cacalchén presents to the traveler is not remarkable; it is a typical henequen-zone town, its large rectangular plaza graced by a few trees and park benches. Around the plaza are the white-washed church, the palacio municipal (town hall), a small market place, and a number of shops. The streets are laid out in the grid pattern typical of Latin American towns, ending some four or five blocks from the plaza. As one moves away from the center, the proportion of casas de mampostería (Spanish-style houses

of rubble masonry) diminishes and that of casas de paja (oval-shaped pole-and-thatch dwellings in the Maya style) increases. The streets likewise change from smooth, wide paths suitable for four-wheeled vehicles to footpaths partially obstructed by vegetation and outcroppings of rock.

The Setting

Village History

It is not clear whether a large settlement existed at the present site in pre-Columbian times. According to the relación of 1581 (Collección: 1898), it was the site of a reducción carried out during the early colonial period, when the population of the surrounding area was concentrated there in order to facilitate their indoctrination by the Franciscan friars. At that time, the local Indians were subject to the monastery in Motul, 12 kilometers to the north. Later, a church (still in use) and a small monastery (now in ruins) were constructed in Cacalchén itself. These are located on a large, rectangular platform raised a few feet above the plaza, probably used as a Mayan temple platform in ancient times.

Slightly south of the town are the ruins of a sacbé (ancient Maya road) apparently linking Izamal, 20 kilometers to the east, and the ruins of Aké, eight kilometers to the west. The remains of pyramids and temples at the latter site indicate that it was an important ceremonial center in post-Classic times, as was Izamal. At the time of the conquest, however, the people of Cacalchén owed allegiance to the Pech family, rulers of Motul (Roys, 1965).

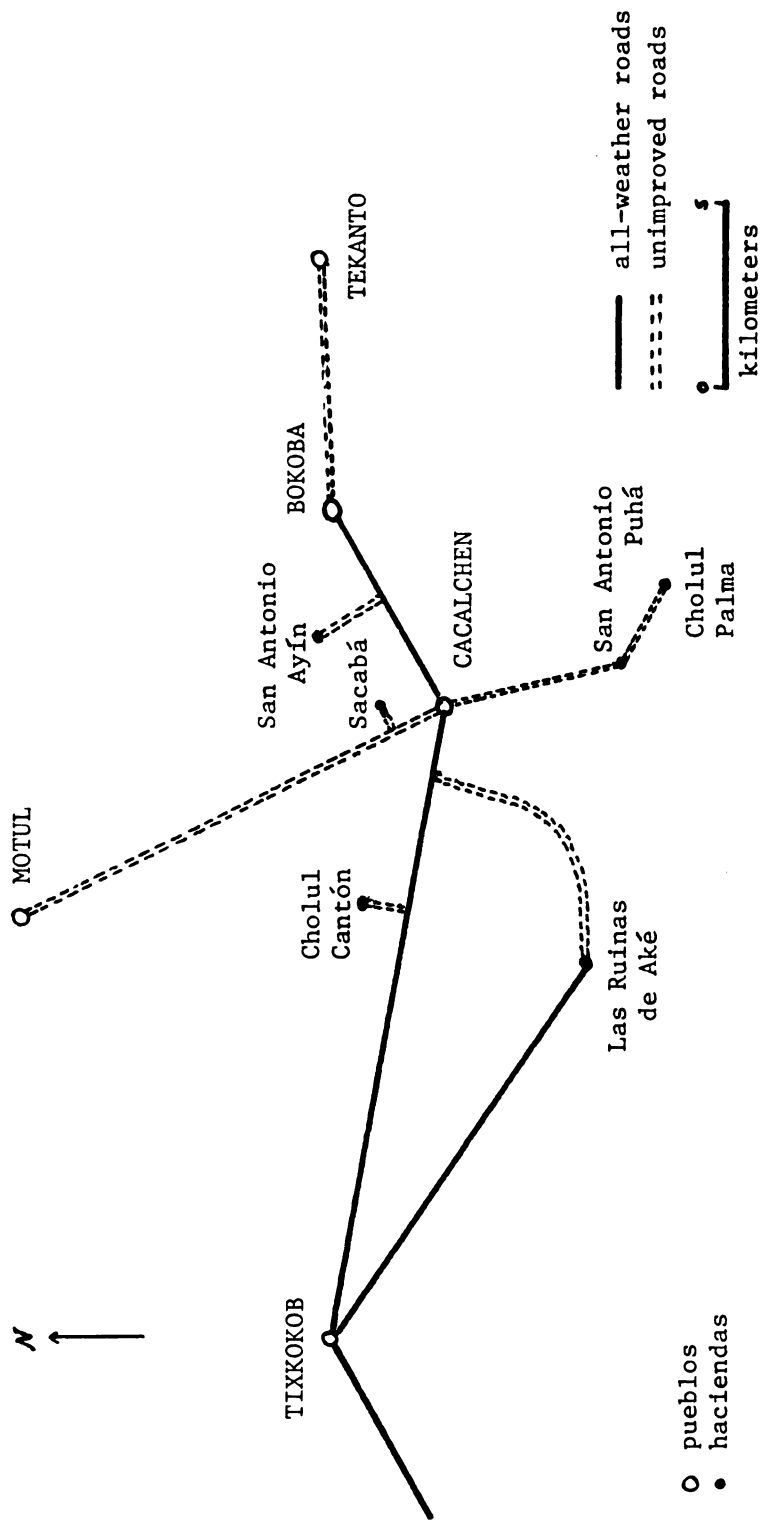


Figure 9.--Cacalchén and neighboring communities.

The history of Cacalchén in post-Conquest times is not well-documented; apparently it was never an important center of commerce or administration. The residents of the community have a sense of history stretching back only to the times within living memory or, at most, to events of the past recounted by the parents of those now living. Ideas about the Caste War of the 1840s, the Colonial period, and the ancient Maya are very sketchy indeed. Even events of the past 40 years cannot be placed by most people with much accuracy. Nevertheless, there is one period of the past which is discussed with considerable frequency in Cacalchén, and that is the época de esclavitud, the days of debt peonage before 1915. Then the parents and grandparents of many Cacalcheños were peones acasillados (resident peons) on the nearby haciendas, and most adults can recite the abuses of that time. The account which follows is a composite of informants' recollections.

Peons were not paid in money; instead they were given rations of food, clothing, and aguardiente (sugar-cane liquor). The aguardiente, according to informants, was intended to kill pain and make the peons work harder. These rations were charged against the worker's account at the plantation store and his wages were applied to the account. By law, peons could not leave their patrones without paying off these "debts."

Peons were locked in at night and not allowed to leave the haciendas except for a few hours on Saturdays or Sundays. They were required to work not only the tarea (task), for which they were paid, but the fagina ("public service") for which they were not. They

were beaten for not fulfilling their quotas, so that their wives and children often had to help them finish their tareas.

It was during this epoch also that many chinos (actually Koreans) came to work in the fields. Groups of them came on the train and were taken to the haciendas on the plataforma (mule cart pulled on narrow-gauge rails). Many came without really knowing where they were going; they were sent as contract laborers. Today most of these have become assimilated to the local population.

Peons were virtually owned by the hacendado; they were bought and sold. Children, if orphaned, became the "property" of the hacendado. Corporal punishment was regularly administered for being away from the premises without leave, being late when the bell was rung to call people to work in the morning, and failing to greet the hacendado or administrator properly. Sometimes, beatings were fatal.

Daughters of the peons were frequently exploited sexually by the hacendado and his sons. When a girl became pregnant the owner would order one of the young peons to marry her. In fact, marriages were often arranged by the hacendado without consulting the wishes of the people involved, and peons were not allowed to marry without permission.

Women with small babies were required to wet-nurse the children of the overseers. Women as well as men were whipped for various infractions. One nearby hacienda had a special whipping post for pregnant women, arranged to protect the abdomen so that the lashes fell only across the woman's back. Children were not allowed to

attend school or learn to read, and were punished for attempting to do so.

These dismal remembrances are common knowledge in the community, and are confirmed by the incidents recounted in John Kenneth Turner's Barbarous Mexico, published in 1910. There are, nevertheless, persons who regard those times as the good old days. Some of those whose forebears were peones eventuales (occasional day laborers resident in the pueblo) rather than peones acasillados point out that, by contrast with today, no one ever lacked employment. The hacendados gave their workers new clothes every New Year and helped them out in other ways in times of need. According to one informant, even the esclavos (slaves) ate better in those days than the ejidatarios do now. On the whole, however, most people do not share this romanticized view of the past. The supposed generosity of the hacendados is belied by the common recollection that people had very little clothing. Women frequently had little or nothing with which to cover themselves while they washed their only garments. The men often went to work in the fields shirtless and barefoot, with nothing but a bit of cloth around the loins. The food was poor, and such luxuries as chocolate were unknown to most. One man argued that the apparent generosity of the hacendados was designed to deceive the workers; whatever they were "given" was really earned through the unpaid labor of the fagina.

In any case, all of this changed with la libertad, the abolition of debt servitude granted by General Salvador Alvarado in 1915. With la libertad came the end of corporal punishment and the

freedom to leave one's employer. Improvements in working conditions and wages followed. But the coming of la libertad did not completely change the lives of the workers. The hacendados still owned and operated the plantations, and for most people there was no other employment available. This began to change as land redistribution was initiated under the administration of Gov. Felipe Carillo Puerto in the early 1920s.

Cacalchén first applied for ejido lands in 1921, and was granted 6,142 hectares under a Presidential resolution of November 29, 1923. This grant consisted of 1,507 hectares belonging to the pre-revolutionary antiguo ejido, the community's traditional common lands, and 4,635 hectares of uncultivated lands expropriated from nearby haciendas (DAAC, Archivos).

There is some confusion in the records about the actual quantity of land included in this original grant. The lands involved were not surveyed until 1936, at which time numerous small discrepancies were apparently found between the estimated and actual size of private holdings. Also, it appears that some of the lands included in the original grant were later recovered by the private estates, since the amounts of land listed as already expropriated in the 1936 survey are considerably smaller, by about 632 hectares, than those listed in the original grant. Exact comparisons are made more difficult because the names of the estates often changed with their owners, while some were split up and others consolidated in the period between 1923 and 1936. In addition, there were at least two haciendas named Cholul and three names San Antonio.

In any case, additional lands were applied for in 1935 to provide for still landless residents of the pueblo as well as for 159 peones acasillados of nearby haciendas. An agrarian census of 1936 determined that there were 2,147 inhabitants, of whom 407 had lands received under the original grant and another 352 were eligible to receive lands. A grant of an additional 1,274 hectares was confirmed by a resolution of President Cardenas on September 11, 1937. In 1938, another 179 hectares were purchased by the local ejido credit society from a private owner. Both ejido grants, of 1923 and 1937, stipulate that the land is to be worked collectively.

The original land reform measures of the 1920s allowed the private estates to retain 200 hectares. In 1937 this limit was increased to 300 hectares (150 in henequen and 150 uncultivated). For purposes of expropriation the estates owned by members of the same family were usually treated as one unit, so that some of the estates in the Cacalchén area were expropriated completely, with the exception of the hacendado's residence and the decortivating plant in which the henequen fiber is separated from the leaves. The retention of the decortivating plants by the hacendados allowed them to retain considerable control over the henequen industry, since the ejidos had to pay them for the processing of their henequen.

The Contemporary Economy

Cacalchén's economy is still heavily dependent on henequen production. By 1972 the number of ejidatarios had grown to over 1,000 and the organization of the ejido was fairly complex. The ejido is operated as a collective under the guidance of the Agrarian

Bank of Yucatan, which advances operating funds and oversees the operations of most of the henequen-growing ejidos in Yucatan. Weekly budgets and task assignments are drawn up by the local ejido officials, but must be approved by the bank inspector.

All ejido members have rights to ejido land, but the internal structure of the ejido divides the members into a number of groups. Most of the members work under the Sociedad Local Colectivo de Crédito Ejidal, which receives operating funds from the Agrarian Bank. This credit society has some 2,500 hectares planted in henequen and is divided into five work groups (grupos económicos) assigned to the fields formerly belonging to each of five nearby haciendas. Each group has its own foremen who organize and oversee the work, and each group is allocated a weekly budget to pay wages to its members for the various tasks completed. The fiber produced is turned over to the Bank for marketing, and the proceeds credited to the society's account. Monies in excess of the society's debts are to be paid in annual dividends, but in recent years, because of low prices on the world market, there have not been any dividends.

In addition to the Credit Society, there are four solidarity groups (grupos solidarios) made up of 50 to 70 members each. These groups deal directly with the Agrarian Bank rather than being subject to the local Credit Society. They have separate allocations of land and separate budgets. These groups were organized during the 1960s as a part of a Bank policy aimed at eventual dismantling of the large collective credit societies and gradual change toward

individual parcels. Consequently, the grupos solidarios have been encouraged by the Bank with credit for expansion of plantings, and the incomes of their members are somewhat better than those of the grupos económicos. The wage rates for tasks performed are the same in both types of groups and are established by the Bank. Workers are paid by the piece rather than the day, and although these payments legally consist of advances against the sale of the crop, the people think of them as wages.

Although not all the community's land holdings are planted in henequen, expansion is currently not possible. The Bank attempts to limit production in order to sustain the price of fiber on the world market. The result of this strategy is widespread underemployment in the henequen ejidos. Because of the large number of ejidatarios and the limited lands in production (roughly 2.5 hectares per ejidatario), most ejidatarios worked only two or three days a week in the ejido fields during the period of study.

Within each group, tasks are assigned on the basis of need, those who are single or have small families receiving smaller work assignments than those with large families. Weekly wages for each ejidatario vary from a low of 15 pesos to a high of about 100 (excluding some of the officials), but the mean is certainly toward the low end of this range. Officials of the credit society and of the grupos solidarios receive extra pay for their services. The division of the ejido into various grupos económicos and grupos solidarios also results in differences in average weekly wages among the groups, since some groups have more lands under cultivation than others.

But even those individuals lucky enough to be assigned a full week's work have limited earnings. For example, in 1972 workers were paid 7.80 pesos for each 1,000 leaves cut and 5.20 pesos per mecate (an area 20 by 20 meters) for chopping weeds. It usually takes one day's work to cut 2,000 leaves or weed two mecates (perhaps longer in the rainy season). As a result, six days of cutting leaves brings in 93.60 pesos while six days of weeding brings only 62.40 pesos. These incomes are not adequate for families whose weekly expenditures for food alone range from about 60 to 100 pesos.

Consequently, most ejidatarios look for some other source of income, the most common (aside from weaving) being work in the haciendas, either in the fields or in the decorticating plants. The wage rates paid on these privately owned estates are usually lower than those paid by the ejido. But, by making use of the assistance of their adolescent sons, some of the men are able to combine enough work in the ejido and in the haciendas to make ends meet. There are six haciendas remaining in the vicinity, all of which have lost some of their lands to the ejidos of Cacalchén and other towns. A number of other estates close to Cacalchén have ceased to exist as separate entities, their operations having been consolidated with those remaining.

Most of the haciendas no longer have sizeable resident populations. Over the past three decades there has been a dramatic shift in the settlement pattern of the municipio, with most of the former residents of the haciendas moving into the pueblo. This shift of residence first began with the end of debt peonage. Then

for the first time, resident peons were free to leave their employers. Over the years, however, a number of incentives have operated to attract people to the center. The advent of corn mills, free schools, a clinic, and cheap federal electricity have made life in town appear increasingly attractive. Today, the men still work in the fields of the haciendas, but they commute to their jobs by bicycle, bus, or rail-cart. The only nearby hacienda with more than a handful of families is one which has a school, store, and corn mill, and is located on a paved road with bus service to Tixkokob.

