SHANTI NAGAR: THE EFFECTS OF URBANIZATION IN A VILLAGE IN NORTH INDIA
2. ASPECTS OF ECONOMY, TECHNOLOGY, AND ECOLOGY

STANLEY A. FREED AND RUTH S. FREED

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ABSTRACT

In the year 1958-1959, Shanti Nagar was a north Indian village characterized by a generally traditional economy and technology at the beginning of intensive modernization. Modern influences impinged upon its people in the form of legislation and governmental programs that were designed to change, even revolutionize, village life from economic, technological, and social viewpoints. The vocational, educational, and recreational opportunities afforded by Delhi, a city then experiencing rapid modernization and westernization, were influences equally as effective as the developmental programs promulgated by the Government of India. The village was not overwhelmed by either governmental or urban influences. A well-integrated social unit, its people possessed the capacity to adopt selectively those innovations they believed to be useful and to reject others they perceived as risky or disruptive. The conjunction of various traditional and modern influences in Shanti Nagar resulted in a predominantly agricultural economy but a significant proportion of income was derived from salaries in modern urban occupations. It was clear that considerable potential for further economic and technological change existed in two principal areas. The Green Revolution would, in all probability, change village agriculture and, temporarily at least, could result in a reduced concern to obtain income from urban employment, especially on the part of the large landowners. With the passage of time, however, the future economic well-being of the villagers probably will increasingly depend on training the young people for modern careers in government, business, and industry.

INTRODUCTION

This is the second monograph in a projected series devoted to a study of the effects of urbanization upon the people of the north Indian village of Shanti Nagar. We analyze here its economic life, technology, and some of the ecological factors that most prominently affect village agriculture and animal husbandry. Shanti Nagar is a relatively large, complex social unit that forms part of a modern industrial nation; as such, we found its economic life not only internally complicated but also intricately connected to the regional, national, and, to some extent, world economies. The analysis of such a complex system requires that it be subdivided into smaller, more comprehensible subsystems. This process involves the risk that, in concentrating on the analysis of subsystems, one can insensibly lose sight of the features that characterize the system as a whole (cf. Anderson, 1973, p. 206). This tendency is enhanced by the considerable amount of detail that must be presented in order to describe fully the various subsystems that we identify as comprising the economic life of Shanti Nagar. To minimize the possibility that its general characteristics may be overlooked as we dissect and describe the system in detail, we present in these introductory paragraphs those general features of the economic life of Shanti Nagar we regard as especially significant.

Shanti Nagar had a mixed economy. Approximately 25 percent of the income of the villagers was earned from economic activity beyond its limits, principally from jobs in cities. Although agriculture was the most important village occupation, some villagers earned their livings principally from crafts or by the provision of services other than agricultural labor. Moreover, the agricultural component of the economy consisted of a mixture of subsistence farming and production for the market. Markets and marketplaces existed for almost all the agricultural products of the village; markets for wheat, milk, and gur (a kind of brown sugar) were especially important.

The family served as the basic production unit; it was also the basic consumption unit. Although several families often cooperated in a specific economic activity, such as the operation of a sugarcane crusher, no business firms existed in which family identity was lost in a larger unit. Because there was no distinction between the familial production and consumption unit, many economic transfers were auto-

matic. This situation characterizes subsistence economies; and to a considerable degree, the economic activity of Shanti Nagar was on a subsistence basis. However, production units did engage in economic transfers with other production units as well as with laborers, craftsmen, and buyers based in cities. Such economic transfers included cash transactions, exchange of labor, payment in kind, and barter. Payment in kind for labor and services, exchange of labor, and barter were prominent in intravillage economic transfers; in barter transactions, the exchange rate for goods was determined by their market price expressed in money (cf. Cook, 1973, p. 829). Much of the economic exchange between villages occurred in ceremonial contexts in the form of gifts exchanged between families united by marriage. Market transactions outside the village were customarily cash sales. These generalities should not be understood to suggest that particular classes of transactions were confined to specific contexts. Cash payments and sales, for example, frequently occurred in the village, although payment in kind was a noteworthy feature of intravillage economic exchange.

Economics as the process of economizing, that is, the allocation of scarce resources to ends (LeClair, 1962, p. 1188), was generally a prerogative of the heads of families. Many factors affected their decisions. For farmers, such considerations might include the various factors of production (land, labor, and capital) available to them, risk, the cash flow of the family, and the most desirable product-mix in view of the subsistence needs of the family, the fluctuations of external markets, and the limitations imposed by techno-environmental factors, such as the availability of water or the most effective crop rotation. To the extent that a farmer could summarize such considerations by estimating how much money he could earn by resorting to various strategies, the price of commodities in regional markets was crucial. For example, the relative prices of gur and *khand* (raw white sugar) on the Delhi market determined whether farmers would incur the extra costs involved in the production of *khand*. Market considerations were factors in estimating risk. Growing vegetables, a potentially more valuable crop than grain, involved greater risks that were either acceptable or not, depending upon the farmers' estimates of the relevant markets. Estimating risk took a variety of forms. For example, whether a farmer sold his sugarcane as gur or juice depended partly on his skill in making gur. To sell sugarcane in the form of juice at a price less than that of gur would be justified if the farmer believed that he might produce relatively inferior gur or even spoil an occasional batch. In the selection of varieties of a crop, such as wheat, yield and price almost invariably determined the choice.

Although economizing decisions were based on considerations like market price and the subsistence needs of a family, ecological or, more precisely, techno-environmental factors partly determined the relative proportions of the various crops that were grown and also the composition of the cattle population of the village. By far the most important of the techno-environmental factors was the availability of irrigation water from canals that permitted cultivation of some crops that would otherwise have been difficult or impossible. Because of the use of irrigation water, there had been a considerable increase in double cropping, commercial crops had become more important, and the winter-spring crops were more valuable than the summer-autumn crops. Moreover, the demographic characteristics of the cattle population of the village reflected the fact that a substantial portion of the village agricultural land was irrigated. Irrigation favored the water buffalo in relation to zebu cattle.

Because the agricultural implements were technically rather simple, a westerner viewing Shanti Nagar for the first time might be tempted to conclude that from the economic point of view the village was relatively unchanging, and that its farmers were governed by tradition rather than by rational economic considerations. Such a conclusion would be unjustified. Although the pace of change in the decades preceding our residence in Shanti Nagar had not been rapid, changes had occurred, in technology and also in the varieties of the principal crops that were cultivated. Furthermore, the system of traditional economic relationships, known as the jajmani system, had

also undergone changes (Freed and Freed, 1976a, p. 122). Almost all these innovations had their origins either beyond the borders of Shanti Nagar or stemmed partly from changing conditions outside of the village. New varieties of crops, for example, developed and tested at government experimental farms, were often introduced into the village by government officials. The availability of employment in Delhi and the introduction of labor-saving machinery were important factors in the changes that had taken place in the jajmani system. The principal external forces of change were the programs and legislation devised by the Government of India that had as their objective to change, even to revolutionize, village life from both the technological and social points of view, and the growth and economic modernization of Delhi that provided employment opportunities for villagers. Potential innovations were appraised by the villagers, principally by family heads, who accepted those that appeared to be useful but generally managed to resist those that seemed risky or disruptive of cherished customs. The villagers decided to accept or to reject innovations that were principally technological or economic, generally on the basis of rational economic considerations. We found the irrational tradition-bound villager to be largely a myth.

The serial publication of the results of a research project that encompasses a large complex social unit like Shanti Nagar magnifies a problem inherent in the presentation of all social anthropological reports: to select the most efficient method of partitioning the description of major aspects of culture and society in order to achieve a maximum of coherence and comprehension and a minimum of repetition. The main difficulty with which analysts must contend is the intricate interrelation of all aspects of culture and society. For example, the traditional system of economic relationships among castes, known as the jajmani system, could have been treated equally well in the context of the present publication as in the preceding one in this series, on social organization (Freed and Freed, 1976a), where we decided to include it under the general heading of caste interaction. As a result of a few such decisions, all aspects of the economic life of the village will not be discussed in the present publication; the reader must therefore, to some extent, refer to the earlier work.

A second problem concerns the extent to which the theoretical background of the research, the definitions of terms, and the basic descriptive data, such as population statistics, all of which were necessarily presented in our earlier report, should be included in subsequent reports. Assuming that those readers who have access to the present report will have access to the preceding one, because both are published in the same monograph series, we repeat only a minimum of the basic information already contained in the initial report and provide here no more than the absolutely necessary geographical and demographic data sufficient to orient the reader.

The principal economic data contained in Freed and Freed (1976a) are concerned with the jajmani system, moneylending, traditional caste occupations, and some data concerned with expenditures, urban employment, and preferences for various types of work that we obtained by means of a questionnaire. None of this material is discussed here except for those data from the questionnaire concerned with the reasons for accepting urban employment, the methods used to obtain it, and the reasons for leaving it. Freed and Freed (1976a) should be consulted for a presentation of the theoretical considerations that guided the research, methods of fieldwork, adjustment to life in the village, general demographic information, a description of the social organization of Shanti Nagar, and a list of papers that we have published, complete except for Freed and Freed (1976b), that deals with various aspects of life in Shanti Nagar.

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LOCATION

Shanti Nagar was a type of village, common in northern India, often described as nucleated; the houses were crowded together, usually sharing one or more walls with adjacent houses. The compact habitation site was surrounded by the undivided village common land, which was used principally for grazing; beyond this tract lay the cultivated fields. The village was about 11 miles (17.7 km.) northwest by road from Shakti Nagar, the northernmost of the small, named communities that constituted the City of Delhi. Several villages were situated between Shanti Nagar and Shakti Nagar. Travel between Shanti Nagar and Delhi was relatively easy. Except for about 1 mile (1.6 km.) the road to Delhi was paved. A bus made four round-trips daily; usually, it took about an hour and a quarter to cover the distance between Shanti Nagar and the Old Delhi Bus Station. During the rainy season, the bus traveled only to the end of the paved road in a village near Shanti Nagar; passengers had to complete the journey on foot. A railroad station was 2 or 3 miles (3.2 km. to 4.8 km.) from Shanti Nagar; trains provided less expensive, if less convenient, transportation between Shanti Nagar and Delhi than did the bus.

Narela, a town with a population of 10,699 (Rao and Desai, 1965, table 1-1), was about 4 miles (6.4 km.) from Shanti Nagar. The direct road between Shanti Nagar and Narela was unpaved but was suitable for bullock carts and bicycles in dry weather. Narela could also be reached by rail on the same line that connected Shanti Nagar and Delhi. In the past, Narela had served as the principal market for Shanti Nagar. Although the importance of Narela to the people of Shanti Nagar declined when improved transportation made Delhi more accessible, it still served Shanti Nagar villagers as an outlet for most of the grain and considerable quantities of gur they did not retain for their own use.

Shanti Nagar was in a section of the Union Territory of Delhi that formed a portion of the Haryana region (*prant*) which included an area of the Punjab. The Haryana Prant was both a cultural and linguistic region. The language was Haryana, a dialect of Western Hindi influenced by Punjabi and Ahirwati, a dialect of Rajasthani (Rao, 1970, pp. 18-19). For economic data that can be compared to those we collected in Shanti Nagar, we refer principally to villages in the Haryana Prant. Shanti Nagar was situated on relatively level land (called *bangar*) high enough above the Jumna River that village land was not subject to flooding from the river. Most of the agricultural land was irrigated from the Delhi Branch of the Western Jumna Canal.

CLIMATE

The monsoon season lasts from early July until the middle of September. Over half of the annual rainfall occurs during July and August. Rainfall varies markedly from year to year; the annual amounts recorded at nearby Narela from 1951 to 1960 (India, 1961b, table 9.1) ranged from approximately 8 to 36 inches (20.3 cm. to 91.4 cm.). The rains continue into September; a brief warm spell follows. Winter begins in October and ends in March. The hot season, the third of the three seasons of the region, begins in March. The peak of the hot season is reached in May and June when daily maximum temperatures average 104.8° F. (40.4 C.) (May) and 102.4° F. (39.1 C.) (June); temperatures exceeding 110° F. (43.3 C.) are not uncommon. Although the temperature during the winter does not fall to the freezing point and daytime temperatures are usually pleasant, the evenings and mornings can be cold.

POPULATION

The Shanti Nagar population of 799 indi-

viduals was divided among 13 castes; all were Hindus. The population, by caste and sex, is recorded in Freed and Freed (1976a, table 1). The Jat Farmers and Brahman Priests, by far the two most populous castes in the village, accounted for 56 percent of its population. The low castes (Chuhra Sweeper, Chamar Leatherworker, Gola Potter, Mahar Potter, and Nai Barber) constituted 35 percent of the village population; the high castes (Brahman Priest, Bairagi Beggar, Baniya Merchant, Chhipi Dyer, Jat Farmer, Jhinvar Waterman, Lohar Blacksmith, and Mali Gardener) comprised 65 percent. The most populous and wealthiest caste in the village was the Jat Farmer. Fifty-one percent of the total population was male; 49 percent, female. Shanti Nagar had a youthful population with a median age of 15 and an average age of approximately 21.

The village population is divisible into urban-oriented and village-oriented groups. We defined an urban-oriented person as one who had worked and/or lived in an urban community; a village-oriented person lacked such experiences. We found that 49 percent of the adult males (that is, men 20 years of age or older, or those in their late teens who were married and had completed their schooling) had lived or worked in urban areas. According to a random sample of 28 urban-oriented men, the average length of urban employment or residence was 7.8 years. Such urban experience was much more common among the younger than among the older men. In the classification of females, we considered not only their personal experiences but also those of their husbands. The wife of a man classified as having had urban experience was placed in the same category. Because relatively few women had urban experience like that common for men, we found this procedure to be the only satisfactory way to isolate a group of women that would correspond to the men with urban experience. In analyzing the effects of urbanization upon the villagers, especially their attitudes with respect to economic and other aspects of behavior, we often compared village-oriented and urban-oriented villagers.

When concerned with urbanization, we frequently dealt with a third group comprised of people who had emigrated from Shanti Nagar, as well as with village-oriented and urban-oriented villagers. It was possible to divide emigrants into the categories of temporary and permanent. We classified as temporary emigrants all men who, without wives, had left the village for employment or schooling and who visited Shanti Nagar less than once a month. Such emigrants were either unmarried men or married men whose wives remained in Shanti Nagar. Men who lived outside of Shanti Nagar with their wives and children were classified as permanent emigrants. However, some permanent emigrants were members of joint landowning families some members of which lived in Shanti Nagar. Emigrants such as these were almost certain eventually to return to the village. Other emigrants who owned farm land or houses in Shanti Nagar were also likely to return there upon retirement or if they lost their jobs. Although economic considerations provided the major motive to emigrate, these were also the principal motives for villagers to maintain their village ties; because of such ties, most emigrants would eventually return to Shanti Nagar.

Of the village males five years of age and older, 64 percent were literate and/or attended school. The percentage of literate males was highest among the young; most men 40 years of age and older were illiterate (Freed and Freed, 1976a, table 6). Of the adult men, 51 percent (N=171) were literate. Seventeen men had taken, but not necessarily passed, the matriculation examination; 11 men had completed higher secondary school (11 grades); six had studied in college or in teachers' training courses beyond the higher secondary level. A knowledge of English, an important qualification for obtaining urban employment and for dealing with government officials, was, we believe, fairly good among these 34 men, who can be considered the educated elite of Shanti Nagar.

Females were less educated than males. Disregarding the 72 female children too young to be in school, we found that only 21 percent of the females were literate and/or in school (Freed and Freed, 1976a, table 7, and p. 46). As was true with males, education was more common among the younger females. Of the adult women, that is, women 16 years of age

and older, only 11 percent (N=148) were literate. Six females had studied beyond the level of the village school (fifth grade) but none had yet appeared in the matriculation examination.

A NOTE ON THE TRANSCRIPTION OF HINDI WORDS AND NOMENCLATURE

Proper names of persons, castes, organizations, places, major yearly festivals, and geographical features, and of all words contained in Webster's "Third New International Dictionary of the English Language, Unabridged" have been reproduced in Roman script. Other Hindi words, the Romanized spellings of many of which have become more or less standardized because they frequently appear in English publications, have been italicized and spelled in their customary forms without diacritics. English plurals and possessives have been used (except when Webster's gives the Hindi plural), for example, bigha, bighas (pl.).

We have used binomial names for castes. The first word is the usual Hindi designation for the caste; the second, an English word that denotes the traditional occupation of the caste and/or translates the Hindi term. For example, the English translation of Nai is barber, the traditional occupation of the caste: hence, the caste designation, Nai Barber. Jat does not mean farmer in English, but the Jats are traditionally farmers: hence, the caste designation, Jat Farmer. There were two castes of potters (Kumhars) in Shanti Nagar, the Gola Kumhars and the Mahar Kumhars. To avoid the use of a cumbersome three-term name, we designate the castes, Gola Potter and Mahar Potter. When the same caste is mentioned successively, we frequently shorten the name following its initial use either to its Hindi or English component. When used in this way, the English word is capitalized. When not capitalized, words such as potter, farmer, and priest refer to occupations and not to castes; for example, "Ram Kishan, a Brahman Priest, was a farmer," means that the foregoing member of the Brahman caste worked as a farmer.

MONEY, WEIGHTS, AND MEASURES

We have generally used Indian units to designate money, weights, and measures, and have occasionally given their equivalents in dollars, pounds, kilograms, acres, and hectares so that non-Indians, especially Americans, can understand the quantities involved. Such an understanding is most easily developed for weights and measures because the pound, the acre, and the corresponding Indian measures have not changed through time. The several devaluations of the dollar since 1959 and the steady attrition of its purchasing power may mislead the reader into underestimating the purchasing power of the sums of Indian money that we report. Monetary conversions were made on the basis of the rate of exchange in 1958: 4.76 rupees to one dollar; at that time, the Indian rupee was worth more in terms of the dollar than it is in 1977. Moreover, even if one keeps in mind that the dollar was more valuable in 1958-1959 it still fails to convey adequately a realization of the value of the Indian rupee. Perhaps the best appreciation of its value can be derived from the estimate that Meier (1962, p. 304) has made of the cost for an individual of a minimum adequate standard of living for a year in New Delhi in April 1960, "a level of living well above subsistence and one which permitted cultural activity as sophisticated as any that has been achieved up to the present day—so long as such cultural activity renounced conspicuous consumption of material goods or energy." The total cost was Rs. 1,030 a year, a figure that included prorated sums for essential urban services, such as police, schools, and public health that amounted to a total of Rs. 365 (Meier, 1962, table 1).

Two monetary systems were then in use: the first, the ancient traditional system; the second, the decimal system. Although the Government of India had begun to convert its currency to the decimal system, both systems were functioning in 1958-1959. In the traditional system, the rupee, abbreviated Re., Rs. (pl.), is divided into 16 annas. An anna is divided into 12 pie, three of which equal a pice. In the decimal system, the rupee is divided into 100 naye paise, abbreviated nP. Sums of a rupee or more are given in the decimal form: for example, Rs. 8.25 (8 rupees and 4 annas). Annas are reserved for sums of less than a rupee. Because the rupee was worth 21 cents, an approximate

value in dollars of a sum of rupees can be quickly obtained by dividing by five.

An approximation in acres of the usual Indian measure of area in the Shanti Nagar region, the bigha, can also be readily obtained by dividing by five, for one acre (.40 ha.) is equivalent to 4.75 bighas. (In all cases, we refer to the kachcha bigha; the pukka bigha, also in use, is three times the size of the former.) A bigha is divided into 20 *biswas*. We have rendered bighas and *biswas* in decimal notation, for example 8.75 bighas (8 bighas and 15 *biswas*).

The seer, approximately equivalent to 2.05 pounds (.93 kg.), was the unit of weight in the Shanti Nagar region. Consequently, seers can easily be converted to pounds by dividing by two. The seer is divided into 16 chattaks. One chattak equals 5 tolas. A maund, equal to 40 seers, is approximately equivalent to 82.3 pounds (37.3 kg.). In Shanti Nagar, agricultural yield was customarily given as maunds per bigha; the price of agricultural commodities was usually quoted as rupees per maund.

ECONOMY

Land, livestock, and the considerable knowledge and skills necessary to exploit them effectively were the principal economic resources of Shanti Nagar. Supplementary but nonetheless of considerable importance, was employment away from the village, mainly in Delhi and other cities. The cash value of the products of village artisans, its potters, blacksmiths, basketmakers, and tailors, was relatively insignificant as compared with the return from agriculture or from urban employment, but the products themselves were vital to the village economy. It was impossible for the farmer to function without the blacksmith; the baskets and pots produced in the village were indispensable to the village housewife.

The farmers of Shanti Nagar grew crops primarily for home consumption. The costs of cultivation incurred within the village were generally paid in kind. It followed that much of the farm produce of the village was consumed locally. The distribution of farm products between families within the village was, to a considerable extent, on the basis of payment in kind. Harvesting expenses and payments to artisans within the jajmani system were largely of this nature. However, day labor was usually compensated in cash. After his own needs were provided and after paying his jajmani obligations, crops remaining to the farmer were sold for cash either in the village or in the markets of Delhi or Narela. Many such sales took place in the village because farmers who failed to grow enough produce for their families, and landless laborers, who did not earn enough in kind, purchased additional supplies from farmers who grew more food than they could consume. Although the prices at which commodities were sold in Shanti Nagar depended on the prices then current in Narela or Delhi, villagers usually preferred to buy and sell their produce locally to avoid cartage costs. Farmers preferred to avoid the commissions and taxes they would have to pay when selling at the marketplace.

Ceremonial obligations constituted a major network for the exchange of cash and commodities among families resident in different villages. Cities were places to buy, to sell, and to earn money. Economic relations with people in relatively nearby villages derived to a large extent from the obligations between families united by marriage. Throughout the year, the average family customarily sent gifts of food, clothing, and money to affinally related families in other villages and was the recipient of similar presents. From the point of view of Shanti Nagar as a whole, such transactions probably balanced so that the villagers neither gained nor lost. However, a specific family with many daughters and few sons would find such obligations burdensome, whereas another family with many sons and few daughters would profit from the exchange of gifts. As the villagers often told us, "The daughter is the dacoit of India." While the ceremonial network of exchange did not result in any profit to the village as a whole, it operated somewhat as a

form of insurance for the individual. When a man was confronted with the major ceremonial expense of a wedding, he would be assured of the assistance of those families with whom he had established relationships. As a consequence, considerable aid would be available when most needed.

It was important to the villager that he have cash to pay his land revenue and irrigation charges (if he was a farmer), to purchase consumer goods in urban markets, and to meet ceremonial obligations. In addition to the money obtained through the sale of agricultural commodities, cash entered the village economy from wages and salaries earned outside the village and from governmental funds, such as those provided to subsidize the housing and to pay some of the educational expenses of the lower castes. Some of the funds earned away from the village were used to pay basic living expenses, such as the cost of food and clothing; some funds were invested in capital improvements, such as new houses, wells, and livestock; and a very small amount was spent on amusements. One of the economic changes that villagers called to our attention was the increasing prominence of cash in the village economy.

In addition to the increased importance of cash, a number of other changes worth noting had occurred in the village economy. Older men remarked on the increased prosperity of the village. They did not stress the fact that an increasing number of men held jobs in Delhi as the basis for increased prosperity but believed that the farmers had become more prosperous as a result of a greater return from agriculture. It is possible that increases in the price of farm commodities an older man would have observed during his lifetime as well as increased yields from new varieties of seeds could have led to this conclusion. On the other hand, some of the younger farmers remembered their boyhoods as a period of greater prosperity for the farmers. They attributed this opinion to the fact that changes in rainfall and drainage problems had, temporarily at least, ruined the most fertile fields in the village. Those fields, currently water-logged, were said to have yielded twice as much wheat per acre as those currently in production. There may be justification for both points of view; the longer trend could have been for increased prosperity, however, with short term setbacks. Landless laborers complained about the increased difficulty of earning a living in the village if one did not have an urban job. They attributed this situation to the fact that landowners refused to permit their land to be cultivated on shares, a result of the Delhi Land Reforms Act which we frequently observed (cf. Uppal, 1969a, pp. 364-365; 1969b, p. 62; Rao, 1970, p. 52). Farmers appeared to be more innovative with regard to crops, seeds, and fertilizers than with equipment. As one might expect, it was much easier for a farmer to adopt a new variety of seed than, for example, to cope with the many major adjustments that would be required to begin to farm with a tractor. The introduction of the mechanical fodder cutter provided the only change in farm implements in the last approximately 30 years that resulted in a significant reduction in labor requirements.

The statistics for land areas, number of cattle, costs of cultivation, crop yields, expenses, salaries, and the like that we present are based on the testimony of informants. We did not measure land or count cattle or make inquiries of employers as to salaries. We believe, however, that, on the whole, our figures are good approximations, principally because we followed several procedures by which it was possible to appraise the validity of the statements of informants. First, we asked many people the same question. For example, many farmers told us that wheat usually yielded some three to four maunds per bigha. Farmers were customarily well informed about all aspects of agriculture as practiced in Shanti Nagar. We had little reason to doubt that they knew with considerable accuracy the yields of all crops grown in the village. Furthermore, the informants had no reason to misrepresent such data. If one or two villagers did so (or were simply mistaken), or if we misunderstood a response, the discrepancy became obvious when that response was compared with others, including those of our most knowledgeable and most reliable informants. Secondly, the statements of our informants about, for example, the yield of wheat, conformed with comparable figures pub-

lished by investigators in other villages of the region.

Since most farmers had similar experiences in such matters as crop yields, cross-checking readily revealed discrepancies in informant testimony. However, some kinds of economic information were specific to the individual farmer: for example, the size of his landholding or the number of animals that he owned. Two checks were available with regard to landholding. First, it was possible to compare a farmer's statement with the size of his landholding as recorded in the government records. Such a comparison was often difficult; we rarely attempted it. Secondly, on the basis of genealogical information, it was feasible to calculate the acreage a man should, in all probability, own if one knew the extent of the landholding of his brother, cousin, or uncle. For example, each of four brothers should own the same area of land, provided that there had been no sales or purchases, information that could be learned by consulting the appropriate governmental register or by asking other villagers. Hence, if one brother exaggerated the size of his holding, the misrepresentation immediately became obvious.

The number of cattle owned could be checked by comparisons with other informants in similar circumstances or with the size of a family's landholding. For example, noncultivators owned no bullocks; villagers with large landholdings might own as many as four bullocks (Freed and Freed, 1972). Were a noncultivator to report that he owned four bullocks, this would suggest a quite unusual situation; the information could quickly be confirmed or denied by checking with other informants. Salaries were also verifiable by cross-checking. For example, laborers earned roughly similar salaries. Therefore, a large discrepancy in the reported salary of one laborer as compared with those of others would have aroused suspicion; it was possible to check this information with men who were, in all likelihood, familiar with the informant's circumstances. Therefore, with regard to such figures as those cited for land, salaries, and agricultural income we believe that our informants provided us with relatively reliable data that give a good approximation of village economic life at the time that they were collected.

General statements concerning ceremonial expenses were the most difficult to verify. Because prestige and large expenditures were associated, some people showed a tendency to exaggerate. Cross-checking was difficult principally because of the considerable range and variation of the elaborateness of ceremonies between families and castes and also because the size of gifts reflected not only the occasion but also a donor's generosity, a quality held in large measure by some and very little by others. When gathering data on ceremonial expenses, we depended to a considerable extent on our most reliable informants or on our observations of occasions, such as the presentation of the mother's brother's gifts at a wedding, where gifts were publicly announced and displayed.

It is important to bear in mind that many of the figures here presented are averages or were characteristic of normal conditions. While the average normal wheat yield, for example, was three to four maunds per bigha, the yield of a particular field did not necessarily fall within that range. The care with which the field had been prepared, the vagaries of rainfall, the availability of irrigation, and the fertility of that particular field all had an effect on crop yield. Sometimes crops did not mature at all.

SERVICE

Number Employed

Villagers customarily referred to regular employment outside the village that was paid for in cash as service. If we take into consideration the number of villagers who held such employment, we can attain some idea of the contribution made to the economy of the village by nontraditional, generally urban employment. Thirty-seven men of Shanti Nagar had jobs outside the village when we took our census. This

figure included the village accountant (patwari) who, although he worked in Shanti Nagar, received his salary from the government, an outside agency. In addition, 20 men who were employed outside Shanti Nagar also lived away from the village; they were therefore classified as emigrants and excluded from the village census. Nonetheless, these men were members of either joint or nuclear families, some of whose members resided in Shanti Nagar. Of these 20 men, 13 were temporary emigrants, that is, their wives (and children) lived in Shanti Nagar; seven lived away from Shanti Nagar with their wives and children, but they were still members of a joint family of Shanti Nagar. Although these men used part of their earnings to pay their individual expenses, all, or most of them, remitted money to Shanti Nagar. All the temporary emigrants were obligated to support their families in Shanti Nagar; the other emigrants contributed to their joint families according to their ability to do so. The salary figures for men in service are preferably regarded as approximations, although rather accurate ones, partly because some of these salaries were composed of a base salary plus allowances, and, occasionally in reporting salary figures, informants failed to include all allowances. Also, some workers occasionally received overtime pay, and some businesses were said to distribute an annual bonus.

Clerks

Most commonly villagers were employed as clerks. Twelve of the 37 villagers in service worked as clerks in stores, factories, or for the government. The average salary was approximately Rs. 132 ($27.73) per month. As a group, the clerks were very well educated. All were literate; only one had less than an eighth grade education. Nine had attained the educational level of matriculate (tenth grade) or higher. Two had college educations. As was predictable on the basis of their educational achievements, almost all the clerks were members of the high castes: six were Brahman Priests, five were Jat Farmers, and one was a Mahar Potter. The clerks were generally employed by private business (five), four had government jobs, and one worked for the railway; we lack this information about the other two clerks.

Laborers

The second most common employment was that of laborer. Eight men were laborers: six were employed in factories, and two worked for the government. Three laborers were employed by the same flour mill. Although the other three laborers who worked in factories did not specify the company, we would not be surprised to learn that one or two of them were also employed by the same flour mill because a customary means of finding work was to ask someone with a job for assistance in entering his firm. The average monthly income of the laborers was Rs. 76 ($15.97) (cf. Niehoff, 1959, p. 39). The laborers were much less educated than the clerks: four were illiterate, three were literate, and one was a matriculate failed. Four of the laborers were Brahman Priests and four, Chamar Leatherworkers. Although the sample was small, the caste distribution of laborers indicated that education was more important than caste in determining the job that one could obtain. Of the four Brahman laborers, three were illiterate.

Sweepers

Four of the five Chuhra Sweepers who had jobs in Delhi worked at their traditional occupation (the removal of refuse), or a closely related one, that of plumber. The fifth had an unspecified job with a railroad, but one that, in all likelihood, involved sweeping and cleaning. Niehoff (1959, pp. 53-54, 56-57) noted this strong tendency of the Sweepers to continue almost exclusively in their traditional occupation when they go to work in the city. They sweep floors and streets, wash drainage gutters, clean toilets, and do other such labor that involves cleaning. The salaries of the Chuhra Sweepers varied little; three earned Rs. 80 per month and two, Rs. 85, for an average of Rs. 82 ($17.23) per month. Thus, the Sweepers, continuing their traditional occupation, attained a slightly better financial return than the laborers. Two of the Sweepers were illiterate and three had studied in the village school to the

fourth or fifth grade level. In the village, the Sweepers had a monopoly on their specialty; they also were in demand in Delhi. Therefore, they had a fair amount of economic security and apparently were not tempted to enter other occupations where the financial return might have been greater. We would expect this situation to change gradually as Chuhra Sweepers took advantage of their educational opportunities. They would then aspire to positions as clerks, teachers, or to careers in military service, following the model of higher caste men.

Teachers, Accountants, Orderlies, and Miscellaneous

The additional 12 jobs held by villagers were rather varied. Two men, a Brahman Priest and a Jat Farmer, were teachers. The Brahman, who had studied at the university level and had a B.A.B.T. (a teacher's diploma), taught in a higher secondary school and earned Rs. 155 ($32.56) per month. The Jat, who was a matriculate and had taken a teacher's training course, taught at the elementary level and earned a monthly salary of about Rs. 123 ($25.84). Two villagers, both Jat Farmers, were accountants. One, the patwari (village accountant), had studied to the twelfth grade. His monthly salary was Rs. 100 ($21.00). The other Jat Farmer, a matriculate, worked in a sewing machine factory in Delhi for a monthly salary of Rs. 30 ($6.30). According to our informants, his salary was so low because he did not work for the government but for a private company. Some people were trying to find a better job for him.

Three men were employed as orderlies, two in the courts of Delhi and one in a nearby school. Both men who worked in the courts were Bairagi Beggars and well educated (ninth grade and matriculate); they earned a monthly average of Rs. 93 ($19.54). The third orderly, a Gola Potter, was uneducated. A Brahman Priest, a matriculate, was a reader in the courts at Rs. 170 ($35.71) per month. He was a friend of the two Bairagi orderlies and had helped them to obtain their jobs.

A Brahman Priest, a matriculate failed, was employed in the police department at a monthly salary of Rs. 110 ($23.11); another Brahman, who had studied to the seventh grade, worked for the post office for Rs. 85 ($17.86) per month. An illiterate Jat Farmer supervised a gang of laborers at a construction project. His monthly salary was Rs. 60 ($12.61). One of the village Nai Barbers worked in a shop in Delhi where he was paid Rs. 50 ($10.50) per month. He had attended the village school to the fifth grade.

Emigrants

The emigrants held jobs similar to those of the villagers, but the proportions of various jobs differed somewhat between the two groups. Proportionately, there were fewer clerks among the 20 emigrants; only three, as compared with 12 clerks among the 36 villagers. Five of the 20 emigrants were in military service, but only one of the villagers (he was a clerk and we so classified him in the foregoing account). We see no significance in these differences; in all probability they reflect little more than residential requirements. For example, most of the men in military service were posted in places that made it impossible for them to live in Shanti Nagar. The proportions of laborers and sweepers were quite similar in the two groups.

The salaries and educational levels of the emigrants generally resembled those of the villagers who held comparable jobs. Two of the three clerks were rather well educated; one had attended school to the tenth grade and the second, to the eighth grade. The third clerk had become literate as an adult when he attended a social education course. Two of the clerks were Mahar Potters, and one, a Brahman Priest. We recorded the monthly salary, Rs. 80 ($16.81), of only one of these men. The salary is below average for clerks. Of the four laborers, three were Brahman Priests and one, a Chuhra Sweeper. Their salaries ranged from Rs. 75 to Rs. 85 with an average of Rs. 81 ($17.02) per month. Only one of these men, who had a seventh-grade education, had been in school beyond the second grade. One emigrant Sweeper pursued the traditional occupation of his caste; a second Sweeper worked for the railway, probably as a sweeper. We learned neither their salaries nor their education. A third Sweeper who worked at an unspecified

occupation, which we assumed to be sweeping or related work, was said to have attended school for five or six classes and to have earned Rs. 80 ($16.81) per month.

The five men in military service, all Jat Farmers, were by far the best educated. Three of them had studied at the university level (one was a B.A.) and the other two were matriculates. Their average monthly salary was Rs. 141 ($29.62); but because we did not learn the salary of the highest ranking officer of the group, this average figure was lower than the actual one. Most of the other five emigrants were well educated and had good jobs. A Brahman Priest with an M.A. was a police officer and earned Rs. 145 ($30.46) a month. Two men had good government jobs. One, a Brahman with a higher secondary education, earned Rs. 125 ($26.26) per month; the second, a Jat Farmer who was a matriculate, earned somewhat more but we do not have the precise figure. A Mahar Potter with a higher secondary education was a headmaster in a school. The fifth man, a Brahman who had studied to the sixth grade, did not specify his occupation.

Reasons for Entering Service

In order to collect data systematically with regard to the reasons men gave for entering and leaving service and the methods that they used to obtain it, we administered a questionnaire to a sample of 123 individuals as described in Freed and Freed (1976a, Appendix). Thirty-nine men replied to question 2, "Why did you take the job?" The primary reasons for seeking employment outside the village were economic; 34 of the 39 informants gave such answers as the need to support his family, a family farm of insufficient size, or the fact that a father or brother took care of the family farm and there was no other work available for him in the village.

The following responses were typical. An ex-army officer, a Brahman Priest, told us, "Anyone who takes a job does so to earn a living, to make prospects for his life. I went into service to be able to support my family." A Brahman Priest, the only son of a man with 37 bighas (7.8 acres, 3.2 ha.), said, "My father was doing the agricultural work of the family. I engaged in service to add to our financial position. At that time there were no other side occupations." If farms were tiny, the prime need was not that of adding to a reasonably adequate income, but of supplementing one that was totally inadequate. A Brahman, one of four adult men in a family who owned 1.4 acres (.57 ha.) of land, remarked, "We don't have [enough] land and the family is large; so to keep the family going I had to take a job." Occasionally, noneconomic motives were mentioned. A Chamar Leatherworker said, "I was tired of the village, so I took a job. No fortunate person takes a job."

Methods of Obtaining Service

The methods used to acquire a job were probed by question 3 of the questionnaire (Freed and Freed, 1976a, Appendix), "How did you get the job?" The methods included: just applying, through the employment exchange, in a competition, through a relative, through a friend, with difficulty, bribery, has his own business, and through considerations due to the informant's refugee status (some of the Sweepers of Shanti Nagar had previously worked in the part of the subcontinent that became Pakistan). We classified the first three as "applied, competition," the following two as "relative, friend," and the last four as "other." Of the 46 men who replied to the question, 22 (48%) gave one of the first class of responses; 14 (30%), one of the second class; and 10 (22%), one of the "other" responses (Freed and Freed, 1976a, pp. 215-216 and table 36).

The following quotations are typical of the responses to question 3 of the questionnaire. "There was a competition," reported one informant. "Sixty-two candidates appeared for the two vacancies. I was selected." A Brahman Priest told us, "There was a Brahman who was an orderly of the Deputy Commissioner and an intimate friend of my father. He recommended me and I was appointed. In those days it was very difficult to get a job." Although the use of influence in obtaining jobs was most often exercised on behalf of one's relatives or caste fellows, it was not limited to such cases. Men often assisted fellow villagers who were members of other castes. A Chamar Leatherworker,

speaking on behalf of himself and a few other Chamars, told us that a Brahman had interceded for them. "We asked Pandit Ram Kishan who works in the mill," he said. "With his recommendation we were able to get jobs."

With regard to most subjects, the responses that we elicited through use of the questionnaire and the comments of individuals interviewed in more informal situations were generally similar. However, in the case of the methods used to obtain jobs, the informal comments and the responses to the questionnaire differed. Informal comments cited the influence of relatives and friends as the principal method for obtaining service. Informants noted 25 instances in which influence was the principal method and only eight in which jobs were obtained through direct application, recruitment, or through placement by a school after the completion of a course of training. Discrepancies between random and nonrandom samples, like those that apparently occurred in this inquiry, are to be expected occasionally. If all of our data is taken into account, influence, generally through relatives and friends of the same caste as that of the job seeker, was apparently the principal successful method to obtain employment; an application on the volition of the individual ranked fairly close in second place.

A noteworthy feature of our data with respect to seeking and finding employment, as compared to those data collected by other investigators, is the fact that our informants mentioned bribes relatively infrequently. In describing a village in the Union Territory of Delhi fairly close to Shanti Nagar, Rao (1970, p. 99) writes, "But the part played by bribing in encountering a strange situation needs to be stressed. . . . The external urban world is so strange to the villagers that the primary ties [of caste, kinship, and village] tend to be few and less effective. Through bribing [the villagers will] . . . get their work done." Although Rao is, at this point, discussing bribing in the context of the totality of contacts between villager and city, nonetheless he makes clear its importance in relation to obtaining urban employment.

Of our 46 questionnaire responses, only two mentioned the necessity of resorting to bribes to obtain employment. Of 38 additional comments, only five mentioned bribery. Furthermore, four of these five comments referred to general conditions and did not record the personal experiences of the informant. Thus, we collected only one example (involving two individuals who were hired at the same time for similar jobs) in which a bribe was paid (Rs. 100 for each). The five comments follow. A Chamar Leatherworker, in a general discussion of the difficult economic circumstances of his caste, said, "It's hard to get a job without bribery. Therefore, most service goes to the zamindars' sons." A Brahman Priest commented, "I would quit my job [in a private mill] in a minute if I could get a government job. But you need to bribe and to know people to get a government job." A Chuhra Sweeper who worked for the railway, answering a question concerning the difficulty of finding such employment, remarked, "It is very difficult. One needs an education and bribery has come in. In British times there was very little bribery among the Indian staff, but now there is a lot. . . . I got my job when the British were there. I just greeted the sahib, applied, went through recruitment, and was accepted." Another Chuhra commented, "The Delhi Municipal Corporation pays Sweepers Rs. 90 per month, but it costs a bribe of Rs. 300 to get a job." This informant tended to exaggerate; the amount of the bribe was probably not that large. Rao (1970, p. 99) cited Rs. 100 as the prevalent rate in 1957. As for the single specific case of bribery, the individual who had acted as intermediary said, simply, that he had arranged for jobs for two men of the village, but that they had to pay Rs. 100 to the person in charge of hiring. Doubtless bribery is occasionally necessary to obtain employment; however, its extent is possibly somewhat less pervasive than is often asserted. Moreover, it is necessary to specify the kinds of transactions to be classified as bribery. The exchange of favors, which could possibly occur as frequently as the payment of money, could justifiably be excluded from the category of bribery. For example, we recorded one instance of a villager who managed to obtain employment for two of his caste fellows because of an earlier favor that he had done for the manager of a factory. As far as we know, no money changed hands. In the West,

this sort of quid pro quo is not regarded as bribery, nor should it be so regarded in the Indian context.

Reasons for Leaving Service

Men left their jobs for various reasons, such as being discharged or a dislike for the work because the pay was poor or the work was too hard (Freed and Freed, 1976a, p. 217, and table 40). One reason given was of special interest principally because it illustrated the strong economic and emotional influence exercised by landownership. Just as men sought urban employment when another family member could care adequately for the family farm, they would abandon outside employment and return to the village to farm the family land upon the death of the relative who had been doing it. "My father died," a Jat Farmer told us, "and I resigned my job because I had to take care of the household and land." No job was ever attractive enough to tempt a man to sell his land in the village and so become a permanent urbanite. However, many men found it unnecessary to choose between farming and service; it was feasible to combine the two. A farmer might hire laborers; he might arrange for someone to farm part of his land on shares if his substitute could be trusted not to attempt to claim ownership of the land; he could farm on weekends or in the evenings; also he could take annual leave for several days at the busiest times of the year.

Salaries by Education and Caste

Salary levels were correlated with both education and caste, but the relationship was stronger with education than with caste. This indicated, we believe, that education, more than caste, was the critical factor in obtaining well paying work (cf. Rao and Desai, 1965, p. XXXI). The fact that caste and educational level were positively correlated led to (or increased) the positive correlation of caste and salary. Concerning literacy, we accepted our informants' information at face value; that is, if an informant claimed to be literate, we did not ask him to demonstrate his ability to read and write. Informants claimed literacy on the basis of having taken a year of schooling either as a child or in adult education classes. The educational and salary data for both the villagers and emigrants combined are as follows. Illiterates (N=8) earned an average monthly salary of Rs. 76.50; literates (N=10), Rs. 75.50 per month; men (N=7) who had gone to school more than five grades but less than 10, Rs. 87.43; matriculate and matriculate failed (N=12), Rs. 121.33; higher secondary and higher secondary failed (N=4), Rs. 105; and college (N=7), Rs. 155.71. The rank-order correlation coefficient calculated from these data is +.89, p. <.05, one-tailed test. The salary and caste data of the villagers and emigrants combined, with the castes arranged in ascending order of status, are the following. Like the Bairagi Beggars and Jat Farmers, the Mahar Potters and Nai Barbers were tied in caste rank (Freed, 1963a, p. 886). The Chuhra Sweepers (N=7) earned an average salary of Rs. 80.71 per month; the Chamar Leatherworkers (N=4), Rs. 72.50; the Mahar Potter (N=1), Rs. 145 and the Nai Barber (N=1), Rs. 50; the Bairagis (N=2) and Jats (N=13), Rs. 93 and Rs. 127.30, respectively; and the Brahman Priests (N=20), Rs. 102.70. The rank-order correlation coefficient, +.48, is not statistically significant at the .05 level, one-tailed test. If the Mahar Potter and Nai Barber are omitted because each is represented by only a single individual, the rank-order correlation coefficient is increased to +.73 which, again, is not statistically significant.

Salaries and Length of Service

Our data indicate that salaries were positively correlated with length of service. The statistics for both the villagers and the emigrants follow. Men (N=3) who had held their jobs less than one year earned an average monthly salary of Rs. 71.66; those (N=7) employed in the same job from one to four years, Rs. 81.42; those (N=9) who had worked from five to nine years, Rs. 132.22; and those (N=10) with 10 or more years of service, Rs. 125.20. Differences in average monthly salary were rather large until men had worked for more than five years; after that, salaries generally appeared to stabilize. Because of the small

number of men involved, these averages should be viewed with caution. A positive correlation of salary with age can also be shown from our data. Men 16 to 25 years of age (N=24) earned an average monthly salary of Rs. 97.33; those 26 to 35 years old (N=19), Rs. 108.78; and men 36 years old and older (N=5) earned Rs. 108.40. Although salaries increased with age, the increments were relatively small; the salaries of the older men averaged only 11 rupees more a month than those of the younger men. Length of service was apparently a more noteworthy factor that influenced salary level. Men who had held their jobs for five years or longer averaged 57 rupees more per month than beginners. Although this difference in salary may be partly the consequence of annual salary increments, the probable influence of other factors should also be borne in mind. For example, men would ordinarily be inclined to stay longer in the better paid jobs, a situation that would contribute to a positive correlation of salary and length of service.

Expenses of Service

City jobs involved specific expenses. The cost of transportation was the principal outlay for commuters. The bus, the most convenient and comfortable means of transportation, was also the most expensive. It made four round-trips daily between the village and Delhi. The early morning bus from the village arrived in Delhi at a convenient hour for office workers, and there was a bus that left Delhi shortly after the close of the business day. The bus stopped at the outskirts of the village. However, during the rainy season it could proceed only to the end of the paved road which was about a half-mile (0.8 km.) distant from the village. The buses were equipped with racks on their roofs suitable for carrying baggage, bicycles, and other items. Men who had to travel a significantly long distance in Delhi from the Old Delhi Bus Station to their place of employment often rode their bicycles which they took with them on the bus. The bus trip cost 12 rupees per month, so that bus transportation consumed nine percent of the average monthly salary of a clerk. Travel by train was less expensive. A monthly pass cost Rs. 7.50. However, the railroad station was two or three miles (3.2 km. to 4.8 km.) from Shanti Nagar; consequently, train travel was less convenient than travel by bus. The least expensive means of transportation was by bicycle. Once a bicycle was purchased, its maintenance was minimal, only a few annas per month.

Additional expenses of city workers varied, depending upon the type of job and how economical a man needed to be. Office workers had outlays for clothing that neither factory workers nor farmers had to incur. Also, an occasional cup of tea with friends at the bus stop while awaiting the departure of the evening bus was part of the routine of the office worker. Those men who worked in large factories had to pay union dues, said to be four annas each month. One man reported monthly payments of 10 rupees to a government benefit fund. The men who worked for business establishments large enough to maintain a canteen might take advantage of this service. Workers in one factory reported that for 3.5 annas (about 5 cents) they could eat as much as they wanted in the company canteen. Although this price seemed to be a bargain, one man reported that, nonetheless, he usually brought his own food because he found that the bread in the canteen was undercooked (and also, we believe, to save money). Some men who left the village temporarily to work in cities had to pay a house rental; others received free housing from their employers. We recorded only a single figure on the cost of renting houses. A Brahman Priest, who worked as a clerk in Delhi for Rs. 140 per month, reported that he paid 10 rupees per month for lodging, but he was believed to have shared his quarters with relatives. In view of the salaries earned by most men, we would expect that they would arrange to share lodging or to find other means of maintaining housing costs at a minimum.

Service Income Compared With Agricultural Income

Most of the income from sources other than agriculture was derived from the salaries of men in service. The total of the monthly sal-

aries of 35 of the 37 villagers in service (we did not learn the salaries of two) was Rs. 3545. To this sum we can add the combined monthly salaries of 12 emigrants (the salaries of eight were unknown to us), Rs. 1320, for a monthly total of Rs. 4865. The average monthly salary of the villagers was Rs. 101; and of the emigrants, Rs. 110. If we rely on these averages as the best estimates of the 20 salaries not known to us, we can add Rs. 202 to the total monthly salaried income of the villagers and Rs. 880 to that of the emigrants. Thus, the total estimated monthly income from salaries was Rs. 5947 or Rs. 71,364 annually.

In addition to those in service, some men earned money from nonagricultural sources outside the village. One of the village barbers had a shop in Delhi from which he netted Rs. 100 per month. The Lohar Blacksmith family had a shop in Narela and also sold their products in neighboring villages. The two village potters disposed of some of their wares at fairs in neighboring villages; two other Gola Potters owned shares in a gristmill in a nearby village; 10 Gola Potter families, who owned mules, donkeys, and horses, earned money by transporting loads, principally at brick kilns. A Chamar Leatherworker shoemaker sold some of his shoes outside the village. We estimated the yearly income of these villagers from these activities at Rs. 11,824. Thus, the total annual nonagricultural income earned outside the village was Rs. 83,188.

We can gain an understanding of what this sum meant to the village economy by comparing it with the gross value of the village crops. We estimated this total from the crop chart (*Goshwara*) maintained by the village accountant. The crop chart listed the area of land planted in various crops. We multiplied these figures by the average yield and price for each crop. A few of the listed crops for which we had no figures covering yield and price, or that we were unable to identify, occupied 186 bighas during the rabi season and 46.5 bighas during the kharif season. To account for the value of the crops grown in these areas, we calculated a figure for the rabi area as if it had been planted in wheat, and one for the kharif area as if its crops had been equally divided between sugarcane and jowar. Thus we arrived at an estimate of Rs. 254,009 for the total value of the village crops in 1958. Therefore, the money earned in employment outside the village equaled 33 percent of the value of all the crops grown on the village agricultural land. An increment of this size would be considered significant in any economy, but especially so in a society like Shanti Nagar with its generally Spartan standard of living.

LAND

Area

One would have expected that the importance of land in village life would have been reflected in precise, up-to-date, accessible, and readily understandable records of landownership; but this expectation was unfulfilled. The land records as well as other statistical information on the village (a collection of some 21 books and registers, assuming that the patwari records of Shanti Nagar were similar to those of the nearby village of Rampur as reported in Lewis [1958]) were not only difficult to use except by the initiated, but also generally out-of-date, and inconsistent enough to suggest imprecise land measurements. In these respects, the patwari records of Shanti Nagar were apparently typical of the genre. Other investigators have also commented on the unreliability of patwari records and the difficulty they encountered in consulting them (Lewis, 1958, pp. 329-347; Bailey, 1957, pp. 279-284). In any case, the figures given in the Shanti Nagar records differed from those obtained on the basis of our interviews with each landowner. The villagers reported that they owned a total of 4577 bighas of agricultural land (964 acres, 390 ha.). The total area of agricultural land credited to all the landowners by one of the patwari records was 4348 bighas (915 acres, 370 ha.); 261 bighas of this total were owned by outsiders. Thus, the discrepancy between the records and the testimony of villagers

amounted to 490 bighas; it follows then that villagers claimed ownership of 12 percent more land than was credited to them in one of the patwari records. In another of the patwari records, the statistical summary of the village, a total of 4057 bighas (854 acres, 346 ha.) of agricultural land was recorded. Reducing this area by the 261 bighas owned by outsiders, we calculate a difference of 781 bighas between the government records and the testimony of villagers. The villagers thus claimed 21 percent more land than was noted in the patwari records. It is possible to calculate another figure, 3996 bighas, on the basis of the patwari records. This figure, reduced by the 261 bighas owned by outsiders, differed from the total reported by the villagers by 842 bighas, or 23 percent.

A part of these discrepancies may have been caused by encroachments on the village common grazing land by various cultivators (cf. Lewis, 1958, pp. 95, 97). After several years of unchallenged occupancy, a cultivator may have come to believe that such land was his although its ownership would not have been so recorded in the patwari records. In our examination of the records, we noted an early figure of 688 bighas (145 acres, 59 ha.) of village common land and a more recent figure of 341 bighas (72 acres, 29 ha.); the difference, 347 bighas, represented land withdrawn from the common land. If we assume that most of this land was cultivated rather than utilized for house sites or other purposes, it is possible to add approximately 300 bighas to the totals cited from the patwari records. Thus, the first of these totals becomes 4648 bighas; the discrepancy between this figure (reduced by 261 bighas) and the statements of villagers is only 190 bighas. Hence, the villagers reported that they owned only 4 percent more land than the figure given in the patwari records. A similar calculation regarding the second of the figures from the patwari records as given above indicates that the villagers reported that they owned 12 percent more land than was credited to them in the records; and 13 percent with regard to the third figure. Based on these calculations, we suggest that, as a reasonable estimate, the villagers believed that they owned about 12 percent more land than the patwari records credited to them. We have no means of judging the correct total area of the village agricultural land; furthermore, we doubt that it can be obtained either from the records or from questioning landowners. The only certain method would be to undertake a careful survey; if one wanted to know the extent of the holding of each landowner, it would be necessary to question each one as well. In view of the foregoing, for purposes of our analysis we decided to rely on the statements of each informant with regard to the amount and kinds of agricultural land he owned. However, we used the figures from the patwari records for three other classes of land: the habitation site (*abadi deh*) that measured 74 bighas (16 acres, 6.5 ha.) upon which the houses were built, the common grazing land (*shamilat deh*) that totaled 341 bighas (72 acres, 29 ha.), and 98 bighas (21 acres, 8.5 ha.) that were used by the government for various purposes, such as roads and railroads. Thus, Shanti Nagar had a total of 5090 bighas (1072 acres, 434 ha.) of land.

Irrigation

Most of the agricultural land of the village, 3973 bighas, was irrigated from the Delhi Branch of the Western Jumna Canal through a network of small irrigation ditches (fig. 1). Of this total area, however, 1421 bighas were water-logged and unfit for cultivation, so that only a balance of 2552 bighas (537 acres, 217 ha.) of canal-irrigated land was suitable for farming. In addition, 423 bighas of land too high for canal irrigation could be farmed with rain water. Like the canal-irrigated land, a portion of the higher land, 167 bighas, was waterlogged and could not be farmed. Of the 256 usable bighas (54 acres, 22 ha.), 120 could be irrigated from wells. Finally, the villagers described 181 bighas of land as waste. Therefore, 39 percent of the total agricultural land was unfit for cultivation in 1958.

Landownership and Caste

The Jat Farmers, the principal landowners, had title to 3746 bighas of the agricultural land of the village (82%). Their farms ranged in size

FIG. 1. For irrigation, a low dike is opened to allow water from a ditch to flow into a field. A pair of typical shoes, foreground.

from 29 bighas to 312 bighas and averaged 125 bighas (26 acres, 10.5 ha.) per family. Thirty of the 31 Jat families owned land in Shanti Nagar; the patwari, a Jat who resided in Shanti Nagar, owned no land there; we classified him as landless despite the fact that he owned land in his village of birth. All 22 families of Brahman Priests owned land in Shanti Nagar, a total of 795 bighas, 17 percent of the agricultural land. Their farms ranged in size from 1.7 bighas to 240 bighas, averaging 36 bighas (7.6 acres, 3.1 ha.) per family. Landowners from other castes held trivial amounts: the five Bairagi Beggar families owned a combined total of 14 bighas, an average of 2.8 bighas per family; a Chamar Leatherworker, 15 bighas; and the Mali Gardener family, 7 bighas. Of the 59 landowning families, 20 owned less than 20 bighas, 22 owned from 21 bighas to 100 bighas, and 17 owned from 101 bighas to 312 bighas. Of the 17 large landowners, two were Brahman Priests and the remainder, Jat Farmers.

Land Revenue

Farmers paid a tax on their land called land revenue. The tax was levied as a fixed sum of rupees on a specific piece of land. The basic rates of land revenue for Shanti Nagar had been established in the land settlement that began in 1906. British policy established that the land settlement be revised every 40 years and that the land revenue be re-evaluated on the basis of changed conditions. The revised settlement should have taken place in 1947, but the riots that accompanied the political partition of India and Pakistan and other pressing problems prevented the realization of the new land settlement. Land revenue had increased somewhat since 1906, but, according to an assistant revenue officer, not in proportion to inflation; the rates of land revenue were essentially similar to those of the land settlement of 1906.

The total land revenue of Shanti Nagar as calculated from figures given in one of the patwari records, the *Mafasl Jamabandi*, was Rs. 1583 annually. For land irrigated either by canals (*nahri*) or wells (*chahi*), the rate was generally 10 annas per bigha per year. However, if the land were less productive than normal, the assessment might be 8 annas. Naturally moist low land (*dhari*) was generally assessed at 8 annas. Land classified as *rausli*, a light loam, was taxed at 6 annas per bigha annually, and *bhur* (*rausli* adulterated with

sand), at 4 annas. Salty land was taxed at the rate of 4 annas. The villagers paid no taxes on barren land, that is, land that had lain fallow for a least eight successive harvests (*banjar qadim*), on village common land, or on the habitation site. The rate paid for irrigation water was the other principal governmental assessment levied upon agriculture. This tax varied from crop to crop; consequently, a specific farmer would be assessed differently from year to year, depending on the crops that he had sown.

Although India had a personal income tax, the farmers of Shanti Nagar did not have to pay it. In some respects, land revenue can be considered as the income tax of the farmer. The total value of the village crops in 1958 was estimated at Rs. 254,009; consequently, the farmers paid only 0.6 percent of their gross income in land revenue. If, on the basis of farm accounts collected in the neighboring Rohtak district of the Punjab, one were to estimate the costs of cultivation at 40 percent of gross income (Singh and Singh, 1949, Statement VIII-A), the farmers still paid only a 1 percent tax on net income. This figure emphasizes the slight extent of the government share in the increased agricultural revenues that have resulted from inflation. Since 1911, the prices of the crops grown by the farmers had increased several-fold; in 1958, for example, the price of wheat was about five or six times what it had been in 1911.

Although the rate of land revenue, as a proportion of gross income paid by the farmers of Shanti Nagar, was much less than income tax rates in western countries, nonetheless, it was of considerable consequence to many of the farmers of Shanti Nagar who lived under frugal circumstances. The farmers with large landholdings were the principal beneficiaries of the situation. Under then current conditions, a healthy man cultivating 100 bighas of land (21 acres, 8.5 ha.) could be well off, by Indian standards. Seventeen men in Shanti Nagar owned at least this much land. It should be noted that land revenue differs from most income taxes in that it is not progressive; the farmer with a small landholding pays the same amount of money per bigha as does the owner of a large farm. In consequence, such a tax is most burdensome for the owners of the smallest farms who generally have the smallest incomes.

Tenancy

Most landowners cultivated their own land. According to the villagers, tenancy had been common prior to the passage of the Delhi Land Reforms Act of 1954; but, since then, landowners have been careful about permitting others to cultivate their land for fear of losing it. Nonetheless, various rental and sharecropping arrangements were current, but the land area involved was not extensive. From the viewpoint of the landowners, such arrangements often contained the potential for a good deal of mischief were they to be recorded in the government records. Consequently, our data in all probability underestimated their frequency. However, some individuals ran no risk of losing their land if they permitted others to cultivate it; among such individuals were military personnel absent from the village, widows, and minors. Accordingly, a Jat army officer leased his land to a Brahman Priest and a Jat widow who had a minor son leased hers to a Bairagi Beggar. Thirty bighas were involved in the case of the army officer. He and his tenant shared the produce equally; the cost of seed was equally divided; the tenant, on his part, used his own plow and bullocks, furnished the manure, and also paid the hired laborers. The similar arrangement between the Jat widow and her tenant involved 76 bighas. In general, the owner paid the land revenue and irrigation charges to avoid any presumption that he was not the cultivator; if according to prior agreement these fees were to be shared, the tenant paid them to the landowner, not to the government.

The arrangements agreed upon by two families of Jhinvar Watermen and several Jat landowners differed somewhat from the foregoing examples. Each Jhinvar family rented a garden of fruit trees for a yearly rental, Rs. 110 for a garden of 2 bighas and Rs. 150 for one of 3 bighas. The Jhinvars retained all of the produce. The two families also rented about 4 bighas for an annual fee of Rs. 40 per bigha, and sharecropped an additional 4 bighas. They grew tomatoes on the rented land and sugar-

cane on the land that they sharecropped. For the sugarcane, the Jhinvars provided the seed, bullocks, and all the labor. Because the crop required so much labor, they retained two-thirds of the produce. The Jhinvars complained that in the past they had been able to rent some 60 or 70 bighas of land. The Mali Gardener family leased a garden of fruit trees, but we did not learn its size.

A Chamar Leatherworker farmed 14 bighas owned by two Jats. The produce was divided depending on the crop and the way that expenses were shared. The Chamar received half of the wheat, two-thirds of the sugarcane, but only one-third of the tomatoes, because the landowner had provided the seed for them and had used his bullocks to draw water from his well to irrigate the crop. Another Chamar Leatherworker, employed by a Jat Farmer on an annual basis, was allowed to farm 4 bighas as part of his compensation. One of the Nai Barbers did some agricultural work for a Brahman. In return, he was permitted to farm a small field of 1.5 bighas from which he retained all the produce. The Brahman plowed the field for him. One Brahman Priest cultivated 20 bighas of land owned by a Jat, on the basis of equal shares; another Brahman was said to cultivate an unspecified amount of land owned by a Jat. The total land area cultivated by nonowners under rental or sharecropping arrangements was somewhat in excess of 159 bighas, or approximately 6 percent of the then cultivable land in the village.

Mortgage

Mortgages of land and transfers of its ownership, owing to sale, exchange, gift, and inheritance, were entered in the *Intkal* register. Mortgages often had their origins in simple loans. The next stage in the sequence of events occurred when a borrower was unable to meet periodic interest payments, and the interest began to accumulate. Faced with a steadily mounting debt, the borrower stabilized his debt by mortgaging some land to his creditor. Under such an arrangement, the creditor had cultivation rights in the land; he was therefore entitled to the income from cultivation which served in lieu of interest on the money he had loaned. Such an arrangement could continue for years until the mortgager repaid the principal and thus reclaimed his land. Occasionally, the parcel of land in question became water-logged and unfit for cultivation, in which case the mortgager had what amounted to an interest-free loan. We examined the *Intkal* register for the period from May 1948 to March 1958. In the course of these years, 11 mortgages were made; 25 mortgages were redeemed. The excess of redemptions over mortgages may have reflected a period of increased prosperity and perhaps, too, the reluctance of landowners to permit others any rights whatsoever in their land, primarily because of the uncertainty that discussion of proposed land legislation had provoked.

We questioned several informants about the circumstances surrounding a number of mortgages. In general, land was mortgaged to pay daily living expenses and/or ceremonial costs. We learned of no examples of the mortgaging of land to obtain capital to invest, to purchase land, to build a house, or to improve land or other property. The following transactions appeared to be typical. A Brahman Priest mortgaged 2.3 bighas of land to another Brahman for Rs. 267.50. His first wife had died, his remarriage had been expensive, and the income from his land was modest. He had a continuing account with the mortgagee, a moneylender. Finally, the moment arrived when he was unable to meet the interest payments on his loan. To avoid the mounting interest, he mortgaged his land. When his son grew up and obtained a city job, the mortgager redeemed the land. It is worth noting at this point that urban employment strengthened the economic position of this family who owned only a relatively small farm (30 bighas). Such small landholdings could pass to larger landowners when a period of misfortune started a farmer on a downward economic spiral. Income from urban employment tended to minimize this possibility.

In 1954, a Brahman Priest redeemed a mortgage that was so old that he was in danger of losing title to his land. He had mortgaged 18.7 bighas to a Brahman from another village for Rs. 660. According to our informants, his debt

had eventually grown to Rs. 2800. The landowner had been squeezed between high marriage expenses and low income from agriculture. Although his income from agriculture had risen substantially since his land had been mortgaged, he still did not have enough money to redeem the mortgage. Therefore, two local Brahmans each lent him Rs. 700, and the mortgage was redeemed. The two Brahmans, who acted to prevent the loss of the land to an outsider, were repaid in the next few years. The same Brahman had also mortgaged to local Brahmans two other parcels of land, a total of 7.7 bighas, for Rs. 947. Both mortgages were redeemed in the early 1950s. It was quite common for the same individual to be involved in several mortgages as either mortgager or mortgagee. There was a tendency for mortgager and mortgagee to belong to the same caste.

After the death of his wife and children, a Jat Farmer who could not work very hard was compelled to borrow money for his living expenses. For Rs. 668, he mortgaged two parcels of land, totaling 13.1 bighas, to some local Jats and to some unspecified outsiders. However, he was a resourceful man. He entered into an agreement with a strong young Chamar Leatherworker to farm the rest of his land in return for a yearly compensation. As a result of this arrangement, he improved his circumstances and redeemed one of the mortgages. As the villagers described it, his economic position was rather good.

Villagers attributed the economic difficulties of some farmers to a taste for high living. A Jat Farmer, a rather bizarre man by village standards and considered also to be a bit foolish, redeemed three mortgages in the 1950s. Our informants reported that he had been living far beyond his means, had fallen into debt, and the accumulating interest had forced him to mortgage some of his land. A Brahman Priest was reputed to have had a similar history. He had expensive habits, did little work, and, as a result, was compelled to mortgage 10.3 bighas for Rs. 950. However, he reformed, began to work, and in 1954 redeemed one of the mortgages.

Expenses that resulted from litigation could also force farmers to mortgage land. Two Jat brothers who were involved in prolonged litigation with other villagers and were also faced with heavy marriage expenses had to mortgage some of their land. They redeemed the mortgage in 1956.

In general, farmers apparently did not jeopardize the bulk of their property when they mortgaged land. The portions mortgaged usually affected only a small part of their holding. It was also true that those who mortgaged land were frequently among the largest property owners of the village. We investigated only one mortgage by a landowner with a small holding, that of the Brahman with 30 bighas mentioned above, and found that he had mortgaged only 8 percent of his property. We discovered only one instance, that of one of the largest Jat landowners of the village, where a landowner mortgaged land to the extent that he got into serious trouble. He had died before our arrival in the village; he was described as a wastrel. Upon his death, his son was compelled to sell approximately one-third of the land to obtain enough money to redeem the remainder.

Sale and Inheritance

Of the various changes involving land that were entered in the *Intkal* register, the most numerous were those due to mortgage (36). Second was the outcome of death and inheritance. Twenty such changes were recorded from 1948 to 1958. The rare case of the disappearance of a landowner was treated, after a number of years, as if he were dead. Only one such occurrence was recorded in the *Intkal* register: a Brahman Priest, said to have been a man possessed of a violent temper, quarreled with his sons and left his home. He disappeared and was never again heard from; eventually, his land was distributed among his heirs. Between 1948 and 1958, no gifts of land were recorded in the register.

Except for gifts, sale was the rarest type of land transfer. Records of six sales of land were recorded in the *Intkal* register during the period in question. Five of these represented the purchase by one Shanti Nagar family of village land owned by various residents of Delhi. Approximately 42.5 bighas were purchased at a

cost of Rs. 16,485, or $387 per acre ($956 per ha.). (There was some ambiguity in the records, or in our translation; the per acre cost could have been $423, or $1045 per ha.) The sum recorded in the patwari records probably exceeded that actually paid, a practice, as Lewis noted (1958, pp. 332-333), derived from the need of the purchaser to protect himself from subsequent claims by the relatives of the original owner who, after his sons, had first priority in the purchase of the land. Although relatives could claim this right in court, they had to repurchase the land at the price recorded in the patwari records. An elevated price protected the purchaser from possible claims. Even were one to allow for the possibility that a recorded price exceeded the actual price, the cost of land was high, far beyond the reach of all except the wealthiest farmers. However, the price of land reflected its potential income rather well. An acre of land planted in sugarcane could yield a crop valued at $160. Land capable of producing such an income would not be overvalued at $400. On the other hand, land revenue did not begin to reflect its value. On the acre of land that sold for approximately $400 and that might yield a gross return of $160, a farmer would pay land revenue of $.62 annually. In the sixth sale of land recorded in the *Intkal* register, both buyer and seller were residents of Delhi. Five bighas changed hands for Rs. 800. In this sale, the cost per acre was a more modest $160 ($395 per ha.).

AGRICULTURE

There are two crop seasons in the agricultural year, the kharif (summer-autumn) crop and the rabi (winter-spring) crop. Generally, the kharif crop is sown in June through July and harvested from mid-September to mid-November; the rabi crop is sown from mid-September to mid-November and harvested from mid-March through April. According to the village crop chart (*Goshwara*) kept by the patwari, 1873 bighas were cultivated during the kharif season in 1958, and 2601 bighas during the rabi season (1957-1958). The total area cultivated for the two seasons was 4474 bighas. Of the kharif crop, 41 percent was canal-irrigated (*nahri*). Very little of the irrigated crop failed to mature, only 13 bighas (2%); 59 percent of the kharif crops were under *barani* (rainfall) cultivation; of these, 40 percent (438 bighas) did not mature. Altogether, 24 percent of the kharif crop failed to mature; consequently, it was classified as waste (*kharaba*). Forty-three percent of the rabi crop was canal-irrigated; only 6 bighas (0.5%) resulted in waste. The balance of the rabi crop, 57 percent, was under *barani* cultivation, except for a few bighas of vegetables irrigated from wells; 13 percent did not mature. Thus, 8 percent of the total rabi crop ended in waste. We have estimated the value of the kharif crops grown in 1958 at Rs. 106,641, and the rabi crops at Rs. 147,368.

KHARIF CROPS

Sugarcane

Sugarcane, by far the most valuable of the kharif crops, accounted for approximately 55 percent of their gross value. Sugarcane, in many ways, was a special crop. It was planted during the latter part of March or early April, well before the other kharif crops. Its harvest began at the end of November, after the other kharif crops had been harvested, and continued for some three to four months. After the cane had been cut, its roots were left in the fields to sprout anew the following year. From year to year, the yield gradually decreased until, after approximately four years, the old roots were dug up and there was a new planting. The roots of old plants were used for fuel. Although a field often lay fallow in the rabi season preceding the planting of sugarcane, sometimes gram or peas were sown in the field. These plants served to increase the nitrogen in the soil. Because sugarcane generally had been removed from a field by the end of February or early

March, it could lie fallow about eight months until a crop of the following rabi season was sown. In the 1958 kharif season, 373.75 irrigated bighas were sown in sugarcane; of these, 10.25 bighas ended in waste. Sugarcane was only grown on irrigated land.

Making sugarcane juice into gur (unrefined brown sugar) or *khand* (raw white sugar) was the most complex of the processes by which agricultural products were prepared for home consumption or for the market. Not all farmers were expert enough to process the sugarcane juice themselves; consequently, specialists were often engaged for this service both from outside as well as within the village. The crushers used to process sugarcane were rented from a company outside the village because neither the farmers nor the local blacksmith were qualified to maintain them. The use and expense of a crusher were shared by several farmers. Sugarcane was marketed in several forms. Prices varied almost daily; contracts with buyers and processors were frequently renegotiated in the course of the crushing season. Sugarcane required more labor and expense than any other crop. Large families with many individuals available for work were better suited to cultivate it than small families. We have previously noted a correlation of family type and the ownership of land (Freed and Freed, 1969, table 11). Joint families, who averaged 10 members, were more likely to be found among landowning families than were nuclear families, who averaged 4.6 members. The widespread cultivation of sugarcane, with its considerable labor demands, may have contributed significantly to this correlation.

The average yield from sugarcane in the form of gur was 10 maunds (823 pounds, 373 kg.) per bigha at an average sale price of Rs. 16 per maund. Sugarcane also yielded leaves and tufts which were used as fodder and worth about Rs. 3 per bigha. The fodder, worthless when dry, had to be used on the day it was cut. Any excess was given away. Every fourth year, sugarcane equivalent to 2 maunds of gur per bigha was used as seed; thus, the seed requirements equaled 20 seers of gur per bigha per year. Before planting, a field had to be plowed five or six times; sowing also required considerable labor. However, these operations occurred only once in four years. Ten cartloads of dung per bigha, at Rs. 2 per cartload, were needed as fertilizer. Irrigation charges were Rs. 3.44 per bigha. Land revenue was 10 annas per bigha. The sugarcane had to be hoed and weeded (one operation) five or six times a year. This operation required one person's labor for one day per bigha on each occasion. As the sugarcane grew in height, it was necessary to tie seven or eight plants together for their mutual support to prevent them from falling over (fig. 2). This process, repeated three times every year, required one person's labor for one day per bigha each time. Like harvesting expenses, the costs of crushing the cane and making gur varied. These costs depended upon how much labor was hired and the number of farmers who shared a cane crusher.

An approximation of gross income and expenses for a specific farmer who had planted 5 bighas of sugarcane follows. He obtained 45 maunds of gur which were valued at Rs. 720 plus fodder worth Rs. 15 resulting in a gross income of Rs. 735. His costs for seed, fertilizer, water, land revenue, weeding, hoeing, and tying totaled Rs. 170.33 (fig. 3). He hired a laborer for three months to harvest the crop and to work at the crusher. The laborer was paid Rs. 90 for the season plus his meals which we estimated at Rs. 45 for a total of Rs. 135. The farmer paid 6 percent of the gur to the stoker who fed the fire under the pans in which the juice was boiled and to the Jhinvar Waterman who prepared the gur, a total of Rs. 43.20. He shared a crusher with six other farmers; his share of the total expense amounted to 10 percent or Rs. 20. To approximate the net annual cost of maintaining the yoke of bullocks used to draw the plow and to power the sugarcane crusher, we have used Rs. 458 (Singh and Singh, 1949, p. 57), an amount which probably underestimates the cost of such maintenance in Shanti Nagar a decade later. Because this specific farmer was cultivating 29 bighas of land, five of which were in sugarcane, we applied 5/29ths of the bullock expenses to those specifically for the sugarcane, or Rs. 79. Based on figures obtained from four landowners, the average cost of a bullock cart (fig. 4), which

FIG. 2. Sugarcane, background, has been tied together to prevent it from falling over. In foreground a man works with a spade, probably opening a passage in the low dike bordering the irrigation ditch just behind him.

was used to transport sugarcane from the fields to the crusher, was Rs. 413; these farmers averaged Rs. 351 invested in other agricultural equipment. We have assumed the useful life of a bullock cart to be eight years (Narain and Narain, 1932, p. 202)[1]; and we have relied on the same figure for the other agricultural equipment. The yearly cost of the cart and other equipment times 5/29ths is Rs. 16.47. In compensation for the maintenance of agricultural equipment, the Lohar Blacksmith was paid annually in wheat and chaff equivalent to Rs. 21 of which 5/29ths is Rs. 3.62. Greasing and annual maintenance of a bullock cart cost Rs. 10; of this amount, Rs. 1.72 can be applied as part of the expense of sugarcane cultivation. Thus, the total expenses were approximately Rs. 469. The labor costs of irrigation, plowing,[2] and planting were excluded. None of these was incurred the year we recorded these figures. Also excluded was the cost of the part

[1]One of our informants estimated the life of a bullock cart at from 25 to 30 years; for purposes of this accounting, we preferred to use the shorter period. The same informant cited Rs. 800 as the cost of a completely equipped bullock cart.

[2]A man was able to plow 5 bighas a day. Thus, 5 plowings of a 5-bigha field at the plowman's payment of Rs. 2 per day equal Rs. 10 or Rs. 2.50 per year when the cost is prorated for four years. The major expense of plowing was the maintenance of bullocks rather than the labor of the plowman.

of the weeding and tying that was done by family members.[1] The net return to the farmer was Rs. 266. Expenses amounted to 64 percent of the gross income.

This farmer's net profit, as a proportion of his invested capital, can be estimated as follows. His 5 bighas of canal-irrigated land on which he grew sugarcane had a value of about Rs. 2000. He had purchased a yoke of bullocks for Rs. 900; he had Rs. 413 invested in a bullock cart and Rs. 351 in additional agricultural equipment. We use here the average figures for carts and for agricultural equipment. By depreciating the value of the bullocks, the cart, and the additional agricultural equipment over eight years and apportioning 5/29ths to sugarcane, we calculate a value of Rs. 36. The farmer's net profit of Rs. 266 amounted to 13 percent of his invested capital (Rs. 2,036).

Although the foregoing accounting is illustrative and provides a good estimate of actual costs it is not necessarily typical of cash expenditures associated with the cultivation of sugarcane. This particular farmer was in service full-time; his children were not yet old enough to assist in agricultural labor. His wife and his elderly mother were the only other adults in his family. Thus, although he worked on his land on weekends and in the evening and was considered an excellent farmer, he was quite dependent on hired labor. Also, his ratio of bullocks to cultivated land could have been more favorable. A pair of bullocks has the capacity to cultivate adequately as many as 60 bighas. The cost of bullock maintenance charged against the 5 bighas of sugarcane would be reduced if the farmer were cultivating more than 29 bighas. In addition, a farmer with a large family would probably not have required a laborer for three months; the family members would also have done all the weeding, hoeing, and tying themselves. In the budget described, family labor could replace Rs. 145 of hired labor, a potential cash saving that emphasizes the value of a large family in the cultivation of sugarcane.

Sowing sugarcane demanded considerable labor; however, the work progressed quickly, and a relatively large field could be sown in a day. We watched two families who shared the

[1]We calculated the cost at Rs. 63.75. For some of this work, a laborer was hired for Rs. 10; the rest was done by family members.

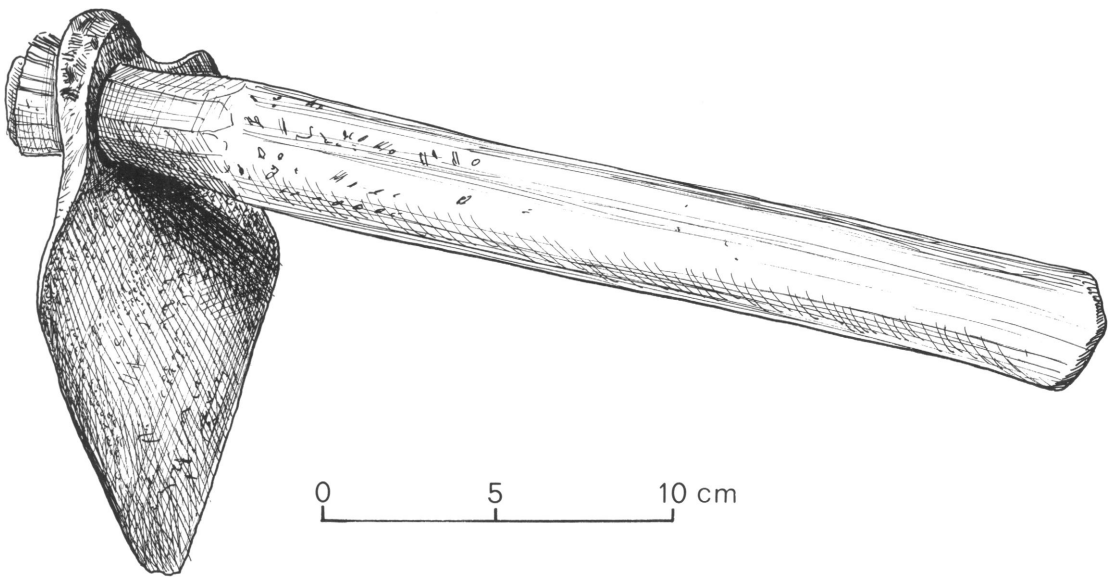

FIG. 3. Short hoe (*khudali*) used to loosen earth and to weed around sugarcane. AMNH 70.2-8174.

FIG. 4. Bullock cart stands in a village lane. Bricks will be used to construct a house.

cultivation of a 5-bigha field sow it with sugarcane in one day early in April. Stalks of cane that had been saved from the previous harvest and buried in a pit at the edge of the field to prevent them from drying served as seed. In preparation for planting, the field had been plowed twice before its irrigation and twice afterward. All but one of the members of both families assembled for the work: two men, three women, and a number of children, three or four of whom were old enough to assist. In addition, a Jat Farmer man, a teenage Jat boy from the same family, a Bairagi Beggar man who was a friend of the Brahman families, a teenage Bairagi girl, two Gola Potter boys about 10 to 14 years of age, and two Chuhra Sweeper men assisted for the day. An elderly Brahman woman belonging to one of the families also assisted, bringing cooked food to the people working in the field, but she did not participate in any of the agricultural work.