All six of the estates are owned by absentee landlords and managed by professional administrators. Three of the owners are very definitely members of Mérida's wealthy elite; they have a variety of other business interests and do not live primarily from the proceeds of their haciendas or decorticating plants. One of them uses the hacienda primarily as a weekend retreat. Two others are owned by groups of relatives who acquired them through inheritance; these owners do not appear to be particularly affluent.

Five of the haciendas have decorticating plants which are still operating, and each of these employs some men from Cacalchén. In addition, the henequen leaves of the Cacalchén ejido are sent to four of them for separating the fiber, and the owners are paid by the ejido for this service. The plants are very old, built in the period from 1900 to 1915, and have not been extensively modernized. In most cases the original equipment is still in use, except for the replacement of steam engines by deisel.

Although the haciendas today are mere shadows of their former grandeur, the continuing importance of social and economic links between the haciendas and the pueblo is symbolically expressed in the celebrations of the saints. Fiestas are still held for the patron saints of some of the haciendas, people from the pueblo visiting for this purpose. One of the saints has been rescued from an abandoned and decaying hacienda and is now kept in the pueblo church, honored by the former residents of the hacienda. Every year at Easter the image of Santo Cristo from the hacienda Las Ruinas de Aké is brought on foot by an escort of pilgrims from Cacalchén; he is honored with the largest and most impressive procession of the year and remains in the pueblo for several weeks.

Because of the shortage of arable land, subsistence agriculture plays a very minor role in the village economy. A few ejidatarios have small privately owned plots of land on which they raise a part of their annual consumption of maize and beans, and a few others are able to secure ejido lands for this purpose. Fields are cultivated for only two seasons and left to fallow for 6 to 10 years before being used again. According to local informants, yields are poor in the second year, and the usual fallowing period is really too short for optimal regeneration. Most ejidatarios have no land for milpa, although they are allowed to plant corn between the rows of young henequen plants when a new henequen field is planted. A few individuals have planted milpas in the territory of Quintana Roo, but most cannot afford to take the necessary

time off from work in the henequen fields. In addition, transporting the grain back is a major expense.

A few turkeys or chickens are kept by most households, and some also raise one or two pigs. Fruits and vegetables are sometimes grown in the house lot, although most villagers feel that this is not worthwhile unless one has a windmill or electric pump to assist with the large amount of irrigation necessary for good results.

The primary means of saving and investment for those with a little bit of surplus income is the purchase of cattle. It is difficult to estimate what proportion of the ejidatarios own cattle, but they would appear to be a distinct minority. Cattle generally roam free in the unused ejido lands and frequently break into the henequen fields to eat the young leaves. In 1972 heavy fines were instituted to discourage this (100 pesos per violation), and owners unable to fence in their cattle on private land were considering selling their animals.

Of the non-agricultural alternatives available for supplementing income, weaving hammocks is the most common, and will be discussed in greater detail later in this chapter. Although other opportunities for local employment are limited, a few individuals round out their ejido wages with a variety of part-time work, ranging from skilled trades such as mason or baker to delivering newspapers and selling firewood. Women earn small amounts by taking in washing and ironing, embroidering huipiles, or selling snacks; young women are sometimes employed as clerks by local shops. The most common

alternative for girls is to seek work as domestic servants in Mérida.

There are a number of full-time merchants or professionals in Cacalchén. Fifteen shops carry staple foods, canned goods, and a variety of general merchandise. In addition, there are four corn mills, six bakeries (most of them combined with a store or corn mill), six cantinas and two pool halls, one restaurant, and one dry goods shop. The full-time professionals are limited to two resident school teachers (the others commute from Merida), a doctor, a nurse, the priest, and two hacienda administrators. A few people work full-time at skilled trades such as tailoring or carpentry; more frequently such occupations provide only part-time employment.

Cacalchén has experienced considerable out-migration in recent years, as well as a relatively high rate of population increase (23 percent from 1960 to 1970). Those young people who have received some secondary education or specialized vocational training are especially likely to leave. Some local people have found work in Merida, and there are a number of Cacalcheños in Mexico City, many of whom live in the same neighborhood and work for the same firm. A few people from Cacalchén live and work in Los Angeles.

The rhythm of community life is set largely by the routine of work in the ejido and on the haciendas. Wages are paid in both of these on Saturdays, and the vast majority of all village commerce takes place on Saturday afternoon and Sunday morning. This is the time when people stock up on staple foods, pay their bills, and perhaps splurge on sweet rolls, a little liquor, soft drinks, or

cochinito pibíl (succulent young pig roasted in an earth oven).

Several head of cattle are slaughtered every Saturday, and a few itinerant peddlers show up to sell fruits and vegetables or cuts of cloth. Movies and dances are held on Saturday and Sunday nights, and the cantinas do a healthy business until Monday. Throughout the rest of the week people make most of their daily purchases on credit. It is not uncommon for families to run up debts of several hundred pesos, only part of which is paid off every Saturday.

Because of its dependence on a monocrop economy, the fortunes of the community rise and fall with the price of henequen on the world market. During 1971-72, the ethnographic present of this study, the henequen cycle was at a low point, and had been for several years, due to competition from other nations and from synthetic fibers. Ejidatarios and merchants alike complained incessantly about the general poverty and the inability of either group to prosper in the absence of adequate employment. Ejidatarios talked in nostalgic terms of the days when they had a full week's work, when dividends were paid at the end of the year, and when the prices of food were lower. Merchants recalled the times when sales boomed and people collaborated enthusiastically on public projects such as improving the town hall and the park. There were frequent criticisms of Bank mismanagement and government inaction, and each new program aimed at improving the lot of the rural population was greeted with a skeptical, wait-and-see attitude.

Class and Ethnic Relations

Social class differentiation in Cacalchén reflects that of the henequen zone as a whole and has its roots in the historical process which created the plantation system. The events of the twentieth century have brought about the disappearance of serfdom and the feudal features which were once a part of the relations of production under this system, but they have not created an independent peasantry. Rather, the agricultural population involved in henequen production today constitutes a rural proletariat, related to the process of production through the administrative structure of the Agrarian Bank. In theory the ejidatarios are the collective owners of the land. In practice they do not have effective control of the means of production and think of themselves as wage laborers.

Unlike the rural proletariat of many other plantation regions of the New World, that of Yucatan retains a cultural identity distinct from that of the nation as a whole. As a result, class relations in Yucatecan society are often expressed in ethnic terms.

The Indian-mestizo or Indian-ladino distinction of other regions of Mesoamerica is not applicable to Yucatan. In Yucatan, the Indian and mestizo categories of colonial times have collapsed into one, and the bearers of the (presumed) indigenous culture refer to themselves and are referred to by others as mestizos. Mestizos speak Maya as a first language, wear a distinctive costume, and often bear Maya surnames. The term indio is sometimes used for

the same group, usually in a pejorative sense. Such expressions as los maya or la gente maya are also heard.

People who speak Spanish, dress in European style, have Spanish surnames, and identify with the Mexican variant of Hispanic culture are called gente de vestido (dzulob in Maya). However, not everyone who meets these criteria is accepted as gente de vestido. Those who have made the transition recently are called, instead, catrín. It is a mark of their superior status that the term gente de vestido is less frequently used in everyday conversation than mestizo and catrín; the culture of the dominant group is assumed as the standard and norm against which the "other," the mestizo and catrin, are measured. The use of the term catrín or catrina is a way of emphasizing that in spite of surface appearances, the person being described still has important connections with the lower status group: his or her parents are mestizo.

In Cacalchén, people who are mestizo or catrín far outnumber those who are de vestido. Among women, status placement is clearly a matter of dress and family connections, and the three-fold classification is applied frequently to them. A mestiza is a woman or girl who wears the huipil (hipil in Maya), and her long hair is neatly pulled back in a bun. If she becomes a catrina, she puts on a dress and cuts her hair; the hairdo must conform to the mode of dress. Although there may be some ambiguity about whether a woman is catrina or de vestido, there is no confusion about whether she is mestiza.

Mestizo families are not necessarily consistent in dressing their daughters; one girl may be raised as a mestiza and another as a catrina. In early childhood a girl may have both kinds of clothing and wear them alternately. It is not entirely clear what factors determine the eventual choice. In any case, the change from mestiza to catrina is usually irreversible. Beyond adolescence women rarely revert from catrina to mestiza, and catrina mothers do not dress their daughters as mestizas.

Among older women, there is an air of easy interaction among mestizas, catrinas, and de vestido. At public gatherings or on other occasions they will sit together, talk together, and sometimes dance together. Young unmarried women of the de vestido group, however, tend to associate exclusively with their own kind. Their parties, excursions, and dance groups do not include catrinas and mestizas. There is much more interaction between young catrinas and mestizas, since they are often sisters or cousins.

The classification of men is more ambiguous, at least to the outside observer. The traditional mestizo costume consists of straw hat, white shirt, white knee-length pants, sandals, and a wrap-around apron (delantal). Today only men in their fifties or older wear the delantal. Ankle-length white pants or blue denim trousers have replaced the shorter white pants. Younger men often wear tee shirts or ready-made shirts in various colors. All of these modifications, however, may be accompanied by sandals made in the traditional mestizo style (called alpargatas), and it is this item of footwear which appears to be the distinctive mark of mestizo status

today. On the other hand, men who ordinarily wear alpargatas sometimes wear shoes, and may be thought of as catrín. The hot climate discourages the regular wearing of shoes, and even de vestido men wear sandals most of the time. Their sandals, however, are often factory-made and usually differ in style from the alpargatas.

Although dress is to some extent a mark of ethnic status, men are seldom referred to in Cacalchén as mestizo, catrín, or de vestido. Instead, terms reflecting occupational or class status are much more common: ejidatarios or campesinos (peasants) for those who work in the fields; comerciantes (merchants) or other appropriate designation for those who do not. Collectively, the latter and their families are known as los del centro, those who live in the center of town.

Los del centro are the town's bourgeoisie. They include the merchants, professionals, and administrators; the families with high income and prestige within the community. Virtually all of them have Spanish surnames and live in Spanish-style houses. They tend to take a leadership role in community affairs, particularly municipal government.

Those who are not members of this group are referred to as la gente humilde (the humble people) by members of the bourgeoisie, although campesinos is a more common auto-designation. People of this group are usually ejidatarios, live in Maya-style houses, and have Maya surnames. Although there are differences in wealth and prestige within this group, most of them are poor in comparison

with los del centro. They tend to have less influence in public affairs, with the important exception of the ejido organization. As might be expected, los del centro are gente de vestido, while campesinos are mostly mestizo and catrín. Ethnic status and class status are largely congruent.

The distinction between los del centro and campesinos is apparent in patterns of social interaction. The two groups are largely endogamous, and their social gatherings are often restricted to persons of like status. Los del centro celebrate baptisms, birthdays, and weddings by inviting others of their own group to private fiestas. Campesinos also have fiestas for the same occasions, and the only members of the bourgeoisie present are usually compadres. Los del centro are often asked to serve as godparents by campesinos, but the relationship is asymmetrical. Los del centro choose compadres among themselves or among the bourgeoisie in larger towns.

There are several kinds of gatherings which bring both groups together, particularly religious activities. Members of both groups attend mass and participate in novenas (nine consecutive nights of prayer sessions) and processions in honor of the saints. But even in religious celebrations there is a tendency toward separateness. Celebrations of primarily European identity, such as Carnaval, are largely the matter of gente de vestido. Young people of the leading families organize dance troupes and dominate the proceedings, which take place over four days and nights.

Mestizos and catríns also take part, but their role tends to be peripheral.

In the traditional Maya ceremonies, on the other hand, only mestizos take part. Rain ceremonies, conducted in Maya by an h-men (shaman), are still celebrated annually by several groups of milperos in Cacalchén, but the only gente de vestido who attend are visiting anthropologists. Likewise, hetzmek ceremonies¹ are not observed for the children of gente de vestido, though a few of them have served as godparents of hetzmek for mestizo children.

The two-class model so far described tends to minimize the extent of differences in wealth and prestige among those identified as gente humilde, campesinos, and mestizos. Some of these own a few head of cattle and small parcels of land, while others do not. There is also an ideal mestizo life style, many aspects of which can only be achieved by the relatively affluent: the elegant ternos (embroidered ceremonial huipiles) worn for weddings and other festive occasions; the prestations, including gold chains, involved in marriage arrangements; the sponsorship of celebrations for the saints. These customs are respected by mestizo and non-mestizo alike, and those able to sustain them achieve prestige within their own group and the respect of los del centro. Nevertheless, membership in the latter group is closed to those of mestizo identity. Upward mobility into this group requires wealth, some education, a high-status occupation, and full adoption of the dominant culture. It also requires one or two generations--long enough for one's humble origins to be forgotten.

Participation in Hammock Production

Although the nearby town of Tixkokob has long specialized in commercial hammock production, this activity has become widespread in Cacalchén only in recent years. Beginning about 1950, one of the local women began to make hammocks for a dealer in Mérida. Initially she took in young girls as apprentices, and many village residents eventually learned to weave, directly or indirectly, from her. The apprentices worked without pay for several weeks while they learned the necessary skills, after which they were paid a piece rate. At times, she had as many as 10 or 12 apprentices working in her home. Eventually, other suppliers began to distribute materials to weavers working in their own homes, those who had already learned the skill teaching their relatives and friends. Rates of pay have risen slowly during this period, but the activity has spread nonetheless as incomes from henequen production have declined and consumer prices have risen. Today, Cacalchén possibly produces more hammocks than any other community in Yucatan, surpassing even Tixkokob.

It is difficult to estimate exactly how many households in Cacalchén are involved in the hammock industry at the present time. Informants insist that everyone makes them, and indeed, most of the few exceptions I encountered were among the town's elite. Even the daughters of the relatively affluent often make hammocks in order to acquire spending money for clothes.

My own judgment, based on various kinds of indirect evidence, is that 70 to 80 percent of the households are actively involved in

weaving on a fairly continuous basis, and that another 15 to 20 percent weave occasionally. For both groups, the level of production is affected to some extent by seasonal fluctuations in supplies of materials.

During my residence in Cacalchén I conducted a survey of hammock-producing households aimed at clarifying the characteristics of weavers and weaving households and the factors influencing productivity. One hundred five households engaged in weaving were surveyed between February and May of 1972, the time of year when productivity is highest.

Because of the large size of the community a complete census of households was impractical. Consequently, the households interviewed were chosen through a process of neighborhood quota sampling. A rough map of the community was made and the location of each house site was plotted on the map. Since each site usually consists of more than one structure (a separate kitchen and other outbuildings in addition to the house), a group of structures was considered to be a single house site if it was surrounded by a stone wall or other enclosure having a single entrance to the street. Where two houses were located on a single undivided lot, but each had its own street entrance, they were counted as two house sites.

Since these determinations were made through visual observation rather than the questioning of informants, the number of house sites does not necessarily coincide with the number of households, a household being defined as persons sharing a house site and having meals in common. During the course of interviewing it

was discovered that three house sites contained more than one household. Nevertheless, it may be assumed that in most cases there is a correspondence between house site and household.

After the mapping of house sites, the community was then divided into four quarters along its north-south and east-west axes, with the goal of interviewing at least 10 percent of the households in each quarter. Only those households known to be engaged in hammock production were interviewed, but an attempt was made to scatter the interviews throughout each quarter. Occasionally one interview would lead to another, with neighbors or relatives of the interviewee. On other occasions, the persons interviewed were approached without introduction. In a few cases, people I had met through other channels invited me to include their households in the survey. The proportion of households ultimately interviewed in each of the four quarters is shown in Table 21.