To prepare the stalks of sugarcane for planting, the two Chuhra men cut them into lengths that contained two nodes. As one of the Brahman men plowed the field, children, teenagers, and women followed him placing the sections of sugarcane stalk, lengthwise, quite close to one another, in the newly opened furrow (figs. 5, 6). The sowers were supplied with the pieces of cane by one of the Brahman women who carried large basketloads from the place where the Chuhra Sweepers were working at the edge of the field and dumped the sections of stalks in heaps conveniently spaced along

the furrows, so that the sowers never had far to go for a fresh supply. A Brahman man piled the pieces of cane so that they could be picked up easily. After the cane had been placed in the furrow, the Jat Farmer man, operating a second plow following the first, closed the furrow by plowing another furrow close beside it; the displaced soil covered the first furrow. The work of the sowers did not appear to be organized; apparently they started their labors and stopped as they pleased. However, a sufficient number of sowers were involved so that the second plowman was not delayed while the furrow in front of him was filled with pieces of sugarcane. After the sowing was completed, one of the Brahman women walked over the field and picked up clumps of grass which had been uprooted. Then a heavy wooden plank (*mej*) was hitched behind each yoke of bullocks. With a plowman standing on the plank as he drove the bullocks, the plank dragged over the field to smooth it, first in one direction and then at a right angle to the first direction.

The Jat Farmers were helping the Brahmans on the basis of a labor exchange (*dangwara*); the Brahman plowman would reciprocate by assisting the Jats with their plowing. The two Chuhra Sweeper men were paid Rs. 1.50 for the day, the then-current rate for daily wage labor. We do not know how the Bairagis or the Gola Potters were compensated. Since the Bairagis were close friends of the Brahmans, we surmise that their participation in the planting may have been on the basis of exchange labor. The Potter boys were probably paid cash.

Some two months following the sowing, any cane that had not germinated was turned to the surface in the course of hoeing and weeding. This cane was taken to the houses of the Brahmans where it was used as fuel. Apparently, landless people had the right to collect such ungerminated cane for fuel. We base this conclusion on our observation of a Chamar Leatherworker woman collecting such cane in the Brahmans' field.

The foregoing account of our observation of sowing, which involved six men, three women, an additional woman to cook and carry food to the field, and seven or eight teenagers and children, provides, at least, a partial understanding of the labor requirements for the cultivation of sugarcane. On the day we observed the sugarcane-sowing, the usefulness of the joint family

FIG. 5. Planting sugarcane. Children follow the plowman to place sections of sugarcane used as seed in the furrow.

FIG. 6. Wooden plow with iron plowshare.

in its cultivation was well illustrated in an adjoining field where we observed the weeding of sugarcane (fig. 7). The plants had grown about a foot high. Two men and three women were at work; all were members of a Jat joint family that consisted of the families of two brothers and a first cousin. One of the men, a skillful plowman, guided the plow, not only between the rows of plants but also back and forth between the plants of each row. The bullocks were muzzled to prevent them from nibbling the young sprouts. The second man (the plowman's brother), and the three women (wives of the men of the family) used long handled-hoes (fig. 8) to break up the clods of earth produced by the plowing and removed the weeds. Weeding and hoeing required more labor than sowing: a crop was sown only once in four years but it needed five or six weedings every year.

The sugarcane harvest, begun either at the very end of November or early in December, continued for approximately three or four months, well into March. Only the quantity of cane needed for a day's crushing was cut. The stalks were chopped with a cleaver flush with the ground, (fig. 9), loaded on a bullock cart, and transported to the crusher. The leaves stripped from the cane were chopped into small pieces in a fodder cutter and fed to cattle. All the crushers did not begin operations on the same day. For example, sugarcane pressing began at three crushers on November 30; at

FIG. 7. Weeding a field of sugarcane. Jat Farmer man uses a plow and bullocks, muzzled to prevent their nibbling the sugarcane. Three women work with hoes.

another, it began on December 8. That three crushers began operations on the same day may have happened in part because it was Sunday, a day considered auspicious; also, men with weekday city jobs would have been available to assist on Sunday. Similarly, the work at some crushers was finished earlier than at others, but all crushers were still functioning in early March, and some operators planned to continue until late in the month. The first gur produced at each crusher was given away in the village. Sometimes, the first few batches of gur were not as clean as later ones and brought a lower price. At one crusher, we noticed that the first gur appeared to be of inferior quality. Its poor quality may have resulted in part from the

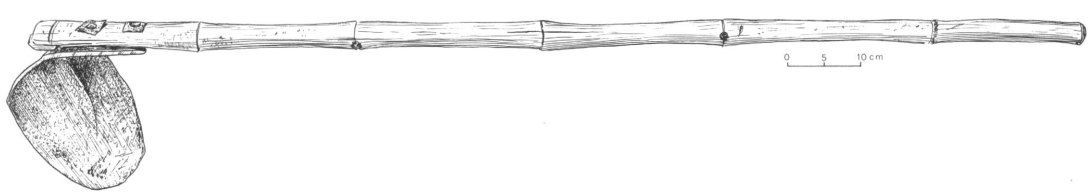

FIG. 8. Long-handled spade or hoe (*kasaula*). AMNH 70.2-6449.

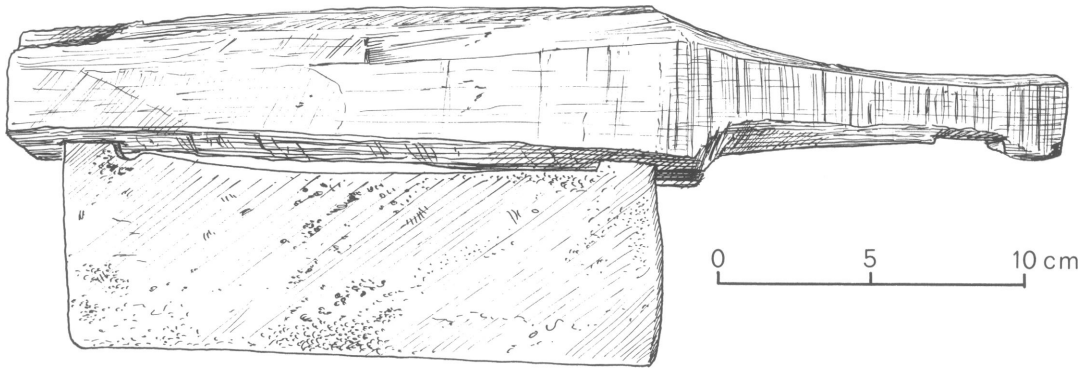

FIG. 9. Cleaver (*gandasa*) for cutting sugarcane during harvest. AMNH 70.2-8181b.

farmers' rush to activate their crushers the day preceding the day of the new moon in order to avoid unnecessarily the loss of a day's work. Bullocks were not worked on the day of the new moon. The day after the new moon is inauspicious; an enterprise cannot be initiated on that day. Thus, if one began to press sugarcane the day preceding the day of the new moon, it was permissible to continue pressing the day after the new moon. However, failure to do so meant losing the time for crushing both on the day of the new moon and on the following day.

During the 1958-1959 season, eight sugarcane crushers were in operation in Shanti Nagar. Forty-seven families shared the eight crushers, an average of almost six families per crusher; the range was from two to 11 families. The most common arrangement was to share a crusher among some of the families of a single lineage (*kunba*). Jat Farmers, in groups of two, three, six, and seven families, operated four crushers under such an arrangement. Another group of five Jat families, representing a single lineage, shared a crusher with two Brahman Priest families of the same Brahman lineage. Four Brahman families of the same lineage shared a crusher with a Brahman family of a different lineage and also with a Jat family. Five Jat families who represented four lineages shared a crusher. However, four of these Jat families who had emigrated to Shanti Nagar from Delhi in the preceding decade (they were therefore known as "Delhiwalas" in the village) could be considered almost a lineage. The families who shared the eighth crusher were quite diverse in lineage affiliation: 10 Brahman families who represented five lineages and a Jhinvar Waterman family. At this crusher, there always seemed to be considerable tension in the air in contrast to the situation at the other crushers where a generally calm and amiable atmosphere prevailed. We are inclined to attribute this tension, at least in part, to the diversity of lineages represented; no single lineage comprised a majority of the families although five families were members of the same Brahman lineage. However, two of these five Brahman families were at odds with each other, a situation that would have tended to reduce the unifying effects of their lineage upon the other partners sharing the crusher.

Partners who shared a sugarcane crusher divided the expenses of its rental and operation in proportion to the quantity of cane that each partner processed. This proportion was measured by the number of pitchers (*ghara*) of juice to be produced which, in turn, were initially estimated from the number of bighas each partner had planted in sugarcane. The so-called pitcher was actually a tin can originally used either for kerosene, which held 18 seers of juice, or for cooking oil, which held 20 seers of juice. For example, the shares in one of the crushers operated by six Jat Farmers of the same lineage, measured in pitchers, were 10, eight, eight, six, six, and five, a total of 43 shares. Thus, the partner with five shares paid

about 12 percent of the expenses of the crusher. Each partner had two turns (*chakkar*, circle) per day at the crusher. An individual farmer cut the amount of cane that he would crush during the day, transported it to the crusher, and, when his turns came, used his own bullocks to activate the crusher to fill his quota of pitchers. When he filled his quota of pitchers (equal to his shares), his daily turns were complete.

The quantity of gur obtainable from a pitcher of juice increases slightly as the season progresses, the sugarcane matures, and the juice becomes richer in sugar. Farmers gave us a range of figures for the expected quantity of gur to be processed from a pitcher of juice, from 2.5 to 3.25 seers in December to 3.5 to 4 seers by February. At the crusher operated by the six Jats which we are using as an example, the farmers obtained 3.25 seers of gur from an 18-seer pitcher in mid-December. Since each partner had two turns, the crusher produced 86 pitchers of juice per day, the equivalent of 7 maunds of gur. At the beginning of February at this crusher, a pitcher was yielding 3.5 seers of gur, equal to a daily production of 7.5 maunds.

At another crusher, one farmer estimated its production at from 7 to 8 maunds per day; another farmer 5.5 maunds. A worker at this same crusher estimated the yield at 5 maunds. On the basis of figures provided by the Jhinvar Waterman who made the gur there, we calculated the production to have been between 5.5 and 6 maunds. The average crusher of Shanti Nagar apparently yielded about 5.5 to 7 maunds of gur daily. Partners divided the gur produced in proportion to their number of shares.

All the partners who operated a crusher shared proportionally the costs of renting the machine, or mill, that pressed the juice from the sugarcane, of maintaining the small shed situated near the mill, of buying the two large iron cauldrons in which the juice was cleaned and boiled, of buying or constructing the cooling tray, and of paying the stoker (*jhoka*) and the Jhinvar Waterman who made the gur, if the farmers did not themselves do so. We use the term, crusher, to refer to the mill, but also, more frequently and more inclusively, to refer to the entire installation used to produce gur: the mill, the furnace, the cauldrons, the cooling tray, and the hut. The rental of the mill, Rs. 80 or Rs. 85 per season, included all repairs. However, these machines varied in quality; the farmers at one crusher, using a heavier, more efficient mill than normal, paid a rental of Rs. 125. If the farmers failed to return the mill at the end of the season and the rental company had to fetch it, there was an additional charge in the form of an unrefunded deposit. For example, the farmers paid Rs. 90 at the beginning of the season and received a refund of Rs. 10 when they returned the mill. The two cauldrons cost approximately Rs. 150. They lasted for only three years, deteriorating because of the fire that constantly burned beneath them when in use. If made of wood, the cooling tray cost Rs. 10. Clay cooling trays were made by the farmers at no cost. Yearly maintenance of the hut cost about Rs. 25. These annual cash expenses amounted to approximately Rs. 165 or more.

In addition, the stoker (often aided by his wife or other family members) was reimbursed for his labor by one seer of gur for each maund produced; the Jhinvar Waterman was paid 1.25 seers per maund. Often the stoker was also allowed to take home a small quantity of sugarcane juice or gur in the evening. Throughout the day, there was a steady drinking of sugarcane juice and nibbling of gur not only by the workers at the crusher but also by visitors. The stoker and Jhinvar were paid 5.6 percent of the production of gur; if the drinking and nibbling were taken into account, the cost was probably about 6 percent of the total production. Six of the crushers engaged Chuhra Sweepers as stokers; two hired Chamar Leatherworkers. All the stokers were from Shanti Nagar except for one Chuhra Sweeper who was assisting a local Sweeper. At three of the crushers, local Jhinvar Watermen processed the gur; at one, the gur was made by Jhinvar Watermen who came from Uttar Pradesh for the season; the farmers at the rest of the crushers made their own gur. Each partner provided not only his own bullocks to power the mill during his turn, but also someone to feed cane into the mill, and another helper to drive the bullocks. Exceptionally strong bullocks might continue to work without

being driven; the one camel in the village, when blindfolded, continued to turn the crusher without being urged on.

All the mills used to crush the cane were of the three-roller type. Each mill was installed in such a way that the rollers were vertical; a long horizontal wooden beam was attached to an axle that protruded from the top of the mill (fig. 10). Bullocks were hitched to this wooden beam and driven in a circle, thereby transmitting power to the axle to turn the rollers. The worker who fed cane into the mill sat by a vertical slit through which the sugarcane was passed to reach the rollers. The slit served not only to guide the cane but also to prevent a worker from accidentally having his hand caught between the rollers. The beam passed just over the head of the man feeding the mill as the bullocks plodded around in a circle. A kerosene tin fitted with a wooden handle, installed in a hole in the ground, was positioned to catch the juice as it ran from the bottom of the mill. As bagasse was extruded from the mill, the stoker collected it and spread it on the ground to dry. It was subsequently used as fuel. The juice was either temporarily stored in large oil drums that had been cut in half or it was transferred immediately to the cauldrons to be cleaned and boiled.

The furnace for cooking the juice was an underground horizontal tunnel with openings at one end for inserting fuel and removing ashes, under the two cauldrons used to clean and to cook the juice, and at the opposite end to allow

FIG. 10. Sugarcane crusher. Depicted are the iron mill, the long wooden beam by means of which bullocks activate the mill, and one of the large iron cauldrons used to boil sugarcane juice.

smoke to escape. The smoke was carried off through a short chimney. The cauldrons were wide, relatively shallow circular iron pans with sloping sides and handles on the rims. The cauldron closer to the fuel inlet received more heat than the other and was the juice boiler (*karka*); the other cauldron received less heat and was the juice cleaner (*tanki*).

Juice was first poured into the juice cleaner where it was mildly heated and impurities floated to the surface. The impurities were skimmed off and placed in a kerosene tin; near the bottom it had a hole which was closed by a stopper (a bit of sugarcane). The tin container was placed so that the hole was over the juice cleaner. Periodically, the stopper was removed; the juice that had gathered near the bottom of the tin flowed into the juice cleaner. By this method, the impurities left in the can were concentrated. This residue was taken by the Chuhra Sweepers who worked at the crushers and was used to feed their pigs (or we surmise that possibly it was given in rotation to the Sweepers who served each of the partners because we saw one such Sweeper help herself to a pitcherful). Apparently Chamar Leatherworkers had no use for the residue. At crushers where they were employed, it was given to Chuhra Sweepers.

To clarify the juice more effectively, okra (*bhindi*), also called lady's finger in English, was soaked with its leaves and branches in a kerosene tin of water; this water was subsequently added to the contents of the juice cleaner and juice boiler. Scum that rose to the surface in the juice boiler was returned to the juice cleaner. The juice was transferred from the juice cleaner to the juice boiler with a large ladle. It was boiled about one and a-half to two hours.

When the juice was almost ready to be removed from the boiler, approximately an ounce of mustard oil was poured into the juice boiler to prevent the juice from frothing. It was then stirred with a wooden ladle (*masand*) for about 10 minutes. During this phase of the process the fire was no longer fed with fuel. It was important to judge correctly the precise moment to empty the juice boiler; otherwise, the juice might either be incompletely cooked or it might be scorched. Informants told us that few men in the village were successful in producing good gur batch after batch (fig. 11).

The juice was emptied into the cooler by two men who grasped the handles of the boiler and tilted it. Either a wooden or clay tray could serve as a cooler. Farmers who used a wooden tray said that it was superior because no clay was scraped off to become mixed with the gur while it was kneaded, and also that it was earier to move about. Farmers who preferred a clay tray claimed that a wooden tray was liable to develop leaks which had to be stuffed with cotton; besides, one cost Rs. 10.

The gur was considered to have cooled adequately to be kneaded when a small amount raised on a spatula and allowed to drip broke quickly and failed to form a continuous thread. At this point, the cooling gur was vigorously kneaded both with a wooden spatula and with the hands for about 6 or 7 minutes, at which time it was formed into cakes, each weighing 2.5 seers. These cakes were temporarily stored in the small hut near the mill where they continued to solidify. Kneading the gur and forming the cakes might take place in the hut. Most huts had low brick walls, ridged thatched roofs, and were open at the front. Sometimes, smaller cakes of gur called *peris*, which weighed about one-eighth of a seer, were produced. Although such cakes fetched a better price per weight than the larger ones, they required more work to produce.

Some farmers added a spoonful of a commercial white powder to the juice boiler. We did not learn its composition; it was known by the word meaning spice, or simply ingredient (*masala*). The powder was said to lighten the color of the gur so that it could be sold for a few annas more per maund. To make *shakkar* (brown sugar), this same powder was mixed with the gur in the cooling tray. *Shakkar* was made from gur boiled until it attained a high consistency so that when rubbed it became powder and remained so.[1]

The speed at which it was possible to fill a

[1]India (1939, pp. 15-16) identifies the bleaching agent as "hydros" and the chemical added to *shakkar* as bicarbonate of soda.

FIG. 11. Brahman Priest, expert in making gur, sits behind one of the cauldrons in which sugarcane juice is boiled. Behind him are the stoker and the stoker's female assistant, veiled because she is married to a man of Shanti Nagar and must cover her face before village men senior to her husband. Bagasse, used as fuel, lies on the ground to the left.

tin of juice depended on the size and strength of the bullocks, the efficiency of the mill, and also on the speed at which a farmer was willing to drive his bullocks. Powering a sugarcane crusher was hard work for bullocks; men also became fatigued if they tried to drive their bullocks too quickly. We timed the filling of five tins under normal conditions, that is, when farmers did not notice that we were consulting watches so that they would begin to race. The average time was about 12 minutes; the range, from 8 to 17 minutes. At one crusher, we watched one farmer fill his pitcher in 17 minutes; the succeeding farmer at the same crusher, however, seemingly working with greater urgency, filled his tin in 8½ minutes. At another crusher, farmers filled their tins in about 12 minutes. When they became aware that we were timing them, they began to race and filled a tin in 7 minutes. Farmers were quite interested in the speed with which it was possible to fill pitchers. When they observed our interest, they recounted stories about record filling times of 5, 3, and even 2½ minutes. The heaviest, most powerful mill of the eight in the village filled a tin in 8 minutes, and there the farmers did not seem to hurry. This mill also extracted more of the juice from the sugarcane than did the lighter mills. Although this particular mill was heavier and stronger than the others then in use, it was less strain on the bullocks; its rental cost was approximately 50 percent more than the rent of the lighter mills.

Although we failed to record the number of hours that a crusher was operated in one day, we calculated an approximate total of 12 to 15

hours. For example, at the crusher with the heavy mill, 86 tins of juice were filled daily. A tin was filled in 8 minutes; consequently 11.5 hours of operation were required daily. It would be necessary to add to this figure a few minutes for each change of bullocks. With six partners each taking two turns, the bullocks had to be hitched and unhitched 12 times. Thus, the crusher was probably in operation somewhat longer than 12 hours during which time 7 maunds of gur were produced. Similar calculations for the other crushers yielded an average daily operation period of about 15 hours. The crushers did not operate every day. The day of the new moon was a day of rest for bullocks. Crushers also suspended operations on rainy days. In 1958-1959, there was at least one week of such weather; farmers reported that during the previous season the crushers were inactive for a month.

Farmers sold the gur that they did not retain for the use of their families. Some farmers preferred to make only enough gur for home consumption; they sold the balance of their sugarcane in the form of juice. At one crusher the farmers sold juice on a contract basis to Jhinvar Watermen from Uttar Pradesh who processed it and sold the gur. The farmers' responsibility ended with the extraction of the juice. In mid-December, the farmers and the Jhinvars had contracted for 950 pitchers of juice at Rs. 1.15 each. Therefore, the contract was for 11 days because the crusher produced 86 pitchers daily. At that time, each pitcher yielded 3.25 seers of gur. Thus, the Jhinvars were paying Rs. 14.15 per maund for gur which they sold for Rs. 16, a transaction that yielded a profit of Rs. 1.85 per maund or about Rs. 13 per day. The farmers considered the contract favorable to them because they could not produce gur of as good quality as that of the Jhinvars, and the best price they could have obtained would have been Rs. 15. In addition, the Jhinvars were willing to make the smaller gur cakes. Although these required more work, they sold at a slightly higher price than the larger cakes. Under these circumstances, the contract could be said to cost the farmers only 85 nP per maund; they were also saved no end of trouble by being relieved of the production of the gur. Furthermore, when the farmers did make gur, both workers and visitors continually nibbled it as it was made. When the contract had expired, it was renegotiated depending on the price of gur at the Narela market and the quantity of gur yielded by a pitcher of juice. We recorded one of the subsequent contracts. In early February, a pitcher yielded 3.5 seers of gur and the Jhinvars paid only Rs. 1.19 or Rs. 13.60 per maund. Although the yield had increased by 7.7 percent, the price had risen by only 3.5 percent. We did not record the price the Jhinvars were receiving for their gur, but a Jat Farmer had at that time sold some at Rs. 16.25 per maund. On the basis of this figure, the Jhinvars were earning a profit of Rs. 2.65 per maund.

Some farmers sold their gur to buyers who came twice daily from Delhi on specially reinforced bicycles with which they transported gur to the city. These buyers were interested in only the best gur. We were present at a crusher when one such buyer arrived. He talked a great deal, fast and loudly, and complained about the weight of the gur cakes. Each cake weighed exactly 2.5 seers, a situation which he compared with a dry river. He argued that each cake should weigh a little extra so that a maund would weigh 40.5 seers. He was referring to the fact that the type of scale used to weigh gur was a balance with weights in one pan and gur in the other. In his view, the two pans should not balance; rather, there should be sufficient gur to tip the balance. Before his arrival, we had watched these farmers as they weighed their gur cakes; they used only enough gur to balance the pans exactly. Although the farmers were somewhat embarrassed by the buyer's charge, they agreed with him. They said that they did not want their crusher to have a bad reputation. Then they argued about the price. One farmer said that Rs. 15 was the minimum acceptable price. The buyer offered Rs. 14.87. Another farmer immediately accepted this figure on behalf of the crusher.

Some farmers sold gur at the market in Narela. Such sales involved expenses that were not incurred when gur was sold in the village. In order to transport gur to Narela, a farmer had to hire a bullock cart because his own

bullocks were in use at the crusher. Cartage costs were 6 annas per maund of gur, and Narela levied an octroi of 2 annas per cart. A farmer told us that it required four cartloads to transport only 38 maunds of gur to Narela. A cart could not be loaded too heavily because the gur cakes would be crushed. In addition to cartage and the octroi, a farmer paid a broker a commission of 2 pice per rupee (about 3%) to sell his gur.

Early in March 1959, gur was selling at about Rs. 18 per maund and *khand* (raw white sugar) at Rs. 30 to 35 per maund. This difference in price was sufficient to make the production of *khand* profitable; a number of farmers decided to produce it. To produce white sugar a great deal of labor and the rental of additional equipment were required. Sugar was not made every year. The year preceding our observations, according to our informants, the difference in price between gur and sugar was not enough to justify its production.

Raw white sugar was made in a centrifuge known in Hindi by the borrowed English word, machine. Centrifuges were rented from a neighboring village for Rs. 2 per maund of sugar produced. To produce sugar, liquid gur was boiled until crystals formed in it. The liquid (*rab*) was stored in large metal oil drums which cost Rs. 18 or 19. A crusher used about four or five such drums. As a preliminary to pouring the liquid into the centrifuge, it was transferred in small portions to an earthen vat where a worker searched through it for lumps of gur that were squeezed between the fingers to pulverize them. It was important that the liquid have a uniform consistency. Two men turned a crank to cause the internal cylinder of the centrifuge to rotate until it was spinning rapidly. At this point, a bucket of the liquid was poured into the cylinder. The cylinder had a perforated wall. Molasses (*rala*) was forced through these perforations and then drained from the bottom of the centrifuge where it was collected in a bucket. The molasses was either added to a subsequent batch of *rab* and passed through the centrifuge again or it was boiled a little longer and made into gur. The sugar was deposited on the interior wall of the centrifuge. A farmer using a small pump sprayed water on the sugar deposited on the inner surface of the spinning cylinder to clean it further. After the liquid had passed through the machine, one of the farmers applied a brake to stop the cylinder. The base of the cylinder was removed and the sugar on its wall scraped off into a tray placed under the centrifuge. The sugar was spread on sheets laid on cots to dry in the sun. Informants reported that they could produce 13 to 15 maunds of sugar daily. We did not learn the proportion of a maund of liquid gur that was convertible to white sugar.

San and *Sani*

San (*Hibiscus cannabinus*) and *sani* (*Crotolaria juncea*) were minor plants in terms of the area devoted to their cultivation. In March, *san* was sown as a border plant in sugarcane fields. It was not sown in separate fields and, possibly for this reason, was not listed in the village crop chart (*Goshwara*). *Sani* was sown in June-July in its own fields; during the kharif season of 1958, 6 bighas of irrigated land and one-quarter bigha of land cultivated by rainfall were sown in *sani*. All of the crop matured. It was possible to grow *san* in a sugarcane field only during the initial year when the sugarcane was newly sown. After the first year, according to one informant, the sugarcane roots spread so that *san* could not be grown. Both *san* and *sani* have been called hemp although Narain and Narain (1932, pp. 297, 298) refer to *H. cannabinus* (called *patsan* in the Rohtak District of the Punjab) as Deccan hemp and *C. juncea* (called both *san* and *sani* in the Rohtak District) as hemp. From a distance, the two plants appear very similar, but, when inspected closely, they are quite different. Both plants yielded fibers that were hand-twisted into rope and cord to be used in the construction of cots (fig. 12). These plants were not grown for sale but principally for use by the individual farmer. Generally, *sani* was grown in fields smaller than those of one bigha.

Both *san* and *sani* were harvested from mid-September into November. Tied into bundles, the stalks of both plants were placed underwater in ponds where they rotted. *Sani* rotted in about 15 days; *san*, in approximately 20 to 25

FIG. 12. Stringing a cot.

days. The bundles of *sani*, when removed from the water, were dried in the sun. *Sani* was then stored in the house; periodically, the stems were separated from the fiber. The fibers of *san* were separated from the stems while the plants were still wet. The accumulated fiber was then dried in the sun and stored, ready for use. The stems of both plants were used as fuel. Although men of large landowning families could be observed occasionally making cord in their spare moments, this activity was a rather important source of income for old landless men. They could earn from 8 annas to 1 rupee for each seer of fiber twisted into cord; sometimes they were paid only one seer of grain, worth about 6.4 annas. It took about one day to twist 1 seer of fiber into cord.

Cotton

Formerly an important cash crop and grown extensively, cotton was in 1958 a relatively minor crop in Shanti Nagar, grown on only 52.75 irrigated bighas during the kharif season. Farmers generally grew cotton for their private use. Two newly introduced varieties, Japanese and American, were grown. They withstood heavy rainfall better than Indian cotton. Cotton was sown in May and harvested late in the season in October and November. Consequently, the choice of crops that could be grown in the subsequent rabi season was strictly limited. A farmer could not even be certain that the relatively hardy gram would produce a crop; usually it was possible to grow only peas (*matar*) for fodder. A field was often left fallow during the rabi season after a cotton crop had been harvested. The average yield was 3 maunds of cotton, including cottonseed, per bigha at an average price of Rs. 20 per maund, including the seed. Cotton was susceptible to rain. An entire crop could easily be ruined; however, no cotton grown in 1958

ended in waste. The cost of seed, only 6 annas per bigha, was negligible. A field had to be plowed, hoed, and weeded two or three times. Irrigation water cost Rs. 1.56 per bigha. According to our informant, cotton was not fertilized; other writers, however, report the use of manure (India, 1912, p. 110; Narain and Narain, 1932, p. 82). Family members customarily harvested the crop, periodically picking the field clean as the cotton matured.

Cotton could be ginned either in the home with a simple hand-operated wooden gin or it could be taken to a mill for this purpose. The mill charged Rs. 2.50 to gin a maund of cotton, and the farmer received both cottonseed and the cotton. Women carded and spun cotton (Freed and Freed, 1976a, fig. 9); they said that cotton ginned by hand was better for these operations than that ginned in a mill. The advantage of the mill was that the work could be done quickly and considerable labor could be saved. Villagers generally sent their cotton to another village to be woven because there were no professional weavers in Shanti Nagar. A weaver charged Re. 1 per seer of thread. However, at least one of the Bairagi Beggar women knew how to weave crude rugs or heavy bedspreads (*dari*). She had learned the skill from a social education teacher who was living in the village when we arrived but who departed shortly thereafter. Sending cotton to be woven out of the village had disadvantages. Once we overheard a farmer angrily reprimanding his nephew who had taken some of his uncle's cotton to another village to be woven. The uncle was certain that the weaver had substituted inferior cotton for his freshly harvested cotton, and he accused his nephew of carelessly executing the errand.

Cottonseed was boiled and fed to cattle. The stalks were burned as fuel; they were also used in the construction of large dome-shaped stacks of chaff designed for purposes of storage. The outer protective wall of each stack was partly constructed of twigs which were set into a trench and extended aboveground about 3 feet (fig. 36). The stalks of cotton plants could be used for this purpose.

Jowar

The most extensively grown of all the kharif crops, jowar (large or great millet) was sown on 178 irrigated and 450 *barani* (rainfall) bighas, totaling 628 bighas in 1958. In addition, three *barani* bighas of *chari* (a variety of jowar used only for fodder) were grown. Like bajra (spiked or bulrush millet), the other important kharif millet, a large proportion of the *barani* area sown in jowar ended in waste, 167.5 bighas or 37 percent; thus 27 percent of the total area sown ended in waste. In Shanti Nagar, jowar was grown chiefly as a fodder crop. For human consumption, bajra was preferable to jowar, but wheat was greatly preferred to either of the two. Canal irrigation had considerably augmented wheat production and had made possible a diet the staple of which was wheat.

Jowar was sown in late May through the first half of July and was harvested in late September through October. The seed could either be sown through a tube attached to a plow or sown broadcast; however, the latter method wasted seed. Wheat, gram, or *gochni* (a mixture of wheat and gram) could be grown in the rabi season preceding the sowing of jowar; it was followed, usually, by gram, although peas or barley could also be sown after jowar. Seed requirements were 2.5 seers per bigha, valued at 10 to 12 annas. In preparation for jowar, a field was usually plowed two or three times. Manure was used as fertilizer only if a field was weak or if a farmer had a surplus of manure, in which case two or three cartloads, each worth Rs. 2, would be applied per bigha. Irrigation water cost 12.5 annas per bigha. According to an informant, jowar was not hoed and weeded. When workers outside the family were hired to harvest the crop, each received 5 percent of the jowar he harvested. Jowar was cut close to the ground and tied into sheaves (*pulis*); workers received one sheaf for each 20 they cut.

The average yield of jowar per bigha was 100 sheaves, worth Rs. 25 to 30 per 100 sheaves. Apparently so little of the crop was threshed to provide grain for human consumption that our informants did not quote a price for grain. Jowar was stored in the form of sheaves for subsequent use. Often a bed made of the stalks of rice was laid beneath the jowar to prevent it from spoiling. Sometimes, a

farmer sold jowar as it was still standing in his field, preferring that the buyer assume the expense and trouble of harvesting it.

Bajra

Bajra (pearl, spiked, Indian or bulrush millet) was sown almost exclusively on *barani* land; of the 587.5 bighas sown in bajra during the kharif season of 1958, only three-quarters of a bigha was irrigated. Although bajra was extensively sown, ranking second to jowar among the kharif crops, much of it failed to mature, 255 bighas, or 43 percent of the area sown. The tendency of both jowar and bajra to end in waste has been noted by other writers. According to Narain and Narain (1932, p. 165), the proportion of waste in these two crops was always considerable and, in addition, even most of its first-class cultivators produced barely enough bajra for their own consumption. They suggest that this situation can be attributed to canal irrigation and the consequent diversion of the energies of cultivators to more lucrative kharif crops, such as sugarcane. As for bajra, Narain and Narain (1932, p. 165) remarked that landless tenants, lacking access to irrigated land, obtained the highest yields of bajra because they devoted more time to its cultivation than farmers who grew sugarcane and cotton.

Bajra, sown in June and the first half of July, was harvested in late September through October. In the crop rotation, it was usually preceded by wheat or gram and followed by gram. A bajra field was plowed once or twice and weeded and hoed once. Manure was not used. Seed requirements were only one-half seer per bigha worth about 2 annas. Because the grain on an ear of bajra is exposed to depredations by birds, it was necessary to guard bajra constantly from the time that the ears began to appear. Men standing on the ground or on crude platforms at the borders of fields chased the birds by hurling small pellets of dry clay at them with a sling (fig. 13). Aside from consumption by birds, there was also the danger of theft although this problem was not confined to bajra. Thieves visited the fields at night and broke off ears of grain, leaving only

FIG. 13. Farmer standing on a platform uses a sling to hurl pellets of clay to drive birds from a field of bajra.

the stalks; or else they stole sheaves that had been harvested and left in the fields overnight. When workers other than family members had to be used to harvest bajra, they received 5 percent of the quantity they cut, or one sheaf out of 20, as with jowar.

Bajra yielded an average of 70 to 80 sheaves per bigha and 1.5 to 2 maunds of grain. The grain was worth about Rs. 10 per maund. The stems of the plants, used as fodder, were worth about Rs. 10 per bigha. Informants said that bajra, unlike jowar, made good bread; it was also used in the preparation of other dishes. Therefore, a good proportion of it was threshed and winnowed to obtain the grain for human consumption. The ears were broken from the stalks by hand and dried. Bullocks were then driven over the ears or, as in the case of a laborer who had only a small quantity of bajra and owned no bullocks, the ears were beaten with a wooden stick (fig. 14). The resultant mixture of chaff and grain was then placed on a winnowing tray and handed to a worker who stood on a low, three-legged stool. With a light breeze blowing, he gradually allowed the mixture to fall from the tray to the ground. The breeze blew the lighter chaff to one side as the grain fell to the ground in an approximately straight line (cf. fig. 34). The chaff from bajra was valueless as fodder. It was usually spread as bedding under cattle and might subsequently be used as fertilizer.

On the average, farmers made very little profit from growing bajra. As an example, assuming that the same farmer whose experiences we relied on to calculate the income from sug-

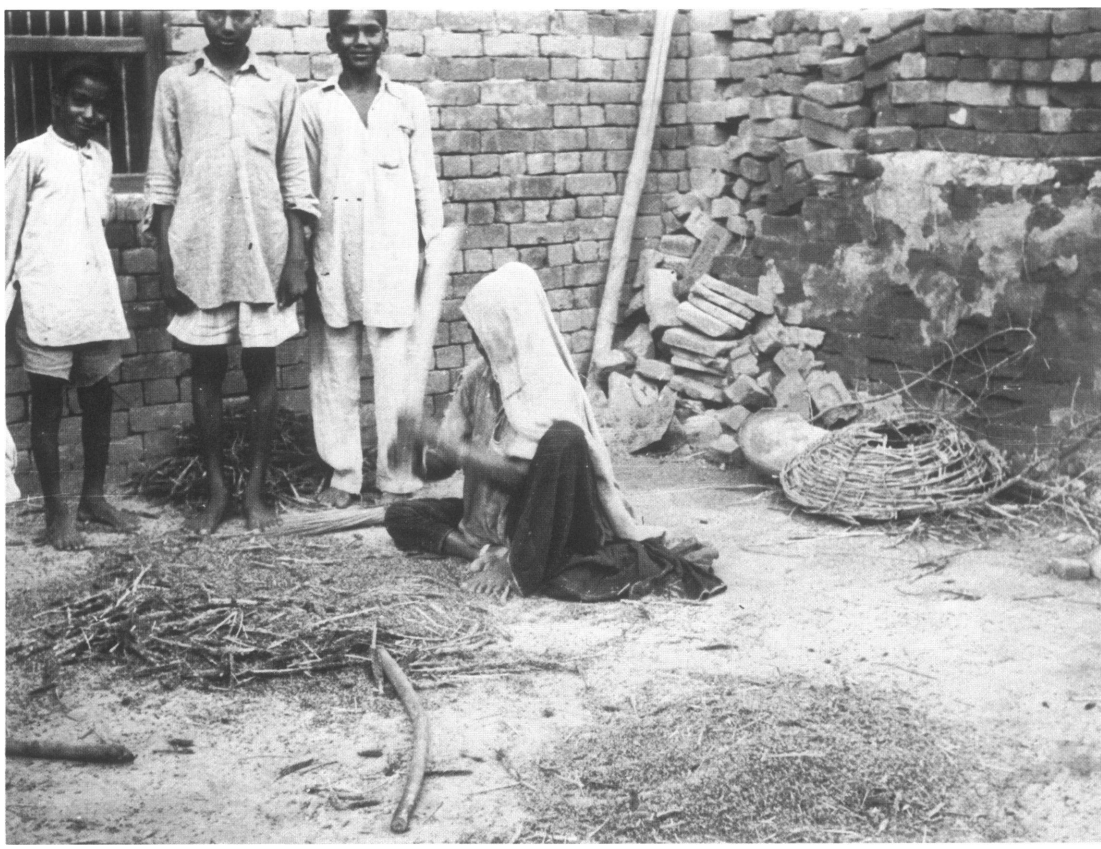

FIG. 14. Chamar Leatherworker woman threshes bajra with a stick.

arcane cultivation planted 10 bighas in bajra and that the village average of 43 percent of his crop failed to mature, we find that his profit would be only Rs. 18.85. Income was calculated as follows: 10 bighas of bajra would yield an average of 1.75 maunds of grain per bigha at Rs. 10 per maund (total, Rs. 175) and fodder worth Rs. 10 per bigha (total, Rs. 100). Subtracting 43 percent wastage, or Rs. 118.25, we arrive at Rs. 156.75 as income. Plowing, land revenue, weeding and hoeing, harvesting, and seed costs amounted to Rs. 37.09 if we assume that only threshing, winnowing, and guarding the crop were done by family members and everything else, by hired labor. The expenses of bullock and bullock-cart maintenance, depreciation of agricultural equipment, and the annual fee to the Lohar Blacksmith were all the same as those calculated for sugarcane and amounted to a total of Rs. 100.81.[1] Narain and Narain (1932, p. 217) who calculated the return from growing bajra for five cultivators in the Rohtak District found that each of them lost money. Under such circumstances, we might ask why farmers persist in cultivating bajra. The gist of the answer is that the bulk of the expense, as in the budget detailed above, was part of the general cost of cultivation, such as necessary bullock maintenance, which would have to be borne in any case. If only the special expenses related to the cultivation of bajra, such as seed and harvesting costs, are taken into account, our farmer made a profit of Rs. 119.66. This figure would be raised if some of the operations for which laborers were hired were carried out by family members. Moreover, a farmer might hope that, in his own case, wastage would be less than the village average of 43 percent, a situation that would further increase his profits. Under then-current conditions, bajra fitted well into the agricultural year.

[1]These costs were the same in both cases even though 10 bighas were sown in bajra and only 5 in sugarcane. The farmer cultivated 29 bighas and, therefore, in the case of sugarcane, we apportioned 5/29ths of bullock and equipment maintenance and depreciation to that crop. The same proportion was used for bajra because it occupied a field only one of the two annual cropping seasons; sugarcane, on the other hand, was in a field for the entire year. Thus, 10 bighas of bajra would be equivalent to 5 bighas of sugarcane in terms of area occupied per year.

Rice

Rice, a relatively minor crop, was sown only on 83.75 irrigated bighas and 15.5 *barani* bighas, a total of 99.25 bighas. All the *barani* rice failed to mature. According to our informants, rice had been grown in Shanti Nagar some 35 years previously; then, because of a decrease in annual rainfall, its cultivation had been abandoned for a number of years. The increase in rainfall that began some five years prior to our residence led the farmers to grow it again. When we saw the considerable quantity of water in the fields during the kharif season of 1958 and heard the farmers discussing the situation, we asked them why they did not take greater advantage of the water to grow more rice. They explained that rice was harvested late in the season. Therefore, only peas or fenugreek (*methi*), a fodder crop (the seeds were used as a spice), could be grown in the succeeding rabi season if a field was not left fallow. They added that no one needed a great deal of peas or fenugreek. Rice in this regard resembled cotton; because both crops ripened late, their cultivation generally did not permit the planting of either wheat or gram, the major rabi crops, in the subsequent season. Farmers often grew wheat in the rabi season preceding rice.

Rice seed was planted in late May and the first half of June in nurseries situated close to an assured source of water, usually a well; the seedlings were transplanted to fields during the middle of July after the arrival of the monsoon (figs. 15, 16). Rice was harvested during the latter third of October and very early November. It was important to time its harvesting rather precisely; if the farmers delayed too long, the grain would begin to drop from the plants and some of it would be lost. Because of both the transplanting and considerable weeding and hoeing, rice required a great deal of labor. It took four laborer-days per bigha to transplant rice from the nursery to the fields. The periodic hoeing and weeding of a bigha of rice required 12 laborer-days. Each field was plowed two or three times. Seed requirements were 1.5 to 2

FIG. 15. Watering a bed of rice seedlings. The water comes from a well at right.

seers per bigha. Two or three cartloads of manure per bigha were used as fertilizer. The rate for irrigation water was Rs. 2.03. Harvesting expenses were the traditional 5 percent of the harvest if the work was done by hired laborers. Threshing was the customary task of family members, generally women. Family members, often elderly men or boys, usually guarded the crop. Once we met a boy about eight years old who planned to stay overnight in the fields to guard some of his family's rice that had been cut and left there. He told us that he was not afraid of anything or anyone.

The average yield per bigha was 8 maunds of paddy (unhusked rice) and some grass that was usable as fodder. Although the stalks of the rice plant did not provide good fodder, they were nevertheless sometimes used for this purpose. Usually, the rice stalks were dried and used as fuel or placed for protective purposes under stored sheaves of bajra and jowar. The average price of paddy was Rs. 10 per maund; the grass was worth Re. 1 per bigha. The rice stems were cut close to the ground, taken out of the water, and laid on cots set up near the harvesters. Most of the workers we observed harvesting rice were women. After harvesting, the plants were taken to the threshing area to dry. To thresh rice, a large heavy cloth was spread on the ground and a large basket, bottom-up, was placed in its center. Workers, usually women, then grasped a number of stalks, swung them over their heads, and struck them forcefully down against the basket. The impact caused the rice to loosen and to fall on the cloth (fig. 17). The rice was then winnowed. One farmer used a different system. He explained that because he possessed no large cloth, he dug a shallow trench in the ground and built a sort of low rounded parapet of hardened mud in front of it. Standing in front of the parapet, he struck the stalks of rice against it, and the grain dropped into the trench (fig. 18).

Rice was produced by dehusking paddy, a process that could be accomplished in a mill at the cost of 1 rupee per maund of paddy or carried out at home. Paddy was dehusked in a stone mortar. A woman placed a small quantity in a mortar and pounded it with a heavy wooden pestle to remove the husks. The rice was then winnowed. Eight maunds of paddy

yielded 5 maunds of rice. Two maunds of husk were wasted and a maund of moisture was lost when the paddy was dried in the sun. Rice sold for Rs. 20 per maund.

Maize

A small quantity of maize was grown. The village crop chart recorded 3.5 irrigated bighas and 15.75 *barani* bighas planted in maize, a total of 19.25 bighas, none of which ended in waste. An early ripening variety and a late variety of maize were grown. Because the early variety was harvested in the second half of August, it apparently had an advantage over jowar and bajra as a kharif crop. Because the jowar and bajra harvest continued until the end of October, there was no time to prepare a field for wheat in the next rabi season; consequently, gram usually was grown. However, after a crop of the early variety of maize, it was feasible to fertilize and to plow a field properly for wheat. Nonetheless, the area sown in maize was insignificant compared with that for bajra and jowar. No doubt it had disadvantages as well that would explain its relative neglect; however, we did not question farmers on this point. One farmer who cultivated only a few bighas of land and therefore was obliged to obtain maximum production from them planted a crop of the late maturing maize after he had harvested a crop of the early variety and, following this second crop, he planted tomatoes in the rabi season.

The average yield of maize was 5 to 6 maunds and 50 sheaves of fodder per bigha. The average price per maund for kernels off the ear was Rs. 10; the fodder was not considered salable. A bigha required 2.5 to 3 seers of seed. A field was plowed twice. Manure was

FIG. 16. Woman drawing water for rice seedlings. A Persian wheel, at that time in disrepair, has been installed at the well. The Persian wheel is a device for drawing water from a well for irrigation. Bullocks, walking in a circle, turn the cogwheel, right. The motion is transmitted through an underground rod to the wheel, left, at the well. A continuous chain of containers activated by this wheel raises water from deep in the well to the surface where it is distributed to the fields through channels.

FIG. 17. Women threshing rice over baskets. A large cloth under the baskets catches grains of rice.

used as fertilizer, some four cartloads per bigha. The rate for irrigation water was 12.5 annas. Weeding and hoeing expenses amounted to one to two days of labor per bigha; harvesting expenses were the customary 5 percent of the harvest. Other operations, such as removing the kernels from the cob, were usually carried out by family members. Accustomed to tender, succulent American hybrid corn, we found the Indian variety to be rather tough and tasteless; the villagers, however, apparently regarded maize as something of a delicacy. One day, the Baniya Merchant brought a supply of maize from Delhi to the village, parched the ears, and began to sell them in his shop. There was a brief flurry of excitement as villagers, especially children, ran to the Baniya's shop to buy an ear. When the poorer villagers ran out of wheat, they made bread from a flour of maize and gram. Bread made from maize was considered to be inferior to wheat bread.

Gowar and *Lobiya*

Gowar (field vetch), a leguminous plant used as fodder, was grown in fields mixed with jowar or bajra or unmixed in its own fields. The village crop chart recorded 1.25 irrigated bighas and 37 *barani* bighas sown in *gowar*, none of which ended in waste. *Gowar* increased the nitrogen content of the soil. *Gowar*, sown from mid-June to mid-July, matured toward the end of November. It was possible to feed it to cattle gradually from the end of October to the end of November, but the fields were not entirely cleared until the end of November.

For the following three months of the rabi season, the fields were left fallow and prepared for the planting of sugarcane in March. Sometimes gram was sown after *gowar*. Because *gowar* was harvested late in the season, wheat could not follow it in a field. Wheat, gram, or *gochni* were usually grown in the rabi season before *gowar*. The average yield of *gowar* was 150 to 200 maunds of fodder per bigha worth Rs. 50 to Rs. 60 per bigha. Seed requirements were 5 to 6 seers per bigha. A field was plowed either once or twice. Fertilizer was not used, neither was a field hoed nor weeded. The cost of irrigation water was 12.5 annas. If the crop was sold, the buyer harvested it; consequently, the cultivator did not incur harvesting expenses.

A fodder crop like *gowar*, *lobiya* (a kind of bean) was insignificant in terms of the area sown, only one-half of an irrigated bigha, according to the village crop chart. An early kharif crop, it was sown in June and harvested in August; therefore, it could be followed by wheat. The average yield, 100 to 125 maunds of fodder per bigha was worth Rs. 40 to Rs. 50 per bigha. Four seers of seed, worth 1 rupee, were required per bigha. Plowing, fertilizer, irrigation water, hoeing and weeding, and harvest expenses were the same as those for *gowar*.

Tomatoes and Vegetables

The cultivation of vegetables, a recent agricultural innovation in Shanti Nagar, dated from the political partition of India and Pakistan in 1947. An informant explained that some of the refugees from Pakistan who came to Delhi became involved in trade in vegetables; it was this activity and the growing demand for vegetables in Delhi that served to interest the farm-

FIG. 18. Jhinvar Waterman threshing rice over a low mound of earth.

ers of Shanti Nagar in their cultivation. The establishment of bus transportation between Delhi and Shanti Nagar also served as a stimulus to the cultivation of vegetables; farmers sometimes found it convenient to transport their vegetables to market in baskets carried on the roof of the bus. Although some vegetables were consumed in the village, they were grown principally as a cash crop. Farmers described the large profits that, under favorable conditions, it was possible to earn by raising vegetables, exceeding even those realized from sugarcane cultivation. However, growing vegetables was risky. Crops could be spoiled by too much rain. They also generally required a small quantity of water weekly during the growing season. The supply of irrigation water was unpredictable; sometimes the canal was dry for periods lasting two months, a fatal situation for vegetables. Moreover, prices varied substantially, depending upon when the vegetables were taken to market. It was possible to sell an early or a late crop at high prices, but one that was taken to market at the height of the season brought in substantially less. According to informants, the growing of vegetables appealed to farmers who did not hesitate to gamble a bit. Sugarcane was a much more dependable crop than vegetables. It rarely spoiled; even a spoiled crop might result in a small yield. In general, vegetables required considerable attention, a fact that augmented the value of fields close to the village habitation site where it was possible to grow them most conveniently. Sometimes vegetable fields were enclosed by brush fences to protect them from the depredations of animals and children. The marketing of vegetables was relatively time-consuming and costly. It was necessary for a farmer to arrange to transport basket loads of each crop to the market in Delhi every few days as it matured; at the urban market, the farmer paid not only a broker's commission but also a market tax.

Some vegetables could be grown either during the kharif season or the rabi season. The three vegetables listed in the village crop chart of 1958 as those cultivated during the kharif season—tomatoes, okra, and eggplant—were also grown during the rabi season. For example, it was feasible to plant tomatoes in July following a rabi crop and harvest them in December-January. Some other vegetable could be planted in February and harvested in June-July. Jowar could then be planted, or the field could be left fallow and prepared for wheat. Alternatively, tomatoes could be planted in December-January, after a kharif crop, and harvested in June-July. Then jowar could follow in the kharif season, or the field left fallow and prepared for wheat.

Of the three vegetables listed as grown during the kharif season, tomatoes were by far the most important in terms of area sown. They were cultivated on 21 bighas of irrigated land; of these, 2.75 bighas (13.1%) did not mature. By contrast, only 2.7 percent of sugarcane failed to mature. Okra was grown on two irrigated bighas; eggplant, on only 1.75. Tomatoes were started in nurseries and transplanted to fields in mid-July after the beginning of the monsoon. Each field was plowed five times, rolled with a stone roller, and furrowed. The plants were set in a hole punched in the ground with a short stick. The blunt end of the stick was used to tamp the soil around the plant. During a rain when the ground was soft, a plant was simply pushed into the ground with the fingers. Okra and eggplant were sometimes grown on the ridges separating the rows of tomato plants. About one-twelfth of a seer of seed and a cartload of manure for fertilizer were used per bigha of tomatoes. Irrigation water cost Rs. 1.59 per bigha. Weeding and hoeing costs were 12 to 14 days per bigha. Family members customarily guarded and harvested the crop.

The average yield of 50 to 60 maunds per bigha at an average price of Rs. 10 to 12 per maund would make tomatoes a most lucrative crop if the risk and expense that attended their cultivation were in proportion to the expected return. However, farmers considered tomatoes to be vulnerable to unfavorable weather. The heavy rains during the 1958 kharif season ruined some fields of tomatoes. The proportion of spoiled tomatoes was 4.8 times that of sugarcane, a comparable crop in terms of the quality of the land on which it was grown and the cost of cultivation. The area devoted to the cultivation of tomatoes was also restricted be-

cause the necessary workers were not always available. We once heard a farmer allude to the good fortune of another farmer, based on the fact that some of his fields were situated so close to the village habitation site that it was possible for him to grow potentially lucrative crops such as vegetables that required fairly constant attention. The second farmer protested that he did not realize the full potential of his land because of a shortage of labor.

Some farmers avoided part of the labor problems involved in cultivating tomatoes, the time used to market them, and the uncertainties of price by selling the crop while still in the field, in which case the purchaser assumed all subsequent responsibility. On one occasion we were at the house of a landless Chamar Leatherworker shortly after he had purchased a field of tomatoes from a Jat Farmer for Rs. 50. Aided by a Gola Potter man, he was sorting a large pile of tomatoes into heaps of larger and smaller tomatoes. He then filled a number of crudely woven withe baskets, with the smaller tomatoes at the bottom and the larger on top. Damaged tomatoes were set aside, presumably for household use. Such a heaping basket load weighed 25 to 30 seers for which the Leatherworker hoped to receive Rs. 2 to Rs. 2.50. He said that it cost 8 annas to transport each basket load to Delhi, 1 anna to pay the market tax, and 2 annas for the broker's commission. The Gola Potter explained his participation in the work when he said that he would transport the tomatoes to Delhi.

Four months later, at the invitation of a broker who had several clients in Shanti Nagar, we visited the Delhi vegetable market. He told us that his commission varied: he received 2 pice per basketful if the seller brought the produce to market himself; 3 pice, if he sent it to him unaccompanied; 1 anna if he wanted an advance on the sale. While we stood there, a number of village women brought some produce which they sold themselves; the broker took an anna commission. According to his own statement to us, he should have taken only half that amount (2 pice). He also collected a 1-anna market tax from the buyer. A man from Shanti Nagar was also at the market that day to sell some six or eight baskets of tomatoes. He received only 9 annas per basketful; the broker complained about their poor quality and protested that he did not like to handle inferior produce.

We have scant information with regard to okra or eggplant, as only a small amount of each was grown. Okra was used in gur production as a clarifying agent. One farmer, who had planted 2 bighas of okra, his first experience with the crop, told us that he was receiving 2 to 3 rupees for 5 seers. As the crop ripened, he cycled to Delhi every other day to sell it, leaving the village at about three o'clock in the morning. At the end of the kharif season, he told us that he had received only Rs. 70 for his okra and that he had lost money on it. Undiscouraged by this setback, he intended to continue to grow a variety of vegetables and planned to plant tomatoes, turnips, and peas during the rabi season. He also said that he had once tried to raise squash and potatoes but that neither venture had succeeded. He had managed to obtain only 8 maunds of potatoes per bigha; under average conditions, one would expect about 20 maunds. His squash had been damaged by heavy rains and, in addition, vegetable prices had been low that year. Our impression, with regard to the growing of vegetables, was that a larger area was being devoted to them and a greater variety was being grown than was at that time reported in the village crop chart. We also observed that the farmers of Shanti Nagar were experimenting with various strategies of incorporating their cultivation into the agricultural year in order to render their risks more tolerable. For example, we once saw a sugarcane field with melons growing in it. Had the melons failed to mature, the field presumably would, nonetheless, have produced a crop of sugarcane.

Fruit and Flowers

The village crop chart recorded a total of 39.75 irrigated bighas devoted to gardens of flowers and a variety of fruit, such as guavas, mangoes, oranges, bananas, and *ber*. Flowers were grown only by the Mali Gardeners. They leased two gardens, one in Shanti Nagar; the other, a rose garden, at a school in a neighbor-

ing village. They grew both flowers and fruit. They sold the fruit in the village and the flowers at the flower market in Delhi where they went every few days as the flowers blossomed and were picked. Both families of Jhinvar Watermen leased fruit gardens, a total of 5 bighas, from Jat Farmers. Villagers very much enjoyed a little fruit in their diet. The farmers with fruit gardens possessed large landholdings. The ownership of gardens lent prestige, a motive which may have been of some importance to such landowners. However, the cultivation of both fruit and flowers were specialized activities. The great majority of farmers did not participate in this activity and had little intention of doing so.

RABI CROPS

Wheat

The most extensively grown of all crops, both rabi and kharif, was wheat. In the 1958 rabi season, 822.5 irrigated bighas and 518.5 *barani* bighas were sown in wheat, a total of 1341 bighas. Six irrigated bighas and 98.25 *barani* bighas failed to mature. The estimated value of the wheat crop amounted to some 68 percent of the value of the rabi harvest. Some wheat, the basic grain in the diet of Shanti Nagar, was consumed at almost every meal. Its successful cultivation required considerable care. In the crop rotation, wheat was almost invariably preceded by fallow, because it was necessary to plow a field a minimum of eight times before sowing wheat, and there would be insufficient time after harvesting any of the important kharif crops. An industrious farmer might plow a field as many as 20 times. After a field had been plowed, it was leveled with either a plank of wood or a stone roller drawn by bullocks to crush the clods of earth resulting from the plowing. Farmers began plowing in preparation for planting wheat after mid-August when the monsoon rains had diminished and the soil had become firm enough to be plowed (figs. 19-22). Plowing, continued until the end of October, was followed by sowing which lasted into early November. During these months, farmers, their families, and their bullocks worked harder than in any other period of the year. Not only were fields plowed for wheat and other rabi crops, but rice and tomatoes were weeded, sugarcane plants were tied together, and kharif crops were harvested. One farmer told us that at this season people wished that they and their bullocks were made of steel so that they could work constantly. By the middle of November, these activities were completed; sprouts of the new wheat crop made their appearance in the fields. At this time, farmers began to prepare for the more leisurely sugarcane crushing season which would last until the rabi harvest.

Wheat was sown through a tube attached to the light plow used for sowing (figs. 23, 24). Seed requirements were 10 to 12 seers per bigha. The rate for irrigation water was Rs. 1.31. Four varieties of wheat were grown in Shanti Nagar, all new varieties introduced by the government. In 1958, the most frequently grown wheat was known as C281. It had replaced the earlier indigenous variety chiefly because it fetched a higher sale price and also because it lacked two disadvantages of the earlier variety. Men acquired blisters during the threshing of the indigenous wheat; it also irritated the hooves of bullocks as they walked over it to thresh it. On the other hand, the indigenous wheat was said to have a better flavor and to cause less depletion of the soil. In actual practice, considerations of price determined the choice of variety to be grown. In our experience, we found that yield and price were invariably the dominant considerations in choosing among varieties of any crop. Sugarcane provided another example: just prior to 1958, farmers had begun to grow a new variety. The preceding variety was said to have a better flavor and to be preferable for the health, but the farmers told us that it was impossible to ignore the greater yield of the new variety. It did not appear then very likely that wheat C281 would continue to be the dominant kind in Shanti Nagar for any great length of time. The farmers were becoming interested in C591, which was reputed to produce superior fodder (the animals liked it better than other varieties) and to be more golden in color than

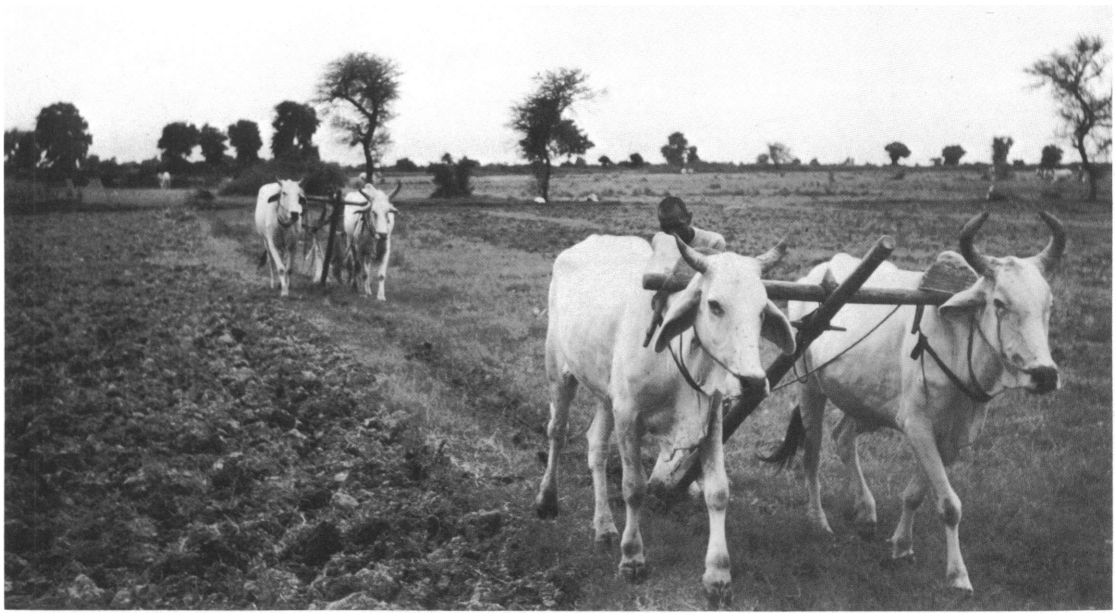

FIG. 19. Plowing with bullocks, front view.

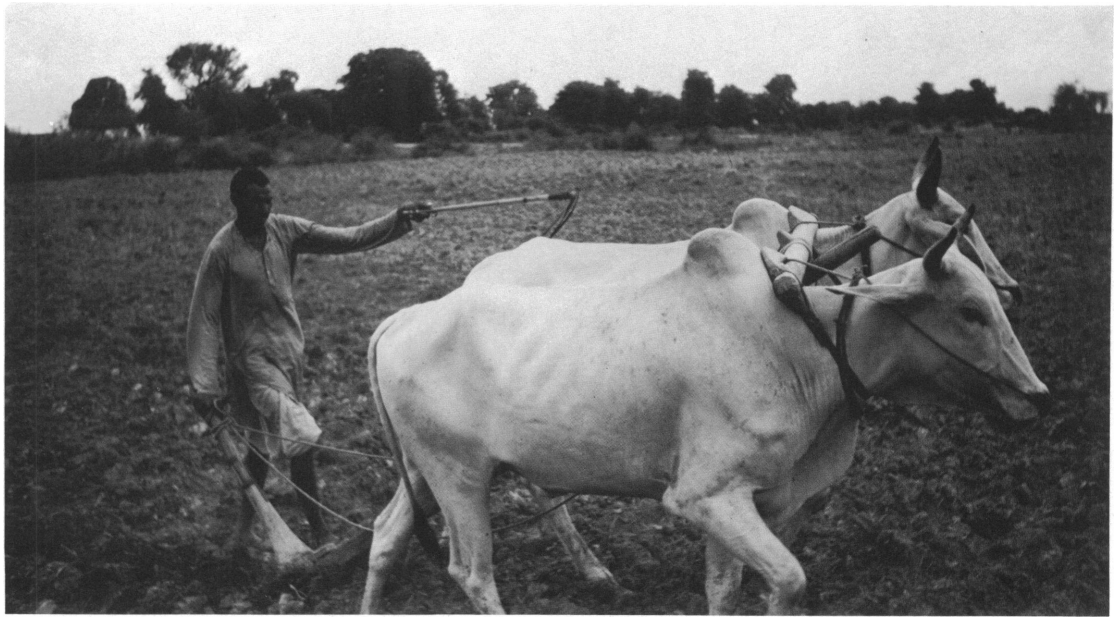

FIG. 20. Plowing with bullocks, side view. Bullocks are directed with a whip and a simple system of verbal signals.

FIG. 21. Plowing with bullocks, rear view.

C281, so that it sold at a higher price. A government official, the Village Level Worker (Freed and Freed, 1976a, pp. 189-192), told us that the Department of Community Development was recommending that year wheat NP 718. A few days after reporting this, he returned to Shanti Nagar to arrange for a demonstration plot of wheat 874, another new variety. Moreover, the high-yielding varieties were just over the horizon. On the basis of the money that it was possible to earn by cultivating the high-yielding varieties, they would in all probability eventually replace all the other varieties.

Wheat was usually not fertilized. However, when a crop of the early-maturing variety of maize was sown in a field in the preceding kharif season, the field was fertilized with manure to prepare it for sowing wheat. Although wheat was usually not fertilized with manure, one method of fertilizing fields benefited not only wheat but also other crops: this method consisted of the transportation of soil from one

FIG. 22. Jat Farmer plowing with tractor, the only one in the village.

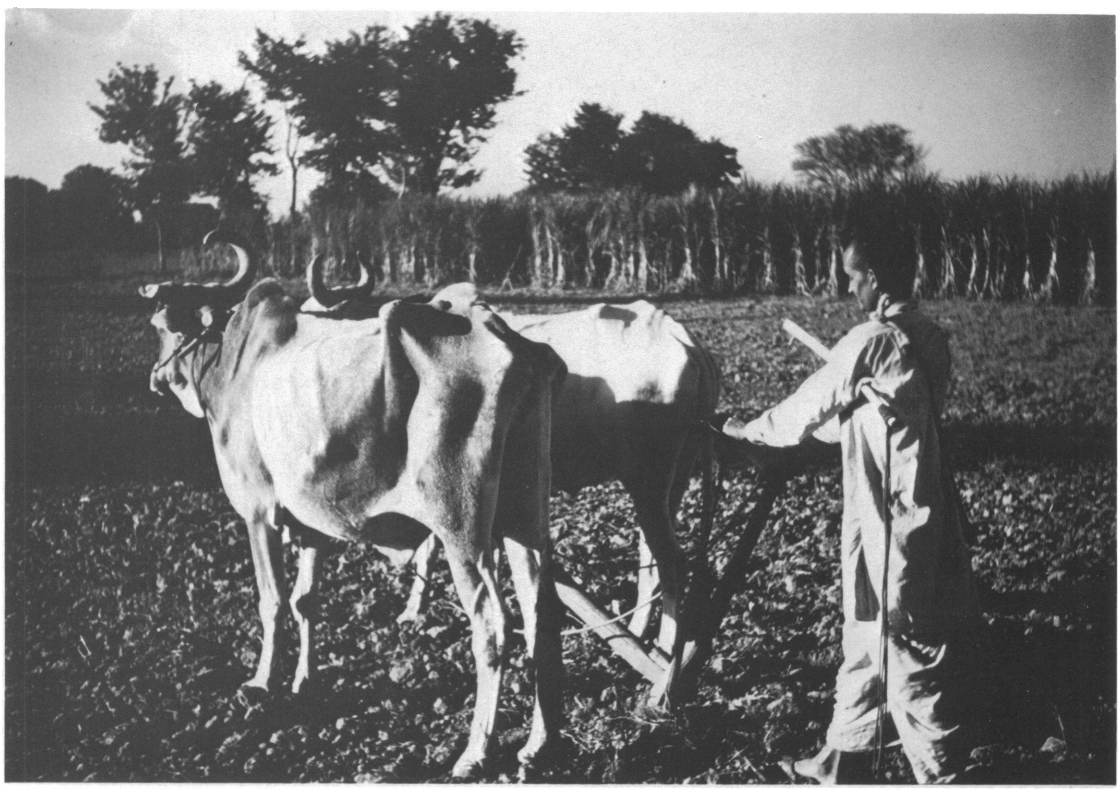

FIG. 23. Sowing grain through a metal tube. Sugarcane is in the background.

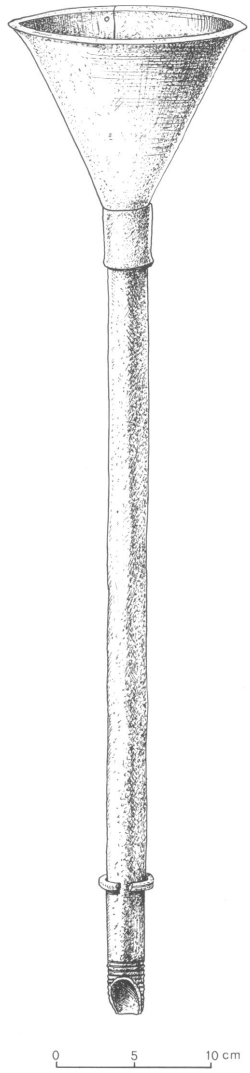

FIG. 24. Metal tube used to sow grain (*orna*), consisting of a funnel mounted on a pipe. AMNH 70.2-6450.

field to another. Farmers believed this to be the most effective of all their known methods of fertilization. The extent to which farmers followed this procedure is attested to by a record of expenditures kept by one farmer who cultivated 29 bighas, 12 of them planted in wheat. He had paid Gola Potters, one of whose traditional caste occupations was to transport loads on the backs of donkeys and mules, Rs. 159 to move soil from one field to another. All except Rs. 20 of this expense was incurred in August; therefore it was clear that the work was done expressly to benefit the growing of wheat since his only fallow fields at that time were being prepared for it.

Wheat was neither hoed nor weeded. However, it was imperative to guard it during most of the growing season in order to protect it from animals, birds, and people. Five Chuhra Sweepers served as guards. The landowners selected one man to be responsible; he, in turn, chose his associates. At the harvest, these watchmen received one sheaf of grain per bigha in addition to one-quarter seer of wheat per bigha at the beginning of the season, all of which they divided equally among themselves. We observed the presence of the guards in the fields on December 14; they were, in all probability, on duty prior to that date. At the end of the season, we visited one of the guards. He told us that in payment for his six months of guard duty, he had received from 6 to 7 maunds of wheat at the harvest, a return which would suggest that the sheaves given to the guards contained an average of 1 seer of grain. Once a farmer called our attention to a pile of wheat sheaves left in the fields overnight before transportation to the threshing floor. He showed us that the sheaves were piled so that the surface of the stack was smooth. If a sheaf were stolen, the farmer would notice the resultant irregularity the moment he saw his stack, provided that the thief did not restack the sheaves in a pile with a smooth surface.

The wheat harvest began in mid-March; harvesting, threshing, and winnowing were generally completed by the first week of May. The yield of wheat averaged from 3 to 4 maunds of grain per bigha (at Rs. 16 per maund) and 4.5 to 8 maunds of chaff (at Rs. 3 per maund). Harvesting expenses amounted to the customary 5 percent; each worker received one sheaf out of each 20 that he cut. A wheat field was sown in such a manner that several workers could divide it efficiently for the purpose of harvesting the wheat. At regular intervals in the field, a row of mustard (*sarson*) was sown. The area between two rows of mustard was defined as

FIG. 25. Farmer using bullocks to move earth in one of his fields.

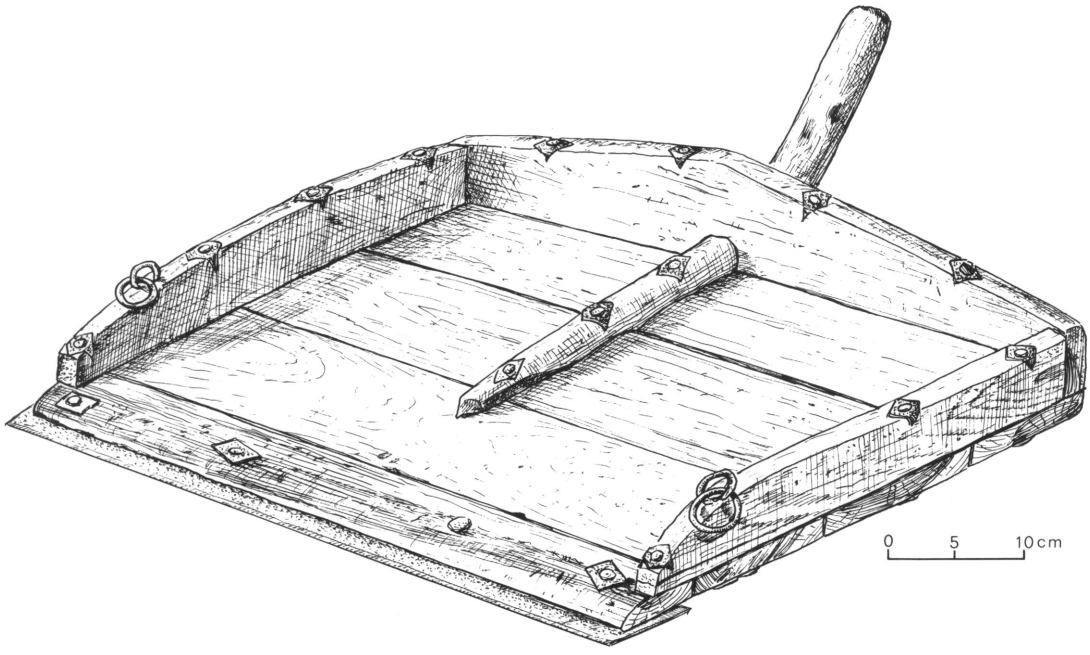

FIG. 26. Implement (*gorhi*) of thick wood, iron fittings, and metal edge drawn by bullocks to move earth. AMNH 70.2-8173.

the territory of each harvester. It followed that there was no confusion about who had cut which area of wheat. Harvesters, working in a bending or squatting position, grasped several stalks of wheat in one hand and cut them close to the ground with a toothed sickle held in the other hand (figs. 27, 28). The workers laid the wheat behind them and continued to cut, moving back and forth across their working areas as marked by the rows of mustard. Periodically, they stopped to tie the cut wheat into sheaves.

At the end of the day, the sheaves were arranged in rows of 20, and the farmer paid his workers, an event often marked by considerable contention. The workers did not make all their sheaves of equal size. When they were paid, they tried to take the larger sheaves. As one farmer somewhat sarcastically explained, the workers tied small sheaves for purposes of counting and large ones for purposes of payment. The farmers were alert to guard against this practice. We watched one farmer as he paid his laborers. A worker, according to customary practice, took a large sheaf from one row of 20 and a smaller sheaf from the next. If a row were a few sheaves short of 20, a worker had to be content with a smaller sheaf. The farmer we were observing was especially alert; occasionally, he snatched a large sheaf from a worker and forced him to accept a smaller one. On the other hand, some farmers were generous. We watched one farmer; after the sheaves of wheat had been loaded onto his bullock cart for transportation to his threshing floor, he tossed a couple of additional sheaves to each of his workers.

A worker was capable of cutting an average of approximately 200 sheaves daily, according to farmers, who estimated that a sheaf yielded from one-half to 1 seer of wheat and approximately twice that quantity of chaff. Based on the averages of these figures (0.75 seers of wheat and 1.5 seers of chaff) and at the then-current prices of Rs. 16 per maund for wheat and Rs. 3 for wheat chaff, it was possible for a harvester to earn about Rs. 4.13 per day, a favorable wage when compared with the rate of Rs. 1.50 for daily wage labor. Information provided by some landless laborers resulted in a somewhat lower estimate of possible earnings during the harvest. From a Chamar Leatherworker family, we learned that four adults of the family had each worked seven days during the harvest and in payment they had received 200 sheaves. Thus, each worker had cut an average of 143 sheaves daily and had earned

FIG. 27. Women harvesting wheat. Sheaves lie on the ground behind them.

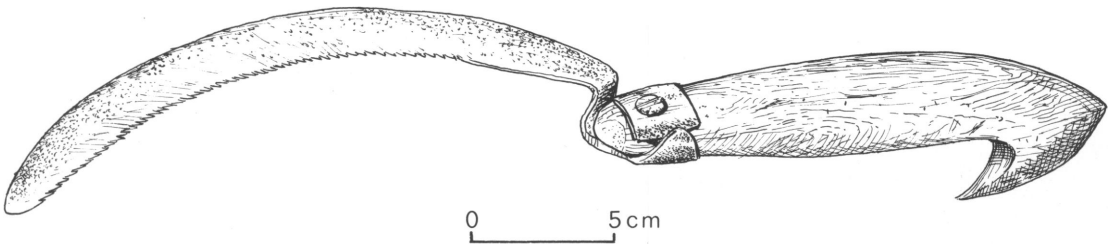

FIG. 28. Sickle (*daranti*) used to harvest grain. AMNH 70.2-6448.

about Rs. 2.95. This estimate approximates the maximum estimate that can be made on the basis of the data published by Narain and Narain (1932, p. 17) who reported that a laborer usually cut from 0.5 to 0.75 bighas of wheat per day, a return of a possible Rs. 1.93 to Rs. 2.89 calculated on the basis of the yields and prices current in Shanti Nagar. The lesser of these two figures nonetheless exceeds the rate for day labor in Shanti Nagar. Moreover, on the basis of a less conservative yield of one seer of grain per sheaf, instead of three-quarters of a seer, all the figures cited above would be augmented. Two landless workers provided us with figures indicating that a sheaf did actually yield one seer of wheat. Individuals such as these would not be inclined to overestimate the pay that they earned for their labors. In any case, it was possible for an experienced harvester to earn more than the then-current rate for daily wage labor; sometimes, considerably more.

The opportunity to participate in the rabi harvest was one of the advantages of village residence available to a landless person, even if he held an urban job. He could supplement his income by taking some of his leave during the harvest. It must be noted, however, that urban workers frequently became unaccustomed to work in the fields; consequently, they were unable to harvest as much wheat as would the more experienced workers. The wife of a Gola Potter reported that her husband had obtained only two or three sheaves daily during the few days that he worked in the harvest; she explained that he was out of practice because he had a salaried position.

After a field had been harvested and the sheaves transported to the threshing floors, a fair number of stalks and ears remained scattered about the field; these were all available for gleaning (fig. 29). The owner of a field had the right to glean it and would do so if he had insufficient wheat to see his family through the year. If he preferred not to glean the field himself, he could arrange to have someone do the work, and the two parties involved divided the wheat equally. Often, a farmer reserved this right to glean for his Sweeper. If the right was not assigned to the Sweeper, it was customary practice for any low-caste person to glean the field, keep half the wheat, and give half to the landlord. However, gleaners sometimes kept all the wheat for their own use. In such cases, we do not know whether the landowners agreed in advance to such an arrangement or whether they were unaware that someone had gleaned their fields. Some farmers may quite simply have had no interest in the wheat that could be gleaned in a harvested field. In any case, it was impossible for any farmer to keep his fields under constant surveillance. Landless people had traditional rights with regard to the use of fields; it was easy to infringe the line between what was permissible and what was not. For example, walking in the fields one day with a Jat Farmer, we saw some low-caste women in a field of gram gathering weeds for fodder, a permissible activity. However, the Farmer called our attention to the fact that the women were pulling up not only weeds but also a few gram plants. At about that moment, the women called to the Jat to ask him not to tell the owner of the field; they pointed out that they were not in one of the Jat's fields. Gleaning wheat fields was a moderately profitable ven-

FIG. 29. Gleaning.

ture. A Chamar Leatherworker told us that during one day of gleaning she had collected 3 seers of wheat, worth Rs. 1.20. A Gola Potter woman reported that she gathered from 2 to 5 seers each day and kept all the grain.

Farmers often engaged laborers to help to thresh and winnow their wheat. Usually such labor was hired on the basis of a seasonal contract that paid from 3 to 5 maunds of wheat for the season, depending on its duration. The typical contract paid 4 maunds of wheat for one month of labor. These workers received no chaff. Sometimes, daily labor was hired at a rate of Rs. 2 plus meals, according to a Sweeper, or at Rs. 1.50 and no meals, as reported by some Chamar Leatherworkers. Each family used its own threshing floor, usually located just outside the village habitation site on village common land. Sheaves of wheat, transported to the threshing floors in bullock carts (figs. 30, 31), were piled about 2 feet high in a circular arrangement. A yoke of bullocks, usually hitched to a drag made of tree branches and shrubs or to a stone roller, was driven around on the wheat until the grain had loosened from the ears and the stalks were broken into small pieces (figs. 32, 33). To winnow, a few seers of grain and chaff were placed on a winnowing tray by one laborer who passed it to another who stood on a stool or on the end of a cot. Taking advantage of a breeze, the worker on the stool allowed the mixture of grain and chaff to fall slowly to the ground, as the wind blew the lighter chaff to one side. Sometimes, a third worker squatted on the ground and, using a small broom, swept the residual chaff off the pile of grain as the wheat accumulated (fig. 34). Winnowing trays were made either of basketry or of part of a kerosene tin cut in the same shape as a winnowing basket (fig. 35). Villagers estimated that it required from eight to 12 days to thresh 100 maunds of wheat. The time needed to winnow this quantity depended upon the number of workers employed and also upon the strength of the wind and how long it continued to blow; it was possible to complete the work in one day or it could require as many as four days. The farmer who owned the only tractor in the village used it to thresh wheat. The sheaves were

arranged in the same way as for threshing by bullocks. Disk harrows were hitched to the tractor and behind them was attached a traditional drag of branches. Then the tractor was driven around over the wheat. The work accomplished with the tractor in approximately 28 hours was generally equivalent to that done by bullocks in about 16 days.