Table 21.--Proportion of households interviewed, by quarter.

Quarter	Number of House Sites	Number of Households Interviewed	Percent Interviewed
Northwest	140	20	14.3
Northeast	256	30	11.7
Southwest	139	20	14.4
Southeast	255	35	13.7
Total	790	105	13.3

The representativeness of the survey population can be judged in one additional way. Insofar as the community is stratified geographically, it is in terms of distance from the central plaza. There is no simple gradation from relative elegance to relative squalor, but the general tendency can be noted. Consequently, the approximate distance (in city blocks) from the central plaza was calculated for each household interviewed, with the results indicated in Table 22.

Table 22.--Proportion of households interviewed, by distance from plaza.

Approximate Distance From Plaza, in Blocks	Total Number of House Sites	Number of Households Interviewed	Percent
0	25	2	8.0
1	129	11	8.5
2	138	20	14.5
3	170	21	12.4
4	151	30	19.9
5	104	14	13.5
6	52	6	11.5
7	21	1	4.8

These figures indicate that those households in the middle range are somewhat overrepresented, while those closest to and farthest from the central plaza are underrepresented.

General Characteristics of Survey Households

The 105 households surveyed contained 781 persons, with a mean size of 7.4 persons per household. This fairly large size reflects the high frequency of three-generation extended families, 41.9 percent of the total. Of 36 couples residing with the parents of one of the spouses, 31 were living with the husband's parents and only 5 with the wife's parents. In two of the latter cases, the household head was a widower. These data are consistent with the strong preference for patrilocality in the early years of marriage reported elsewhere in Yucatan (Redfield, 1941:194-95; Thompson, 1970:46-50; Kirk, 1975:212-19; Raymond, 1971:213-14). The remaining cases of three-generation households were accounted for by elderly persons living in households headed by a son (10 cases) or by a daughter's husband (7 cases). These were widowed people who had moved into the already established households of their married children, or given up their positions as heads of household to the younger generation. There were no cases of married siblings continuing to share a household after the death of both parents, but in some cases a widow or widower with children not yet grown lived in the household of a married brother or sister.

Nuclear families accounted for 52.4 percent of the households, and married couples living alone for only 2.9 percent. Although young couples often feel that it is desirable to establish their own households as soon as possible, few are able to achieve this in the early years of marriage. Only 10 of the households consisted

of nuclear families in which all of the children were less than 10 years of age.

The residents of the households surveyed constituted a relatively young population: 48.1 percent were 19 or under, 24.5 percent 20 to 39, 13.3 percent 40 to 59, and 4.2 percent 60 and over. The sex ratio was fairly well-balanced, with a slight excess of females among those under 40 (328 females to 316 males) and an excess of males among those 40 and over (74 males to 61 female).

Ninety-four of the households were headed by ejidatarios, while 97 derived at least some income from the ejido. Twenty-one of the households had two members working in the ejido, while 24 had three or more. Twenty-one households also derived some income from work in the ex-haciendas, and this was the most common source of supplementary income aside from weaving. Seventeen households had a member employed in domestic service and 19 had milpas. The tendency to rely on multiple sources of income is illustrated by Table 23. Men, in particular, frequently have two or three occupations.

Of the 781 persons, 303 (38.8 percent) reported hammock-weaving as one of their occupations: 207 females and 96 males. Many of these weavers were young: 55 percent were between 7 and 19 years of age, and 88.6 percent were under 40. This reflects the heavy reliance on the labor of children and adolescents. Only 23 weavers were household heads, while 70 were the wives of household heads, 101 were daughters, and 69 were sons. Although many women listed weaving as their primary occupation, only adolescent males

Table 23.--Number of paid occupations, by household size.

Number of Paid Occupations	Number of Persons in the Household			Total
	2-5	6-8	9-15	
2-4	18	15	2	35
	69.2%	32.6%	6.1%	33.3%
5-7	7	25	14	46
	26.9	54.3	42.4	43.8
8 or more	1	6	17	24
	3.8	13.0	51.5	22.9
Total	26	46	33	105
	99.9	99.9	100.0	100.0

did so. For adult men, weaving is a secondary occupation. Forty-eight of the weavers were enrolled in school, 42 were employed in the ejido, and 36 gave some other occupation in addition to weaving. Of the remaining 177, most are girls and women who perform domestic chores in addition to weaving. Weaving, then, is largely a part-time occupation.

Informants were often imprecise about estimating the number of hammocks produced monthly, especially during the early days of the survey when there was some suspicion about the purposes of the survey and the uses to which the information would be put. Several individuals asked directly whether I was working for the government, and one rumor which came back to me was that the state intended to use the data to place a tax on looms. Later, some of these fears appear to have been allayed, but their overall effect on the data was likely some underestimation of levels of productivity. For this reason, I emphasized questions about the hammocks being made at the time of the interview, asking the size of each, the name of the supplier, and the wages that would be paid for each one. Since most of the houses are one-room structures, these data could be gathered by asking about each of the looms within sight, and then asking if there were any other hammocks being made. This information was used to calculate each household's earnings from weaving.

The results indicate that the average household has 2.9 persons employed in weaving and produces 5.5 hammocks monthly, with only 11.4 percent producing more than 10. At the time of the interview, the mean number of hammocks being made was 2.4, with an average

wage value per household of 48.09 pesos. This figure provides the best estimate available of average monthly earnings from weaving: approximately 110 pesos per household or 38 pesos per weaver. It should be remembered, however, that these figures represent earnings during the season of peak production, and must be somewhat lower during other parts of the year.²

There are basically two strategies available for maximizing income from weaving. The first involves working on the higher quality hammocks. The second involves seeking a source of supply of materials which pays higher rates--and this means a source of supply in Tixkokob or Mérida.

The data collected on 244 hammocks indicate that the wage rates paid for hammocks made of cheaper materials are highly uniform (5 pesos per madeja for 145 out of 215 hammocks, with a narrow range from 4.50 to 6.00 pesos). The rates for the more expensive hammocks of hilera varied more, from 10 to 35 pesos per box, depending on the fineness of the thread and the weave. In the high end of this range it is possible for the weaver to earn more per hour than can be earned making the lower quality hammocks. There are, however, several drawbacks. Not many hammocks of hilera are made (only 29 out of 244 included in the survey). Also, they take longer to complete, and the weaver consequently has to wait longer to get paid. The ordinary hammock of madejas can be made in a week or two, while the hammock of hilera takes two or three weeks.

The second strategy appears to be more attractive for most weavers. The mean rate per madeja paid by agents in Cacalchén was

5.02 pesos (157 cases), while the mean rate paid by dealers in Tixkokob and Mérida was 5.52 pesos (47 cases). Those who acquire materials directly from dealers in Tixkokob and Mérida are also likely to be working as agents themselves, and thus earn extra money from the commissions paid for distributing materials to other weavers.

Weavers had a mean of 5.7 years of experience, but one-third had been weaving for two years or less, reflecting the youth of the population of weavers and also the recency of the spread of the skill in the community. The majority of weavers learned the skill from a close relative. Given the preponderance of women among the weavers, it is not surprising that most weavers (51.5 percent) learned from a female relative, principally from their mothers and sisters, while only 12.7 percent learned from a male relative. These proportions were much the same for both male and female weavers. Only 13.6 percent learned from non-relatives and many of these (19 out of 46) learned from the woman who introduced weaving to the community in the first place. Significantly, 11.2 percent claim that no one taught them; they merely picked it up by watching others. Clearly, no lengthy apprenticeship is required for learning the basic skills, although those without systematic training are less likely to know the more complicated designs.

The extensive use of child labor in weaving appears to have a slight negative effect on levels of educational achievement. Taking children of school age (ages 7 to 14) year by year, the educational levels of those employed in weaving are higher than those

not so employed during the younger years (ages 7 to 10), but decline with age until by ages 13 and 14 they have fallen slightly behind (see Table 24). A large number of the children between 7 and 14, whether employed in weaving or not, have completed less than one year of school (29.4 percent), and 50.8 percent were not attending school at the time of the interview. Since there are two primary schools in the community, both offering six years of education, the large proportion of children not attending school appears to reflect the importance of their economic role.

Table 24.--Years of education of children 7 to 14 years of age.

Age	Weavers		Non-weavers	
	Number	Mean Years of Education	Number	Mean Years of Education
7 to 8	10	.7	46	.6
9 to 10	21	1.6	23	1.2
11 to 12	35	2.3	16	2.4
13 to 14	<u>35</u>	2.8	<u>11</u>	3.0
Total	101		96	

The differences shown in Table 24 may also reflect the different educational experiences of boys and girls. Compared with girls, there are larger proportions of boys with no schooling at all and with more than three years of schooling. It appears that girls are more likely to go to school at some time during these years, but that they also drop out sooner. The result is an average level of

educational attainment which is lower for girls than for boys (1.7 years compared with 1.9 years), and this may account for a part of the observed differences between weavers and non-weavers in this age group.

Variations in Productivity

It was expected that variations in the levels of hammock production among households surveyed would be influenced both by economic need and by household composition. I started with the assumption that as income from other sources rose, participation in weaving would decline, and vice versa. Unfortunately, it became clear in the course of the survey that gathering accurate data on income from large numbers of households was precluded by the reticence of informants as well as the multiplicity and irregularity of the sources of income. For example, an informant might readily tell me that her husband's ejido salary was 21 pesos a week, but neglect to mention that because of the size of the family, he was given a double work assignment, worth 42 pesos. Informants' statements about supplementary income from other sources were considerably more vague, often emphasizing that such work was part-time or irregular. Evasiveness and imprecision about these matters was almost certainly motivated in part by the common fear that government authorities would conduct another agrarian census, and that those found to be employed even temporarily in other activities would lose their ejido rights. Frequently a man who has an opportunity to work several days for the ex-hacienda may ask his brothers or other

male relatives to cover his ejido work for him, returning the favor at a later time. Correctly or not, ejidatarios believe that the Bank would cut them off if this were known.

Given these problems, attempts were made to measure hammock productivity in relationship to indirect indicators of economic status. In particular, it was expected that there would be differences between ejido groups since some groups were known to be earning more than others. Consequently, various measures of productivity were compared for the households in the three grupos económicos for which I have a sufficient number of cases, referred to here as Groups A, B, and C. Group A was reputed to have the lowest salaries and Group C the highest of these three groups, and this impression was confirmed by the scattered data on salaries that I was able to collect. I expected that productivity of hammocks would be highest in Group A and lowest in Group C. The results, presented in Table 25, contradicted these expectations. Group A led in the number of hammocks produced monthly, but Group C was highest on all other measures of productivity.

A more detailed consideration of the various measures used assists in evaluating these results. The number of hammocks produced monthly was taken from informants' estimates, subject to the limitations already mentioned, while the other measures of productivity are dependent on direct observation. The former, then, is probably less accurate than the latter. In addition, hammocks can vary in size and hence the value of the wages earned for each one, so that the measure based on wage value of the hammocks actually observed

Table 25.--Measures of hammock productivity for households in three ejido work groups.

Means	Group A (N=36)	Group B (N=20)	Group C (N=18)
Number of persons in household	7.6	6.8	7.6
Number of weavers in household	3.0	2.2	3.6
Number of hammocks produced monthly	6.8	3.9	5.9
Number of hammocks in production at time of interview	2.5	1.9	2.9
Value of wages for hammocks in pro- duction, in pesos	50.24	34.38	61.17
Value of wages per weaver, in pesos	16.75	15.62	16.99

in production is probably a more meaningful measure of productivity, in terms of both earnings and labor time invested, than merely counting the number of hammocks. Piece rates are highly uniform throughout the community, so that the primary way to increase income from weaving is to work harder.

One obvious reason for the higher productivity in Group C is the higher number of weavers per household, and using the value of wages per weaver we find that in fact the differences among the three groups are not substantial. While it was hypothesized that the higher income groups would earn less from weaving, it appears

that in fact there is very little difference in this measure. How might this be explained?

One possible explanation lies in the patterns of supplemental occupations for the three groups. Table 26 reveals that the households of Groups A and B had a higher proportion of members employed in occupations other than ejido work and weaving, and this could be expected to diminish the amount of labor time available for weaving.

Table 26.--Occupational characteristics of households in three ejido work groups.

	Group A (N=36)	Group B (N=20)	Group C (N=18)
Mean number of ejidatarios per household	1.7	2.0	2.0
Percent of households with supplementary occupations other than weaving	75.0	75.0	61.1
Percent of households with income from work in the ex-haciendas	27.8	15.0	11.1
Percent of households with a member employed in domestic service	16.7	5.0	5.6
Percent of households with milpas	25.0	30.0	11.1

In order to test this, the measures of productivity for all 105 households were tested for correlation with the total number of other paid occupations engaged in by household members, holding

constant the size of the household labor force (defined as persons between 7 and 60 years of age). Although the resulting correlations were not strong, all of them were negative, consistent with expectation (see Table 27). When the measures of productivity are correlated by type of occupation, it is clear that weaving and domestic service are to some extent incompatible, the number employed in domestic service showing the strongest negative correlations with all measures of productivity. This reflects the fact that most people employed as servants are young women working in Mérida who come home only on weekends.

Measures of productivity were also negatively correlated with employment in the ejido. Since men weave less than women and children this is not surprising. However, the slight positive correlations between productivity measures and other types of supplementary employment suggest that weaving is an activity which may be carried out in addition to these other part-time occupations rather than being displaced by them.

From informants' statements, it is clear that weaving is seen as poorly paid, but preferable on other grounds to work as a servant. The latter pays more than weaving (150 to 200 pesos monthly plus room and board), but parents often resist sending a daughter to work in the city for fear that she will be seduced and become pregnant. That Group A should have the highest proportion of households with a member employed in domestic service is perhaps indicative of their greater need for supplementary income.

Table 27.--Partial correlation coefficients of measures of hammock productivity with alternative allocations of household labor (size of household labor force held constant).

Measures of Hammock Productivity	Total Number of Occupations Other Than Weaving	Number of Ejidatarios	Number of Servants	Number of Agricultural Laborers	Number of Other Female Occupations
Number of weavers	-.1382	-.1718	-.2573	.0552	.1322
Number of hammocks made per month	-.0020	-.1343	-.1238	.2438	.1750
Number of hammocks in production	-.1210	-.1356	-.3593	.2086	.1372
Wage value of hammocks in production	-.0866	-.0825	-.2654	.0266	.0270

Compared with Groups A and B, members of Group C are less frequently employed as agricultural laborers in the ex-haciendas and have fewer milpas. This may reflect the higher ejido salaries of this group, but it may also result from the greater distance (seven or eight kilometers) which Group C members must go to reach their ejido lands compared to the other two groups (two or three kilometers). Also, the ex-hacienda which is adjacent to their ejido lands has been completely expropriated by the ejidos, and only the core with the decortivating plant remains. Consequently, there are fewer opportunities for members of Group C residing in the pueblo to obtain this type of work. Finally, it should be mentioned that weaving is regarded as soft work in comparison with the hard work involved in agricultural labor and in planting milpa, and some men prefer it on those grounds.

In sum, households in these three groups follow somewhat distinct strategies for maximizing income. Households in Group A have fewer members employed in the ejido than the other two and are reputed to earn less. They compensate for this by combining various kinds of supplementary activities: agricultural labor on the ex-haciendas, domestic service, planting milpa, and weaving. Ejido salaries for Group B are only slightly higher than for Group A, but a larger proportion of members are employed in the ejido, and household earnings from this source are likely to be higher. Excess labor is concentrated in work on the ex-haciendas and making milpas, and productivity in weaving is the lowest of the three groups. Members of Group C are reputed to have the highest ejido salaries of

the three groups, and their participation in supplementary occupations other than weaving is lower than for the other two groups. More of their labor is devoted to weaving, and they are the highest of the three groups on most measures of hammock productivity.