The threshing and winnowing were virtually completed by May 5. Only a few landless Chamar Leatherworkers were still threshing and winnowing the grain that they had received in payment for their work in the harvest. According to the farmers the Leatherworkers were using the threshing floors and bullocks belonging to the farmers, free of charge. The Chuhra Sweepers who guarded the crop also used the threshing floor and bullocks belonging to a farmer. The use of the threshing floor was free, but, according to the Sweepers, they paid 10 maunds of fodder to use the bullocks. When we visited their threshing floor they complained that one farmer, notorious for failing to pay his workers, had cheated them by paying for fewer bighas than he had cultivated.

Farmers stored sufficient grain and chaff for their own use throughout the year; they sold the remainder in the village or at the market in Narela. Well-to-do villagers stored their wheat in their houses in large, very heavy jute bags which cost about Rs. 50; poorer people constructed bins of clay mixed with straw which had small wooden doors. These bins had a capacity of about 60 cubic feet. A carpenter was paid approximately Rs. 5 for the wooden parts. A householder constructed the rest of the bin himself. The value of his labor and of the straw, according to a Chamar Leatherworker, was about Rs. 25. Chaff was often stored outdoors in large stacks each provided with a protective layer of twigs and straw. Farmers who anticipated building such a stack kept a supply of unbroken wheat straw which sufficed for the outer covering. First, a circular trench was dug; twigs were placed vertically in it to reach approximately 3 feet aboveground. About a foot aboveground, a thick bundle of twigs was fastened horizontally to the vertical twigs around the entire circle. The horizontal twig wrapping, tied with a rope to the vertical twigs, served to reinforce them. The interior of the circular enclosed area was filled with chaff. Then, as the

FIG. 30. Farmer with a pitchfork unloads sheaves of wheat from wagon.

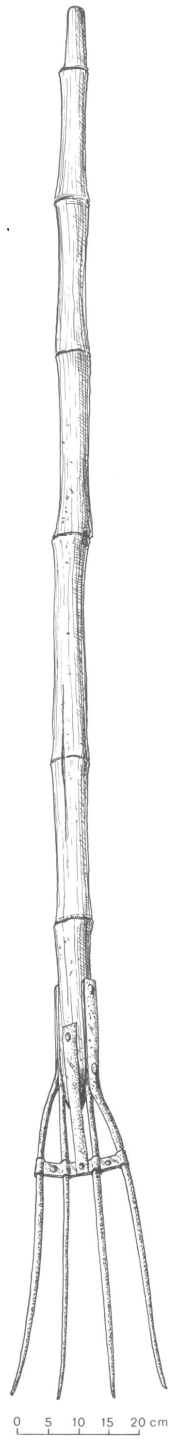

FIG. 31. Pitchfork (*jeli*). AMNH 70.2-8180.

quantity of chaff was increased, an outer covering was built upward consisting of rows of straw laid vertically to the ground, each held in place with ropes. A heavy rope was wrapped around each row of straw and a slender rope was passed diagonally back and forth between adjacent coils of the heavy rope. Each successively higher row of straw was leaned inward so that the stack assumed a domelike shape. The apex was often surmounted by a pointed straw top (figs. 36, 37). One such fodder stack was surrounded by barbed wire to keep animals out. Some farmers liked to speculate in fodder by buying and selling such stacks.

Most villagers preferred to sell and buy wheat in the village rather than at the market in Narela. Such transactions were based on the current price at the urban market. By buying and selling in the village, villagers saved not only the cartage costs of 6 annas per maund but also the broker's commission. However, the poorer villagers complained about one aspect of wheat sales carried out in the village: when wheat was bought on credit, a seller sometimes charged some 2 rupees above the market price. Villagers also reported that when they sold wheat in the Narela market, a maund was measured to weigh slightly in excess of 40 seers, but when they bought wheat, a maund weighed slightly less. Moreover, they said that dealers habitually mixed sand with the grain to increase its weight. Farmers also added sand to grain, saying, in explanation, that this normally happened because of the earthen threshing floor, but one man told us that wheat stored better if a little sand was mixed in it. We visited the Narela wheat market at the end of April when the wheat crop had been almost entirely harvested and threshed. Wheat, selling then for Rs. 14.75, was piled on the ground. An agent was selling it for farmers who watched intently. A number of businessmen were bidding. The bidding, however, was not fiercely competitive, and the participants interrupted their activities for a few moments to talk to us. The market in Narela provided a useful sales outlet when a farmer needed cash on relatively short notice and he found it impossible to arrange a favorable sale in the village.

Wheat was a profitable crop. We may take

FIG. 32. Threshing wheat with a drag of brush weighted with sheaves of wheat.

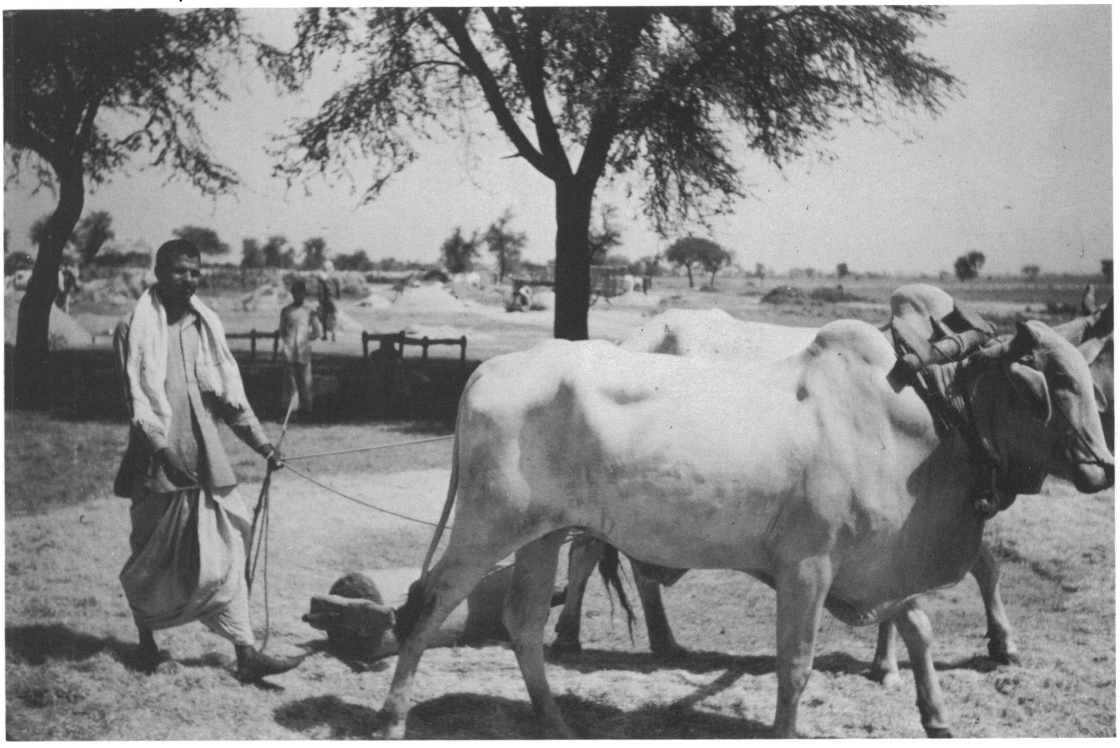

FIG. 33. Jat Farmer threshing gram with stone roller.

FIG. 34. Women winnowing wheat. The three-legged stool on which one woman is standing is customarily used for winnowing. She makes use of a winnowing tray cut from a kerosene can. The woman standing prepares to hand her a basketry winnowing tray filled with wheat and chaff. The woman sitting sweeps bits of chaff off the grain as it accumulates on the ground.

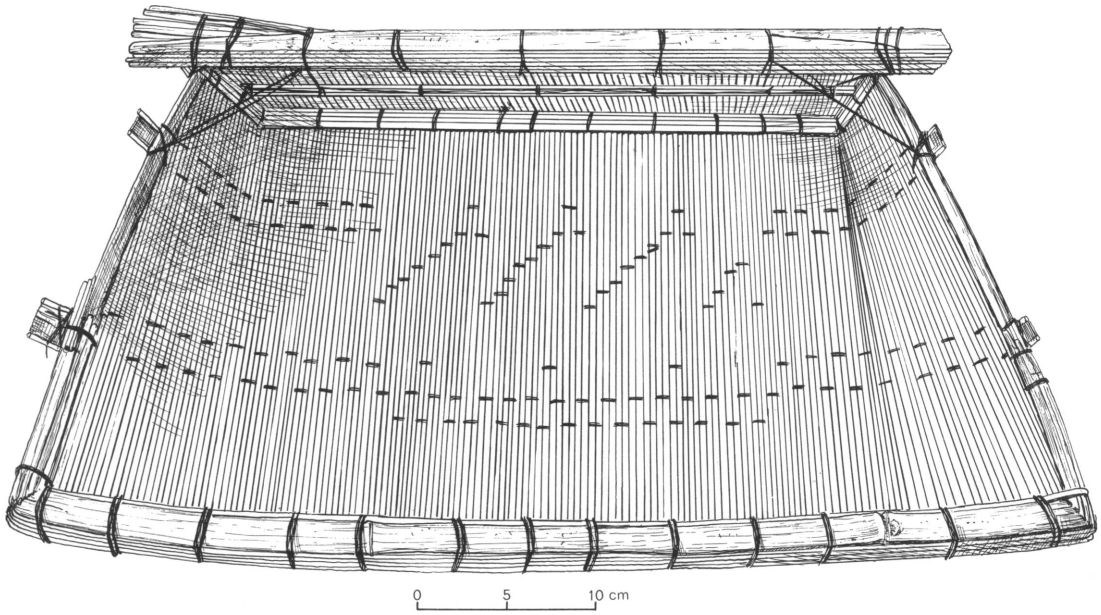

FIG. 35. Reed winnowing basket (*chhaj*). AMNH 70.2-8156.

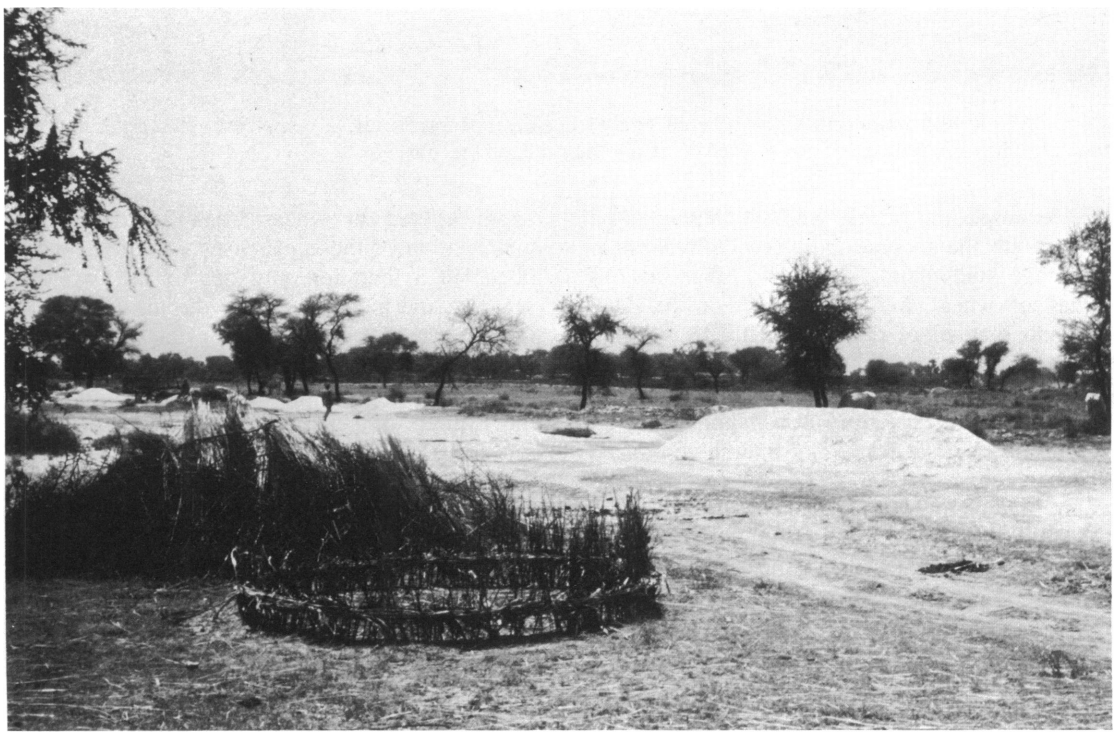

FIG. 36. Foundation of branches for the construction of a pile of chaff for storage. At right, a large pile of chaff ready for storage, similar piles in the background.

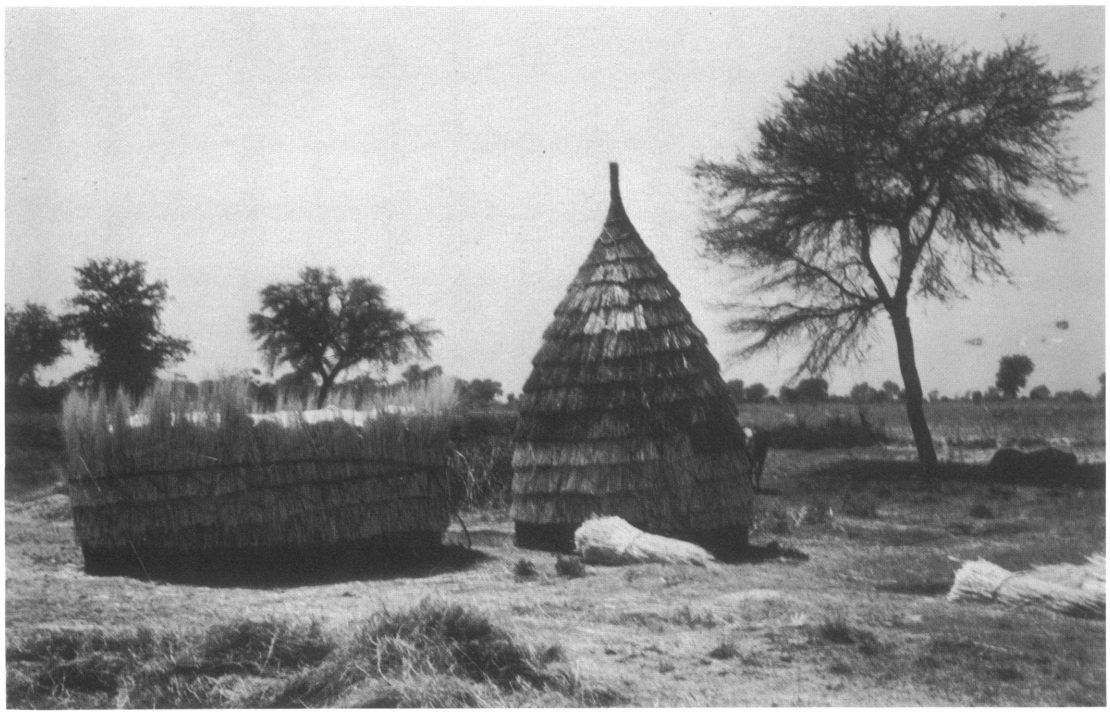

FIG. 37. A half-completed straw-covered pile of chaff for storage, left; a completed pile, right. On the ground, right, are bundles of straw used to make the wall of the pile.

as an example the farmer we have depended on to calculate the income from the cultivation of sugarcane and bajra. Assuming that his 12 bighas of wheat were all grown on irrigated land and that all of the crop matured, we find that he earned a profit of Rs. 258.46. His yield, calculated at the village average of 3.5 maunds of grain at Rs. 16 per maund and 6.25 maunds of chaff at Rs. 3 per maund, produced a gross income of Rs. 897. We assumed that he hired labor to plow his fields 10 times at Rs. 2 per day, to harvest the crop at 5 percent, and to thresh and winnow for 4 maunds of wheat for the season. The costs of plowing, harvesting, threshing, winnowing, a watchman, irrigation water, land revenue, seed, and moving of soil from one field to another for purposes of fertilization amounted to Rs. 396.67. The proportionate cost of bullock and bullock-cart maintenance, depreciation of agricultural equipment, and the annual fee to the Lohar Blacksmith alloted to wheat was 12/29ths of the annual total of these expenses. Although wheat occupied a field for only one of the two crop seasons, the field lay fallow during the preceding season in preparation for the wheat crop; therefore, the fallow period should be considered an integral part of wheat cultivation. Thus, the farmer used 12 of his 29 bighas in each season for wheat. The foregoing annual expenses multiplied by 12/29ths equal Rs. 241.87. The total expense of wheat cultivation was Rs. 638.54, equivalent to 71 percent of gross income.

This farmer's net profit, as a proportion of his capital, can be calculated as follows. The value of his 12 bighas of irrigated land on which he grew wheat was approximately Rs. 4800. His investment in bullocks and agricultural equipment totaled Rs. 1664. Depreciating the value of the bullocks and equipment over a period of eight years and apportioning 12/29ths

to wheat, we calculated an annual investment of Rs. 86. His net profit of Rs. 248.46 was about 5.1 percent of his capital (Rs. 4886).

Mustard

During our residence in Shanti Nagar, we were under the impression that mustard (*sarson*) was a relatively minor crop, a few rows of which were cultivated in fields, principally of wheat and of gram, in order to divide the fields into convenient areas for harvesting. However, the village crop chart indicates that mustard was sown in its own fields; the chart records 51.25 irrigated and 22 *barani* bighas of mustard plus an additional one-half *barani* bigha of *tara*, identified by informants as a variety of mustard. Mustard was threshed and winnowed in a fashion similar to that of wheat. The usual yield was 1 maund of seeds per bigha. The oil was extracted from the seeds at nearby mills. The residue was made into oil cake which was fed to cattle. Mustard stems were not usable for fodder; they were dried and used as fuel.

Gram

The second most important of the rabi crops, gram (chick pea) was grown on 655.5 *barani* bighas, of which 64.5 failed to mature, and on only 2.75 irrigated bighas. Gram, almost exclusively a nonirrigated crop, received sufficient moisture as long as there was any winter rain at all. The season for sowing gram lasted from mid-September to mid-October; it was harvested from mid-March to early April. In 1958, heavy rains delayed the rabi planting to the end of October. Gram was often sown after jowar or bajra principally because it required fewer plowings and less attention than wheat. A field was plowed one to three times. Four seers of seed per bigha were required. Fertilizer was not used; there were neither weeding nor hoeing expenses. In the unusual event that gram was sown in an irrigated field, the water rate was 14.5 annas per bigha. After growing gram, sugarcane might be sown in the kharif season or the field was left fallow and carefully prepared for planting wheat in the following rabi season.

The average yield was 2 maunds of gram and 3 maunds of chaff per bigha. Gram sold at Rs. 13 to Rs. 14 per maund; chaff, at Rs. 3 per maund. Harvesting expenses amounted to the customary 5 percent of that portion of the crop harvested by hired laborers. According to our informants, the cost of threshing and winnowing was less than that for wheat, but they did not cite any figures. The process of threshing and winnowing gram differed somewhat from that for wheat, rice, and bajra. First, the dried plants were beaten with pitchforks, a process that served to separate most of the leaves and the gram from the plant stems. The resultant mixture of leaves and gram was then winnowed. The leaves were used as cattle fodder. The gram and the plant stems to which some gram still adhered, after having been beaten, were mixed to be subsequently threshed by bullocks, sometimes dragging a stone roller. The resultant mixture was then winnowed. The fodder remaining after the final winnowing was believed to be unsuitable for bullocks, cows, and buffalos; it was often sold to Gola Potters as feed for their donkeys. Informants said that cattle preferred the thicker fodder of leaves obtained from the first winnowing, but that they would eat the finer fodder from the second winnowing. Donkeys and camels, on the other hand, liked the finer fodder. The fodder obtained from gram was stored in stacks of the same type as those described for the storage of wheat. Gram and wheat were often mixed and ground to make flour for bread. Informants said that bread made of pure wheat flour could lead to constipation. Considerable quantities of gram were fed to cattle.

Gochni

A mixture of wheat and gram, known as *gochni*, was grown on 27.75 irrigated bighas and 210.25 *barani* bighas, all of which matured. The area sown in wheat, gram, and their mixture, *gochni*, was 2237.25 bighas, which amounted to 86 percent of the total area sown during the rabi season of 1958. The three major crops of the kharif season, sugarcane, jowar, and bajra, occupied 85 percent of the area

sown during that season. For *gochni* 8 seers of seed per bigha were required in a ratio of three parts wheat and one part gram. This ratio was maintained in the harvested crop. *Gochni* was sown through a tube attached to the light plow used for sowing. Growing wheat and gram in the same field was believed to have advantages: the presence of gram augmented the yield of wheat; it was feasible to sow the mixture in a field that had contained either jowar or bajra in the preceding kharif season; also, the fact that gram grew close to the ground and wheat attained a greater height resulted in a "double crop," as one informant described it. The average yield was approximately 2 maunds of grain and 3 to 4 maunds of chaff per bigha. Most *gochni* was consumed in the village; it was said that city people did not like it.

Barley and Oats

Barley was grown on three irrigated bighas and 29.5 *barani* bighas; in 1958, only one of the *barani* bighas matured. Barley required much less care than wheat; it could be planted in fields following jowar, bajra, and even rice. Although barley was hardier than wheat, its cultivation was, nonetheless, something of a gamble as indicated by the considerable proportion of the sown crop that failed to mature. The village crop chart listed nine irrigated bighas of oats which were grown for fodder.

Vegetables and Fruit

Peas (*matar*) were the principal vegetable grown during the rabi season. There were two varieties, one used for human consumption, and the other, called black peas, used for fodder. Peas for human consumption were grown on 33 irrigated and 18 *barani* bighas; one-third of the *barani* peas failed to mature. For peas, 2.5 to 3 seers of seed per bigha were required. A field was plowed three times and hoed and weeded once. Fertilizer was not used. Irrigation water cost 12.5 annas per bigha. The average yield per bigha was 10 to 12 maunds. Peas sold at an average price of Rs. 10 to Rs. 12 per maund. Harvesting expenses were 1 rupee per maund. Women did most of the harvesting. A woman required one day to harvest 1 maund. Informants explained that the payment for harvesting peas was less than the usual rate for day labor (Rs. 1.50) because the work was believed to be relatively easy. Vegetables had to be guarded. In July, we once encountered a farmer sitting in a shed guarding fields in which he was growing a variety of vegetables and spices including tomatoes, peppers, pumpkins, and ginger. He planned to grow peas in the rabi season in a field which then contained *gowar*. He commented that his presence was necessary to protect crops from the depredations of the animals belonging to the low-caste villagers. The shed in which he was sitting had a roof made of the stalks of jowar; it was adequate, he said, to keep out the heaviest rain.

The village crop chart recorded 68.75 irrigated and 22.75 *barani* bighas of black peas. Four seers of seed per bigha were required. A field was plowed once or twice. Fertilizer was not used; there was no expense for either hoeing or weeding. Irrigation water cost 12.5 annas per bigha. The average yield per bigha was 2.5 maunds which sold at an average price of Rs. 11 to Rs. 12 per maund. Harvesting expenses amounted to the customary 5 percent of that portion of the crop harvested by hired laborers. A farmer who chose to sell his peas in the field before they were harvested incurred no harvesting expenses. A bigha of standing peas was sold for Rs. 30.

In addition to peas, the village crop chart listed a number of other vegetables, among them eggplant, tomatoes, pumpkins, fenugreek, okra, vegetable marrow, and melons and unspecified fruit as occupying 106.25 bighas. The most widely grown of these plants were fenugreek (*methi*), sown in 38.25 irrigated bighas and used only for fodder; *ghia* (vegetable marrow) sown in 12.75 irrigated bighas; and *tinda* (a kind of squash) sown in 10.25 irrigated bighas. The crop chart listed no other single vegetable or fruit as occupying as many as 10 bighas.

DOMESTIC ANIMALS

CATTLE

The people of Shanti Nagar owned 200 zebu cattle: 95 bullocks, 47 cows, and 58 calves. They also owned 190 water buffalo: 111 cows and 79 calves. There was no adult male buffalo in the village. The bull that serviced the water buffalo was shared with another village, as was the zebu bull; both wandered freely and neither one had an owner. Thus, the people of Shanti Nagar had full title to 390 cattle.[1]

In addition, there were 11 water buffalo and one zebu cow in the village under an arrangement whereby the ownership of these animals was shared with people who lived outside of Shanti Nagar. In Shanti Nagar and the surrounding region, some people preferred not to care for a cow or buffalo that was not giving milk; such an animal was given to a custodian, who was required to have it impregnated if it was not already pregnant, to feed it until delivery, to pay the delivery expenses, and to keep it until the owner came for it. For these services, the owner and the custodian agreed that the latter would receive half (one-third, if the animal was pregnant before it arrived in Shanti Nagar) of the market value of the animal when the owner came to reclaim it. In the meantime, the custodian was entitled to all the milk and dung that the animal produced. If there was a disagreement as to the market value of the animal, the person who placed the higher value on it kept it and paid the other person the appropriate share. Under such an arrangement, the original owner effectively transferred a share of the animal to the person who cared for it. Therefore, the villagers of Shanti Nagar could be said to own an additional half zebu cow and five and a-half water buffalo, making a total of 396 cattle. There were 402 cattle physically present in the village. The villagers of Shanti Nagar not only cared for cattle on shares from outsiders, but they also entered into such arrangements with each other. Usually, a low-caste person took cattle on shares from a well-to-do landowner.

That such sharing arrangements were feasible and that village residents were permitted to graze their livestock in fallow fields, on waste land, and on village common land, without charge, presented any villager with the opportunity, if he so wished, to go into the cattle business without purchasing an animal and at relatively little cost to himself, provided that either he or his wife had the time to collect random bits of fodder in the fields and along paths and roads (figs. 38, 39). Because sharing arrangements were made with outsiders, it was possible that a rather large number of adult cattle could abruptly be brought into the village at one time. This possibility was exemplified just before we left Shanti Nagar; a Jat Farmer took some 18 head of cattle on shares from a neighboring village. If several such events occurred within a brief period of time, they could lead to overexploitation of village grazing land, a consequence that would increase the expense of the ownership of cattle because people would no longer be able to depend upon free fodder to as great an extent as formerly. The poorer villagers especially would be most affected under such circumstances.

Bullocks

Bullocks were used for plowing, sowing, threshing, turning sugarcane mills and Persian wheels, and drawing carts. They were owned only by cultivators. Of the 95 bullocks in the village, three were owned by landless families; however, these families cultivated land on shares. The various functions of bullocks did not overlap to any significant extent; for example, a farmer did no plowing during the season when he was making gur. Because plowing was the most demanding labor required of bull-

[1]We use cattle to refer to both bovine cattle and buffalo.

ocks, the principal factor that determined the number of bullocks in the village was the area of village cultivable land. According to villagers, a yoke of bullocks could adequately work a maximum of 60 bighas. In 1958 there were 2808 bighas of cultivable land in the vil-

FIG. 38. Women carrying fodder from the fields. Fodder is often wrapped in large cloths to make it easier to carry.

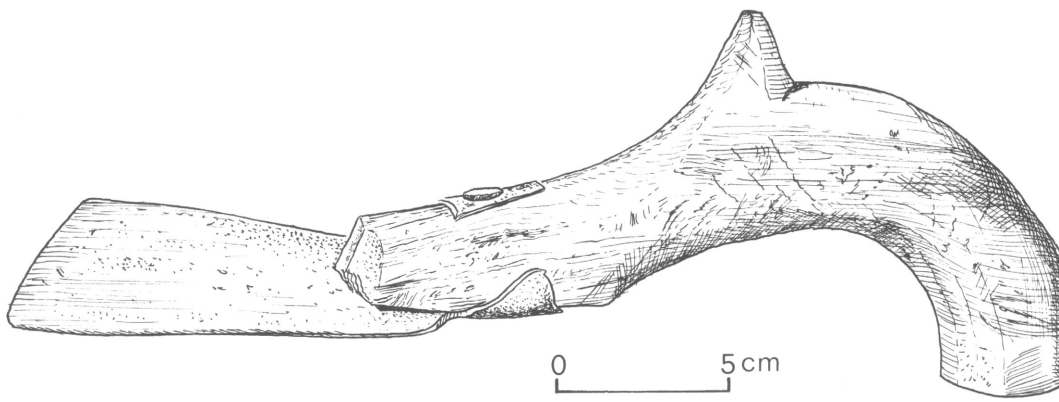

FIG. 39. Scraper or trowel (*khurpa*) used to dig grass for use as fodder and to weed vegetables. AMNH 70.2-6485.

lage. To cultivate this area, in addition to the bullocks, there were a single tractor belonging to a farmer who owned 58 bighas, and a camel owned by another farmer with 210 bighas. The area of land that had to be cultivated by bullocks consisted of the total cultivable land less 58 bighas for the tractor and 45 bighas for the camel (villagers said that one camel did the work of 1.5 bullocks), or 2705 bighas. If the village land were farmed as a single large estate and all the bullocks were well and strong, the land could be cultivated with 90 bullocks. Thus, the fit of land and bullocks on a village-wide basis was very close. The actual situation in the village departed from the economically most efficient condition to the extent of only five bullocks, a surplus of 6 percent (see Freed and Freed, 1972, p. 407, n3).

Although on a village-wide basis, the correspondence of bullock power to land area was quite close, the village land was not cultivated as a single unit; its cultivation was divided among 58 families. Each farmer managed his farm independently. In general, cultivators owned their farms; however, a small number of the 59 landowning families did not farm and a few landless families cultivated land on shares. The division of the cultivable village land among 58 cultivators poses the problem of how efficiently the number of bullocks owned by each cultivator corresponded to the area of land that he farmed.

A tabulation of the cultivating families by the number of bullocks each owned and the area of land that each cultivated is given in table 1. Ten families owned no bullocks. They hired other farmers to plow and to sow their fields; they sometimes did some of the work with hoes; or a combination of these methods was adopted. Hiring farmers to plow and to sow one's fields at a fixed rate per bigha was a relatively common practice and was an effective method of adjusting bullock power to land area. It would be uneconomic for a farmer with a small landholding to own a yoke of bullocks; the alternative of hiring a plowman who owned bullocks was much more practical. Sharing bullocks provided another means of adjusting bullock power to land area. Two farmers, often brothers or members of the same lineage, each of whom owned a bullock, might arrange to share animals in order to form a yoke. Farmers with three bullocks could make similar arrangements. Farmers who needed bullock power to make gur often arranged with another farmer to do the work in return for a share of the product.

These arrangements for hiring or sharing bullocks provided considerable flexibility for the adjustment of bullock power to the size of an individual farm. This flexibility permitted an individual farmer to decide on the number of bullocks he wished to own on the basis of costs vs. benefits. He had options in addition to ownership; he was not compelled to own a yoke of bullocks regardless of the size of his landholding in order to be able to engage in agriculture. The most efficient distribution of bullocks would have been such that farmers with very small holdings would own none, those with approximately 30 bighas would own one, those with 60 bighas, two, and so on. The actual situation in Shanti Nagar approximated this distribution. Table 1 shows that 6.7 bighas was the average landholding of cultivators who owned no bullocks. If these farmers had each owned a pair of bullocks, they would have had approximately 10 times the bullock power that they needed. Farmers who owned one bullock cultivated an average of 20.3 bighas; they had 50 percent more bullock power than they needed. Farmers with two and three bullocks cultivated areas that, on the average, were reasonably close to the most favorable size in relation to the number of bullocks owned. The few cultivators with four bullocks owned a little more land than could be effectively cultivated by their own bullocks. That the customary practices of distributing bullock

TABLE 1
Cultivating Families, by Number of Bullocks and Amount of Land Cultivated

Number of Families	Bullocks per Family	Land per Family (in bighas)
10	0	6.7
12	1	20.3
28	2	53.3
5	3	97.8
3	4	137.3

power among cultivators were effective is proved by the close adjustment of the number of bullocks in the village and the area of cultivable village land.

One conclusion that may be drawn from the fact that the ownership of bullocks was fairly well correlated with the size of individual landholdings is that no great adjustment, by sharing or hiring, was necessary to plow and to sow the village land. For example, the total area cultivated by the 10 families who owned no bullocks was only 67 bighas, an area that exceeded by only 7 bighas the maximum that could be farmed with a single yoke of bullocks. However, it was necessary to negotiate 10 individual agreements to effect the necessary transfers of bullock power even if no single agreement involved the use of bullocks for more than a few days. Occasionally, it might be difficult to arrange a satisfactory agreement, a situation that could lead a farmer to buy his first bullock somewhat sooner than would seem warranted by the size of his farm. We recorded one such case that occurred during the sugarcane crushing season rather than during the plowing season. A farmer, who cultivated 11.5 bighas, owned no bullocks but had arranged for another farmer to transport his sugarcane from the fields to the mill, to crush it, and to make gur for one-fifth of the gur produced. Later, the second farmer demanded one-quarter of the product. The first farmer considered this demand to be excessive and, as a result, he purchased one bullock which he shared with another farmer who owned three. In this case, the cost of the bullock presented no problem because three young men of the family were in service and earned good salaries. A comparison of the landholdings of farmers who owned no bullocks with those who owned one suggests that the decision to buy a bullock was made on the basis of a landholding of about 14 bighas. Of the 10 cultivating families who owned no bullocks, none owned a farm as large as 14 bighas, whereas nine of the 12 families who owned a single bullock had farms that large or larger.

Usually a farmer acquired bullocks by purchase rather than by raising them himself. The need for a bullock often arose more or less abruptly: for example, one of a farmer's bullocks died suddenly or a joint family of cultivators decided to separate into independent nuclear families, in this way creating the need for additional bullocks. Under such circumstances, a farmer who raised bullocks for his own use might not have a replacement at the moment that the animal was needed. To purchase bullocks offered the only available option. Occasionally, a farmer decided to keep a male calf for later use as a bullock. Such calves were castrated by a veterinarian or by the traditional method of beating the testicles with a stick until they were shrunken. Farmers who had no need for a male calf would sell both the calf and its mother. A good profit could usually be made by buying a dry cow, having it impregnated, and eventually selling the cow with its calf.

The price of bullocks varied greatly based on the quality of the animal. We recorded several statements of Jat Farmers with regard to the cost of their bullocks. On the average, these men paid about Rs. 500 for a bullock. They claimed that a really excellent bullock cost as much as Rs. 900; however, we recorded no purchase that even approximated that figure. A Jhinvar Waterman, a farmer who was much poorer than the average Jat, purchased far less costly bullocks than those purchased by the Jats. He had bought one of his current bullocks for Rs. 50 several years previously and the other, only a few months preceding our interview, for Rs. 80. Although bullocks were bought for use rather than for trading and speculation, farmers occasionally did sell them when they thought that they could earn a profit. The Jhinvar Waterman purchased his 80-rupee bullock after selling one for Rs. 150 that he had purchased for Rs. 135. Apparently, he believed that the less expensive bullock would be adequate for his needs; the transaction netted him a profit of Rs. 15 and increased his current cash by Rs. 70. We once observed the efforts of a Jat Farmer as he attempted to sell a yoke of bullocks. He had arranged a demonstration of plowing by his bullocks in the presence of a small group of farmers from a neighboring village. The visiting farmers watched silently and intently. Several of them worked the bullocks

for brief periods. Presumably, those farmers who were still interested after the demonstration would have bid on the bullocks. We questioned one farmer of Shanti Nagar about the reason for the sale; he explained that the price of bullocks had risen greatly. He assumed that if the farmer who was showing his bullocks were successful in selling them, he would buy less costly replacements elsewhere. The potential seller no doubt saw an opportunity to earn a profit.

The diet fed to bullocks varied, depending both on the economic circumstances of the owner and the amount of work that the bullocks were doing. A well-to-do Jat Farmer described the diet he fed his yoke of bullocks (the pair, not to each animal) during slack agricultural periods. It consisted of 2 or 2.5 seers of mustard oil cake, the same quantity of gram flour, and 15 to 20 seers of wheat chaff. During periods of peak agricultural activity, he fed them 2.5 seers each of cottonseed, gram grain, gram flour, and a solution of 2 to 2.5 seers of gur in water. He added that some farmers fed ghee and green fodder to bullocks during such an active period but that he did not. A Jhinvar Waterman, a farmer in considerably more modest circumstances than the Jat, reported that he kept his bullock expenses to a minimum by feeding them, principally, grass supplemented only occasionally with grain. He commented that he could not afford to provide his bullocks with a diet of better quality. Other bullock expenses included the cost of iron shoes, at Rs. 4 per bullock, and the maintenance of the shed for cattle. Although the illness or death of a bullock was a serious loss, farmers rarely spent much money to treat a sick bullock.

Male Water Buffalo

Aside from the single bull shared by Shanti Nagar and a neighboring village, there were no adult male water buffalo in Shanti Nagar. The villagers neither used water buffalo as draft animals nor did they eat buffalo meat. Therefore, because the male animals served no practical purpose, they were not kept. Although Hindus consider only the zebu cow to be sacred, there was a strong sentiment in the village against the killing of any cattle. Consequently, the useless male buffalo could not be slaughtered. Villagers allowed them to die of neglect, turned them loose to wander, or sold them to outsiders who proposed to use them as draft animals but who, in all probability, occasionally slaughtered them. Villagers assured us that they would never knowingly sell an animal for slaughter. They were aware that a buyer who was a stranger to them might deliver an animal to the slaughterhouse; however, they often chose to ignore this possibility.

We did not ascertain the sex of calves; hence, we do not know the number of male buffalo calves that were owned in the village. Although a few may have been old enough to have been sold for a few rupees, the fact that villagers generally preferred to dispose of them as soon as possible, often with no attempt to sell them, suggests that they were of little value. It is also reasonable to assume that religious sentiments concerning the slaughter of cattle may have inhibited the villagers from attempting to realize even the small sums obtainable in a sale. In this view, the death of an animal by deliberate neglect was preferable to slaughter.

Zebu Cows

In general, zebu cows were kept principally to produce the bullocks that were essential to the practice of agriculture. However, the farmers of Shanti Nagar usually purchased bullocks rather than raising them; therefore the bullock-producing function of cows was important principally because it afforded a farmer the opportunity to realize a profit in the cattle trade. Except for male water buffalo, which the villagers sometimes sold but never bought, all cattle were traded. A profit could be realized in two ways. First, market prices constantly fluctuated, so that it was possible to realize a profit by buying and selling at favorable times. Second, the value of an animal was subject to change in accordance with its stage in the reproductive cycle. There was, however, an important difference between milch animals and bullocks. In general, a dry cow or water buf-

falo was worth less than during the period it was producing milk. One could take advantage of this fact by acquiring a dry animal and selling it after it had calved. One could also lose money if the cost of the dry animal and the expense of delivery exceeded the selling price. Bullocks were not subjected to similar price fluctuations based upon reproductive considerations; consequently, cows and water buffalo were traded much more frequently than bullocks.

That the bullock-producing function of cows was more closely related to their trading values than to the need of individual owners to provide bullocks for their own use was made obvious by the distribution of cows and bullocks in the possession of landowning and landless families. Of the 95 bullocks in Shanti Nagar, only three were owned by landless families, all of whom cultivated land on shares. It followed that the owner of a bullock used the animal on his land; if a man did not cultivate, he owned no bullock. Of the 47 cows in the village, nine were owned by landless noncultivators and two were the property of landless persons who did cultivate. Based on a ratio of cattle per individual, bullocks were 19 times as frequently owned among landowners as they were among the landless; in contrast, cows were owned only slightly more than twice as frequently. Since the buffalo was superior to the cow as a producer of milk and dung, a landless person would have no greater economic need for a cow (assuming that it was possible for him to acquire a buffalo) than for a bullock were it not for the eventuality that he might realize a profit from the sale of the cow with her male calf.

The fact that landless individuals owned as many cows as they did suggests the possibility that the cow may have been a superior trading animal for them. One possible advantage for poor people was that cows cost much less than buffalo, so that an individual could enter the cattle business with less capital by buying a cow rather than a buffalo. However, an examination of the distribution of the ownership of cows and buffalo in the village does not support this presumed advantage. If cows were economically more advantageous for landless people than for landowners, then it follows that they should have constituted a greater proportion of the milch animals of the former. The actual proportions of cows among the milch animals owned by the two groups, however, were very similar: 28 percent for the landless and 30 percent for the landowners. Furthermore, we doubt that either cows or buffalo could have a clear advantage as a trading animal for any considerable length of time; if such an advantage were to develop, the forces of the marketplace would soon produce an equilibrium. We recorded only a few statements by villagers with respect to the relative trading merits of cows and water buffalo; opinion was fairly evenly divided as to the superiority of either animal.

In general, environmental conditions in Shanti Nagar were more favorable to water buffalo than to cows. Most of the agricultural land of Shanti Nagar was irrigated, and water buffalo flourish around water (fig. 40). Furthermore, irrigation in a village generally increases the area of cultivable land at the expense of pasture; it also creates conditions amenable to double cropping, a situation which, in turn, leads to a corresponding reduction in fallow land available for grazing. Cows flourish in *barani* areas where more land is available for grazing than in irrigated areas. Water buffalo can stand stall-feeding better than cows and, therefore, do well in irrigated tracts (India, 1935, p. 15) where less land is free for grazing than in *barani* areas. Although the best bullocks and zebu cows are found in *barani* tracts, economic considerations as well as environmental factors may be responsible for this situation. India (1935, p. 28) commented, "It may be safely maintained that breeding of good cattle on irrigated areas is impracticable rather than impossible. The unirrigated tracts contain the best cattle because no other type of farming is possible there. That the irrigated tracts have bad cattle, is because cattle-breeding is pursued only as a subsidiary industry and the attention of the cultivator is concentrated on the cultivation of commercial crops."

That the cow, compared with the water buffalo, is inferior as a producer of milk products and dung, has no superiority as a trading ani-

FIG. 40. Water buffalo in a pond. One of the village wells, foreground.

mal, and appears to be at an environmental disadvantage raises the question as to the reason for the number of cows kept by the villagers. Even if the villagers did raise their own bullocks, which was in general not their practice, 32 cows would have been adequate to maintain the bullock population of 95, provided that we accept the suggestion of Heston (1971, p. 193) that a stable bullock population requires at most one cow to three bullocks. There were 47 cows in the village, a surplus of 15 (47 percent) based on the demographic criterion of bullock replacement. The obviously excessive number of cows can best be explained by religious sentiment. The zebu cow is sacred to Hindus, a belief strongly adhered to in Shanti Nagar. One of the questions we asked a random sample of 67 men and 47 women was, "What is the best thing in the Hindu religion?" The single most common response, given by 18 men (27 percent) and eight women (17 percent) was "the cow" (Freed and Freed, 1976a, table 78). Villagers believed that it was good practice to own a cow. Moreover, it was necessary to have a bit of cowdung on hand daily or less frequently, in the case of many families, to replaster and purify the family stove and cooking area. However, it was unnecessary to own a cow to have cowdung; anyone who owned a cow and had surplus dung would freely part with a handful upon request.

Cows were relatively inexpensive, largely due to their poor milk yield. We recorded only a few statements as to the amount of milk produced by cows. Three farmers reported that their cows were, at the time of inquiry, yielding from 2 to 4 seers daily. Higher yields were obtained early in the lactation period. Two farmers kept dry cows. One farmer reported that a very good cow would generally produce from 6 to 10 seers per day, but we recorded no example of such a yield. Such an excellent cow

could cost, according to the same farmer, from Rs. 200 to Rs. 250. However, the two sales of cows that we recorded were at an average price of Rs. 105. One Chuhra Sweeper who bought a calf for Rs. 15 and sold it six years later for Rs. 100 believed that he had done very well; he gave a feast, costing Rs. 15, in the name of a goddess for the Chuhras of the village.

Female Water Buffalo

As a source of milk and ghee, the water buffalo was much better than the cow. We recorded approximately 30 statements of the yield of milk by water buffalo at various times during the lactation period. The average yield was about 8.5 seers daily, that is, on a given day, the average water buffalo in Shanti Nagar that was not dry at the moment was producing 8.5 seers of milk. A good water buffalo, during the most favorable part of the lactation period, was capable of producing about 14 or 15 seers of milk; a superior animal might yield 20 seers. The specific figures that we recorded supported the general statement of the villagers that a water buffalo produced twice as much milk as a zebu cow. Moreover, buffalo milk was a better source of ghee than cow milk. Our figures for the milk yield of water buffalo accord reasonably well with those provided by India (1935, p. 55) who stated that an average water buffalo had a milking capacity of 10 to 12 seers. The zebu cow, according to India (1935, p. 55) had a capacity of 8 to 10 seers, matched in Shanti Nagar only by superior cows. A comparison of our figures and those of India (1935) suggests that zebu cows in Shanti Nagar did less well as compared with water buffalo than was the case in the Rohtak District. If this is a valid supposition, the principal reasons were probably the limited *barani* area in Shanti Nagar and the emphasis there on cash crops. A young farmer once told us that the number of cows in the village had been reduced during his lifetime and that the number of water buffalo had increased. The cost of a water buffalo reflected its relative superiority to the cow. We recorded 18 statements which included either the price at which a buffalo had been traded or the estimated value of specific animals. The average price, Rs. 465, was twice the cost of a very good cow and perhaps three or four times the cost of an average quality cow.

The expenses of pregnancy, principally for special food and medicine, and the normal diet provided during the period of lactation were the major costs of maintaining a buffalo. One farmer reported that the daily diet that he fed his buffalo during its lactation period consisted of 2.5 seers of cottonseed, 2.5 seers of gram grain, 2 seers of gram flour, 2 seers of mustard oil cake, and chaff or green fodder. For 10 days following delivery, he fed the buffalo only gur, in solution, and also her own milk because she could not as yet digest more solid food. For the succeeding 15 to 20 days he gave her cooked wheat porridge that contained a little of her own milk. This diet was intended to maximize the yield of milk and ghee. Gram cost about Rs. 13.50 per maund; gur, Rs. 16; chaff, Rs. 3; oil cake, Rs. 8; and cottonseeds, Rs. 18. A Brahman woman, experienced in both the maintenance and trading of water buffalo, fed her buffalo approximately the same diet, except that she did not report the use of cottonseeds. This omission was probably an oversight on her part because other informants did mention cottonseeds. The Brahman woman estimated birth expenses at Rs. 100, a figure reflected in her account of her sale of a water buffalo. She had purchased the animal for Rs. 410, had maintained it one year, and then sold it for Rs. 325. Apparently, she assessed the value of the animal, immediately after it would have calved, at less than Rs. 425, possibly at the price of Rs. 410 which she had previously paid. If all her estimates were accurate, she had saved Rs. 15 by selling the animal before it calved. Moreover, during the year that she owned the buffalo, she had received all its milk and dung.

Some families depended on the village herders, a Brahman Priest and a Chuhra Sweeper, to graze both their water buffalo and cows. On one occasion the Sweeper said that he charged 1 rupee a month for a buffalo and 12 annas for a cow; on another occasion, he reported that he charged 12 annas for both animals. Another informant told us that the Sweeper charged Rs. 1.25 for a buffalo and Re. 1 for a cow, also that the Brahman charged Rs. 2 for a buffalo and Re. 1 for a cow. Our informant recounted that the Chuhra had, at

one time, driven a competing herder out of business by cutting his prices to Re. 1 for a buffalo and 8 annas for a cow. Then he waited for the harvest, when everyone was very busy, and doubled his prices, an increase accepted by most of his customers. Because the varied statements of informants as to the fees of herders were collected at different times, they might possibly reflect seasonal differences as well as the normal variability in such statements with regard to many topics. In any case, the cost of the services of a herder was not especially burdensome for most landowners, although it would be of significance to agricultural laborers. For purposes of comparison, it is well to remember that the payment for agricultural day labor was Rs. 1.50.

Families who owned cows and water buffalo used their milk in several ways. Some milk was boiled and drunk; a small quantity was consumed in tea. Children, especially, were given milk to drink. A large quantity of buffalo milk was made into ghee (clarified butter) which could be kept under village conditions for long periods without spoiling (fig. 41). The buttermilk produced in the process, in excess of family needs, was given away. Considerable quantities of ghee were used as an ingredient in village cooking; the amount used by a specific family depended largely on their economic circumstances. Ghee was costly; it sold for Rs. 6.50 per seer. Villagers reported that 14 seers of buffalo milk yielded 1 seer of ghee.

Although the sale of milk was frowned on, some villagers did sell their excess milk rather than make it into ghee. Milk, at about Rs. 18 per maund, was sold to village middlemen who, in turn, sold it in Delhi. Two village men were active in the milk trade. One, who happened to be one of our least reliable informants, described the milk business as risky. He claimed that some initial capital was necessary. In order to have a sufficient quantity of milk to make the enterprise worthwhile, it was necessary to persuade villagers to buy and maintain additional water buffalo. Sometimes the middleman had to lend money to families to assist them to buy buffalo, the resultant debt to be repaid from their profits. Such families were often low-caste and landless with little property and income. When the buffalo went dry, their

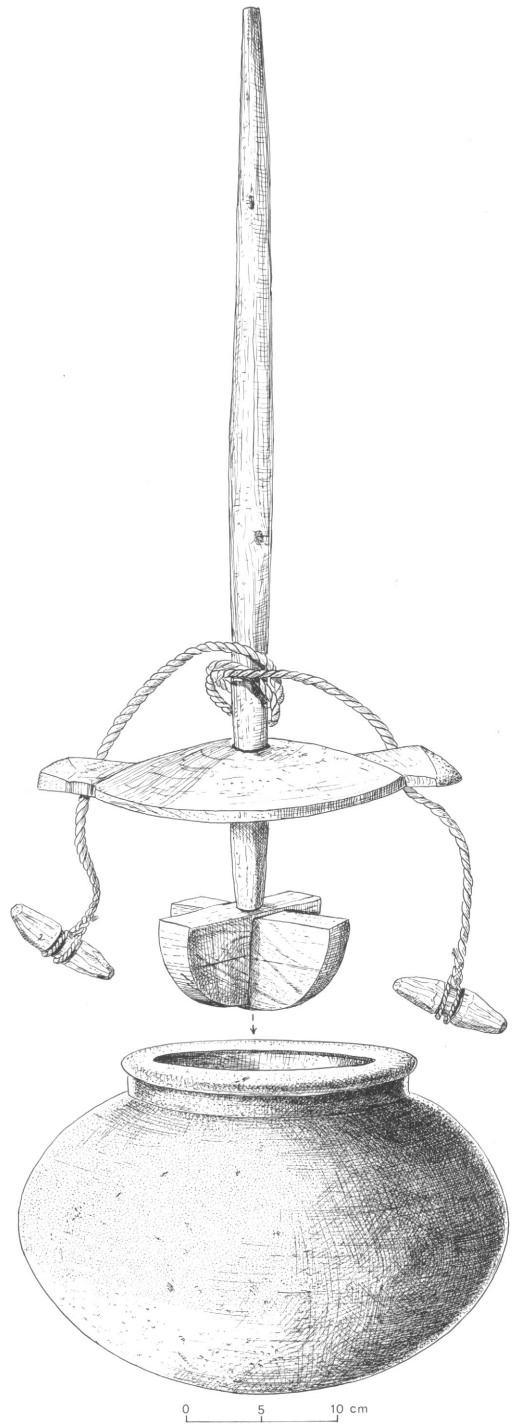

FIG. 41. Churn. The rope is wrapped around the upright shaft. To churn milk an individual alternately pulls the wooden handles tied to the ends of the rope to spin the shaft. AMNH 70.2-6451a-e, 6452.

owners might sell them and fail to repay the loan. Such an outcome would confront the entrepeneur with the problem not only of recovering his money but also with the reduction of his supply of milk. An illustrative situation is described in Freed and Freed (1976a, p. 134).

Not only the problem of insuring a supply of milk but also its successful marketing demanded considerable experience. Milk was sold in Delhi to confectioners who boiled it for a long time to produce a residue called *mawa*. The milk dealer contracted with a confectioner to deliver milk that would yield a specified quantity of *mawa* per seer of milk at an agreed price. According to our informant, if the yield of *mawa* fell below the agreed figure, the milk dealer was obligated to refund money for the entire duration of the contract. Experience and sound judgment were imperative on the part of the dealer to decide on the quantity of water to add to the milk. (Routinely, milk was adulterated with water, a situation that influenced city families to keep a cow or buffalo to provide them with pure milk.) It was possible for the dealer to maximize his profit by diluting the milk so that only the specified quantity of *mawa* was produced, but no more; an excess of water, however, would reduce the quantity of *mawa* below the critical level, in which case money would be lost. Thus, milk dealers were faced with two problems: to secure a sufficient quantity of milk in the village and to negotiate favorable contracts in Delhi. One of the village middlemen lost money and went out of business. The other, a reticent and a shrewd businessman, appeared to be successful.

The water buffalo is an affectionate animal. The senior woman in the household in which we lived often commented that she did not like to be absent from the village because the family water buffaloes did not like to be milked by anyone else. On this point, as well as on the ghee-producing capability of the water buffalo, Darling (1934, pp. 157-158) remarked "if both [cow and buffalo] cannot be kept . . . the buffalo is preferred; and even when both are kept, the housewife takes greater care of the buffalo, for the cow is regarded as the mother of the bullock and the buffalo as the producer of *ghi*, and *ghi* and its proceeds are the housewife's perquisites . . . Moreover, the buffalo, black and sombre-eyed though she looks, understands affection and responds to her owner's call and sometimes refuses to be milked by any other hand. In many homes she stands first in the peasant's affection . . ."

Dung, Hides, and Bone

Dung was an important product of all cattle. Principally used for fuel, it also served to plaster the walls of mud houses; any surplus was used as fertilizer. Only the dung of the zebu cow was used to plaster the stove and the kitchen area. For fuel, dung was molded into relatively flat round cakes which were dried in the sun. Each family had a special place where dung cakes were made and stored (figs. 42, 43). The women of a family, and/or the family's Sweeper, daily carried dung dropped by the family cattle to this place. Families who owned no cattle collected dung from the village lanes and the grazing area. Traditionally, such dung was available to everyone and it was collected by most families. One important duty of a young daughter was to go early every morning through the village lanes to mark dung that fell from cattle when they were driven to the pond or to the grazing area and later to collect it. The system for establishing rights in such dung apparently functioned with relative smoothness. A person who found some dung, but had no time to collect it immediately, marked it with a straw or stick set upright in the heap. The finder could then return to collect it later. The free dung available in the lanes and on the village common land was more important to families who owned no cattle than to the other villagers. There were 16 such families in the village, all but two of them low-caste. Because there were only 47 zebu cows in the village, many of the 110 families of Shanti Nagar obtained the cowdung necessary to plaster the stove and kitchen from another family. Although dung was not bought and sold in the village, in Delhi it sold for Rs. 1.50 to Rs. 2 per maund.

One morning we watched a woman from an 11-person family making dung cakes. Her family owned four buffalo and one buffalo calf.

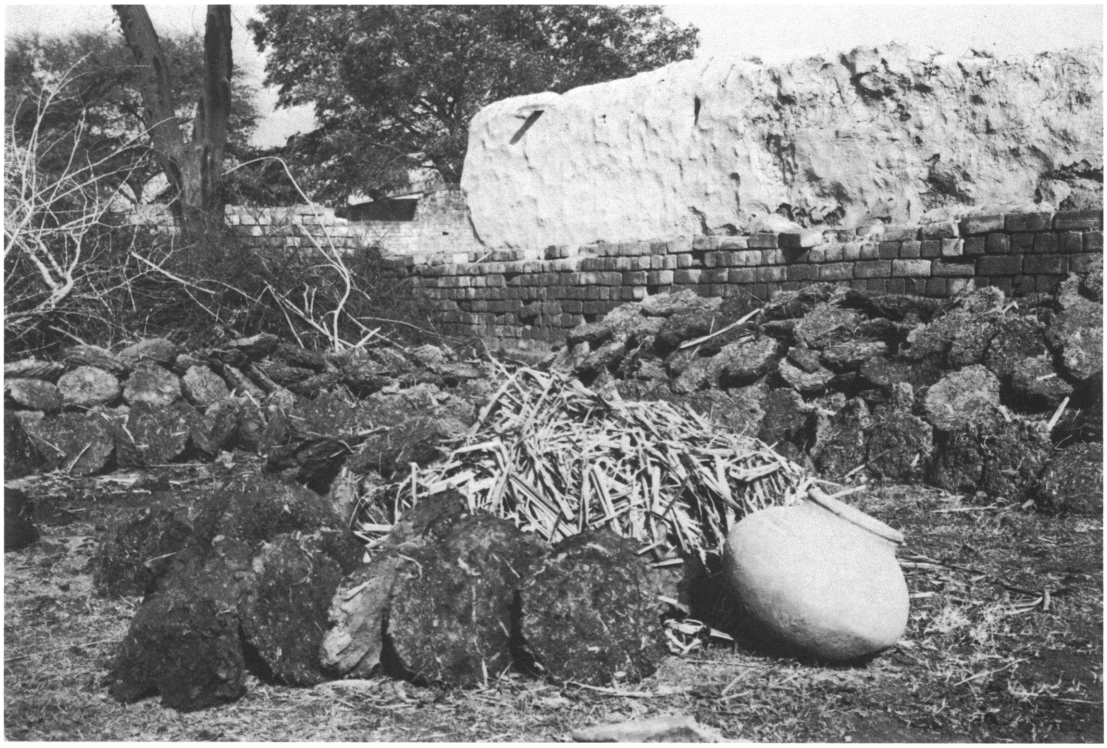

FIG. 42. Dung cakes and bagasse. Straw or bagasse is mixed with moist dung and formed into cakes, which are then dried in the sun.

She mixed the dung with small pieces of mustard stalks, kneaded it, and formed it into cakes of two sizes which she spread on the ground to dry. In the course of the morning, she made about 24 large cakes and 103 small ones. She said that it took one or two days for the small cakes to dry; the large cakes required three or four days. The small cakes were intended for relatively immediate use; the large ones could be used immediately or stored for future use. Our informant told us that her family used 20 or more large dung cakes daily or their equivalent of smaller cakes. A grown buffalo, she added, daily produced a sufficient quantity of dung for five or six large cakes in the summer and about 10 in the winter. The difference in quantity was due to diet. In the summer, buffalo ate wheat chaff; in the winter, jowar. However, dung cakes could not be made during the summer monsoon season, a period of approximately 2½ to three months duration, because it was impossible to dry them. Dung produced during the rainy season was utilized as fertilizer.

In order to have sufficient fuel for the monsoon season, it was necessary to produce dung cakes for storage in excess of the expected daily needs. Such cakes were stored in neat piles which were plastered with a coating of dung to keep them dry; before the rains began, each stack was covered with a straw mat for additional protection. When completed, these stacks of dung cakes resembled small huts (fig. 44). To attain access to the stored dung, a small hole was made close to the bottom of the protective wall of the stack, and then dung cakes were removed as needed. During the morning when we observed the woman making dung cakes, she showed us a stack of stored dung that contained 1960 large cakes which she

FIG. 43. Women making dung cakes.

had been accumulating from February to April 10, the date of our observations. She informed us that two such stacks would last through the monsoon season and into the winter. At the daily consumption rate of 20 or more dung cakes, a minimum of approximately 1500 to 1800 cakes would be required for the monsoon season. Thus, the approximately 3920 large dung cakes that the family stored apparently afforded an ample supply for the entire rainy season, provided that our informant's estimate of the daily fuel requirement of her family was reasonably accurate. On July 3, immediately prior to the advent of the monsoon, we accompanied our informant and two other women of her family to the fields where they collected plants called *basa* from which were made the mats to shelter the stacks of dung cakes. On the same day, we also observed such mats being prepared by other families.

Dead cattle became the property of the Chamar Leatherworkers as payment for their labor in disposing of them (Freed and Freed, 1976a, p. 95, and fig. 11). Although the meat had scant value in largely vegetarian Shanti Nagar, both the hides and bones were salable. A number of men, perhaps a dozen if a full-grown water buffalo was involved, would be required to remove the carcass to the area just beyond the Chamar quarter where it was skinned. The men of Leatherworker families skinned dead cattle in rotation. The hide was then auctioned within the Leatherworker caste and the proceeds of its sale deposited in the community fund of the Chamars. The successful bidder usually attempted to sell the hide, at a profit, to one of the buyers who visited the village almost daily. The community fund was used to sponsor an annual religious feast and to meet other community expenses. For example,

the Chamars had at one time been required to make a donation on the occasion of the opening of a caste meeting house by the Chamars of another village. If any balance remained in the fund at the end of the year, it might be divided equally among the Chamar families. A hide was valuable: that of a full-grown water buffalo could be worth as much as Rs. 25. We recorded the auctioning of one buffalo hide for Rs. 20. After the hide had been removed, the bones of the buffalo were picked clean by the village dogs, cats, and vultures. The bones were sold to visiting buyers. The money so acquired was also deposited in the Chamar fund. We recorded no figures regarding the value of bones.

The disposal of dead cattle was considered polluting; the Leatherworkers of Shanti Nagar were well aware that some Chamars resident in neighboring villages no longer accepted this work. However, the Leatherworkers of Shanti Nagar argued that there was nothing wrong with salvaging the hides of dead cattle. "We must have leather to make shoes," observed one of our informants. "We do our work and wash our hands and eat." He also advanced the argument that when any commodity became scarce, its price increased. It followed then that the skins of dead cattle should be recovered to maintain a low price for leather. Nonetheless, the Chamars of Shanti Nagar were uneasy about skinning dead cattle. We went once to observe the Chamars as they skinned an animal. The men who were doing the work, ordinarily very hospitable, were clearly embarrassed and unhappy because of our presence; we soon left. Occasionally, the high castes grumbled about the location of the cattle disposal area which was situated at the very outskirts of the village. The odor that emanated

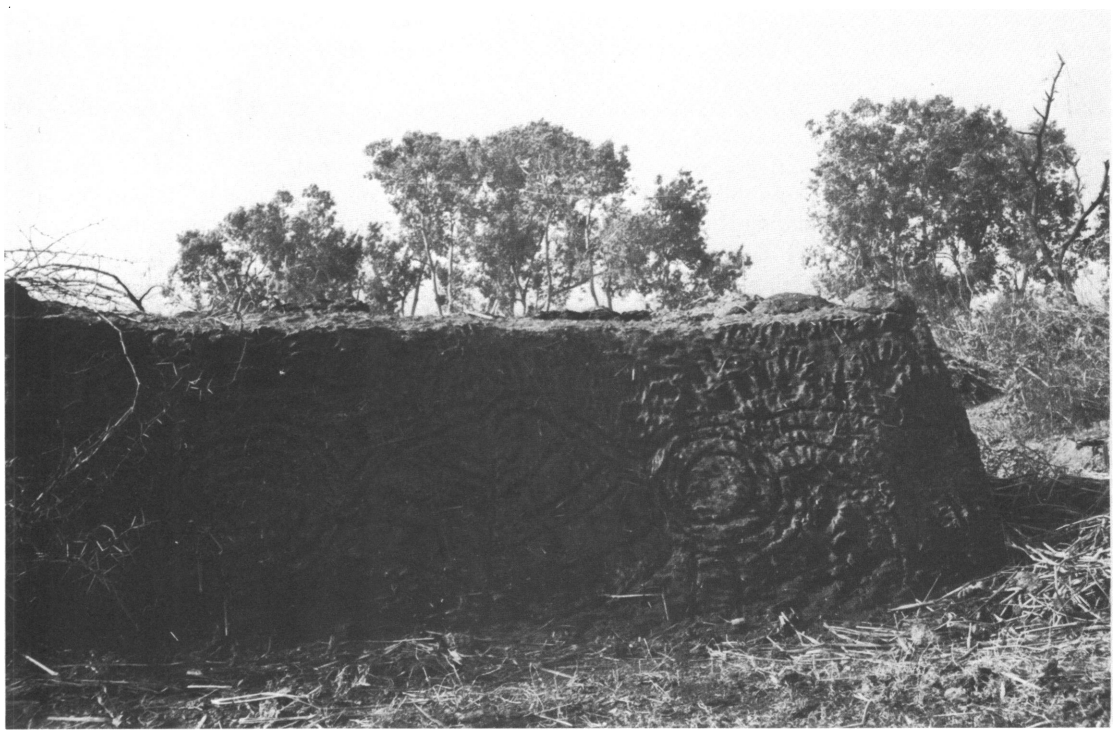

FIG. 44. Partially finished pile of dung cakes. The exterior of the pile is plastered with dung for protection from the rain. The dung coating is often decorated with incised lines.

from the area sometimes pervaded parts of the village and could be quite oppressive.

OTHER DOMESTIC ANIMALS

Although cattle were owned by members of all castes, most of the other domestic animals of Shanti Nagar were the property of members of specific castes. All the pigs and chickens belonged to the Chuhra Sweepers. Five of the 17 Chuhra Sweeper families owned the 26 pigs of the village. One of these families was raising three additional pigs for a Chuhra from a neighboring village on a share basis similar to that practiced for cattle. Under this arrangement, the Chuhra woman, head of her family, had accepted a sow to raise; the sow bore four offsprings. As her share, the Sweeper retained two shoats and returned the sow and the remaining two shoats to the original owner. Her two shoats were included in the village total of 26 pigs.

Pigs were raised for food, for sale, and for their bristles. Among the villagers, only the Chuhra Sweepers ate pork. A pig could not be consumed by a single family; consequently, when one was slaughtered, its owner sold parts of it to the other Chuhras. A pig was slaughtered every two or three months. Live pigs were sold both in the village and in Delhi. As was the practice with many agricultural commodities, the price of pigs then current in the city set the price for village transactions. The Chuhras kept their pigs in sties. The other castes protested strongly when a pig was allowed to run loose.

One of our most reliable informants, who owned four pigs, outlined the economics of raising them. He fed them jowar, gram, leftovers from meals, and also led them to the fields to forage. To be used as fodder for pigs, jowar had to be ground and either soaked or cooked; it could not be too dry. Gram did not require cooking. Buttermilk was also fed to pigs. Each pig consumed about a quarter-seer of fodder daily. After a year and a half, the pig would have grown large enough to sell for Rs. 50. After two or 2½ years, it could be sold for Rs. 100. Our informant said that he profited by Rs. 25 on a 50-rupee pig. If we approximate the cost of raising a pig for a year and a half on the basis of the daily consumption of a quarter-seer of jowar costing Rs. 11 per maund, the total cost would be Rs. 37.64. The actual cost was probably less because the pig foraged for part of its food; therefore, our informant's estimate of his profit on a 50-rupee pig was probably reasonably accurate. He believed that it did not pay to keep a pig beyond the 50-rupee stage because it began to eat more and the higher price ultimately received did not compensate adequately for the increased food consumption. Pigs were salable at any stage, the sale price depending on their size. At two or three months of age, a pig could be sold for Rs. 5.

More chickens were owned than pigs; 10 Chuhra Sweeper families owned 20 hens and four roosters. Raised for food and for their eggs, chickens were relatively costly, a large one selling for Rs. 5. They were sold in and outside of the village. Their diet consisted of jowar, bits of bread, and any insects that they could forage. Our informant reported that he earned a profit of Rs. 3 on a 5-rupee chicken. The few eggs produced were generally consumed in the village; some were sold to those high-caste individuals who would eat eggs. The more observant vegetarians among the high castes frowned on this practice; therefore, the sale of eggs in Shanti Nagar was conducted inconspicuously. An egg sold for 4 annas in the winter, 2 in the summer.

All the mules, horses, and donkeys in the village were owned by Gola Potters who used them to transport loads, one of their traditional occupations. There were 17 mules, three horses, nine mares, one filly, and five donkeys distributed among 11 of the 12 Gola Potter families. The number of such animals per family ranged from one family with one mule to two families with five animals. Although the Potters bred their animals and engaged in trading at fairs, the principal income they produced was from transport. The Potters obtained most of their animals by purchase at a fair held in Beri, Rohtak District, Punjab, and also at another fair held on the Ganges. The mule was the most commonly owned animal because of its strength. With a mule, one could earn from Rs.

2.50 to Rs. 3 daily. The price of a mule, which could be as high as Rs. 1000, reflected its earning potential; however, most mules cost much less. One informant said that he had purchased two mules at the fair at Beri for Rs. 500.

Donkeys were not so strong as mules, an attribute reflected in their cost which ranged from Rs. 50 to Rs. 200. With a donkey, it was possible for a man to earn a maximum of Rs. 2 daily; however, the average was Re. 1 to Rs. 1.50, a figure no greater than the wage for agricultural labor. Horses and mares cost as much as donkeys although both were weaker than donkeys. However, the value of mares was enhanced because they were bred with donkeys to produce the valuable mules. One informant reported that he bought two mares for Rs. 110 and Rs. 125. Potters frequently borrowed money to purchase animals.

Our Gola Potter informant claimed that no one calculated an average monthly or yearly income from his animals because the work with them was intermittent. One worked as many days as possible, but even with transporting loads of bricks at kilns, the most regular employment of the Potters, one might not find work for weeks at a stretch. Although Potters obtained part of their fodder from the fields without cost, except for the labor of the women who gathered it, they found it necessary to purchase additional fodder. Loads were carried in sacks slung over the backs of the animals, one hanging on each side. The Potters themselves wove these sacks. Only one Potter owned a horse cart. A proud and ambitious man, he had purchased the cart and a mare for Rs. 580. We watched him one day, shortly after he had purchased the cart, driving through the village with a load of children. When he arrived at his house, he called his wife, who came, carrying a pitcher of water in one hand and a silver bracelet in the other. She dashed a little water on the mare's legs to welcome her home. The mare was then offered a piece of bread. The risks of engaging in the transportation business were illustrated two or three months later by the death of the mare. Donkeys, horses, and mules lived an average of 12 to 14 years.

Dogs and cats were owned by the members of any caste. We took no census of these animals; they had slight economic importance. Noisy, sometimes aggressive, and potentially dangerous owing to the danger of rabies, the dogs were, in our opinion, a great nuisance because they were permitted to run loose. They foraged for some of their food, but were also fed bread by their owners. One of our informants who owned a large dog reported that it ate as much as a person. Except for sentimental reasons, it is difficult to understand why villagers kept dogs. There were only a few cats in the village. Cats, generally, were not permitted to run loose; we saw one cat tied to a long leash inside a house near the supply of grain, where it served to protect the grain from rats.

There was one camel in the village. The property of a landowner, it performed most of the functions of a bullock, such as plowing and turning sugarcane mills and Persian wheels (figs. 45, 46). We never saw the camel used to thresh grain. A camel was said to have the strength of 1½ bullocks. Whereas two bullocks were used to plow and to activate a sugarcane crusher, a single camel sufficed for these tasks. The camel was also used to transport fodder from the fields. Villagers regarded some of the habits of camels as rather despicable and did not have the same affection for them as for their bullocks.

CRAFTS AND COMMERCE

Professional practitioners of five crafts lived in Shanti Nagar: a blacksmith, basketmaker, shoemaker, tailor, and two families of potters. The villagers required the services of other craftsmen, such as goldsmiths, carpenters, weavers, and well-diggers, but none of these were resident in Shanti Nagar. In some cases, the villagers were unable to provide enough custom to support such specialists. For example, a goldsmith once lived in Shanti Nagar but he left for lack of sufficient business. Craftsmen not represented in Shanti Nagar could be

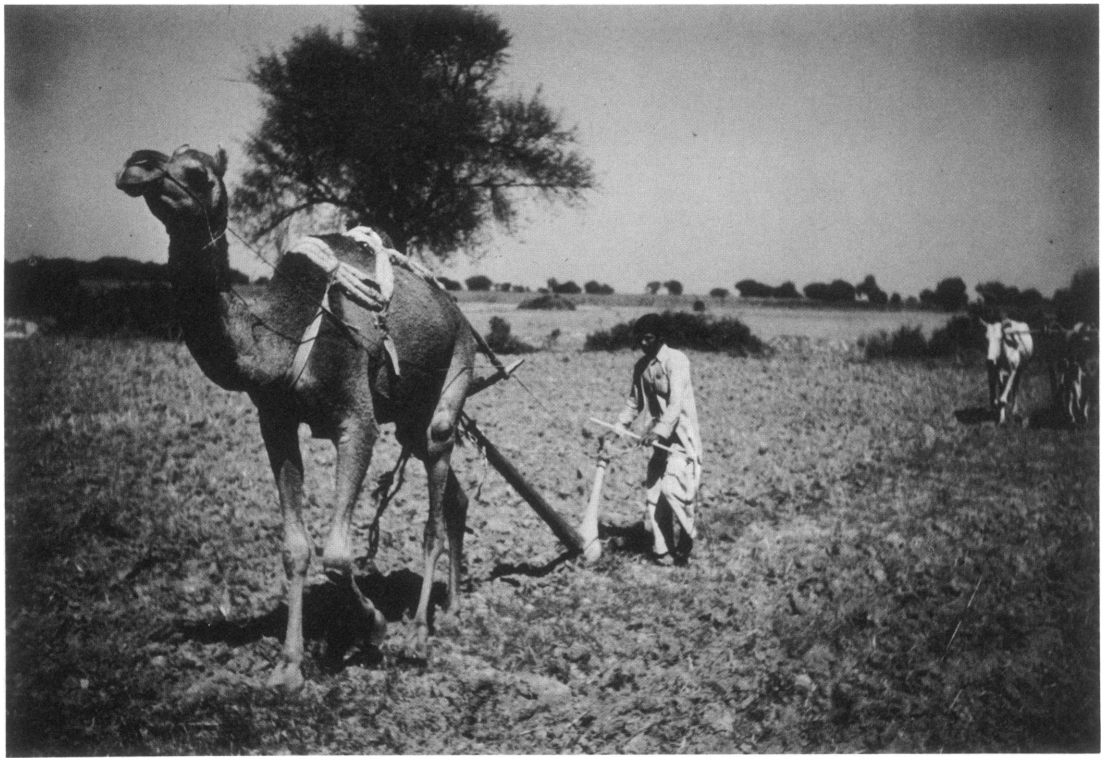

FIG. 45. Plowing with a camel, front view.

found in neighboring villages. Some of these craftsmen visited Shanti Nagar either to work or to sell their products; to obtain the services of other artisans, however, the people of Shanti Nagar had to visit their villages. Of the craftsmen who lived in Shanti Nagar, the Lohar Blacksmith was perhaps the most important principally because he made and repaired agricultural implements. Although a farmer might be able to plan conveniently to purchase a new tool outside the village, he could not foresee when repairs might be required. A trip to another village to have a plow repaired would be most inconvenient during the height of the plowing season; therefore, the farmers made sure that the village always had a Lohar Blacksmith in residence. When the last male of the original Lohars of Shanti Nagar died, his brother's son was invited to come to Shanti Nagar from a neighboring village. A potter and tailor were also essential artisans, and, like the Blacksmith, those living in Shanti Nagar had been invited to come to the village (Freed and Freed, 1976a, pp. 40-41). Of the five craftsmen represented in Shanti Nagar, only the shoemaker can be regarded as nonessential. The villagers needed shoes, but most shoes were either bought outside Shanti Nagar or from itinerant vendors. The village shoemaker, whose prices were considered to be high, supplied few of the villagers of Shanti Nagar.

Although many villagers marketed their agricultural products or the products of their own handicraft, very few worked in commerce, in the sense that they functioned as middlemen or distributors. Except for one man who owned a share of a small gristmill in a neighboring village, no villagers owned or managed any businesses that involved the manufacturing or the processing of raw materials. Such commercial activities were largely confined to Delhi and Narela. The single shop in the village was operated by the local Baniya Merchant; shortly before our departure from the village another

Baniya was invited to Shanti Nagar to open a shop. We lacked the opportunity to observe whether this new venture was successful. We have little information about the volume of business the established Baniya Merchant did in his shop, except that the enterprise required the full-time work of two men and that the proceeds were adequate to support comfortably a family of three adults and three children. The only other middlemen in the village dealt in milk, vegetables, and wood. The activities of the two village milkmen have already been described. One Bairagi Beggar woman regularly peddled vegetables through the streets of Shanti Nagar; she claimed to earn a weekly profit of only 1 or 2 rupees. A young Chamar Leatherworker man briefly tried his hand at peddling vegetables but abandoned the venture after a few weeks.

Blacksmith

The Lohar Blacksmiths made and repaired agricultural implements like sickles, hoes, and hatchets. Not only did they make the metal parts of these implements, but they also fashioned the wooden handles; thus, they were carpenters as well as blacksmiths (fig. 47). Their carpentry was not confined to the making of the wooden handles for tools with metal blades; they also made other wooden implements, such as the wooden parts of the churn. Some metal work however, was beyond their capabilities. For example, they did not repair the metal parts of the sugarcane mills. Apparently they also lacked the high degree of skill in carpentry required to build a bullock cart or an elaborately carved house door. For such work, carpenters were sought in other villages. A single Lohar family with three adult males sufficed to furnish all the normal services required of blacksmiths to the people of Shanti Nagar. In addition, these men found time to make a substantial number of implements that they peddled in other villages and towns and, also, to operate a shop in Narela. For a time, one of them worked in Delhi.

The Lohars were involved in jajmani relationships with many families; a substantial part of their income was derived from such relationships (Freed and Freed, 1976a, pp. 126-127). All the patrons with whom the Lohars maintained jajmani relationships were farmers. The Blacksmiths received an annual payment from a

FIG. 46. Plowing with a camel, rear view, to show details of camel harness and the attachment of the plow.

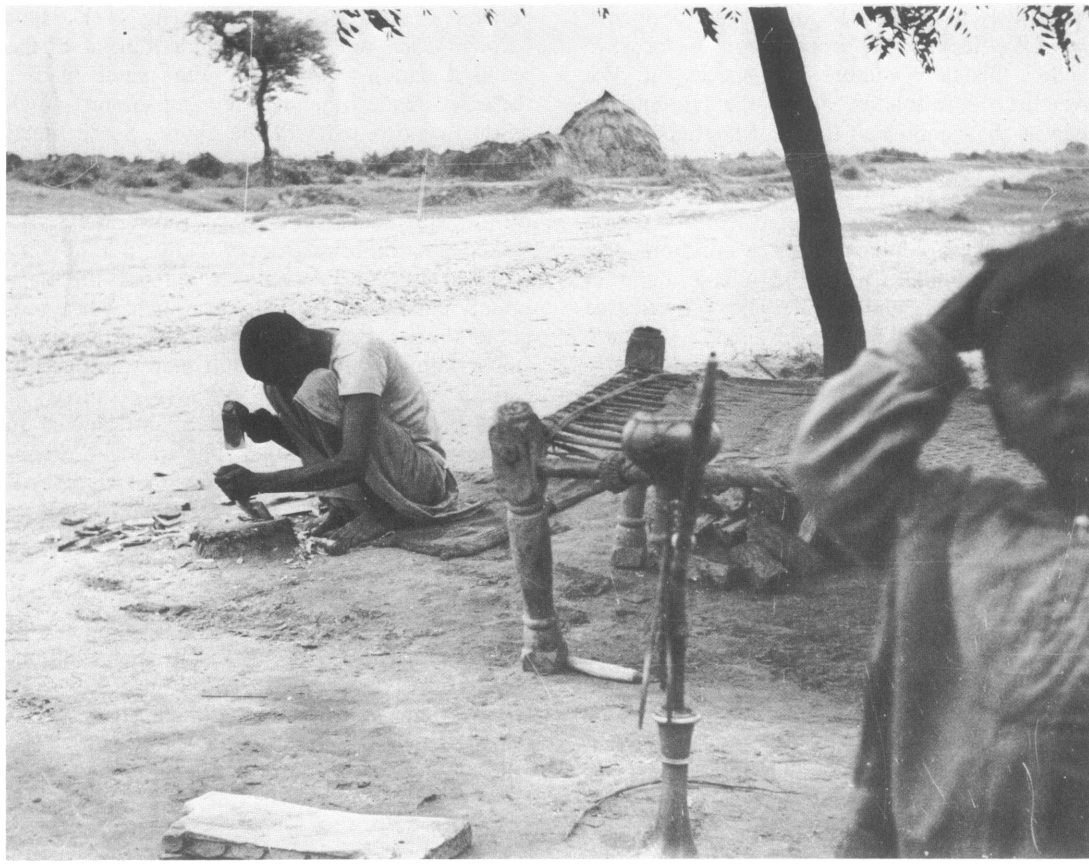

FIG. 47. Lohar Blacksmith making wooden handle for an implement.

patron. Generally, this consisted of 45 seers of wheat and as much fodder in return for the repair of the patron's old tools, the making of new tools from iron that he supplied, and, when required, specific work on his new house. Such was the payment of a patron who operated a single plow, that is, who owned two bullocks. Patrons who owned more than two bullocks were theoretically expected to pay proportionally more, but our data indicate that all of the Blacksmiths' patrons paid basically the same amount. The total remuneration that the Lohar Blacksmiths received from jajmani payments can be estimated in two ways with almost identical results. Forty-eight cultivating families owned bullocks. If we assume that all of them paid essentially the same amount, then the Blacksmiths received about 54 maunds of both wheat and fodder worth about Rs. 1026. We may also simply divide the 95 bullocks in the village by 2 which yields 47.5 "plows." The normal payment of wheat and fodder for each plow would have a value of Rs. 1015.