These findings indicate that although the original hypothesis can be rejected, certain differences do exist between these groups which can be explained in part by their differential need for supplemental income. Households in all three groups need supplemental income, but those in Group C can be more selective and have less need to seek out the less desirable types of occupations.

The patterns observed also suggest that household composition, in terms of sex and age, may have a significant effect on the alternatives chosen for increasing income. While weaving is engaged in by both sexes, agricultural work of all kinds is restricted to men, and domestic service is restricted almost entirely to women. Other kinds of part-time work, whether in skilled trades or manual labor, are available primarily to men. One might hypothesize that productivity in weaving, then, should be correlated with the number of women and girls in the household, and perhaps to a lesser extent with the number of juvenile males. On the other hand, the presence of infants and small children would be likely to diminish the amount of time devoted to weaving, other things being equal, since they demand care from their mothers or older siblings. In order to test these relationships household members were classified into several age and sex categories: children under 7 years of age; juvenile

females, ages 7 to 14; juvenile males, ages 7 to 14; adult females, ages 15 to 59; adult males, ages 15 to 59; and elders, people over 60.

Seven was chosen as the lower limit for the juvenile group because it is at about this age that children begin to assist with household chores, running errands, caring for younger siblings, and participating in economic activities such as weaving. About half of the children in the 7 to 14 age group are involved in weaving, and the boys often assist their fathers in the fields. The activities of this group, particularly of the girls, would be expected to increase productivity in weaving.

Those over 15 were included in the adult group because virtually all young people are involved in gainful employment of some kind by that age. Age 60 was chosen as the upper limit primarily because most ejidatarios retire at that age and draw a pension of 15 pesos a week. Women over 60 may continue to assist to a certain extent with domestic tasks, but they do not participate in weaving. Hence the effects of this group on productivity in weaving should be minimal.

Significantly, Group B (the group with the lowest value of wages per weaver) had the highest ratios of small children to girls and women (see Table 28), and of males to females. Group A had an almost equally high ratio of small children to girls and women, while having the lowest ratio of males to females. This group has a higher proportion of women to girls, but more of their time is apparently consumed in child care within the home and domestic service outside it. Group C had the most evenly balanced ratio of males

to females while having the lowest ratio of small children to girls and women. This sex and age structure is consistent with their greater productivity in weaving.

Table 28.--Ratios of small children to juvenile and adult females and ratios of juvenile and adult males to juvenile and adult females in three ejido work groups.

Ejido Group	Number of Small Children per 100 Juvenile and Adult Females	Number of Juvenile and Adult Males per 100 Juvenile and Adult Females
A	48.3	83.3
B	50.0	114.0
C	36.1	95.9

This relationship between familial sex and age structure and productivity can also be seen in the correlations between the household composition variables and various productivity variables shown in Table 29. As hypothesized, the numbers of juvenile females, juvenile males, and adult females are positively correlated with the number of weavers per household, the number of hammocks in production, and (slightly) with the wage value of hammocks in production. Wages per weaver, however, are slightly negatively correlated with the number of juveniles, both males and female, and only slightly positively correlated with the number of adult females. This is not surprising since presumably, as the number of weavers rises, the proportion who are children and therefore do not produce as much increases, thus lowering the average wage per weaver. The correlations

Table 29.--Correlation coefficients of productivity variables with household composition variables.

Productivity Variables	Number of Weavers	Number of Small Children	Number of Juvenile Females	Number of Juvenile Males	Number of Adult Females	Number of Adult Males	Number of Elders
Number of weavers		.2046	.3598	.2717	.2468	.2043	.0689
Number of hammocks in production	.7252	.0591	.3405	.3093	.2899	.2932	.0227
Wage value of hammocks in production	.5824	-.0296	.1349	.1892	.2114	.1303	.1594
Wages per weaver	-.1301	-.2055	-.0379	-.0211	.0603	-.0058	.1034

between the number of weavers and productivity tend to confirm this trend.

The number of adult males is also correlated with productivity in a manner similar to adult females, presumably because the number of adult males is related to both the number of adult women and of children. The elders, as expected, are relatively unimportant for productivity.

The number of small children in a household is positively correlated with the number of weavers, since weaving is primarily female work. While the number of small children does not seem to influence the number of hammocks in production, it does lower substantially the expected wages per weaver for these hammocks, presumably because the time necessary for looking after the needs of small children is subtracted from the total time available for weaving.

None of the correlations is strikingly high. It appears, then, that household composition is only one of many factors involved in explaining variations in levels of hammock production. Some weavers work more rapidly than others, and this is a variable not tapped by the survey. It is also worth pointing out again that weavers are dependent on dealers and agents for their materials, and some households are better placed than others to insure a continuous supply through utilization of friendship and kinship ties. Other idiosyncratic factors also play a role. Some men are notorious for drinking up a large part of the family income, so that their families work harder at weaving than others of similar income.

Although most households attempt to utilize members' labor to supplement income from the ejido, the strategies they choose for doing this depend on degree of economic necessity, available opportunities, and personal skills and preferences. Weaving is one of the most widely available opportunities and the skill is easily learned. It does not require continuous undivided attention, and being performed at home can easily be scheduled around other activities. It is also relatively easy work by comparison with agricultural labor. Unfortunately, it is also poorly paid and, to some, tedious and boring. Consequently, it will often be put aside in favor of more lucrative employment when the opportunity presents itself.

A detailed look at the economic activities of five selected households, presented in the following section, illustrates the multiple kinds of activities available to residents of Cacalchén and the ways in which members of the community utilize these to compensate for underemployment in the henequen fields.

Adaptive Strategies: Five Families

During June and July of 1972 I collected detailed household budgets from five selected families, all of which depended in part on hammock weaving for their incomes. During the two-month period visits were made to these five households daily or every other day to record all income and expenditures. In all five cases my key informant was the wife of the household head and the person responsible for most purchases. Both husband and wife take part in

decision making on any large purchases and men may accompany their wives when bills are paid and the major weekly shopping is done on Saturday or Sunday, but they generally entrust their wives with day-to-day expenditures.

The five families studied were selected on the basis of already established rapport, rather than as representative of particular economic situations. There was, however, considerable variation among them in household composition and sources of income, and their average weekly incomes during the two-month period varied from 81.77 pesos to 146.37 pesos per household. In all five of these families the head of the household was employed as an ejidatario, and each engaged in other economic activities as well. Three of the men had planted milpas, but these had not yet begun to produce. All five families were dependent on the purchase of staple foods during the period studied. Two of the men earned money by working for the ex-haciendas, and two of them had small privately owned parcels of land. In four of the five families wives and adolescent children also made important contributions to family income. Two of the families had daughters employed as servants, while the daughter of a third was employed half-time in a corn mill. In three of the families adolescent sons worked in the fields with their fathers.

Two of the households were nuclear family groups, while the other three were three-generation extended families. In all cases the household head and his wife were mestizos, although in two of the families the daughters were dressed as catrinas. In the

sketches which follow, the situation of each family is described as it existed in the summer of 1972. All names have been changed to protect the identity of those involved.

Teresa

Teresa and Antonio are in their late twenties and have three children: Manuel and Daniel, ages eight and four, and Cristina, age two. As a child, Antonio was an able student and completed four years of school. Because of his literacy he has been chosen as escribiente (record-keeper) for his ejido group, a job involving considerable responsibility for drawing up the weekly work plan, getting it approved by the Bank inspector, and recording the work completed. His basic weekly salary for this is 70 pesos, and occasionally he earns somewhat more.

Teresa earns money from both weaving hammocks and doing embroidery. She prefers the latter and has a treadle sewing machine which she uses for this purpose (as well as for sewing the family's clothes). When such work is not available, and none was during the two-month period of the study, she does some weaving. Since her mother-in-law distributes hammock thread Teresa has no problem securing supplies. However, the responsibilities of caring for the household and three young children do not leave her much time for this, and weaving accounts for only a small part of the family income. Occasionally Antonio and the oldest boy assist with the weaving, and it was Antonio who taught Teresa to weave.

Antonio has invested in a small business selling soft drinks. He has a cooler in his house and buys four cases a week from distributors' trucks which regularly deliver in Cacalchén. His income from this activity, however, is minimal. Each case costs 16.75 pesos, and he must pay 1 peso in municipal business taxes and 3 pesos for ice to cool the soft drinks. His profit is only 85 centavos a case, and even this may not be realized since he often sells on credit. He admits that he engages in this activity more for pleasure than profit. It is also a form of saving; in a crisis situation he can quickly realize cash from this source and use it for necessities. This happened once during July when the payroll for Antonio's ejido group was delayed. The Bank had discovered that a team of 13 men had reported work completed when in fact it was not. Because of this, they held back the pay for about 300 workers for five days. During this time Antonio used money from the soft drink sales to buy food for the family, since they had already reached the limit of credit that the stores would extend to them.

Antonio does not own any livestock or land, and plants milpa only when space is available in the new henequen fields. He planted such a milpa during the spring of 1972, and spent some of his Sunday mornings during June and July weeding it.

Teresa and Antonio live in an old house with walls made of poles covered with mud, a thatched roof, and a dirt floor. The 25-year-old roof is in poor condition and began to leak badly with the coming of the rainy season in 1972. Antonio and his uncle, who

is the owner of the house, spent one Sunday morning repairing the roof, replacing parts with new grass and other parts with corrugated asphalt roofing material. But the roof was so dry and brittle that while repairing some sections, others fell out. At the rear of the house is a separate structure of poles and thatch used as a kitchen and for bathing.

Antonio wants to build a new house, and has already bought a lot next door for this purpose. So far, however, they have been unable to accumulate the necessary funds or materials. If he builds a traditional Maya-style house he can find many of the materials in the bush and get his brothers and uncles to help him build it. However, he would like to build a house of concrete blocks and plans to seek the assistance of Teresa's father to finance it.

Their household furnishings are not elaborate, consisting of a wardrobe, the sewing machine, the soft drink cooler, a table, a few chairs, and three hammocks. Antonio also owns a bicycle.

Table 30 summarizes the average weekly income and expenses for the family during the two-month period of the study. Weaving accounted for only 4.2 percent of the income during this period, the lowest proportion of the five households studied. Only two hammocks were made during this time, with a total value in wages of 31 pesos. Their average weekly income of 81.77 pesos was also the lowest of the five families, and consequently a larger proportion of their expenses (88.4 percent) went for food. Miscellaneous expenditures included cigarettes for Antonio (one pack a week) and

the money that he spends on the lottery. Once he won 300 pesos on a lottery ticket, and another time he won 350.

During the two-month period they were fortunate enough not to have any medical expenses, and they also spent very little on clothing. Even so, they were spending about six pesos a week over their income and making 66.2 percent of their purchases on credit.

Table 30.--Teresa: Average weekly income and expenses.

	Pesos	Percent
<u>Average Weekly Income</u>		
Ejido wages	78.33	95.8
Hammocks	3.44	4.2
Total Income	81.77	100.0
<u>Average Weekly Expenses</u>		
Food ^a	77.85	88.4
Non-food items		
clothing	2.88	
laundry (soap, etc.)	2.67	
transportation	.79	
electricity	2.19	
miscellaneous	1.70	
total non-food items	10.23	11.6
Total Expenses ^b	88.08	100.0
Average Difference (Income less Expenses)	- 6.31	

^a Average expenditures for food per person per week: 15.57 pesos.

^b Percent of total purchases made on credit: 66.2.

As the children grow older they will begin to assist with weaving and work in the fields, thus contributing to the household income, but they will also consume more in expenses for food and clothing. It will be several years yet before Teresa's daughter is old enough to assist with the household chores. As a result, the family will be heavily reliant on what Antonio can earn for the next few years, particularly if additional children are born.

Dolores

Dolores (33) and Fernando (35) have five children: three daughters ages 14, 11, and 10, and two sons ages 12 and 8. All seven live in a small one-room thatched house with a dirt floor. The house has not been white-washed in some years.

Fernando has been assigned a full six days of work in his ejido group, but he usually takes his oldest son with him and they complete it in three or four days. He tries to get work in the ex-haciendas on the other days, and was able to earn money in this way during three of the eight weeks studied.

Dolores began to weave six years ago when her children were small. Now she earns additional money by taking in washing and ironing and by raising chickens, turkeys, and pigs. Most of the weaving has been turned over to the three older children. Two of Dolores' neighbors are hammock agents, and she regularly gets materials from both of them.

Dolores' oldest daughter, Ana Maria, shares a job in a local corn mill with another girl; they work alternate weeks. When

it is her turn Ana Maria works 51 hours a week for 30 pesos. During her weeks off she weaves and helps her mother with household tasks.

Dolores never attended school and does not read or write, but Ana Maria was a very able student in primary school and won first place in a regional competition for sixth grade students. She and other winning students from Yucatan were awarded a trip to Mexico City where they went sight-seeing and met briefly with the President of Mexico. Since her family could not afford to send her to secondary school in Tixkokob, Ana Maria has hopes of becoming a seamstress. Meanwhile, she is learning to be a rezadora (prayer-leader) and is already receiving requests to lead prayers at novenas. Rezadoras are not paid in money for their services, but receive compensation in the form of extra portions of the food served at novenas, fiestas for the saints, or other ritual events for which they perform. This can be an important supplement to family income for a rezadora who is much in demand.

Fernando also supplements the food supply by hunting birds and small game. He has a shotgun and keeps three hunting dogs. Dolores has a sow and two small pigs, aside from her chickens and turkeys, and she spends more on animal feed than any of the other four families.

The house was inherited from Fernando's father and is furnished with a wardrobe, a few chairs, a combination table and altar, and several hammocks. It has a separate kitchen shelter to the rear. One of the family's most prized possessions is an image of San Nicolas enclosed in glass. He is the patron saint of the

house and originally belonged to Fernando's patrilineal great-grandfather.

During the two-month period studied, Dolores' family was one of two which did not spend more than its income, partly because there were no illnesses or other emergencies (see Table 31). Although 70.3 percent of the money spent went for food, the amount per person was the second lowest of the five families (13.63 pesos per week), reflecting the contributions to the food supply from Fernando's hunting, Ana Maria's activities as a rezadora, and the eggs provided by Dolores' chickens.

The ceremonial expenses were occasioned by 67 pesos spent on the 11-year-old daughter's first communion. Most of this money was used to buy special clothing for the child to wear. Dolores is bringing her daughters up as catrinas, and each of the girls has one or two good dresses for such occasions. Dolores does not have a sewing machine, but sometimes uses that of her husband's sister, who lives next door.

Dolores and Fernando have reached the stage in the domestic cycle when their children are beginning to make a significant contribution to household income and they are able to make ends meet. However, they have not been able to accumulate much in the way of savings, and do not own any cattle or land other than the house lot.

Bartola

Bartola and Vicente are in their late thirties and have four children: a boy 16 and three girls, 12, 5, and 1. Bartola

Table 31.--Dolores: Average weekly income and expenses.

	Pesos	Percent
<u>Average Weekly Income</u>		
Ejido wages	77.38	54.0
Other agricultural labor	13.13	9.2
Hammocks	23.88	16.7
Other		
Daughter's job in the corn mill	13.88	
Washing and ironing	7.44	
Grinding coconuts	1.31	
Selling chickens	6.38	
Total other	29.01	20.2
Total Income	143.40	100.1
<u>Average Weekly Expenses</u>		
Food ^a	95.40	70.3
Non-food items		
Clothing	5.35	
Laundry (soap, etc.)	6.88	
Transportation	3.93	
Electricity	2.19	
Animal feed	10.00	
Medical care	.20	
Ceremonial	8.38	
Miscellaneous	3.35	
Total non-food items	40.28	29.7
Total Expenses ^b	135.68	100.0
Average Difference (Income less Expenses)	7.72	

^a Average expenditures for food per person per week: 13.63 pesos.