In addition to payments in kind within the jajmani system, the Lohars sold implements for cash to their patrons, to the landless people of Shanti Nagar, and to customers who lived in other villages and towns. It was difficult to estimate the cash income of the Blacksmiths. On one occasion, a Blacksmith told us that his family averaged about Rs. 60 per month in cash sales, of which Rs. 35 were profit, about 60 percent. The purchase of coal, iron, and wood amounted to Rs. 25. On another occa-

sion, he said that the maximum that his family could earn in cash sales was Rs. 5 per day or Rs. 150 per month. Thus, yearly cash sales were Rs. 1800; this figure reduced by 40 percent for expenses gives a yearly profit of Rs. 1080. Another time, the Lohar reported that his family sold 400 sickles for the kharif harvest and from 1500 to 1750 for the rabi harvest. If we average the last two figures, 2025 sickles were sold annually. Sickles cost 10 annas, 4 annas of which, according to the Lohar, represented the cost of material. Therefore, the Blacksmiths had cash sales of sickles alone of Rs. 1266, of which Rs. 759 represented profit. During the sugarcane crushing season, the Lohars operated a shop in Narela. They hired two men for Rs. 75 per month each to make the large iron pans used to boil sugarcane juice. We do not know how much profit the Blacksmiths earned from this shop.

The yearly income of the Blacksmiths can be estimated as somewhat in excess of Rs. 2319. The return from jajmani relationships was about Rs. 1020, if every patron paid the required fee. The profit from just the cash sales of sickles was Rs. 759. Since a number of other implements were also made and sold, the total profit from cash sales can reasonably be estimated at double that figure, or Rs. 1518. If we average this figure with the estimate derived from a daily cash sale of Rs. 5, the yearly profit from sales was Rs. 1299. This figure plus jajmani payments of Rs. 1020 totals Rs. 2319. Additional income was derived from the shop in Narela and from salaried urban employment. Most of the cost of iron, fuel, and wood can be charged against cash sales rather than repair work compensated by jajmani payments. All sales required raw materials and most of them involved the use of coal. Repairs, on the other hand, might require only labor. For example, during the harvest season the Blacksmiths sharpened the sickles of their patrons as needed, a task that involved only a few moments of work with a file.

In our judgment, the 11-member Lohar family was in a relatively strong economic position. However, it would be unjustified to conclude that Blacksmiths who lived in villages similar to Shanti Nagar were in comparable economic circumstances. Luck, especially with regard to one's health and the number and sexes of one's children, influenced an individual's economic situation. Sons involved expense but at least they had the potential to strengthen a family economically when they became adults; daughters, however, were a heavy financial burden. The Blacksmith of Shanti Nagar had four sons and three daughters. Moreover, two of his sons were adults; another, 15 years old, could assist in the smithy if necessary. In contrast, the Lohar Blacksmith of Rampur, a village in the Union Territory of Delhi quite similar to Shanti Nagar, lived in poverty (Lewis, 1958, pp. 64-65). His problems stemmed from having six daughters, and only four sons, and especially from the fact that the three oldest children were daughters who had to be married before his sons were old enough to contribute significantly to the income of the family. The marriages put him in debt; he fell sick, lost money on an investment, was harrassed by creditors, and his debts were continually increasing. His hope for a change in fortune rested on his four sons who, eventually, would begin to contribute economically to the family.

We did not attempt to study the technical aspects of the Blacksmith's trade, but contented ourselves with the observations that were possible in the course of our somewhat casual visits to the smithy. Such a study would have presented problems. The Lohars were always busy; there were usually several customers in the shop waiting for their work to be done. The presence of customers tended to inhibit interviewing. Moreover, blacksmith's work was noisy, much of it involved the hammering of iron, and it could not be interrupted very long for explanations, for the iron had to be pounded while it was hot. In contrast, the basketmaker or tailor could interrupt their work for several minutes without creating problems. In general, the oldest son of the Blacksmith, 24 years old, was the principal worker at the smithy. He worked at the forge and generally supervised the activities in the smithy. His younger brother, 21 years old, did the heavy hammering, as the older brother manipulated the red-hot iron on the anvil; he also did chores

around the forge, such as carrying coal. Customers sometimes assisted with the heavy hammering when the younger brother was absent. For light hammering, a Blacksmith wielded the hammer in one hand as he held the hot iron in tongs in the other. A wheel activated by a manually operated crank produced a draft at the forge (fig. 48). Although we have relatively few statements on the point, apparently the marketing of tools in other villages was a task undertaken principally by the father and younger brother.

Potter

The two Potters of Shanti Nagar produced most of the earthenware used in the village: a variety of pots for carrying and storing water, churning and boiling milk, and for storing ghee and grain, as well as pot lids, lamps for festivals, hookah bowls, feeding troughs for cattle, and cooling trays for gur. The two potters easily supplied the needs of Shanti Nagar and, in addition, produced earthenware for sale outside the village, especially at fairs. Moreover, both Potters were as active as were the other Gola Potters in the transportation business; one man owned two donkeys, one mare, and one mule, and the other Potter had two mares and three mules. Although the Potters had jajmani relationships with patrons, most of their earthenware was paid for on delivery, either in cash or, usually, in grain, rather than by a specific payment of grain and fodder annually (Freed

FIG. 48. Interior of the Lohar Blacksmith's workshop. The forge is in the left background; the wheel that produces a draft, to its right. An anvil is in front of the forge. A hookah is in the foreground.

and Freed, 1976a, pp. 129-130). The customary jajmani payment was 20 seers of grain, or less; but even those landowners who maintained jajmani relationships with a Potter bought most of their pots for cash or grain and paid upon receipt. A patron's annual jajmani payment compensated for relatively few of the earthenware utensils he might require. Although we do not know the number of villagers who had a jajmani relationship with a Potter, we can make an estimate based on a sample of four landowning families and four low-caste landless families. Two of the landowning families and none of the low-caste landless families had such a relationship. Thus, we estimate that perhaps 30 of the 59 landowning families paid about 20 seers of grain as a jajmani obligation, making a yearly jajmani income equivalent to Rs. 120 for each of the Potters.

Most of the income from pottery was derived from sales other than jajmani payments. The annual value of these sales can be estimated as follows: normally, except during the monsoon season, a potter fired a batch of pots every two months. Under such a regime, he could produce a maximum of five lots a year. A batch of pots, according to one of the Potters, usually consisted of a mixture of several kinds of pots, a total of about 400, plus 50 to 60 hookah bowls (Freed and Freed, 1963, p. 39). Ordinarily, approximately 20 percent of this earthenware was spoiled in the firing. We have from six to 10 statements of the prices paid for four of the most common types of pots. Prices ranged from half a seer to 3 seers of grain. For each type of pot, we averaged these prices to obtain an average price. A typical lot of pots included about 200 water pots; the balance was a mixture of other types, such as those used as churns or as containers to boil milk. To estimate the value of a lot, we calculated a weighted average of the prices for each kind of pot and added to this figure the value of the hookah bowls, 2 annas for a large bowl and 1 anna for a small one, based on information from a Potter. According to this method of calculation, the value of a batch of pottery was Rs. 167.09. The five batches produced in a year were, therefore, worth Rs. 835.45. A small proportion of these pots would be used to satisfy jajmani obligations; on the other hand, Potters occasionally fired about 500 hookah bowls for sale at a fair; they also made equipment, such as cattle-feeding troughs. Such products were in addition to the annual five lots. We assume that the income from additional production equaled not only the value of the pots used for jajmani obligations but also covered the cost of fuel and of the paint used to decorate the pots. Fuel consisted of dung and straw, much of it collected free of charge. Occasionally, however, fuel had to be purchased. The Potters paid nothing for their clay. Therefore, the yearly profit from sales for each of the Potters can be estimated at approximately Rs. 835.45. The estimated annual income from pottery, both from sales and jajmani payments, was approximately Rs. 955.45 for each Potter.

Apparently, the trade of the Blacksmith was somewhat more lucrative than that of the Potter from the point of view of the annual income that the village of Shanti Nagar produced. The Blacksmith's annual income from ironwork and carpentry was about Rs. 2319; that from pottery was Rs. 1911 (for both Potters). The income from ironwork was 21.4 percent greater than that from making pottery. Three Blacksmith men worked in the smithy and sold their products. The pottery was fashioned by three men and two women: in one family, the Potter was assisted both by his wife and his elderly father; the second Potter was aided only by his wife. Thus, not only was the ironwork produced in the village worth more from the standpoint of income than was the pottery but it required fewer workers to produce. However, the Potters did not devote full time to their craft. Each Potter owned donkeys, mules, and mares and carried on a transportation business. On the other hand, only one of the Blacksmiths worked full time at his trade. His father, as befitted an elderly man, did not work very hard and his younger brother could be spared to take a full-time job in Delhi.

The Lohar Blacksmith family enjoyed better economic circumstances than either of the Potters. One of the Potters failed to earn enough even to feed his family adequately. Twin six-month-old daughters, the youngest of his 10

children, were in danger of starving. Although the second Potter appeared to be relatively poor, the appearance may have been deceptive; we suspect that he really was not badly off. He had only one child, a daughter. His father, a family member, helped him to make pots and to graze his animals. Since his earnings supported a relatively small four-member family, we assume that his economic resources were greater than surface appearances (for example, his mud house) would indicate. However, the manufacture of pottery had been rendered less profitable during our residence in Shanti Nagar by a decision of the village Development Committee to auction the cattle dung that fell on the common village grazing land (Freed and Freed, 1976a, pp. 164-167), an action that effectively closed this source of free fuel to the Potters. The Potter with 10 children was forced to abandon making pottery because he could not afford to pay for fuel. He decided to move to a distant town to obtain work in a brick factory and to remit money to his wife and children who continued to live in Shanti Nagar. The second village Potter elected to continue to produce pottery despite the unfavorable effects of the dung contract.

Except for paint, the raw materials for pottery were to be found on village land. Both Potters had free access to a pit of yellowish clay. A Potter loaded the saddlebags of his donkeys, mules, or mares with the clay and transported it to his courtyard, where it was dumped on the ground. In the same way, he brought sand from a nearby source. His wife fetched water from the well. With an iron sickle, the Potter cut the clay into wedges, about 4 or 5 seers apiece, and placed them in a storeroom to prevent them from drying too rapidly in the sunlight (fig. 49). The Potter and

FIG. 49. Gola Potters preparing the clay to make pots.

his wife mixed one wedge of the clay at a time with sand and water by treading. The Potter then placed the mixture on a stone slab and kneaded finely sifted sand into it with his hands for additional tempering. The clay was then ready for the wheel.

The Potters used a single-disk, solid potter's wheel mounted about 4 to 6 inches above the ground. The wheel was 4 to 6 inches thick and weighed about 3 maunds. One Potter told us that he had made his own wheel. Only men worked at the wheel although women assisted in other aspects of the manufacture of pottery. While working at the wheel, the Potter squatted with his heels and arches resting on a wooden platform raised a few inches from the ground. As he leaned forward over the wheel, he manipulated the clay that was positioned at its center.

To throw a large pot or water jar, the Potter slapped a small dab of clay onto the center of the wheel; he placed one of the kneaded and tempered wedges of clay on top of it. Using a stick, one end of which was set in a notch at the rim of the wheel, to function as a lever, the Potter set the wheel rotating (fig. 50). After the wheel had gained sufficient momentum, the Potter began to shape the pot. First he formed the rim. Next, he pressed one hand into the clay to form the hollow interior of the jar (fig. 51), forcing its sides to bulge outward below the neck. The Potter then removed the roughly shaped, thick-walled vessel from the wheel and placed it in his storeroom to dry for a day or so depending on the weather.

After partially drying, the vessel was expanded, shaped, and smoothed with hand tools and molds. Dishes and broken pieces of pottery

FIG. 50. Gola Potter using a stick as a lever to activate his potter's wheel.

FIG. 51. Gola Potter throwing a pot. When the wheel loses momentum, the Potter reinserts one end of his stick into the hole at the edge of the wheel and again sets it to spinning rapidly.

were used as molds. The Potter placed the unfinished jar on an earthen dish that served as a mold and with two tools, a flat wooden paddle (*tapa*) and a small clay anvil (*pinda*), proceeded to enlarge, thin, and smooth the wall of the jar. The wall was pounded between the anvil and the paddle, the anvil placed against its inner surface. Before being used, the anvil was sprinkled with fine sand to prevent it from sticking to the interior surface of the wall which might be damp. If the clay was too dry, the Potter sprinkled a little water on it to render it easier to expand and shape. The entire surface of the pot except its rim was shaped with the paddle and anvil. This procedure served not only to expand the size of the jar and to thin its wall but also to provide an even distribution of the water in the clay and to reduce porosity.

In the next step, the Potter placed the jar on a shallow dish that served as a mold, covered the entire opening of the jar with the heavy pottery base of a hookah, lifted the jar slightly, and let it settle on the mold. The bottom of the jar was given its proper shape by the mold; the weight of the hookah base compressed the air trapped inside the jar and caused its sides to bulge symmetrically. After the jar was again dried, it was pressed a second time into the same mold to round its base. The Potter then placed the mold inside the jar at the bottom and further smoothed and refined its shape with the anvil, paddle, and his hands. At this point, the

pot was placed upside down on the floor of the storeroom to dry.

In the final step before firing, the Potter's wife applied an unidentified substance to the top of the jar. She obtained a gritty, rocky substance from a nearby hill, broke it up using an iron weight, mixed it with water, dipped a rag into the solution, and wiped the upper portion of the jar with the moistened rag. When the jar was fired, the applied substance melted and flowed downward to coat the jar, a procedure that served to reduce porosity. This substance was applied only to jars used to carry or store liquids. It was apparently a slip. The technique is comparable with that described for Sind (Mackay, 1930, p. 133).

Much of the small clay ware was not finished with the paddle and anvil. Small items, such as lids for pots, lamps, and saucers required nothing more than to be thrown on the wheel and fired. For example, to produce pot lids, the Potter took a prepared mass of 4 or 5 seers of clay, centered it on the wheel, activated the wheel, pressed the top of the mass with a mold shaped in the form of a lid, formed a nob in the clay with his fingers, and separated the newly formed lid from the mass of clay with a taut string. It was possible to produce 5 or 6 lids from such a mass of clay in a few minutes. The lids were then ready to be fired. A similar rapid process was used for lamps and saucers.

Pottery was dried at least a day before it was fired. Hookah bowls were the only pottery forms decorated prior to firing. Occasionally, they were ornamented along the rim with incised designs produced with a stick or a piece of metal. Earthenware was fired in a large circular pit 18 feet or more in diameter. Dung cakes and chaff provided the fuel. A layer of chaff and dung cakes was placed at the bottom of the pit. On it was arranged a layer of earthenware, the large jars lying on their sides with the smaller articles fitted around and between them. The layer of pottery was covered with a layer of chaff and dung on which, in turn, was placed a second layer of pottery. When the pile of pottery and fuel was completed, it was covered with sherds and earth. At its center was a large hole filled with chaff and dung, where the fuel was ignited. From this point, the fire spread throughout the pile. The temperatures produced by this crude and inexpensive method of firing pottery can scarcely have exceeded 700° C. The ware produced by this method was nonvitreous, somewhat porous, and either reddish or pinkish gray; the redder hue appeared on the wares to which a slip had been applied. Approximately 20 percent of the items were usually spoiled during firing, as can be expected from a method that lacked oxygen controls (cf. Scott, 1954, pp. 382-383). The spoiled pieces were either broken or blackened during firing. It was possible to salvage some of the blackened items by refiring.

After firing, the Potter's wife painted designs on the large jars, usually only those used to carry water from the well. Black and white pigments, the only colors used, were purchased in Delhi or from the village store. In Delhi, pigment cost 1 anna per seer; the village Baniya charged 2 annas. The Potter's wife ground these chalky pigments and mixed them with water. For making brushes, she traded pots to the Chuhra Sweepers for hairs from the tail of a small animal that they hunted. She said that in return for one or two large water jars she could obtain enough hair to make six or seven brushes. To paint a jar, she placed it on a circular iron griddle (*tawa*) shaped like a shallow bowl. The jar and griddle, together, could be easily rotated. A small jar set on top of the large jar to be decorated served as a handgrip. The Potter's wife painted with rapid flowing strokes as she rotated the jar with her free hand. The design customarily consisted of one or two bands encircling the jar below its neck. A common design consisted of two adjoining bands surrounding the jar, the upper one composed of black triangles with white dots inside each triangle and the lower one of black crosshatching. The black paint turned brown when applied to the jar and allowed to dry. It took about two minutes to paint a design. A less common decorative band depicted a stylized peacock with the swirl of its tail feathers somewhat resembling a snake. The peacock motif is a prominent one in many aspects of life in Shanti Nagar.

Although it was not feasible to fire pottery outdoors during the monsoon season, a Potter sometimes attempted to fire a batch of hookah

bowls indoors. In the middle of September, toward the end of the monsoon season, we visited one of the village Potters who, after waiting four days for the rain to stop, decided to fire a batch of about 500 hookah bowls in his storeroom (fig. 52). He hoped to be able to sell them at a fair that would take place in a few days and could wait no longer. The hookah bowls were fired in two batches. Dung cakes and then the hookah bowls were placed on a layer of straw spread on an area of the storeroom floor. The resulting pile was covered with potsherds. As was done in the out-of-doors kiln, a hole in the center of the pyre, filled with straw and dung, was the place at which the pyre was ignited.

The hookah bowls were made in two sizes; they were all decorated with incised designs. Casual inspection revealed at least three different designs. At 2 annas for a large hookah bowl and 1 anna for each small one, the Potter would receive Rs. 37.50 for the batch, if only 20 percent of the bowls were spoiled in firing. According to the Potter, it required about 10 to 15 days to make that many hookah bowls. Bowls not sold at the fair were saved for a later fair. The day following the firing, we visited the Potter who told us that all of his labor of the previous day had been wasted. Instead of the proper reddish color, the hookah bowls had turned black. The Potter planned to refire them. We watched him build a new pyre; the black bowls on the bottom were topped by a layer of new unblemished ones.

It is difficult to estimate the average life span of various types of earthenware. Pots might be either broken or discarded for a variety of reasons. For example, after the *havan* ceremony for a birth, a family discarded their water jars and obtained new ones. Any polluted pot was broken. This crude utilitarian ware tended to lose its shape after a time and was discarded. Wealthy families bought some new pots at every major festival, and so gradually

FIG. 52. Gola Potter arranging hookah bowls and dung cakes for firing indoors.

replaced all or most of their household pots annually. However, old water jars that had lost their porosity and no longer cooled water, were used to store grain. Some families had 15 to 20 grain storage jars and only four water jars; these figures suggest that the oldest grain storage jars were probably four or five years old.

In addition to making pottery, the Gola Potters practiced another craft, weaving. Although they were not professional weavers, who wove textiles for sale, the Gola Potters produced crudely woven saddlebags (*bora*) for use on their own donkeys, mules, and horses (fig. 74). Every animal carried two bags, one on each side. Two types of saddlebags were woven, one designed to carry earth and the second, bricks. Although a variety of loads could be carried on the backs of animals, bricks and earth comprised most of the loads hauled by the Gola Potters. The warp of the saddlebags used to carry earth consisted of cord made from coconut fiber, purchased in Delhi ready-spun for Re. 1 or Rs. 1.12 per seer. About 4 seers of this cord were required to make one saddlebag. The weft consisted of strips of rags. A bag to carry earth lasted about eight years. Saddlebags to carry bricks were woven only of rags because bricks did not cut rags as rapidly as they did coconut fiber. About 5 seers of rags, costing from Rs. 2 to Rs. 5, were required to weave a bag. The saddlebags used to haul bricks lasted only six months. Saddlebags were woven on a vertical frame that consisted of two sticks set upright in the ground, slightly inclined toward each other and held apart at the top by a horizontal stick. The continuous warp was wound around the vertical sticks and adjacent strands were tied together by the weft. The technique resembles the coiling method used in basketry. The wider end of the bag was joined by sewing to form the bottom. The only tool used to weave saddlebags was a wooden peg (*kili*), about six to eight inches long, used to separate the warp strands. According to the Potters, the loom had no special name but was designated simply as wood or sticks (*lakri*). The ropes used on donkeys were made by the Potters. Human hair was used because of its softness.

One young Bairagi Beggar woman also practiced the craft of weaving; she produced for family use crudely woven mats for beds (fig. 53). Like the Gola Potters, the Bairagi woman was not a professional weaver who sold her products. The loom (*adda*) consisted of four wooden stakes driven into the ground to mark the corners of a rectangle the size and shape of a bed mat. Two stringers several inches from the ground connected the corner posts along the shorter dimension of the rectangle. A continuous thick warp, made of some six homespun threads twisted together, was strung between the two horizontal poles. The weft consisted of a similar number of threads bunched together but not twisted. Supported by a timber underneath the mat, the weaver squatted on the mat as she worked. Beneath her toes, she held a wooden spreader (*gaza*) which maintained the desired distance between the lengthwise borders of the mat as it was woven. The threads that composed the borders of the mat were quite thick. The weaver inserted the weft with her fingers and pounded it home with a batten (*panja*) that had a head of five nails. The weaver told us that she could make a bed mat in two or three days. Skills such as this process of weaving and also the use of the sewing machine had previously been caste-associated occupations for males. Possibly because men were increasingly obtaining employment in urban areas, these skills were gradually becoming the province of women.

Tailor

A family of Chhipi Dyers who worked as tailors moved to Shanti Nagar from a neighboring village a few months following our arrival. With customers both in Shanti Nagar and in their original village, the tailors had plenty of work. Consequently, they did not engage in any other part-time work, such as agricultural labor during the harvest. The Chhipi claimed that his monthly earnings were between Rs. 80 and Rs. 90. Most of the tailoring was done by the head of the family although his wife also did some sewing. He used a hand-activated Singer sewing machine that had cost about Rs. 225, second-hand. At that time, a new Singer machine cost Rs. 525. Indian-made sewing ma-

FIG. 53. Bairagi Beggar woman weaving a heavy cotton mat. As she works, she squats on the textile, her weight supported by wooden beams that rest on the floor under the textile.

chines were available at prices from Rs. 150 to Rs. 300. The tailor did not have a monopoly in the village. The villagers freely engaged the services of tailors from outside Shanti Nagar. Especially when a family had considerable tailoring to be done, they might hire a tailor from outside the village to come to their home to do the work.

Basketmaker

Basketmaking, one of the traditional occupations of the Jhinvar Watermen, was practiced by the head of one of the two Jhinvar families in Shanti Nagar. One of his sons who assisted him was learning the craft but was not yet sufficiently skillful to make baskets for sale. Baskets were woven in several sizes and for various purposes from small ones for holding bread to large burden baskets. All baskets were strictly utilitarian, designed specifically for the uses to which they were put. Baskets were generally similar in shape except for the winnowing basket. The price depended upon size and workmanship. Large baskets sold for Rs. 2; small bread baskets, for from 2 to 4 annas or the equivalent value in grain.

Most baskets were made of withes from the mulberry tree (*tut*). Winnowing baskets were made of the straw of a wild plant (*sir*) that grew in ditches; sometimes these were made of quills from peacock feathers. The local basketmaker, however, did not know how to make winnowing baskets of quills. A Chuhra Sweeper in a neighboring village knew how to make quill baskets.

Because the tree from which the basketmaker obtained his raw material was on land belonging to a Jat farmer, the two men shared the income from basketmaking equally, according to the Jhinvar. The Jat did not share in the income from winnowing baskets, for he did not supply the raw material. Although the Jhinvar Waterman said that he made baskets every day,

it is unlikely that this statement was applicable during the busy agricultural seasons, as he himself farmed and was also in charge of making gur at one of the village sugarcane crushers. On the days that he wove baskets, the Jhinvar said that he produced three or four. He supplied the whole village and, in addition, sold in surrounding villages. Typically, he might sell baskets worth Rs. 3 in a day of which he retained half.

Several stages in the process of weaving a large burden basket are illustrated in figures 54 to 59. The withes were cut in October and the small branches trimmed off. If the withes were to be used immediately, they were sufficiently flexible and it was unnecessary to soak them in water. Withes that had been stored were soaked in a pond for four or five days before they were used. The basketmaker cut and split withes with a sickle, the only tool that he used. When splitting withes, he braced the sickle against a brick and held it with his foot, the blade upright and facing him. He pressed and guided the withe against the blade with his right hand, simultaneously pulling it with his left hand on the far side of the blade after enough of the withe had been split to afford a grip. The basketmaker wove most baskets in his garden because the work required considerable room. During the rainy season, he worked in a small shed in the courtyard of his home, a less desirable location. He said that he tried to finish most of his basketmaking before the rainy season.

The basketmaker began the basket by arranging four bands of radial elements so that they crossed at the base of the basket and extended outward like eight spokes of a wheel. Working in a sitting position, he supported the developing basket with his toes until it was well begun. He turned the basket toward the left and wove toward his right, its interior fac-

FIG. 54. Jhinvar Waterman weaving a basket. He is arranging radial elements.

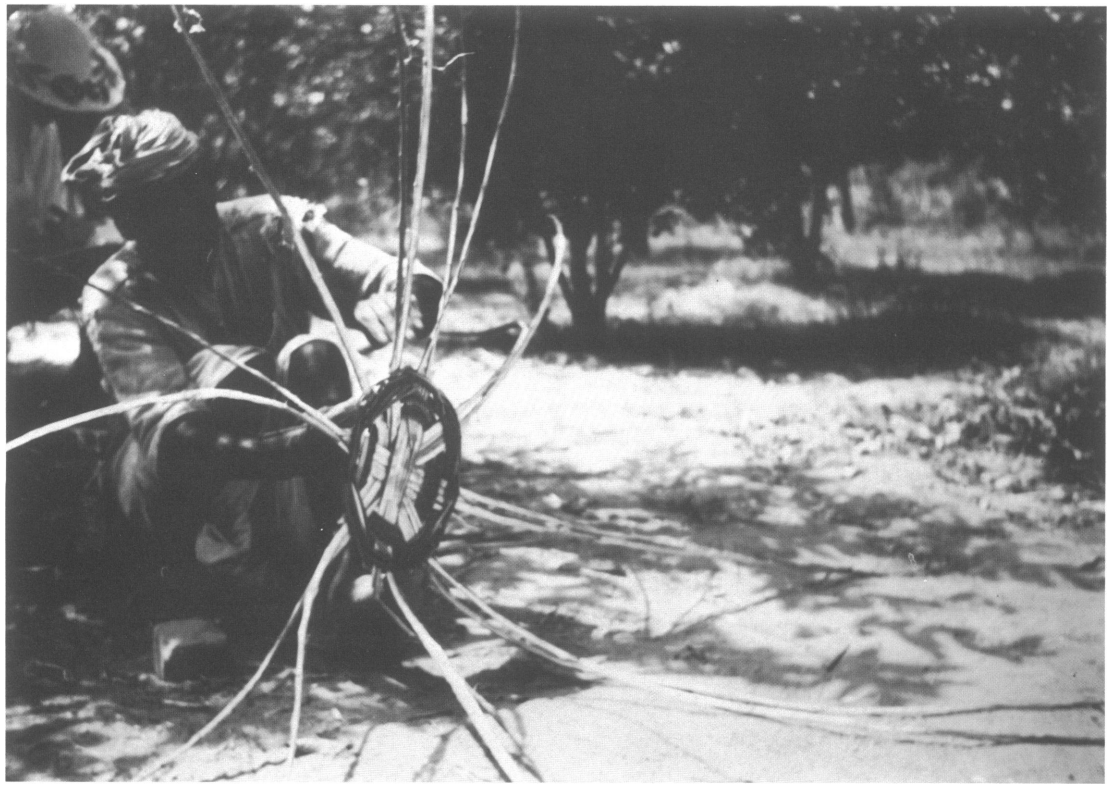

FIG. 55. Jhinvar Waterman weaving a basket. He is inserting spiral elements.

ing away from him. These radial elements consisted of long heavy split withes. Each band consisted of four withes. These bands of radial elements were held in place by an initial insertion of a group of three spiral elements that passed over and under the radial elements and circled the base of the basket twice. Since these three withes crossed a specific radial element on the same side of both passages, the visual effect was a wide band of six withes passing over and under each band of radial elements. The basketmaker continued with a spiral element, a band of three withes, that crossed a specific radial element on the side opposite the first band of six spiral elements. After this band, three withes wide, the spiral elements consisted of single withes. Thin unsplit withes were used at the bottom of the basket where the radial elements were close together. Heavier withes, the thicker parts of which were split, were inserted as the rim was approached and the radial elements were farther apart. Adjacent spiral elements passed on opposite sides of a specific radial element. In order that the strength of the basket be maintained as its circumference expanded from bottom to rim, the bands of radial elements were divided, increasing their number, in order that the distance between the radial elements did not become too great. For example, a band of four withes would fork into two bands, each consisting of two withes.

When the end of a spiral element was reached, the basketmaker might bend it at a right angle and force it between other spiral elements adjacent to a radial element to anchor the end and to reinforce the radial element, or he might simply leave it with no such finishing

touch. New spiral elements were added as needed. New radial withes were added by forcing them into a band of radial elements.

To form the rim, all but one of the withes of each band of radial elements was cut off at the rim. Each remaining withe was bent at a right angle, extended along the rim as far as it would reach, and its end then bent and inserted into another band of radial elements. This process served to interlace the ends of the radial elements to form a rim of intertwined withes. The rim was then lashed at three places with thin pliable withes.

Shoemaker

One Chamar Leatherworker was a shoemaker (fig. 60), who sold his shoes for cash. Most of his customers lived outside of Shanti Nagar; many were Delhi residents. He said that some Chamar boys who lived in Delhi wore his shoes and told other people how well they were made. It was through word-of-mouth advertising that he acquired customers in the city. The people of Shanti Nagar, however, said that his prices were too high; so they bought most of their shoes either in a large neighboring village or in Delhi. Although shoes generally cost from 4 to 6 rupees, the local shoemaker often charged from 7 to 10 rupees. He claimed that the superior quality of his shoes merited the price. We were at his shop shortly after purchasing a pair of shoes for 5 rupees from an itinerant shoemaker who was passing through the village and compared our 5-rupee shoes with those made by the local shoemaker. We

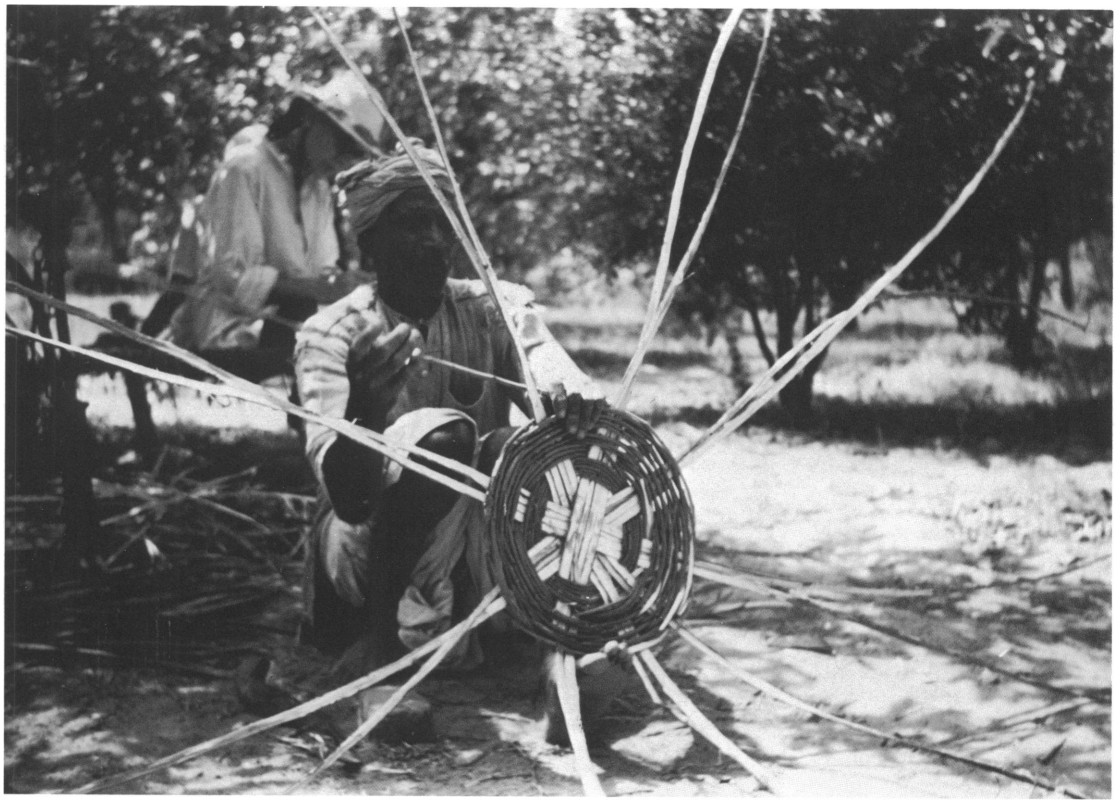

FIG. 56. Jhinvar Waterman forming base of a basket. Implement for splitting withes lies near weaver's right foot. Ruth Freed takes notes, background.

FIG. 57. Jhinvar Waterman forming rim of a basket.

judged his shoes to be decidedly superior to ours.

Despite his considerable skill, the shoemaker apparently failed to earn much money from his craft. He said that he worked slowly and produced only about eight pairs of shoes per month from which he had a net income of from 25 to 30 rupees. If his figures were accurate, shoemaking was apparently the least lucrative of the trades current in Shanti Nagar. However, the production rate of the local shoemaker was admittedly slow whether because of his inability to work faster, an individual preference regarding quality of product, or a shortage of customers for the more expensive shoes. A faster artisan producing shoes worth from 4 to 6 rupees might have had greater financial success.

Wood Vendor

The purchase and sale of wood was a commercial activity of some importance in Shanti Nagar. Three men were engaged in this occupation. An elderly Chamar Leatherworker was involved in the wood business on a full-time basis; the Mali Gardener and a Gola Potter were part-time wood vendors. Although most of the village land was plowed to provide for the cultivation of crops, trees were sufficiently abundant to furnish a steady supply of wood to these three men. Those farmers who owned nonbearing fruit trees sold them to wood vendors who felled them and moved them to the village where they were often cut up for firewood and later transported to Delhi for sale. Some wood was sold to carpenters, both from

Shanti Nagar and from other villages, who used it to make implements (fig. 61). Wood vendors also occasionally purchased trees in other villages. "Buying and selling wood is a very solid business," commented the Mali Gardener. "One cannot lose on it." He claimed to earn a profit of Rs. 20 on each tree.

We were able to observe the details of the wood trade most often at the home of the Chamar Leatherworker. He hired laborers to cut his wood, paying each of them Rs. 2 per day. Wood was bought and sold by weight. Customers paid approximately 1 rupee per maund for undried wood and Rs. 2 for dry wood. The selling price of wood also depended to some extent upon the species of the tree from which it was cut. The Chamar claimed to earn Rs. 30 per month when business was good. Although some wood was used in the village, the greater part was sold in Delhi. Prices were higher in Delhi; however, the Leatherworker had to pay transportation costs. Wood used as fuel was less costly than either charcoal or coal, but it was more expensive

FIG. 58. Jhinvar Waterman finishing rim of a basket.

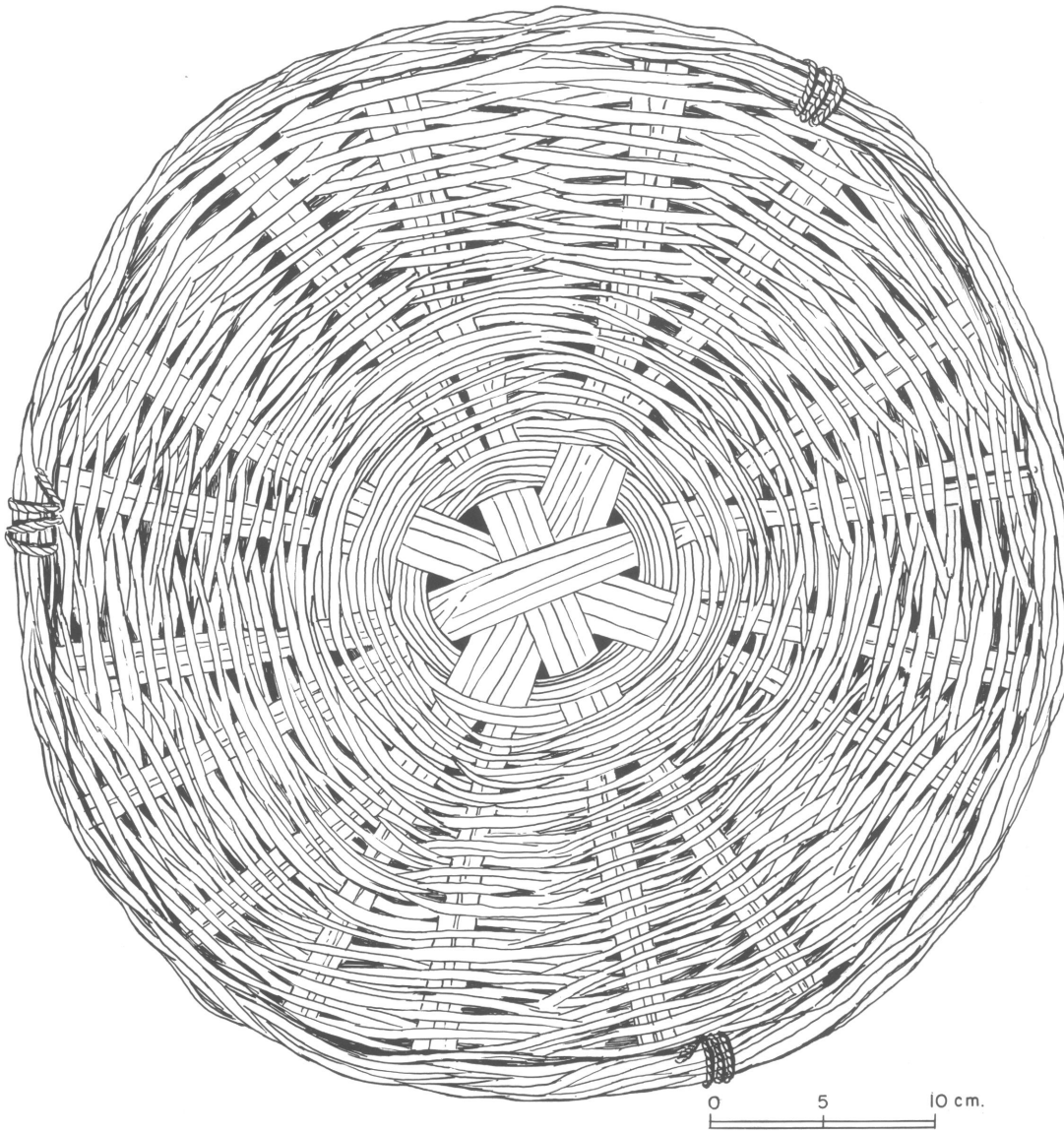

FIG. 59. Drawing of completed basket showing the three lashings on rim. AMNH 70.2-8153.

than cattle dung. The Leatherworker borrowed money to buy trees and repaid the loan when the wood was sold. Sometimes he required a month or two to sell a tree. When we visited him one day, we saw that he had quite a large quantity of stored wood. His estimate of 100 maunds was confirmed by another Chamar Leatherworker. Not all the wood produced by the trees of the village passed through the hands of the village wood vendors. Villagers, especially those with an inadequate supply of cattle dung, could gather sticks and fallen branches for use as fuel (fig. 62).

The successful conduct of a wood business

FIG. 60. Shoemaker at work in background. A guest from another village sits to the right.

FIG. 61. Carpenters from out of the village at work near the house of one of the village wood vendors.