^b Percent of total purchases made on credit: 49.4.

began to weave when her son José was a baby. At that time, Vicente earned only 18 pesos a week, and Bartola had to weave two hammocks a week to make ends meet. When José was two years old he was seriously ill and Bartola sold her rings and gold chains to cover the 700 pesos in medical expenses. Soon after that, the family's fortunes began to improve. Vicente became a member of a grupo solidario, and his earnings gradually increased as the group's fields expanded. Today he and his son each earn 52 pesos weekly from work in the ejido.

Vicente has a privately owned parcel of land which he inherited. Several years ago, when the price of henequen was high, he and his now deceased brother planted 80 mecates (3.2 hectares) of henequen on this parcel. By the time they began to harvest it the price had fallen to the point where Vicente could not afford to keep the weeds cut and maintain its productivity. Now only about 30 mecates remain in exploitation; the rest has reverted to bush. During the study period no henequen leaves were harvested and so there was no income from this source. Now Vicente has 35 mecates (1.4 hectares) of milpa planted on his parcel, enough to provide the family with maize for about eight months if growing conditions are propitious. However, there is not enough land to permit planting milpa every year. He also owns seven head of cattle.

Vicente's 78-year-old mother lives with them, since he has inherited the family lot from his father. The lot has three houses, all built in the Maya style. The main house has a tile floor and houses the altar and a large trunk in which clothing is

kept. The house was first built when Vicente's parents married, about 50 years ago. The roof has been replaced several times and the large beams and roof supports have also been replaced. From time to time, the mud walls are patched and whitewashed. Consequently the house is in fairly good condition, as are the other two on the lot. One of the latter is used for sleeping, while the other serves for storage. The lot also contains a kitchen made of poles and thatch and a rough chicken shelter.

For the past year, Bartola has been working as an agent distributing hammock materials for several dealers in Tixkokob. Every Saturday she makes the trip to deliver the finished hammocks and pick up new materials, handling between 8 and 20 hammocks a week. Her earnings from this activity, plus her own weaving, vary somewhat from week to week, but average about 26 pesos. She also keeps turkeys, chickens, and pigs. While the turkeys are raised primarily for ceremonial use (it is the indispensable dish for most ceremonial meals), the chickens provide eggs to supplement the daily diet and the pigs are being raised for sale.

Bartola does not have a sewing machine. Sometimes her mother-in-law sews by hand. Usually, however, Bartola buys material and has the sewing done by a friend or relative for a nominal fee.

The family's average weekly income and expenditures are shown in Table 32. Bartola contributes nearly 20 percent of the household income through her participation in the hammock industry. Even so, the family was living considerably beyond its income during

this period. While food accounted for only 64.9 percent of their expenses, it accounted for 80 percent of their income.

Table 32.--Bartola: Average weekly income and expenses.

	Pesos	Percent
<u>Average Weekly Income</u>		
Ejido wages	104.00	80.1
Hammocks	25.89	19.9
Total Income	129.89	100.0
<u>Average Weekly Expenses</u>		
Food ^a	104.20	64.9
Non-food items		
Clothing	13.18	
Laundry (soap, etc.)	7.62	
Transportation	3.67	
Electricity	2.19	
Animal feed	5.73	
Medical care	11.67	
Ceremonial	5.43	
Miscellaneous	6.90	
Total non-food items	56.39	35.1
Total Expenses ^b	160.59	100.0
Average Difference (Income less Expenses)	-30.70	

^a Average expenditures for food per person per week: 14.89 pesos.

^b Percent of total purchases made on credit: 66.3.

The excess of expenses over income can be largely accounted for by three categories: medical care, ceremonial expenses, and clothing. During the two-month period studied the baby was ill for several days with a gastro-intestinal disorder which did not respond to treatment at the local government-run clinic. She was taken to a private physician in Mérida, and the treatment (which worked) cost 90 pesos. This money came out of funds which Vicente had been saving to buy a horse for travelling to his milpa. José has a bicycle which he bought second-hand for 270 pesos, and father and son ride it to the henequen fields where they work, about an hour away on the road to Motul. The path to the milpa, however, is too rough for a bicycle.

In June of 1972, Vicente and Bartola were co-sponsors of a fiesta held in celebration of Saints Peter and Paul, the patron saints of the community. In Cacalchén, fiestas are not sponsored by individuals but by organizations called gremios (guilds). In this case, 10 couples had been chosen (from the membership of 100 or so families) to co-sponsor the fiesta for the whole group. Each couple contributed a turkey, 10 kilograms of maize, and 30 pesos, while other members of the gremio gave smaller amounts according to what they could afford. The events included a midday meal for all members held at the home of the host, a procession of the saints, a mass paid for by the gremio, and a traditional vaquería (dance) held in the evening at the home of the host.

The amount listed in Table 32 under ceremonial expenses includes only the 30-peso contribution; the turkey was one which

Bartola had raised and the 10 kilograms of maize came out of the household food supply. In preparation for the fiesta Bartola spent 86 pesos on new clothing for the family. The debts accumulated for this fiesta will be paid off slowly over several months' time.

Miscellaneous expenses includes José's allowance, five pesos weekly, which he spends on recreation.

Although this family is relatively fortunate in enjoying a higher than average income from the ejido, they worry about the future. José finished primary school with high grades, but his parents cannot afford to send him to secondary school. Bartola's brother is a tailor and they hope that José can learn the trade from him. For the time being, however, his earnings are an essential contribution to the family budget and cannot be foregone while he seeks additional training.

Angela

Angela (39) and Jacobo (49) have been married for 24 years, but had no children during the first 10 years of marriage. Both were able to work and accumulate savings, and they built a substantial masonry house with a large single room in front and a spacious covered veranda behind. Jacobo also owns a parcel of land planted with 50 mecates of henequen, and has eight head of cattle.

Living with them are Angela's widowed mother (58) and their four children, two daughters (13 and 9) and two sons (7 and 1).

Jacobo works only one or two days a week for the ejido, and his weekly earnings from this source average 25.70 pesos. Most

of his income is earned through work in the decorticating plant of a nearby hacienda, a job he has held for 25 years. This work pays more than field work, and his average weekly earnings from this source were 81.44. Since he usually works seven days a week he has no time for planting milpa. When his henequen plants require care or cutting, he usually hires his brother-in-law to do it, for the same reason. Consequently, it has been difficult to give the henequen plot optimum care during recent years when the price of fiber has been low.

Angela's daughters do all of the weaving, since Angela never learned to do this. Her mother does much of the shopping, cooking and other housework, so that Angela has quite a bit of time to devote to other activities. She earns money by taking in ironing, embroidery, and by drawing embroidery designs for others (two pesos per pattern). Her most important contribution, however, is in the form of the gifts of food which are received in exchange for her services as a rezadora. Angela is much in demand for this, and the family received gifts of food from this source on 16 occasions during the two-month period. Since the prayer sessions usually take only an hour or two, and the food reciprocated may serve as the main meal for the whole family, this employment of her time is more lucrative than any of the money-making activities open to local women. The figures in Table 33 do not include this important contribution to the food supply.

Angela is extremely active in church affairs as well. She sings in the choir and belongs to Acción Católica. She and

Table 33.--Angela: Average weekly income and expenses.

	Pesos	Percent
<u>Average Weekly Income</u>		
Ejido wages	25.70	17.6
Other agricultural labor	81.44	55.6
Hammocks	7.00	4.8
Other		
Ironing	6.44	
Embroidery	6.11	
Daughter's job as servant	17.78	
Miscellaneous	1.89	
Total other	32.22	22.0
Total Income	146.36	100.0
<u>Average Weekly Expenses</u>		
Food ^a	94.09	65.2
Non-food items		
Clothing	18.02	
Laundry (soap, etc.)	6.33	
Transportation	1.23	
Electricity	21.19	
Ceremonial	5.38	
Miscellaneous	17.00	
Total non-food items	50.15	34.8
Total Expenses ^b	144.24	100.0
Average Difference (Income less Expenses)	2.12	

^a Average expenditures for food per person per week: 13.44 pesos.

^b Percent of total purchases made on credit: 48.42.

Jacobo are members of a gremio which sponsors the fiesta of one of the saints, and during the study period she was donating her time to make an estandarte³ for this group. Her family was the only one of the five studied to make a regular church offering, one or two pesos every Sunday. Her religious devotion has earned her the respect of her neighbors and she has numerous comadres and compadres.

Angela was also the president of an organization of mothers involved in a food distribution program. The food, provided by the European Common Market countries under a foreign aid program, was supplied through the local government-operated clinic and was used to supplement the diets of infants who were found to be underweight. The foods provided included powdered milk, cooking oil, and dried fish.

Angela's oldest daughter, Carmela, works as a maid in Merida. She earns less than many servants (75 pesos a month) but her employer is a seamstress and is teaching her how to sew.

The family has a windmill and uses it to irrigate fruits and vegetables grown on the house lot. During the study period 12 pesos was earned from the sale of bananas, but most of the products of the garden are consumed by the family or given to Angela's brother and sister-in-law who live next door. They are compadres of Angela and Jacobo and the two families exchange many small services and favors.

During the period studied Angela's family had the highest income of the five families. Due to the garden and the gifts of food received, they also ate better than any of the other families,

even though the amount they spent per person on food was the lowest of the five families: 13.44 pesos per week.

Nevertheless, Angela's family spent nearly everything that they earned. They spent more on clothing than any of the other families. Also, they were the only ones to spend any money on books or toys: three pesos for a religious book and one peso for a plastic toy truck. Fortunately, they had no expenses for medical care. The large miscellaneous category includes a fine of 100 pesos which Jacobo had to pay when one of his cattle was caught in a henequen field. Because of the increase in these fines, he was giving serious thought to selling his cattle and putting the money in the bank. If he kept it in cash (several thousand pesos, since a full-grown animal is worth about 1,000 pesos) he fears that it would soon be gone in loans to friends, neighbors and relatives. That is what happened the last time he sold an animal, and he finds it difficult to deny these requests.

Isabel

Isabel (46) and Genaro (55) have four children, two of whom are already married. Their oldest son lives next door with his wife and five young children, and his children are frequently running in and out of their grandmother's house. The second son, also married, works in Campeche with the government anti-malarial program. His wife and baby live with Isabel and Genaro, and he comes home every two weeks to visit them.

Isabel's only daughter, Juanita, is 15 years old. During June of 1972 she began to work as a cook for one of the town's more affluent families. She works about 48 hours a week and receives 100 pesos per month plus breakfast and lunch. Benjamin, 11, helps his father in the fields, assists with the weaving, and spends considerable time caring for his infant nephew. Unable to attend classes after the fifth grade, Benjamin finished primary school through free tutoring services offered by one of the resident school teachers.

Ten years ago, Genaro made about 150 pesos a week in the ejido. Since that time the fortunes of his ejido group have declined and he now earns an average salary of 61 pesos a week. He has a milpa in ejido lands which is in its second year of cultivation, but Genaro is subject to frequent illnesses and is reliant on Benjamin for assistance both in the milpa and in the henequen fields.

Several years ago Juanita learned to weave from one of her cousins, and she in turn taught her mother. In 1970 Isabel and some other women decided to form a cooperative of weavers, and they sought assistance from the state government in doing this. The state of Yucatan had established a program to promote the formation of artisan cooperatives as one way in which to ameliorate the problems of rural poverty and underemployment. Isabel became the president of the Cacalchén cooperative, and they obtained loans of materials and cash worth 122,683 pesos from the state agency in charge of artisan cooperatives. The materials and cash payments for labor were distributed to 137 members, and each member was to complete

the number of hammocks assigned and return them to the state agency for sale through their shop in Mérida. The wage rates paid by the cooperative were somewhat higher than those paid by private dealers, and several hundred hammocks were made under this program in 1971.

Unfortunately, the state cooperative program had just been launched and a number of mistakes were made. Representatives of the state agency supervised the distribution of materials and gave them to everyone who wanted to participate, in some cases to persons the local cooperative officers felt were unreliable. Also, wages were paid in advance, being passed out along with the materials. As a result, 16 persons defaulted and failed to return the finished hammocks. Meanwhile, all materials and cash distributed had been charged against the account of the cooperative as a group, and the cooperative was left with a debt of 6,000 pesos. The state agency told the officers that no more materials would be forthcoming until all members complied and the debt was discharged. As president of the cooperative, Isabel had to make several phone calls and trips to Mérida and deal with the tangled red tape of various bureaucracies in order to set matters straight and secure continued work for the cooperative. Over several months, she spent about 150 pesos in this way, none of which could be reimbursed since the cooperative had no funds.

Finally, the state agency renewed the supply of materials in May of 1972. This time, however, Isabel handled all of the distribution, and no cash payments were made until the hammocks were turned over to the state. Continued operation in this form, although

less "cooperative" and structurally identical to the methods used by private dealers, was of some benefit to the community, since the wage rates, although lower than during the early days of the cooperative, were still higher than those paid by dealer's agents (six pesos per madeja rather than five).

Isabel not only distributed the materials and wages, but she and other members of her family were busy during May, June, and July making arms for all of the hammocks turned in. For this work she was paid one peso per madeja by the agency. At this rate, she and Benjamin were able to earn about 12 pesos per day each. Juanita, Genaro, and Isabel's daughter-in-law Marta also helped with this work in their spare time. As a result, the income which Isabel's family enjoyed during June and July of 1972 was considerably higher than normal.

By mid-July, however, supplies from the state began to diminish and continued to be quite irregular for the rest of the year. During those periods when materials were not available through the cooperative, Isabel earned money by weaving for other suppliers and by doing sewing and embroidery for a number of customers. Much of the embroidery was done for the woman who owns the local dry goods shop, and the earnings were applied to the family's bill at the shop.

Three years ago, Isabel and Genaro were able to build a new one-room house of rubble masonry. Genaro collected most of the materials in the bush, including the firewood for burning the lime to make the mortar, and built the house himself with the help of his sons. The roof beams, door and door frames were purchased. The

thatched roof is made largely of grass, except for an edge of more durable palm leaves which were purchased. The floor has been finished with sascab, a type of earth which forms a relatively hard surface.

Isabel hopes to finish the floor with concrete or tile, but they have not yet been able to afford this. There is another, older house at the back of the lot, and a kitchen shelter to one side.

Isabel has a few turkey chicks, but no chickens or pigs. Genaro once owned two cows, both with calves, but all the animals were sold when Isabel required surgery shortly after the birth of Benjamin. Benjamin had to be bottle-fed as an infant, at a cost of 22 pesos a week for powdered milk, so that the family was unable to rebuild its savings, and since then Genaro's earnings have declined.

Of the five families, Isabel's had the highest proportion of income derived from hammock production: 30.2 percent (see Table 34). This was due to the unusually large amount being earned through the cooperative during the period studied. Juanita's contribution to the household averaged only 12.50 pesos a week because she began her job in mid-June and had received only one month's salary by the end of July. Roberto, the son whose wife and baby live in the household, regularly contributes 10 pesos a week for food. This amount does not really cover the costs of feeding his wife and baby, since Isabel spent an average of 16.90 per person per week on food. However, Marta's father is a butcher and occasionally gives them cuts of meat. Also, Roberto assists his parents in other ways. For example, Isabel's work distributing materials for the cooperative

Table 34.--Isabel: Average weekly income and expenses.

	Pesos	Percent
<u>Average Weekly Income</u>		
Ejido wages	61.38	46.3
Hammocks	40.00	30.2
Other		
Daughter's job as servant	12.50	
Son's contribution for food	10.00	
Sewing and embroidery	7.50	
Miscellaneous	1.25	
Total other	31.25	23.6
Total Income	132.63	100.1
<u>Average Weekly Expenses</u>		
Food ^a	101.39	60.4
Non-food items		
Clothing	.16	
Laundry (soap, etc.)	2.98	
Transportation	11.95	
Electricity	2.19	
Animal feed	2.20	
Medical care	9.28	
Ceremonial	33.53	
Miscellaneous	4.08	
Total non-food items	66.37	39.6
Total Expenses ^b	167.76	100.0
Average Difference (Income less Expenses)	-35.13	

^aAverage expenditures for food per person per week: 16.90 pesos.

^bPercent of total purchases made on credit: 32.1.

required the use of a scale, but the cooperative had no funds to cover this expense, so Roberto bought a scale for her.

The fairly large amount spent by this family for transportation had two causes. Genaro and his son usually take the bus to work in the henequen fields near Las Ruinas de Aké, and this consumes six to eight pesos a week. The rest was occasioned by Isabel's trips to Mérida in connection with cooperative business.

In June, Genaro and Isabel contributed 35 pesos for the religious fiesta held in honor of Saints Peter and Paul. However, the amount devoted to ceremonial expenses was caused largely by the death of a niece (Genaro's elder brother's daughter) and the expenses associated with her funeral. The niece, who had been living with her husband in Quintana Roo, had terminal cancer. She came to Mérida for treatment and stayed with Isabel and Genaro for a short time, but soon died in the hospital in Mérida. Genaro, his widowed brother (the woman's father), the woman's two brothers, and her husband shared the funeral expenses, Genaro spending 123 pesos on liquor and food for the wake, and another 22 pesos for the rituals marking the seventh day after death. Most of these purchases were made on credit and it was understood that the other four men would reimburse him for their shares. By the end of the study period, three weeks later, he had not yet recovered any of these expenses.

The medical expenses were largely accounted for by treatment which Isabel received for her "nerves." A private physician in Mérida charged her 18 pesos for an office call, and prescribed 48 pesos worth of pills.

In sum, the family's income was higher than normal during the two months studied, but so were their expenses. Consequently, they were spending about 35 pesos a week beyond their income, with few prospects of increased income in the near future. This no doubt accounts in part for Isabel's "nerves." She also worries about her oldest son's children. They are often hungry and depend on their grandmother for occasional handouts. Juanita will eventually marry and her contribution to family income will be lost. Fortunately, both Roberto and Benjamin have finished primary school and Roberto has a good job. The support of these two sons will be increasingly important as Genaro gets older and less able to work.

Dietary Patterns

Although there were sizeable differences in the incomes of these families and in family size, the differences in patterns of food consumption were not great. All of the families typically had a breakfast of bread and hot chocolate, the latter prepared with water rather than milk and sweetened with sugar. Coffee was rarely drunk for breakfast, or at any other time of the day.

The midday meal was the largest for all of the families, and usually consisted of a quarter-kilogram of meat cooked with beans, rice, or vegetables and served with tortillas. All of the families had meat at least four times a week; Teresa and Angela served meat six days out of seven. Eggs were served about once a week in all five cases, but frequently two or three eggs were shared by the entire family.

Dolores and Bartola each bought 30 kilograms of maize a week, while Angela bought only 20. Their families are of similar size, but Angela's family ate proportionately more meat, fruits, and vegetables. Also, both Dolores and Bartola used some of the maize as animal feed. Teresa and Isabel bought tortillas rather than making them. Informants attributed the tendency toward buying rather than making tortillas to the increasing occupation of women's time with weaving. One corn mill owner estimated that 40 percent of his customers were buying tortillas rather than bringing their maize to be ground. This trend is also encouraged by the increasing scarcity of firewood for cooking the nixtamal (corn cooked with lime, from which tortillas are made).

The quantity of beans consumed varied from one kilogram a week by Teresa's family to three kilograms a week by Dolores' family. All of the families consumed large amounts of sugar. Teresa and Bartola bought one kilogram weekly while the other women purchased two. The sugar is used not only to sweeten chocolate, but in making pozole, a corn soup or mush which the men carry to the fields in gourd containers for mid-morning refreshment.

The greatest differences among these families were observed in the items consumed in the evening meal. All of the families ate the leftovers of the midday meal, if any, accompanied by bread or tortillas. However, Isabel's and Teresa's families consumed bread more frequently at this meal than the other families, perhaps because they were not making their own tortillas. Likewise, these two families had chocolate with the evening meal much more frequently

than the other families. Dolores' family consumed the fewest "luxury" foods: they consumed less bread, chocolate, and soft drinks and more tortillas and beans than the other families.

Although most of the families ate meat or eggs several times a week, the quantities consumed were very small, averaging less than 50 grams daily per person. Much of the meat consumed was fat pork. Other high-protein foods, such as milk, cheese, or fish, were consumed only rarely. To some extent, this low intake of animal protein was offset by the heavy reliance on beans. All but one of the families, Angela's, also consumed very little fruit except for bananas. They rely on the vegetables cooked along with the midday meal--onions, squash, chile peppers, tomatoes, and carrots--for vitamins. Since few fruits and vegetables are grown locally most people must buy them at prices which are substantially higher than those charged in Mérida.

Judging by these data and by the small size and weight of the children in these families, it is probably safe to conclude that they were not enjoying optimum nutrition. Indeed, a local study undertaken by a medical student fulfilling her year of social service found that, based on national norms, 22.0 percent of 82 pre-school children examined weighed 91 to 110 percent of normal weight, 56.1 percent weighed 76 to 90 percent of normal weight, 19.5 percent weighed 61 to 75 percent of normal weight, and 2.4 percent weighed less than 60 percent of normal weight. During the first nine months of 1971 the local clinic, which serves all ejidatario families in Cacalchén, diagnosed an average of 25 cases monthly of nutritional

deficiency (including an average of three cases of pellagra) and 34 cases monthly of anemia (Hernandez, 1971).

Summary

The detailed study of these five families reinforces the survey data in emphasizing the heavy reliance of the residents of Cacalchén on cash income and the relative unimportance of subsistence agriculture. Although three of the families had planted milpas, the harvest was still several months away and none of the families had supplies of staples from the previous year. In three of the cases, contributions to the food supply from gardening on the house lot and raising small animals were insignificant; in the other two they were of only minimal importance.

This picture would likely be altered somewhat if the two-month study had been conducted in early winter after the harvest of the milpas, rather than in June and July. However, even the three families who had planted milpa did not expect this to provide more than a few months' supply of maize and beans. All emphasized the small size of the plots and the possibility of losing the crop if there were not enough rain. Indeed, during July a dry spell of about two weeks killed some of the young plants.

Combining the incomes of all five families, the proportions shown in Table 35 emerge. Earnings in the ejido supplied only 54.7 percent of income. In a community so dependent on the cash economy the need for supplemental income is obvious, and these families (like others in the community) are reliant primarily on hammock

weaving (15.8 percent of income), agricultural labor (14.9 percent), and domestic service (7.0 percent) to make ends meet.

Table 35.--Combined incomes of five families by source.

Source	Percent
Ejido wages	54.7
Hammocks	15.8
Agricultural labor	14.9
Domestic service (includes washing and ironing)	7.0
Sewing and embroidery	2.1
Other	5.5
Total	100.0

The proportion of income from weaving varied from 4.2 percent to 30.2 percent among these families, at a time of year when the peak season of hammock production was ending and materials were becoming scarcer. Hence the figures may be considered representative of the year as a whole.

Of interest are the significant contributions made by women to family income. Of the five women described, four take active roles in contributing to family earnings, but choose somewhat different ways in which to do this. Dolores combines weaving with other activities which can be done at home: washing and ironing and raising animals. With her daughter's job in the corn mill, female labor

accounted for approximately 37 percent of the family income. Bartola not only weaves but distributes hammock materials, thus earning approximately 20 percent of the family income. Isabel performs a similar role, but has followed a more political means to achieve it through community organization and tapping government resources. Although the whole family worked making arms for the cooperative's hammocks, so that the contribution of each is not clearly separable, Isabel and her daughter probably brought in between 35 and 40 percent of total cash income during the period studied. Angela's role is a more traditional one, that of rezadora, but one which brings substantial material benefits. Aside from the food brought in from this source, Angela and her daughters provided 25.9 percent of the family's cash income.

These four families were also ones in which the women were relatively free of the burdens of infant care. Dolores and Isabel no longer have small children, while Bartola and Angela can count on the help of older children and elderly women (Bartola's mother-in-law and Angela's mother) to assist with child care. By contrast, Teresa, with three small children and living in a nuclear family household, contributed only 4.2 percent of the family income.

The combined expenses of the five families are shown in Table 36. In all of the families, food accounted for more than 60 percent of all expenses. When food expenditures are calculated as a proportion of income, they range from 64 percent of income in the case of Angela's family to 95 percent in the case of Teresa's. The proportion of purchases made on credit rather than in cash varied

from 32 percent to 66 percent. Three of the families were able to pay these off each week, but the other two had run up accounts of several hundred pesos. For the most part, credit buying between paydays is a necessity. However, it also means that the people pay more for their food in the long run. Most of the stores extending credit charge prices as much as 30 percent higher than those charged by the local Conasupo store (part of a government-operated food chain). However, the Conasupo store was not allowed to sell on credit.

Table 36.--Combined expenses of five families.

Category	Percent
Food	67.9
Clothing	5.7
Laundry	3.8
Transportation	3.1
Electricity	1.6
Animal feed	2.6
Medical care	3.0
Ceremonial	7.6
Miscellaneous	4.7
Total	100.0

Expenditures for ceremonial purposes account for a larger proportion of expenses than any other category except food. Nearly all of the money spent in this category was spent on rites of passage or celebrations for the saints. To the extent that these events involve serving a ceremonial meal, the fiestas serve a redistributive function, and this is the largest part of the expense involved in sponsoring the fiestas of the saints. In addition, a part of the money is used for paying for the mass (usually 100 pesos), buying fireworks, decorating the saint with new garments, and paying musicians to play for the procession and dance.

For women, novenas and fiestas provide the major opportunities for recreation and for assuming active public roles. Local politics is dominated by men, as are sporting events such as baseball or soccer matches. Cantinas and pool halls are patronized only by men. Religious fiestas and such events as wedding fiestas are the only occasions when women drink liquor, and even then they indulge only moderately.

On the whole, expenditures on recreation other than fiestas were relatively insignificant, even for men.⁴ Only one person in these five families, Bartola's son José, regularly attended movies, and Isabel and her daughter Juanita were the only persons during the two months to attend a public dance where admission was charged.

Although free medical services were offered in the local clinic, 3.0 percent of the money spent by these families went for medical care. The clinic was not well supplied with medicines, and the doctor in charge in 1972, a medical student performing his social

service, was not well regarded by the community. Presumably this problem has been ameliorated, since most of the henequen zone was incorporated into the federal social security medical program by 1973. In that year a new free clinic was opened in Cacalchén with improved facilities and supplies and staffed by certified physicians.

Miscellaneous expenditures were made up largely of such things as cigarettes, matches, haircuts, an occasional razor blade, or firewood purchased when there was not time enough to gather it.

It is probably safe to say that approximately 90 percent of all money spent by these families was spent on necessities. It is worth noting that although food accounted for only 67.9 percent of all money spent, ejido wages accounted for only 54.7 percent of all income. It is clear that the position of these families would be considerably more difficult if they had to rely on work in the henequen ejidos alone. The need for supplemental income is self-evident. Weaving, among other activities, helps to fulfill this need.

The data presented here, both from the household survey and from the detailed family studies, indicates that the use of the term "underemployment" to refer to the Yucatecan henequen zone may be somewhat misleading. The term implies that the rural population is burdened with a large amount of unused labor time for which no employment opportunities exist. My data, and the statements of many informants, indicate that this is not the case. Opportunities for employment exist, and most able-bodied adults are working full-time in one way or another. In addition, employment of child labor

is very common. However, nearly all of the existing opportunities for employment are poorly paid. The widespread adoption of weaving in Cacalchén in the past decade is an attempt to compensate for the low incomes from other sources and for the effects of inflation, an increasingly serious problem in the last few years. While weaving cannot support a family, it can help to make ends meet under these difficult conditions.

Footnotes--Chapter 5

¹Hetzmek is a traditional Maya ceremony in which the infant is for the first time carried astride the hip. The ceremony is performed at three months for a girl and four months for a boy. The child's godparent places in its hands articles which symbolize skills and abilities suitable to an adult of its sex; the ritual is presumed to have the effect of encouraging the sound development of these skills.

²Although I initially attempted to collect figures for weekly production and earnings, since other kinds of employment in the community are paid on a weekly basis, it soon became clear that it was easier for informants to make estimates on a monthly basis. This is because it frequently takes longer than a week to make a hammock.

³Estandartes are large banners made out of velvet and bearing the image of a saint. They are embroidered in silk thread and decorated with sequins, and usually bear the name of the saint, the name of the sponsoring gremio, and the year in which it was made. All the banners, new and old, are carried in the annual procession in honor of the saint whose image they bear.

⁴Although the data gathered were as complete as I could make them, there is one item about which I was not able to get much information: the amounts which the men in these families spent on liquor. I believe that in these five cases it was minimal. One of the men had quit drinking because of stomach problems, while two of the others claimed that they drank only at wedding fiestas, wakes, or similar events. In the other cases I was never able to get more than an evasive answer, but if the amounts spent in this way had been high, I certainly would have heard about it through the gossip of others.

CHAPTER 6

CONCLUSIONS

The basic aim of this study has been to further understanding of the evolution of handicraft industries in Yucatan through the analysis of one particular industry, the hammock industry. At this point we may consider in what ways developments in the hammock industry parallel developments in other handicraft industries of the Mesoamerican region, and how they compare with historically known phases of economic development in Europe.

It is abundantly clear that the hammock industry of Yucatan is a rather different phenomenon, in terms of the relations of production, distribution, and marketing, from the kinds of craft specialization which have most frequently been described for various areas of the Mesoamerican highlands. Notably lacking is a system of periodic markets involving a high proportion of direct sales between producers and consumers. Also, hammock production is not carried on by independent peasant-artisan households engaged in simple commodity production, but by a system of manufacture organized by capitalists who control the means of production. A large proportion of the work force consists not of subsistence cultivators and their families, but of rural proletarians.

The hammock industry is of particular interest precisely because the relations of production are of a type, the putting-out

system, not extensively reported in the ethnographic literature. It is my contention that this system is becoming much more common in Mexico under the influence of tourism. A number of studies indicate that control of artisan production and marketing by middlemen is increasing in several areas, although the details of this process are variable and merely hinted at in some cases.

An important paper on the Tarascan region by Durston (1971) describes the increasing concentration of the marketing of pottery in the hands of four middlemen who maintain their control in part through providing production materials on credit. He also describes the relationship of this process to class differentiation of the peasant community, as some potters become wage laborers working for the middlemen. The system of "farming out," according to Durston, may be observed for other crafts of the Tarascan area. One such instance is reported by Belshaw, involving the sewing of folk costumes for tourists (1967:221-27).

Nutini briefly describes the way in which serape-weavers in San Bernardino Contla (Tlaxcala) are dependent for their supplies of wool on a few merchants who use credit mechanisms to maintain their control of the industry (1968:46-50). A situation similar to debt servitude appears to exist among potters in Temascalcingo, a community in the State of Mexico. One middleman there operates a "tienda de raya," in which potters pay off their debts in pots (Papousek, 1974). Similar but less developed types of merchant control are reported for pottery production in Jalisco by Diaz (1966:138-97) and in Oaxaca by Stolmaker (n.d.). In the latter

case, potters tend to seek advances from the dealers during the rainy season when pottery production falls. Also, these potters increasingly deliver to dealers and shops in Oaxaca City rather than marketing wares themselves. My own inquiries in the Oaxaca market indicate that many of the hand-embroidered garments sold to tourists there are produced under the putting-out system.¹

These studies, as well as the one presented here, suggest that this increased concentration of control in the hands of entrepreneurs is associated not with rural development in the usual sense in which the term has been understood (increased incomes and higher standards of living for the artisans) but with the increasing differentiation of the rural population into petty bourgeois and proletarian or semi-proletarian classes, with the direct producers often living in situations of extreme poverty. These results should give pause to those who argue in favor of encouraging handicraft industries as a way to overcome rural poverty (e.g., Chevalier, 1967:192).

That studies of the putting-out system by anthropologists have not been common may be due to a romantic bias in anthropology, and the concomitant search for pre-Columbian traditions unsullied by the impact of modernization. It may also, however, reflect real changes in the organization of craft production taking place in Mesoamerica over the past two decades in response to increasing tourism. The discussion in Chapters 1 and 2 suggests that changes in artisan production and marketing have long occurred in response to changes in the larger regional, national, and international

economies. It is not surprising, then, that this should continue to happen under the impact of contemporary economic changes, including tourism and the growth of a foreign market for handicrafts.

Although not extensively described for Mesoamerica, the putting-out system is well-known as a stage in the evolution of European capitalism, and has been described and analyzed by numerous authors. The system was well-established in the English textile trades by the 1700s. Merchants controlled marketing and provided workers with materials, using agents to distribute the work (Hammond and Hammond, 1970; Mantoux, 1961). By the early 1800s the system had become the predominant form of industrial organization in England, including the hand-loom weavers, woolcombers, framework-knitters, glove-makers, pillow-lace makers, nail-makers, chain-makers, boot and shoe workers, some potters, and many others (Thompson, 1968:260). Eventually, many of these industries came under the factory system, but outwork persisted in some branches (such as tailoring and dressmaking) into the twentieth century.

The putting-out system also prevailed in Russia in the late nineteenth century. Lenin, who called it "capitalist domestic manufacture," describes its operations in the making of cloth, felt, rope, furniture, leather goods and furs, stockings, combs, brushes, pottery, cutlery, and other metal goods (1964).

The role of the putting-out system in the impoverishment and exploitation of the workers is detailed by Marx (1967, vol. 1: 466-69), Lenin (1964:442-44), the Hammonds (1970:47-63), Mantoux (1961:69-77), and Thompson (1963:314-49), among others. The work

force, frequently made up of women and children, suffered from long hours, low wages, and poor health, and were often paid in provisions rather than money. Typically, their wages were lower than those paid to factory workers.

In both England and Russia the spread of the system was intimately connected with the commercialization of agriculture. In England, the enclosure acts and the adoption of scientific management practices placed rural labor at the disposal of industry. The growth of the putting-out system was only partly a process of formerly independent artisans falling into dependence on merchants; in many cases it was a product of merchants seeking out new sources of cheap labor (Mantoux, 1961).

In Russia, Lenin emphasized the intimate connection between the parallel transformations in agriculture and industry. The abolition of serfdom in 1860 contributed to the proletarianization of rural labor. The landless and near-landless peasants became the rural proletarians employed as outworkers; the prosperous peasants and kulaks became the employers of wage labor, not only in agriculture but in the crafts as well.

Extensive incidence of home-work pre-supposes two conditions: (1) the existence of a mass of rural proletarians who have to sell their labour-power, and to sell it cheaply; (2) the existence of well-to-do peasants, well acquainted with local conditions, who can undertake the function of agents in distributing work (1964:446).

The spread of outwork was also stimulated, paradoxically, by mechanical inventions. In England, the numbers employed as outworkers multiplied enormously from 1780-1830 in response to improvements in industrial technology. These improvements provided

the materials with which to employ the outworkers: machine-spun yarn for the weavers, nail-rod for the nailmakers, etc. (Thompson, 1963:260-61; Mantoux, 1961:219). In the garment industry, invention of the sewing machine gave impetus to the use of outworkers to produce ready-made clothing in the latter part of the nineteenth century (Landes, 1969:294-96). Thompson argues that the putting-out system was thus an integral part of the industrial revolution: "Indeed, we may say that large-scale sweated outwork was as intrinsic to this revolution as was factory production and steam" (Thompson, 1963:260-61).

The spread of the putting-out system under these circumstances came about in two principal ways. In the first, the merchant capitalist, already engaged in long-distance trade, gradually came to control the producers through credit mechanisms and eventually through the direct ownership of the means of production. In the second, the artisan himself became a merchant and capitalist, employing others. The second way, according to Marx, was the truly revolutionary way:

However much this [the first way] serves historically as a stepping-stone . . . it cannot by itself contribute to the overthrow of the old mode of production, but lends rather to preserve and retain it as its precondition. The manufacturer . . . was merely a merchant, who let the weavers carry on in their old unorganised way and exerted only a merchant's control, for that was for whom they really worked. This system presents everywhere an obstacle to the real capitalist mode of production and goes under with its development. Without revolutionising the mode of production, it only worsens the condition of the direct producers, turns them into mere wage-workers and proletarians under conditions worse than those under the immediate control of capital, and appropriates their surplus-labour on the basis of the old mode of production. . . .

The transition to large-scale industry depends on the technical development of the small owner-operated establishments . . . (1967, vol. 3:334-35).

An important discussion by Sweezy, Dobb, and Takahashi (1967) deals with the relative importance of the two ways in various times and places. Takahashi points out that this question is related to the nature of the class structures involved in the transition to capitalism in different countries, and argues that although the second way may have been the most significant for Western Europe, that the first way was more important in Japan and Prussia (1967: 47-55).

Whatever pattern was most common, the putting-out system had certain advantages which prolonged its use. Most importantly, wages were kept down, investment in means of production was minimized, and labor could easily be laid off when demand slowed. There were also disadvantages, however. Embezzlement of materials by the workers was a particularly widespread problem in the eighteenth century, leading to repeated efforts to halt the theft of materials by enacting ever stiffer penalties (Landes, 1969:60). Prevention of embezzlement was the chief advantage claimed by those masters who had weaving done on their own premises (Hammond and Hammond, 1971:171). Other disadvantages of the putting-out system included the irregular work habits of the outworkers and the tendency of the peasants to put aside the work during periods of peak labor requirements in agriculture (Thompson, 1963:358-59).

One can understand why the thoughts of employers turned to workshops where the men would be brought together to labour under watchful overseers, and to machines that would solve

the shortage of manpower while curbing the insolence and dishonesty of the men (Landes, 1969:60).

The Yucatecan hammock industry bears some similarities to the European situations described above, but is also different in a number of respects. Given the grim conditions described by the above authors, it appears that the abuses of the system were greater in the European case. In Cacalchén, weavers do not ordinarily spend 12 or 14 hours a day at their looms, nor are they paid in provisions. However, the wages of the weavers are certainly among the lowest in Yucatan. They compare unfavorably with the wages paid in domestic service or agricultural labor, and factory workers in Mérida earn 6 to 10 times as much. Parallel with the European case, women and children make up a large part of the labor force.

As in Europe, the development of the putting-out system in Yucatan has been stimulated by developments in mechanization. The production of factory-made cotton cord, first in Mexico City and then in Mérida itself, has provided cheap and abundant materials for the expansion of the hammock industry, and at the same time has allowed a small number of merchants to control the supply. A somewhat similar process has taken place in the production of embroidered huipiles. Merchants provide cloth and embroidery thread, while the use of the sewing machine has allowed a productivity several times greater than is possible in traditional hand-embroidery. In both cases, the development of distant markets has helped to increase merchant control.

While the production of cotton cord for hammocks has been thoroughly mechanized, the weaving process itself has not.

Nevertheless, some of the same pressures toward mechanization which occurred in the European situation also exist in the hammock industry. Like their eighteenth and nineteenth century counterparts, the hammock merchants encounter various problems which create time-lags in production and affect the quality of the finished product. Complaints are frequently heard about the embezzlement of materials and the irregularity of the work habits of the weavers, and it is sometimes implied that the weavers' refusal to work more rapidly is due to laziness or to the fact that the wages are only a supplement to family income and not really necessary. Other complaints have to do with the poor quality of the work: dropped stitches, incorrect measurements, and a reluctance to execute complex designs.

These problems would obviously be alleviated by mechanization. In Mérida, rumors circulate to the effect that the invention of a workable machine for weaving hammocks is imminent, that someone has brought in Japanese technicians to invent it, or has already invented it but is keeping it a secret. Clearly, the development of a machine which could duplicate the knotless netting technique used in the Yucatecan hammock would solve certain problems of quality control and production delays which plague the industry.

Until such a machine is available, however, the organization of workers into workshops is not profitable. Mexico has labor laws which require that employers pay minimum wages, observe minimum-age requirements, and make social security contributions covering their workers. As long as production is restricted to the putting-out system and the wages paid are piece-rate, none of these laws apply.

This sort of legislation both inhibits the rationalization of the industry and serves to avoid the worst abuses of the sweatshops which were a part of the industrial revolution in England.

Perhaps the most significant differences between the European and Yucatecan cases, however, have to do with the larger historical context in which these events are occurring. In England, the putting-out system was a transitory stage integrally linked to the accumulation of capital and the shift from simple commodity production to industrial capitalism. The industries involved played extremely important roles in the transformation of English society and were the cutting edge of capitalist expansion, closely linked with a system of economic imperialism.

Like their eighteenth and nineteenth century counterparts in England, the merchants controlling craft production in Mexico are dependent on foreign markets. However, English exports of cloth and metal goods constituted a large part of Britain's foreign trade, which was one of the most effective instruments of British imperial design and a cornerstone of British capitalism. Captive markets throughout the Empire provided the incentive to manufacturers to make ever larger investments in plant and machinery. To argue that handicrafts play a similar role in the Mexican context would obviously be absurd. Mexico has no captive markets except within its own borders. Its craft exports are not articles of necessity or productive utility, but of novelty and luxury. They play an important but still minor role in the national economy as a whole compared with agricultural and raw materials exports.

In Yucatan (and in Mexico generally) capitalist development has been in large part a derivative process, conforming to the pattern of dependent capitalism evident in other parts of the Third World (Frank, 1972; Fernandes, 1973). This has had significant consequences for the economy and class structure of the region, and creates a situation in which private accumulation and investment of capital occur in a relatively restricted sphere. Unfortunately, historical studies of economic development and the formation of classes in nineteenth and twentieth century Yucatan are inadequate to a full understanding of this problem, but the interpretation presented here attempts to identify the major outlines of this process.

The early years after Independence were characterized by a flurry of entrepreneurial activity in Yucatan (Cline, 1947). Much of the investment went into commercial agriculture, particularly sugar, but a number of industrial enterprises were also launched, such as the textile factory described in Chapter 2. However, the competition of cheap British manufactures was already undercutting industrial development in the newly independent states of Latin America. After the Caste War and the collapse of the sugar industry, investment in Yucatan shifted to henequen cultivation. With the invention of the McCormick reaper, North American finance capital contributed to the expansion of henequen production (Raymond, 1971).

The owners of the henequen haciendas were a capitalist class in the sense of being investors in large-scale commercial agriculture, oriented toward the world market. However, this regional bourgeoisie

was largely descended from the colonial landed aristocracy and maintained some of its feudal characteristics. Internally, the relations of production on the henequen hacienda were those of master and slave.

In Yucatan, persistence of slavery in the form of debt servitude existed alongside capitalist development and was in fact necessary to it, since otherwise no adequate supply of labor could have been found to absorb the capital and provide the raw materials required by the development of capitalism in the United States. Thus, a "pre-capitalist" mode of production, far from being an obstacle to the spread of capitalism, was essential to it in this period of securing access to raw materials. But debt servitude, which was at first necessary to the accumulation of capital in commercial agriculture, was at a later stage a factor inhibiting the growth of capitalism in its commercial and industrial forms, by inhibiting the growth of an internal market and the growth of a free labor force.

In Yucatan, however, change came not as a result of internal struggle, but from above. There was no significant opposition of the rising bourgeoisie against the landed oligarchy; rather the latter had transformed itself into the former, and vice versa. In the words of Florestan Fernandes, "el aristócrata se aburguesa y el burgués se aristocratiza" (1973:220). Indeed, the integration of rising merchants into the landed oligarchy, and the investment of wealth from landed property in commerce, were processes which had been going on since the early colonial period (Hunt, 1974). The

landed oligarchy and the bourgeoisie were not only allied; they became the same group.

Since this bourgeoisie was not formed in opposition to a landed aristocracy, the persistence of traditional aristocratic patterns was favored, resulting in paternalism, noblesse oblige, and caste-like relationships between ethnic groups. Their landed interests and their dependent position vis-a-vis foreign capital made it impossible for this bourgeoisie to carry out the freeing of labor necessary to continued development.

Meanwhile, some internal differentiation of the peasantry into landless, semi-landless, and petty bourgeois strata was occurring in the villages, but was overshadowed by the wholesale enslavement of the rural Mayan and mestizo population on the haciendas. The nature of class relationships and dependent capitalism existing in Yucatan at the time of the Revolution required that the state take an active role in the further development of the economy. The liberation of the peons in 1915 and the subsequent agrarian reforms of the twenties and thirties occurred largely by fiat, emanating from power-holders at the State and national levels rather than by revolution from below.

The period between 1912 and the large-scale redistribution of lands in 1937 was characterized by intense struggle among the hacendados, State power-holders, and the federal government for control of the henequen industry (Raymond, 1971:59-66). Finally, the rapid and extensive redistribution of lands in 1937 provided the basis for the growth of state capitalism in Yucatan. From 1938 to

1955 Henequeneros de Yucatan, organized by the State government, controlled the marketing of all fiber produced by the ejidos and by the private estates. In addition, they directly organized the production of all the henequen ejidos through an administrative hierarchy.

During its sixteen years existence Henequeneros directed the work of approximately 50,000 workers, cultivated seventy-five per cent of the land committed to the production of henequen, and produced seventy per cent of the total amount of fiber (Raymond, 1971:142-43).

Although much of the land of the private estates had been expropriated, the hacendados were able to retain the decortivating plants. This gave the private owners control over an essential phase of production and allowed them to retain a large part of their control over the industry. During the period of Henequeneros control, the owners of the decortivating plants received half of all the fiber which they processed for the ejidos.

Henequeneros de Yucatan appears to have been largely controlled by representatives of the hacendados, who used it in their own interests. It was finally dissolved in 1955 by the federal government after waves of scandal about corruption and graft within the organization (Raymond, 1971:143-46). The Agrarian Bank then came to control the production and marketing of the ejidos while the private owners organized themselves separately. It was at this point that a significant shift in power from the State to the national level began, with the appointment of Agrarian Bank officials directly from Mexico City.

Meanwhile, the Yucatecan bourgeoisie had been investing in the development of an indigenous cordage industry, the only significant industrialization to take place in Yucatan. By 1944 the local cordage mills were consuming 33 percent of the fiber, and by the early sixties, more than 80 percent (Raymond, 1971:71). The finished product, however, was still exported overwhelmingly to the United States.

Over-production and competition brought a number of these mills to the brink of bankruptcy by 1961. The result was reorganization of the mills under a government-controlled corporation, Cordemex, in 1965. This federal bail-out of the cordage industry resulted in the owners being compensated approximately double the worth of their properties upon nationalization, with the bill being footed by the ejidatarios (Menendez Rodriguez, 1964).

The result today is a very high degree of direct federal control over the State's leading industry, in both its agricultural and manufacturing aspects. In response, the regional bourgeoisie has shifted its capital to such fields as tourism (now the State's second most important source of income), cattle ranching, and commerce. Investment in industry has remained low, reflecting the domination of national and multinational corporations over the provision of consumer goods, and the satellite position of Yucatan vis-a-vis Mexico City and the United States. An unknown part of the capital potentially available for local investment is siphoned off in the form of insurance against political events. The local bourgeoisie puts part of its money in Chase Manhattan Bank, First National City

Bank, or Swiss gold. Economic and political instability and the heavy intervention of the Mexican government in the economy are given as reasons for doing this.

These aspects of dependent capitalism retard the internal development of the forces of production, result in the super-exploitation of workers, and inhibit the growth of the internal market. The result is to slow down the development of industrial capitalism stimulated from within, and to replace it by forms dictated from without--forms which depend on the nature of the surplus-product of the developed countries (e.g., Pepsi Cola bottling plants).

This complex of conditions has served to inhibit the growth of an independent bourgeoisie in Yucatan, and the "truly revolutionary way" envisioned by Marx, the transformation of the small producers into industrial capitalists, has occurred only to a very limited degree (e.g., as with the shoe industry in Ticul). In the hammock industry, merchant capital has retained control of the industry and has taken the first steps toward transforming itself into industrial capital with the construction of the two factories for producing hammock materials. A similar process is occurring in the launching of small garment industries such as shirt factories by merchant capitalists. Significantly, this limited transition from commerce to industry in Mérida today appears to be occurring largely at the initiative of Lebanese businessmen and other nouveau riche elements. The position of these nouveaux riches in relationship to the traditional bourgeoisie and the extent to which their rise has created changes in the regional class structure during the

past 40 years is a subject requiring much more extensive study. At this point it can only be suggested that, while not free of the restrictions imposed on local capital in general by its dependent status, they have been more energetic and astute in taking advantage of those opportunities which exist in the interstices between state capitalism and the domination of the multinational corporations.

The nature of capitalist development in Yucatan is also affected by the new restrictions on land and labor created by the agrarian reform program. The distribution of ejido lands in quantities insufficient to support the population has tended to maintain rural communities as pockets of cheap labor, tied to the land not by debt servitude, but by their reluctance to give up ejido rights for an insecure urban existence. Lenin found a similar process at work in Russia:

. . . the tying of the peasant to his allotment . . . artificially enlarges the sphere of application of capitalist home-work, artificially binds the peasant to these worst forms of exploitation. Obsolete institutions and an agrarian system that is thoroughly saturated with the social-estate principle thus exert a most pernicious influence in both agriculture and industry, perpetuating technically backward forms of production which go hand in hand with the greatest development of bondage and personal dependence, with the hardest lot and the most helpless position of the working people (1964:446).

In Mexico, industrialization occurs, but with the advanced technology acquired from the developed nations. The high productivity of labor under these conditions is such that only a small proportion of the available work force need be employed, while the rest are kept down on the farm.

In Yucatan, the complex of developments described above creates propitious conditions for the emergence of industries such

as hammock-weaving and huipil-embroidery organized under the putting-out system. The entrepreneur need only seek out the most disadvantaged groups among the rural population to find the cheap labor needed. Initially this occurred among the rural proletariat of the henequen zone. With the expansion of the highway system in recent years communities in the maize zone have increasingly been drawn into this process. These communities have not experienced proletarianization to the same degree as those in the henequen zone. Although sugar haciendas were important in the region near Teabo in the past there are very few haciendas of any kind in the area today. However, a process of differentiation among the peasantry has been occurring for some time and ease of access to land is diminishing with population growth and a new wave of investment in cattle ranching and fruit-growing by prosperous peasants and the Mérida bourgeoisie. It can be safely predicted that the region will continue to provide an abundance of cheap rural labor in the foreseeable future.

Given these considerations, the major problem facing the hammock industry and other Mexican handicraft industries dependent to a large extent on the tourist market is their vulnerability to economic crises in the developed countries. Unlike the English merchants of the nineteenth century, Mexican entrepreneurs cannot take advantage of a system of imperialist relations which can assure them of foreign markets. Faddish changes in the popularity of products and styles is an additional factor inhibiting the development of mechanization and factory production, which would tie up capital in permanent plant.

In summary, developments in the hammock industry and others like it have a number of parallels with earlier phases of economic development in the industrialized countries, but with some very significant differences. They represent a process of capitalist development of a particular kind, dependent capitalism or the "development of underdevelopment" (Frank, 1969). To date, they bear only a weak relationship to the development of the forces of production or to the development of the internal market, and are associated with the impoverishment of the direct producers. At the present historical moment, they present few possibilities of participating in a dynamic process of development that would benefit the rural Mexican population in general.

Footnotes--Chapter 6

¹Provisionally, the scheme proposed by Lenin for Russia might serve for classification and analysis of the various processes involved in the increasing control by middlemen in Mexican handicrafts:

The first and simplest form is the purchase of wares by the merchant (or owner of a big workshop) from the small commodity producers. . . . The buyer-up takes advantage of his monopoly position to force the price he pays to the producer down to rock bottom. The second form of merchant's capital consists in its combination with usury: the peasant, who is constantly in need of money, borrows it from the buyer-up and repays the debt with goods. . . . The third form . . . is payment for wares with goods . . . typical not only of the small industries but of absolutely all undeveloped stages of commodity production and capitalism. . . . The fourth form . . . is payment by the merchant with the particular kinds of goods that are needed by the handicraftsman for production. . . . Having cut off the small industrialist from the finished-goods market, the buyer-up now cuts him off from the raw-materials market, and thereby brings him completely under his sway. It is only one step from this form to that higher form of merchant's capital under which the buyer-up directly hands out materials to the handicraftsmen to be worked up for a definite payment. The handicraftsman becomes de facto a wage-worker, working at home for the capitalist; the merchant's capital of the buyer-up is here transformed into industrial capital (1964:367-69).

APPENDIX

VALUES OF VARIABLES TESTED FOR SELECTED MUNICIPIOS IN YUCATAN

VALUES OF VARIABLES TESTED FOR SELECTED MUNICIPIOS IN YUCATAN

	A	B	C	D	E	F	G	H	I	J
1. Communities in which participation in craft production is insignificant; only a few individuals involved:										
BACA	1	4,235	33.65	8.98	78	35	1010.1	385.0	881.77	9.79
CONKAL	1	4,075	70.89	20.31	82	60	685.6	422.2	415.72	3.38
CHAN KOM	2	2,771	20.09	11.29	56	60	0.0	617.5	0.0	208.22
CHICKULUB	1	2,145	10.90	2.19	76	72	828.5	213.9	954.99	1.43
IXIL	1	1,594	11.88	1.66	69	64	825.9	575.0	1919.93	2.15
MOCOCHA	1	1,923	33.45	15.50	81	80	945.1	420.0	1563.83	0.97
SUCILA	2	2,588	10.08	1.13	80	64	0.0	885.0	0.0	180.83
TEKANTO	1	3,528	74.67	8.75	55	23	763.6	505.0	606.80	5.41
TELCHEAC PUEBLO	1	3,713	45.42	20.12	82	81	167.7	489.2	2830.48	0.0
TIZIMIN	2	35,647	8.63	29.89	66	77	0.0	1017.5	0.0	359.15
UAYMA	2	1,557	7.91	6.35	45	30	497.6	697.5	3.76	178.83
2. Communities in which participation in craft production is moderately important:										
ABALA	1	4,148	13.76	14.18	65	40	595.4	953.4	684.16	33.59
BOKOBA	1	1,530	31.52	20.76	61	16	804.2	607.5	527.93	73.82
CHEMAX	2	11,017	10.17	16.52	46	37	0.0	882.5	0.0	108.04
CHICHMILTA	2	3,269	9.12	-17.35	45	40	0.0	696.5	0.0	241.59
DZAN	2	1,947	31.76	28.51	69	35	0.0	720.0	0.0	51.48
DZIDZANTUN	1	7,658	38.22	41.43	67	34	649.4	575.0	137.57	0.57
HOCTUN	1	5,185	41.84	29.82	62	23	708.7	640.0	393.20	4.99
HOMUN	1	4,050	21.04	18.72	59	55	767.9	452.5	648.35	9.47
HUHI	1	3,807	19.87	26.35	65	33	683.9	637.5	385.72	12.46
MAMA	2	1,482	12.61	-35.26	67	9	0.0	660.0	0.0	36.44
MOTUL	1	20,994	70.54	23.71	74	60	913.8	319.4	1245.77	3.27
MUNA	2	6,012	22.20	22.64	81	60	641.7	770.0	59.46	59.75
OPICHEN	2	2,558	9.54	17.72	54	46	719.0	1095.0	103.25	91.61
TECOM	1	9,325	20.62	22.71	62	48	688.8	657.5	547.59	10.41
TIXCACALCUPUL	2	2,430	3.38	-2.41	57	64	0.0	685.0	0.0	255.83
TIXPEUAL	1	3,110	45.09	20.96	79	84	933.1	560.0	472.86	143.46
YAXKUKUL	1	1,466	33.76	16.16	76	56	541.3	345.0	174.73	3.98
3. Communities in which participation in craft production is very important; evidence of one or more local craft specialties which are marketed extra-locally, one-third or more of the households probably participating in craft production:										
ACANCEH	1	6,977	45.52	24.17	70	52	550.3	690.0	401.79	14.12
CACALCHEM	1	4,256	55.53	23.15	66	16	633.6	712.5	250.10	8.72
CHUMAYEL	2	1,238	26.92	3.51	50	8	0.0	522.5	0.0	70.65
HALACHO	1	8,236	12.26	8.15	58	25	419.2	777.0	50.59	19.72
MOCOBA	1	4,259	52.10	30.28	65	34	696.2	715.0	317.84	14.91
MUNUCHA	1	10,222	17.06	25.25	68	55	596.2	460.0	280.97	1.03
IZAMAL	1	15,926	57.52	19.23	66	31	799.5	740.0	351.00	11.40
MANI	2	2,598	30.35	15.36	57	14	0.0	670.0	0.0	86.86
MAXCANU	1	10,560	8.00	20.12	64	27	877.9	847.5	318.40	15.66
MAYAPAN	2	1,004	9.70	-0.40	36	15	0.0	545.0	0.0	196.71
SOTUTA	2	5,677	9.26	14.06	79	36	703.7	720.0	1.97	295.07
TEABO	2	2,666	10.18	10.39	58	19	620.7	647.0	5.53	158.12
TEKAX	2	16,463	5.99	31.96	67	65	0.0	867.5	0.0	523.79
TEKIT	1	3,918	17.83	17.48	56	23	786.7	758.0	243.41	25.00
TEKOM	2	1,631	8.08	-23.89	61	26	0.0	662.5	0.0	453.43
TICUL	2	16,510	46.55	30.52	73	64	782.7	780.0	25.59	10.81
TIXKOKOB	1	9,035	56.59	21.42	81	60	837.1	442.9	591.10	0.41

KEY: A = Zone: 1 = henequen zone; 2 = maize zone.
 B = Total population, 1970 census.
 C = Population density, persons per square kilometer, 1970 census.
 D = Percent increase or decrease in population, 1960 to 1970.
 E = Percent literate of the population 10 years and over, 1970 census.
 F = Percent reporting incomes of 200 pesos or more monthly, of the economically active population 12 years and over declaring incomes, 1970 census.
 G = Average annual yield per hectare of henequen, in kilograms, 1957-1970.
 H = Average annual yield per hectare of maize, in kilograms, 1961-1970.
 I = Average annual per capita value of henequen production, in pesos, 1967-1970.
 J = Average annual per capita value of maize production, in pesos, 1967-1970.

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GLOSSARY

GLOSSARY

bastidor--loom used for making hammocks.

cabecera--county seat.

cacique--chief or political leader of an Indian community.

caja--box; in the hammock industry, a measure of the quantity of cord contained in a hammock (six tubes equals one box).

campesino--peasant or farmer.

cantina--bar or tavern

catrín (masc.), catrina (fem.)--one who has changed from the traditional folk costume to European-style dress.

comadre (fem.), compadre (masc.)--reciprocal fictive kin terms used between a child's parents and godparents.

compadrazgo--a system of fictive kinship created through the choice of godparents as sponsors for various ritual occasions.

cuarta--traditional Spanish unit of measure equal to a handspan; about 20 centimeters.

ejidatario--one who has land rights in an ejido.

ejido--land grants made to communities by the Mexican government under the post-Revolutionary land reform program. Ejido lands are communally owned, and in the henequen-growing region of Yucatan, collectively operated.

encomendero--holder of an encomienda grant.

encomienda--the right to collect tribute from an Indian community, granted to individual Spaniards by the Crown during the early colonial era.

fagina--labor levy traditionally used for public works in Yucatecan villages. On the pre-Revolutionary henequen plantations, unpaid labor exacted from the resident peons.

gente de vestido--in Yucatan, refers to people of European dress and Hispanic culture.

grupo económico--an ejido work group operating as a sub-section of a local ejido credit society.

grupo solidario--en ejido work group operating independently of the local credit society under arrangements with the Agrarian Bank.

hacienda--a large agricultural estate.

hamaquera--a woman who works for middlemen distributing materials for making hammocks to the weavers.

hetzmek--a traditional Mayan ceremony in which the infant is for the first time carried astride the hip. Performed at three months for a girl and four months for a boy, a godparent chosen for the occasion places in the infant's hands articles which symbolize skills and abilities suitable to an adult of its sex. The ritual is presumed to have the effect of encouraging the sound development of these skills.

hilera--fine cotton cord used for making hammocks.

hilo de madeja--relatively inexpensive cotton cord sold in skeins and used for making hammocks.

huipil--a long, sack-like, white dress embroidered at the hem and neckline in floral or cross-stitch patterns, worn as part of the traditional women's folk costume in Yucatan.

madeja--skein.

malla--stitch.

manta--pieces of cotton cloth woven by Indian women and constituting part of the tribute exacted under the encomienda system. Each manta consisted of four piernas measuring three cuartas (handspans) in width and four varas (yards) in length.

mecate--an area 20 meters square. One hectare equals 25 mecates.

mestizo--in Mexico, a person of mixed Indian and European descent. While elsewhere in Mexico mestizos are largely Hispanic in culture, speaking Spanish and wearing European dress, in Yucatan mestizos speak Maya as a first language and wear the traditional folk costume.

metate--grinding stone.

metatero--one who makes metates.

milpa--a field, usually cultivated by traditional hand methods, in which the indigenous crops of maize, beans, and squash are grown.

milpero--one who cultivates a milpa.

municipio--territorial unit similar to a county.

novena--nine consecutive nights of prayer in honor of a Catholic saint.

panucho--traditional Yucatecan dish consisting of a filled tortilla with a variety of toppings.

peones acasillados--resident workers on the haciendas.

peones eventuales--non-resident workers or day laborers on the haciendas.

pueblo--small town or village.

repartimiento--in colonial Yucatan, a form of forced trade whereby Indians made cotton cloth to pay off goods advanced them.

rezadora--prayer-leader.

terrenos baldíos--unoccupied or unclaimed public lands.

ventero ambulante--itinerant peddler.

vuelta--in hammock weaving, each turn around the loom.

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