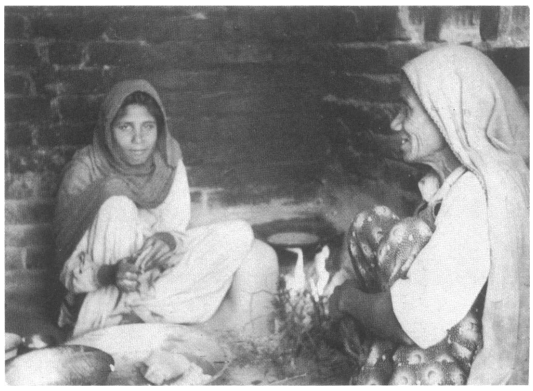

FIG. 62. Brahman Priest woman and her grandmother cooking bread. Fuel consists of sticks and dung cakes.

depended partly upon the ability to estimate the weight of a log. Villagers were usually quite accurate in their estimates, that is, they proposed figures just enough above or below the true weight to give them a decided advantage and yet to be believable. For example, we once observed the Chamar Leatherworker and a Lohar Blacksmith bargain over a log. The Blacksmith needed the wood to make handles for implements. He selected a log and estimated its weight at no greater than 1 maund. The Chamar estimated it at 1.5 maunds. After some discussion, they decided to weigh it, a complicated task. They suspended a heavy beam from the branch of a tree. It required two attempts to arrive at a satisfactory way to suspend the beam. Using a small scale and a 5-seer weight, they weighed eight 5-seer lots of bricks and put them in a sack to provide a 1-maund weight. The log and the weighted sack were then suspended from opposite ends of the beam. The addition of the 5-seer weight and two bricks, each weighing about 3.5 seers, almost balanced the log. Finally, the two men agreed that the log weighed about 1.31 maunds, or approximately halfway between the two original estimates. The log was sold at Rs. 2 per maund.

ECONOMIC ASPECTS OF CEREMONIES

Villagers spent substantial sums of money for ceremonies. Most of the ceremonies of the lengthy series of rites that constituted a Hindu wedding were occasions for gifts and feasts. Gifts were also customary during those ceremonies attendant upon childbirth and death as well as at many of the annual festivals. Foreign observers, impressed with the large sums that Indians spent in the course of ceremonial activity, sometimes were prone to regard such expenditures as a hindrance to economic development. Some of the villagers of Shanti Nagar, generally the more progressive men, expressed similar ideas, saying that more than modest spending for ceremonies was a waste of money. We were told that some caste panchayats had attempted to eliminate specific wedding expenses. Such efforts demonstrated a recognition of the need to establish a reasonable standard of ceremonial expenditures.

On the other hand, some thoughtful villagers described several practical functions of such seemingly excessive ceremonial spending. By promising an elaborate ceremony and a handsome dowry, it was possible for parents to arrange a marriage for a daughter to a more desirable mate than if they decided to spend less generously. Regular gifts to a daughter and her relatives-in-law also helped to guarantee that she would be well treated in her husband's home (fig. 63). Moreover, villagers recognized that the costs incurred by a daughter's family at her wedding, and all the gifts subsequently presented in her behalf on various ceremonial occasions, in a sense, constituted her share of the property of her natal family. Villagers often stressed the fact that because of such a system of gifts, it was not necessary that daughters inherit a share of the family property when their parents died to achieve economic equality with their brothers. After the parents' death, their obligations to a daughter were assumed by her brothers. In general, gifts at ceremonies and festivals are best viewed as an important system for the distribution of goods and for the establishment and reinforcement of social relations. In a family- and kin-oriented society, such as Shanti Nagar, it is not surprising that such a system of distribution was closely connected with the ceremonies that mark the major

events of the life cycle: birth, marrriage, and death.

The contention that ceremonial spending hindered economic development because it inhibited the accumulation and availability of capital, to some extent, assumes conditions that were nonexistent in Shanti Nagar. Some of the familiar institutions of capital accumulation and investment were absent or largely beyond the experience of the villagers. Although we believe that they made scant use of banks, we did not extensively question the villagers about banks and may have underestimated the extent to which they were used. They did not buy shares in established companies. The borrowing and lending of money generally occurred on a person-to-person basis rather than from banks or credit societies. Some individuals who possessed available funds were reluctant to become moneylenders for many reasons; among them was the expressed belief that they were temperamentally unsuited to such an enterprise. The preferred investment was in land. However, there was little for sale and it was costly. The purchase of cattle was restrained by the cost of fodder, the limited village grazing area, the obligation to care for the animals, and the risk of their illness or death. Considerable money was, however, spent on improvements in housing; during our stay in the village, brick houses were rapidly replacing those built of mud. However, an investment in housing did not provide an asset convertible to cash with relative ease. It was not customary to take mortgages on houses. As far as we were able to learn, houses were rarely or perhaps never sold; we recorded no such transaction in Shanti Nagar.

The typical family possessed considerable capital in the form of gold and silver jewelry. We made an inventory of the household property of eight families, half of them high-caste

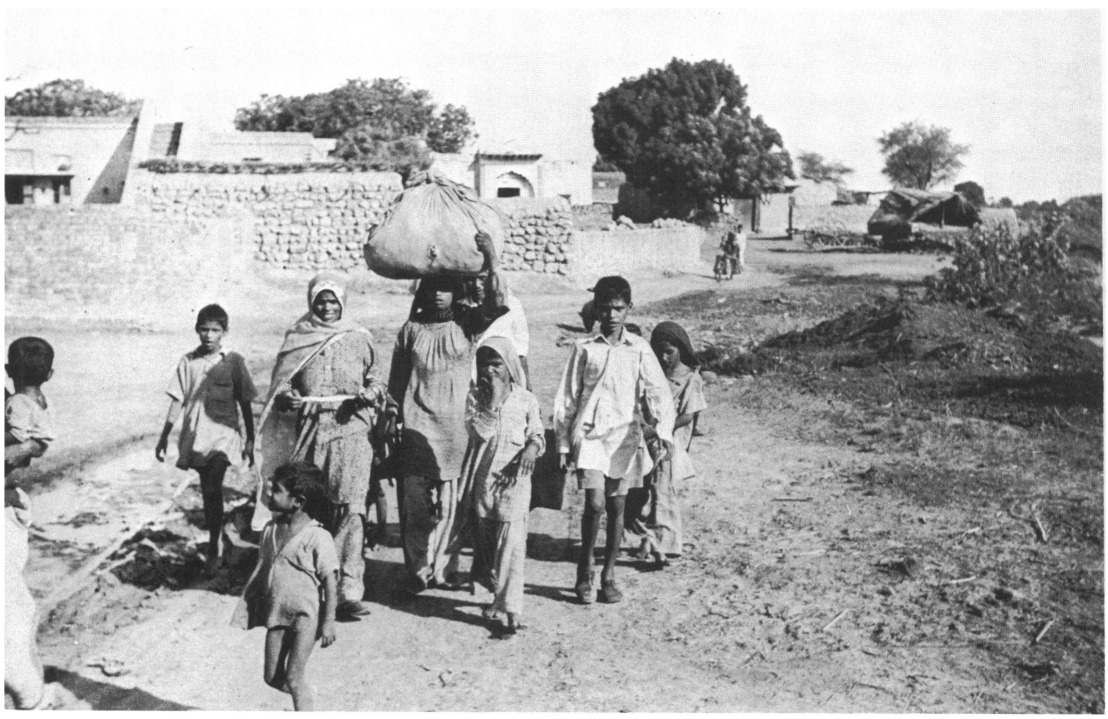

FIG. 63. A married daughter of the village leaves to return to her husband's household. Her brother's daughter carries a load of gifts presented by her brother for distribution to the relatives of her husband.

landowning families, the other half low-caste landless families (Appendix 1). We found that an average of approximately 42 percent of the value of family property, exclusive of land, buildings, and animals, consisted of jewelry. For most of these families, the sum of money represented by the value of their jewelry would have been adequate to finance all, or most, of the cost of a wedding, the most expensive of the village ceremonies. As a reserve fund to meet ceremonial expenses, jewelry would seem to have certain advantages: its value kept pace with inflation (Jacobson, 1976, p. 168) and it could be realized with relative ease.

However, villagers apparently did not routinely use their jewelry to meet such expenses. Although we did not question any villager on this point and, therefore, may have underestimated the extent of such a practice, no villager informed us that he had sold or mortgaged family jewelry to meet ceremonial expenses, except that the obligation to present gifts of jewelry, especially at weddings, was sometimes discharged by using the family jewelry. Such jewelry was frequently taken to a goldsmith to be melted and fashioned into new bracelets, necklaces, and other ornaments. However, gifts of jewelry constituted only a part of the cost of specific ceremonies; to meet the total outlay, resort to the sale of ornaments seems to have been rare. This situation, to a considerable degree, probably stemmed from the fact that much of the jewelry owned within a family was actually the individual personal property of the wives of the family and not general family property. Although married women considered their silver arm and leg ornaments to be a mark of status and were loath to part with them, they did so by their own choice when it was essential to provide a daughter or granddaughter with these ornaments in a wedding or when a prospective father-in-law had to give specific jewelry for the wedding of his prospective daughter-in-law. The woman who most often relinquished her jewelry, if needed, was a widowed grandmother, who seldom wore it. Other ornaments, such as earrings for unmarried daughters and gold and silver amulets for babies, were passed back and forth in the gift cycle for generations. Jacobson (1976) has well described the intricacies of the acquisition, use, and disposal of jewelry in rural India.

In an economic context where cash was not saved in bank accounts or assets accumulated in the form of securities, where valuable jewelry could not easily be realized for family purposes principally because it consisted of individual rather than family property, and where borrowing was relatively costly, villagers needed an institution that would make available a significant part of the sum of money required to finance an expensive ceremony. It is possible to a considerable extent to view the gifts and loans made to friends and relatives at specific ceremonies as a means by which an individual can save money to meet his own ceremonial expenses (cf. Cook, 1973, pp. 836-838). Every family head with children required a large sum of money to finance weddings. To keep such a sum in the house would be risky. However, many of the gifts that one distributed at weddings in the families of castemates and friends were mutual obligations; the recipient had to reciprocate at the marriages in one's own family. Thus, it was possible to distribute a substantial sum of money in small amounts among many families. Such credits were safe and available at the appropriate time. Added to the advantages of safety and availability, the system served to establish and maintain bonds of affection between families. The disadvantages of the system were that the invested money earned no interest, it was unavailable except when a ceremony took place, and much of it was spent so that the accumulated capital was dissipated—for example, in financing a feast or in distributing token sums among specific participants in a ceremony. Details of the economic aspects of ceremonies are described below.

Weddings

Following a discussion of the total costs of weddings, we will describe the gifts that were given at specific rites of a wedding. The estimates of the total cost offer a better understanding of the relative significance of specific expenditures. Our presentation approximately follows the sequence of rites that unfolded at a

wedding. However, depending on family preference, there was some flexibility in the sequence. Some important rites, such as the worship of the potter's wheel, are not mentioned because their economic importance, aside from a small payment to the potter, was relatively insignificant. The point of view of the following presentation is economic rather than ritual. An analysis of the wedding rituals is presented in a forthcoming monograph.

Several informants provided figures covering the total cost of specific weddings. Such figures must be viewed as estimates; when questioned, our informants consulted no records; they attempted to recall, on the spot, the details of a complicated series of expenditures. We also detected a tendency for an individual to overestimate the costs of a wedding in his family because generous spending enhanced family prestige. The figures could not be evaluated by cross-checking to the same extent as could, for example, those provided by informants for the price of wheat because ceremonial costs depended to a large extent upon the economic circumstances of a specific family and not the prices established at markets. However, the fact that several informants arrived at similar estimates of the cost of a specific wedding suggested that such figures provided a reasonably sound idea of the general magnitude of expenditures for weddings.

In a few cases, we were able to appraise the validity of an informant's estimate of the total cost of a wedding by asking our informant to give us the costs of specific items and then calculating a total. These two approaches usually yielded results similar enough to suggest that the estimates of our informants offered reasonably correct approximations. However, when the two approaches yielded substantially different results, we disregarded the information. For example, a Jat Farmer told us that he had spent between five and six thousand rupees for the wedding of a son. He said that he had given the bride 80 tolas (0.41 oz., 12 gm.) of gold and that a feast had cost Rs. 2000. Villagers quoted the price of gold to range from Rs. 105 to about Rs. 130 per tola. Thus, the Jat claimed that the maximum total cost of the wedding was Rs. 6000 but that the jewelry alone had cost Rs. 8400, based on the minimum price of gold. Although we believe that the dubious figure was that of the 80 tolas of gold and that the total cost of the wedding was probably reasonably accurate, nonetheless, we omitted this information from consideration because the partial cost was stated as much greater than the total cost.

One of our most reliable informants, a fairly well-to-do Brahman Priest, reported that he had spent Rs. 6000 for the wedding of one of his daughters. The major expenses were for food, jewelry, cash gifts to the family of the bridegroom as well as to numerous other participants in the wedding, household furnishings, clothing, a cow and calf, a watch, ring, and suit, and a bicycle for the bridegroom. We can distribute the 6000 rupees among these various items only approximately. Our informant's figures indicated that the cost of food for the wedding was well in excess of Rs. 1500. He spent Rs. 525 for gold and purchased 14 silver ornaments, but we do not know their cost. He gave a total of Rs. 601 to the bridegroom's father and the bridegroom. Each of the 60 to 70 people in the wedding party received a rupee, one brass goblet, a bottle of oil, a towel, a cake of soap and a soap dish, a small stool, and an alarm clock. A fancy bed cost Rs. 100, the cow and calf, Rs. 300. The quantities of household furnishings and clothing were impressive: a partial list included 30 brass pots, 17 saris, and 55 women's costumes (shirt, skirt, and headcloth). The amount of clothing depended partly on the number of people in the bridegroom's household and other closely related kin. Some 65 sons-in-law (so classified by village fictive kinship) each received one brass goblet and about Rs. 12. The list of specific items provided by our informant indicated that his estimated cost of the wedding of Rs. 6000 was reasonable. To help meet this expense, he himself received gifts and contributions from relatives, castemates, and friends. It should be noted that the costs listed here were confined to those of the father of the bride; the father of the bridegroom also had expenses although these were less than those of the bride's father.

A Jat Farmer told us that his family and two related families had paid the wedding expenses

of the daughter of the Brahman Priest who served them. The Brahman owned less than one acre of land; his economic circumstances were quite modest. The cost of the wedding was Rs. 2100, a figure probably close to the minimum expected for the daughter of a high-caste landowning family. This wedding was the only example that came to our attention of patrons who paid the wedding expenses of a jajmani client.

Participants in the wedding of a Jat girl of Shanti Nagar estimated its total cost at from Rs. 5000 to Rs. 7000, expenditures that they believed to be quite modest. According to our informants, these figures included the costs of both the bride's and the bridegroom's families. Despite the fact that there were some 800 or 900 guests, the mother's brother of the bride said that the wedding was not a large one. He estimated that the bride's father had spent about Rs. 1500 for food for the wedding guests.

A Jat Farmer said that he had spent Rs. 3000 for the wedding of a sister. A Jat and a Brahman Priest independently estimated the costs of the weddings of two girls from a quite well-to-do Jat family at from Rs. 3900 to Rs. 5000 for each. One informant itemized the cost of each wedding as approximately Rs. 750 for food, Rs. 1000 for jewelry for the bride, and Rs. 2150 for the cash dowry and various presents for the bridegroom and members of his family.

A Lohar Blacksmith told us that he had spent Rs. 1500 for the first wedding of one of his sons and Rs. 500 for a second wedding, when his son married following the death of his first wife. Second marriages were customarily less elaborate than first marriages and considerably less money was spent. We judge that the amount spend by the Lohar Blacksmith for the first wedding would perhaps be equivalent to the expenditure that a Jat Farmer or Brahman Priest would regard as approaching the minimum for a son's wedding. Such a sum reflected the fact that the Jats and Brahmans, the principal landowning castes, were generally more prosperous than the Lohar Blacksmiths.

A Brahman Priest, who had spent about Rs. 2300 for a son's wedding, itemized the total cost under four principal categories: about Rs. 700 for food, Rs. 350 for clothing, Rs. 100 for labor, and the balance, about Rs. 1150, for jewelry for the bride.

During a Chuhra Sweeper wedding in which two brothers married two sisters of Shanti Nagar, an uncle of the bridegrooms estimated that their father would spend from Rs. 1000 to Rs. 1500. A final accounting would have to await the end of the wedding. In accord with their generally inferior economic situation, the Chuhra Sweepers spent less on weddings than the Jats, Brahmans, and Lohars. Moreover, the simultaneous marriage of two brothers and two sisters was a popular strategy to which all castes resorted in order to economize. The cost of a double wedding was less than the total cost of two separate ones. The Chuhra Sweeper wedding was quite modest as indicated by the size of the wedding party that accompanied the bridegrooms to Shanti Nagar: only 20 persons, half of them children. A wedding party in an average high-caste wedding would number 60 to 70 persons. It is important to remember that the members of the wedding party constituted only a small proportion of the guests. Several hundred guests commonly attended a wedding for which a wedding party of approximately 60 men accompanied the bridegroom to his bride's village.

The figures cited above suggest that many weddings in high-caste landowning families cost from approximately Rs. 5000 to Rs. 8000 jointly for the bride's and the bridegroom's families. Artisan castes spent lesser amounts and landless laborers even less. Nonetheless, it was necessary to observe a minimum standard in the sense that some gifts were imperative even if their cost was small, a wedding party had to be received, ceremonies had to be held, and a feast was necessary. The need to meet even the minimum standard could easily force a poor family into debt. It is difficult to determine the maximum amount that might conceivably be spent in Shanti Nagar or in a similar village. Villagers reported, without identifying specific occurrences, expenditures of Rs. 10,000 just for jewelry, and figures of Rs. 50,000 and more were mentioned as total costs. The largest actual recent cash dowry we heard of in a wedding in Shanti Nagar was Rs.

2500 at the marriage of the son of one of the wealthiest Jats in the village. Such a figure suggests an expenditure on the part of the bride's family of perhaps Rs. 12,000 or more.

Engagement (*Sagai*)

The engagement was the rite that initiated the series of wedding ceremonies which culminated months or even years later with the ceremony of *gauna*, the second visit of a bride to her groom, at which time the marriage was consummated. The engagement involved the two families who were parties to the wedding; a ceremony took place and the bride's father or other male relative who represented her family presented substantial gifts to the bridegroom and his father. Following this ceremony, the representative of the bride's family distributed 1-rupee notes to other members of the bridegroom's family. Relatives and friends of the bridegroom's family also received gifts of 1 rupee each. We have good accounts of five engagement ceremonies: two of which occurred in the Brahman Priest caste; two, in the Jat Farmer caste; one, in the Chamar Leatherworker caste. The rules governing the distribution of money at the engagement ceremony were generally well understood; yet they were sufficiently complex that sometimes they apparently permitted more than one interpretation. On such occasions arguments would tend to arise between donors and recipients. Also, it happened that personal reasons sometimes determined whether an individual accepted or refused an offered gift. Occasionally, disputes arose over the amounts of money to be presented.

At one of the Brahman Priest ceremonies, the bride's grandfather presented Rs. 101, the first installment of the dowry that had been agreed upon in the negotiations preceding the engagement, to the bridegroom and his father. Usually, odd numbered sums of money were given as presents. The grandfather also gave the bridegroom a ceremonial offering of a coconut, red thread, sweets, and 1 rupee. The bridegroom's father also received 1 rupee at the same time. A 1-rupee note was customarily part of the offerings on ceremonial occasions; many persons received such small monetary gifts. More substantial gifts than these were a feature of relatively few ceremonies, such as an engagement. After the presents were given to the bridegroom and his father, the bride's grandfather began to distribute money to other members of the bridegroom's family, and to relatives and friends of the family. The bridegroom's mother's brother introduced the individuals who were to receive money. The grandfather passed the 1-rupee notes to the Nai Barber who, in turn, handed them to their ultimate recipients. The women of the bridegroom's family were among the recipients. The grandfather first offered them Rs. 2 apiece, but, when the bridegroom's mother's brother explained that the custom in Shanti Nagar was to give only 1 rupee, he followed his advice. At this time, the bridegroom's father received an additional rupee. The grandfather gave a rupee to his own Nai Barber and to the Nai Barber of Shanti Nagar who served the bridegroom's family. As sometimes happened during such occasions, a few individuals who were entitled to a rupee were overlooked. Such oversights could be considered as slights. The bridegroom's father failed to notice the presence of a Brahman Priest's sister's sons. The Brahman found it necessary to remind him that the sister's sons were entitled to a rupee. The bridegroom's father apologized, explaining that he had forgotten; the Brahman, on his part, did not take offense.

At the engagement of the second Brahman, the representative of the bride's family, a son of the bride's father's older brother, gave only Rs. 21 to the bridegroom. We were surprised by this small sum, especially because the bridegroom's family was one of the prominent Brahman Priest families of the village. At the end of the ceremony, the distribution of money resulted in two rather typical disputes liable to occur on such occasions. A Brahman of Shanti Nagar advised the bride's representative that he give Rs. 3 to a certain Brahman man. This sum of money would have served as recognition of the fact that the recipient, an elderly man, represented three families that had recently comprised a single family. The recipient immediately protested, saying that so long as he

was alive, his family had not divided into three separate families, and that he would accept only 1 rupee. Other Brahmans insisted that he accept 3 rupees. Finally he agreed. The second dispute involved two gifts to a single man, each based on a different rule. He had received 1 rupee because he was the son of the sister of the bridegroom's father's father. He was also a member of the bridegroom's family, so the bridegroom's father demanded that the old man be given a second rupee because he was the oldest man of the family. The bride's representative disagreed. He argued that only 1 rupee was owed and that it could be accepted either way: as a gift for a sister's son or as the due of the oldest man of the family. He laughed as he argued, but he was firm on the issue. Men of Shanti Nagar put pressure on the bridegroom's father to drop his demand, but he refused. Ultimately, the bride's representative yielded and gave an additional rupee.

Except for these disputes, the distribution of the 1-rupee notes proceeded without incident and followed the rules. The bridegroom's father received a rupee. One rupee went to the village council (panchayat) and 1 rupee to each of the two village meeting houses. These 3 rupees were then given to the Baniya Merchant who kept such accounts. The Nai Barber who served the bridegroom's family was given a rupee. One rupee was given to each of two "sister's sons." One-rupee notes were also given either to the heads of families in attendance or to their representatives. All such gifts that we observed, about nine, went to Brahman Priests. In addition, the bridegroom's father was given Rs. 7 for distribution to Brahmans in another village from whom he received money on similar occasions. Such gifts presented at engagements involved a reciprocal obligation. The bridegroom's father asked for money for his children and other members of his family and received a total of Rs. 9 for six sons, two daughters-in-law, and his wife. His wife refused to accept 1 rupee and asked for 5, but she received only 1 rupee. The son-in-law of one of the Brahman Priests who attended the ceremony was then in Shanti Nagar and a rupee was sent to him. The bridegroom's mother then conducted one of the men of the bride's party through the village; he distributed 1-rupee notes to those women from the bride's village who had married into Shanti Nagar. A total in excess of Rs. 38 was distributed to all recipients.

Sons of women born in Shanti Nagar ("sister's sons") who were visiting or who lived there permanently, rather than in the village of their fathers as was customary, and men married to women born in Shanti Nagar ("sons-in-law") who were in the village at the time of the ceremony each received a rupee if they were castemates of the bridegroom. Women from the bride's village who had married in Shanti Nagar each received a rupee regardless of their caste affiliation. It is important to note that the gifts of money to "sister's sons," "sons-in-law," and to all women from the bride's village married into the bridegroom's village were based on the same two principles. The first was that the marital relationship established a condition of unequal prestige between the two participating families. The family of the groom was superior to the family of the bride. Consequently, the family of inferior prestige, that of the bride, presented gifts on many occasions to the superior family, that of the groom, but did not receive gifts in return. "Sister's sons" and "sons-in-law" had higher prestige than the men of Shanti Nagar and so they received gifts at ceremonies held by families of Shanti Nagar. Although the families into which women from the village of the bride's family had married did not have superior status with respect to the other families of Shanti Nagar, their status was superior to that of the bride's family; therefore, the bride's representative was obligated to give them a rupee. The second principle involved in these transactions was that of village fictive kinship (Freed, 1963b). Individuals whose relationship to the donor was fictive rather than based on a real marital or consanguineal connection also received gifts.

The financial transactions at the two Jat Farmer and one Chamar Leatherworker engagements for which we have information were similar to those of the Brahman Priests. The Leatherworkers generally spent less than the Jats or Brahmans but nonetheless impressively in view of their relatively poor economic situation. At one of the Jat engagements, the bride's

representative gave Rs. 101 to the bridegroom's family; the comparable Chamar gift was Rs. 51. Although Brahmans as well as Jats attended the Jat engagements, we recorded gifts of 1-rupee notes only to Jats. There were the usual mild arguments about the amounts to be presented. Some men accepted the 1-rupee notes offered by the bride's representative; others refused, often because they did not want to incur additional obligations. Sometimes such men were pressed to accept a gift, but they were able to excuse themselves gracefully. For example, after one man had declined a rupee, a spectator commented that people who attended an engagement should accept a rupee. The man replied that people came to the ceremony because of love, and love was not demonstrated by a rupee. Each of the Jat ceremonies ended with a distribution of sweets.

It seemed to us that the participants at an engagement were quite concerned with the financial details. The bride's family wanted to create the impression that they had given generously, or at least adequately, as befitted their economic circumstances. The bride's family might, therefore, plead poverty in order to enhance the relative size of their gift to the bridegroom's family. Generally, the relatives and friends of the bridegroom acted in such a way as to allay the anxiety of the bride's representatives. Thus, at one of the Jat engagements, the bride's representative began by remarking that his family were poor people who depended on God. The people of Shanti Nagar replied that they too were poor and they also depended on God. One man from Shanti Nagar then observed that people were eager to extract a large sum of money from the bride's family, but that they should not do so. Another Jat commented that people of all castes were greedy. In general, we believe that remarks such as these were intended to reassure the bride's representative. On the other hand, the people of Shanti Nagar were concerned with keeping wedding costs within the limits that they believed to be appropriate. Since the customary practice among villages varied with regard to how much money should be given and to whom, the people of Shanti Nagar had to be alert to forestall gifts that they considered to be excessive. Different standards led to mild arguments. For example, in one of the Brahman engagements described above, a man from another village wanted to make a specific gift of Rs. 2 but a man of Shanti Nagar advised him that the local standard was 1 rupee. There were individual differences as well as differences between villages with respect to the proper amount for wedding gifts. Some individuals believed that the money spent on weddings was wasted and they often argued in favor of quite modest expenditures.

Letters of Marriage

The bride's family sent two letters of marriage to the bridegroom's family. The first letter, dispatched one to three months before the wedding, specified, among other information, the date of the wedding and exact time for the critical moment of the ceremony, the circling of the sacred fire by the bride and bridegroom. The second letter was a reminder. Sent by the bride's family 11 to 21 days before the wedding, its reception by the bridegroom's family was the occasion for a ceremony. Among Brahmans, there was also a ceremony in the bride's village, although this ceremony was going out of date.

We observed three ceremonies, each in a bridegroom's home, two for Brahman Priests and one for a Bairagi Beggar family. We also recorded some general information. The bride's family gave clothes and sweets to the bridegroom's family and, in the case of one Brahman family, also a large cash gift of Rs. 101. We do not know whether such a cash gift was given in the other two ceremonies; we may have failed to record it. In any case, it should be noted that the total amount of the dowry for a wedding was settled in the preliminary negotiations. This sum was paid in installments at various ceremonies of the wedding series. A substantial gift at one ceremony would mean correspondingly lesser gifts at other ceremonies.

The basic gift from the bride's family at a ceremony held in the bridegroom's house consisted of clothing for the bridegroom and for his mother and grandmother, ceremonial para-

phernalia, and sweets for distribution following the ceremony. The gift of women's clothing included shoes. The bride's family gave the bridegroom a 1-rupee note; in addition, women of the bridegroom's caste who attended the ceremony gave him 1-rupee notes. In the ceremonies that we observed, the women who gave money were closely related to the bridegroom, for example, the wives of sons of the bridegroom's father's brothers. The bridegroom's family gave Rs. 1.25 to the Nai Barber of the bride. The priest who conducted the ceremony also received Rs. 1.25. The spectators received no gifts of money, although sweets were distributed after the ceremony. If the Baniya Merchant distributed the sweets, he received a rupee for the service. We did not witness a ceremony at the home of a bride; however, a Brahman Priest described one that he had held for his daughter. Men from the bridegroom's family brought ceremonial paraphernalia (almonds, a coconut, and red thread), a gold ring, and a gold necklace for the bride. The bride's father, in turn, presented clothing, shoes, and bangles for the bridegroom's mother and grandmother and Rs. 100.

Bath (*Ban*)

During the fortnight preceding the wedding ceremony, both bride and groom were given a series of ceremonial oil baths in their respective villages. A meal served to relatives and friends of the bride and bridegroom who attended the ceremony was a feature of each bath. Although the baths did not serve as the occasion for substantial gift-giving, both relatives and friends aided the families of the bride and bridegroom by assuming much of the expense of the baths. Customarily, various members of the lineages of the bride and bridegroom would act as host for one of the baths. Under these circumstances, the bath and meal took place in the home of the lineage member, who bore the expense.

A similar custom was known as taking a "dry bath" to another village (fig. 64). People with friends in another village whose child was taking ceremonial baths formed a procession and took a gift of food to the parents of the child on the occasion of one of the baths. The bath took place in the home of the bride or bridegroom, rather than at the home of the people offering the gift. The purpose of the gift of food was to help the parents of a bride or bridegroom to meet the expense of feeding numerous guests during the wedding period.

We accompanied a group of Brahman women who were taking a bath to another village. The gift of food consisted of 3 seers of rice, 3 seers of sugar, 1 seer of ghee, 1 seer of a pulse, 7 seers of wheat flour, and 6 seers of cooked gram. In return, they were fed and also given 1 seer of ghee and 1 seer of wheat flour because it was believed to be an unfavorable omen should they be allowed to return home empty-handed. We recorded two similar gifts at a Chuhra Sweeper wedding: the somewhat larger gift consisted of 10 seers each of wheat flour, sugar, and wheat, and 1 seer of a pulse. The recipient reciprocated with a small return gift of gur and wheat flour. To give a feast or food at the time of a bath established a reciprocal obligation; a recipient was expected to host a feast for a bath at a future wedding in a family that had previously done so for him. At the Chuhra Sweeper wedding, other Sweepers also wanted to give a feast, but the family of the bride, reluctant to incur too many obligations, rejected these offers.

Ceremony of the Investiture of the Sacred Thread (*Upanayan*)

In Shanti Nagar, only Brahman Priest and sometimes Baniya Merchant males received the sacred thread. One of the rites of the life cycle, *upanayan* had become part of the wedding ceremony and was enacted in the bridegroom's village. On this occasion, agnates and, in the case of Brahmans, jajmani patrons of the bridegroom's family gave the family small gifts, usually 1-rupee notes. These donations resembled those of *kanyadan* described below (pp. 120-121); informants implied such a similarity by frequently discussing *upanayan* and *kanyadan* together, emphasizing that there were, however, two principal differences. *Upanayan* was celebrated for bridegrooms; *kanyadan*, for brides. Second, far fewer people made *upanayan* donations; consequently, less money was collected than at *kanyadan*. Gifts at

FIG. 64. Women of Shanti Nagar carrying a gift for a *ban* to a neighboring village.

upanayan did not establish reciprocal obligations. We recorded no figures for the total amount collected at an *upanayan*.

After the bridegroom had received the sacred thread, he made a symbolic trip to Benares to study. He carried a small sack for the purpose of collecting alms. Traditionally, students begged to support themselves. As a token enactment of the trip, the bridegroom stepped out of his house for a few minutes and begged, principally from older female relatives who gave him a few coins. In turn, he gave the coins to the priest who had conducted the *upanayan* ceremony. After the bridegroom had finished begging, a woman went to summon him home from Benares. She was paid for this service. At a Brahman wedding that we attended, the woman who went to summon the bridegroom home was a married sister of the bridegroom; her father paid her Rs. 5.

Mother's Brother's Gift (*Bhat*) and Father's Mother's Brother's Gift (*Bara Bhat*)

Men were expected to present clothing and considerable amounts of money at the wedding of a sister's child (*bhat*) or the child of a daughter's or a sister's son (*bara bhat*). We also recorded a *bara bhat* given by a mother's mother's brother. To some extent these basic obligations were inherited. For example, if a mother's brother died, his son assumed the duty of his father and presented gifts at the weddings of his father's sister's children. These gifts were not given automatically. If men were not formally invited to present the customary gifts, they would not do so. We attended two ceremonies at which men were invited to present a *bhat*. At one, a Brahman woman whose son was about to be married came to Shanti Nagar to invite her brother (actually he was the son of the woman's father's older brother, who in Hindi is called brother) to bring gifts. She brought a token gift of gur, some cooked food, and a coconut. In the evening, some women gathered to sing to celebrate the occasion. Following the sing, some 5 seers of parched gram were distributed to the participants. We have recorded only one example of the failure to invite a mother's brother to a wedding: a Chuhra Sweeper neglected to do so with the result that he received no gifts. We do not know why he was not invited; perhaps the two men were not on good terms.

A basic principle that underlay the *bhat* and *bara bhat* was the unequal prestige of two families related by a marital tie. Consanguineal relatives of a woman had a lesser status than those of her husband; as a result, they gave him and his family gifts on specific ceremonial occasions, such as the weddings of his children. We could discern no consistent difference between the value of the gifts given to brides and bridegrooms at their weddings. However, such differences would be difficult to determine because the value of gifts depended partly upon the economic circumstances of the donor which varied considerably. The average *bhat*, however, was always much greater than the *bara bhat*. After a donor had presented the principal gifts to the family of the bride or bridegroom, he distributed 1-rupee notes to relatives and castemates of these families as well as to other persons and institutions who traditionally received such gifts, such as village officials and meeting houses.

We attended several ceremonies of the presentation of the *bhat*: two for Brahman Priest bridegrooms, two for Bairagi Beggar bridegrooms, and one for a Jat Farmer bride. A description of one of the Brahman ceremonies will serve as typical of most *bhat*s. A mother's brother, acting on behalf of himself and two of his brothers, was greeted by the senior woman of the bridegroom's household; he gave a 1-rupee note to each woman of the household as well as to some other women. The principal gifts were then presented in the street in front of the bridegroom's house where several large cloths had been spread so that participants could sit. First, the mother's brother displayed the presents of clothing that he and his brothers had brought for the women of the household and for the bridegroom. We did not obtain a complete inventory of the clothing but did note several women's headcloths, shirts, handkerchiefs, and, for the bridegroom, undershirts, shorts, socks, a turban, shoes, slippers, trousers, and the headdress to be worn by the bridegroom during the wedding ceremony. The gifts of clothing at a *bhat* for a bride were similar, except that the gift of clothing was intended for her and not for the bridegroom. The three mother's brothers jointly gave Rs. 301 in 1-rupee silver coins. In the wedding of a bride, the mother's brother's cash gift formed part of the dowry; however, at a bridegroom's wedding, it was a present to his family. Following the presentation of the gifts to the bridegroom's family, the mother's brother distributed 1-rupee notes. We failed to record a complete list of the recipients other than to note the heads of Brahman families. A Jat Farmer man recorded all the gifts in a book; usually, a Baniya Merchant kept the account.

We have a more complete list of the recipients of 1-rupee notes distributed at another Brahman wedding. They included the heads of Brahman families in attendance who were willing to accept such a gift, the three village lumberdars (village officials), the two meeting houses, the panchayat, the female Nai Barber who served the bridegroom's family (Rs. 2), one Chamar Leatherworker man, women from the mother's brother's village who had married into Shanti Nagar, and individuals who were socially superior to the mother's brother based on a marital tie, for example, a daughter's son. The rupees donated for the meeting houses were deposited with the Baniya Merchant. One of the lumberdars also gave his rupee to the Baniya Merchant for deposit in the village account. There was an argument about the payment to the mother's brother's Nai. The mother's brother argued that he should pay his Nai Barber because that was customery in his village; however, the people of Shanti Nagar contended that they should pay because that was the custom in Shanti Nagar. The mother's brother won this argument when he pointed out that his Nai Barber had not accompanied him. "Had he come," reasoned the mother's brother, "he could have accepted anything he wanted. But he didn't come so that cuts his pay. I'll take care of him in my village." Participants in a wedding were meticulous about financial details. For example, because the gift of clothing was displayed in a new basket, the participants had to investigate whether the basket was part of the normal jajmani relationship between the basketmaker and the Brahman Priest. If not, and had the basket been purchased expressly for the wedding, the question of who was responsible for the payment could have precipi-

tated another debate between the mother's brother and the Brahmans of Shanti Nagar.

One of the gifts that the mother's brother wished to make also provoked considerable contention. Although there were often debates during the distributions of 1-rupee notes at the close of a ceremony, this argument was perhaps the liveliest that we witnessed. The gift in question, called *dehri*, was a sum equivalent to 1 rupee for every Brahman family in the village, this sum to be donated for any worthy cause, such as the village panchayat, a temple, or a school. The mother's brother said that he had announced in his village that he would present that sum and so he was obligated to do so. A Brahman of Shanti Nagar said that there was no firm precedent for the acceptance of *dehri*; another Brahman of Shanti Nagar pointed out that his own offer of *dehri* at another wedding had been refused, so it followed that this offer could not be accepted. The father of the bridegroom, who argued for acceptance, admitted that some *dehri*s had been refused but he also noted that others had been accepted. He suggested that from that day onward it be established that *dehri*s be accepted and presented to the village panchayat for community work. The Jat Farmers in attendance put pressure on the Brahmans to accept. The suggestion was finally referred to a senior Brahman man who vetoed it; the Brahmans of Shanti Nagar did not accept the gift.

For the *bhat* at a boy's wedding in one of the wealthiest Jat families of Shanti Nagar, five mother's brothers contributed the customary clothing for the bridegroom, 1 tola of gold for the bridegroom's mother, another tola for her sister who was the wife of the brother of the father of the bridegroom, Rs. 25 for distribution to the three lumberdars of Shanti Nagar, two meeting houses, and 20 Jat families, and Rs. 500 for the bridegroom's father. At the wedding of a Jat bride, Rs. 200 was given in the *bhat*.

To evaluate properly the cash gifts given for a *bhat*, it is necessary to know the number of mother's brothers who contributed; otherwise, one could be led to the unwarranted conclusion that an especially large gift reflected solely the prestige of the donor and recipient families. For example, the cash gift of Rs. 500 noted just above was contributed by five mother's brothers. In cases where we have recorded the number of mother's brothers contributing to a *bhat*, we find that the customary cash gift of one mother's brother was apparently Rs. 101. The cash gift at one of the Brahman weddings mentioned above was Rs. 301 presented by three men; at the other Brahman wedding, one mother's brother gave Rs. 202, but a cousin of the bridegroom's mother and his son also contributed to this sum. The donors of the Rs. 202 explained the "small" size of the gift on the ground that they were poor, but the Brahmans of Shanti Nagar protested that the gift was very generous. A Brahman Priest, one of our best informants, told us that he had received Rs. 500 in the *bhat* for his daughter, but we do not know how many mother's brothers contributed.

The *bhat*s given during the weddings of two Bairagi Beggar bridegrooms that we witnessed were similar to those presented during the weddings of Jats and Brahmans despite the fact that the Bairagis were economically generally less prosperous than either the Jats or Brahmans. At one wedding, the mother's brother presented Rs. 200 and the traditional clothing. The cash presented was double the normal gift because two bridegrooms were married simultaneously; therefore the mother's brother had to give a gift equivalent to that for two weddings. At the second Bairagi wedding, the *bhat* consisted of Rs. 101 and the customary clothing. The distribution of 1-rupee notes differed somewhat from that at the other weddings that we observed. In addition to the money, small gifts were also presented. For example, the three lumberdars each received a goblet and a small piece of gur as well as a 1-rupee note. The mother's brother gave gifts that we observed at no other wedding: eight gifts each consisting of a piece of gur, a small pitcher (*lota*), and 4 annas for the Watermen of Shanti Nagar and seven villages believed to be related to Shanti Nagar because the Jat Farmers of those eight villages, the dominant caste, were said to be ultimately descended from one man (Freed and Freed, 1976a, pp. 93, 150). The men of Shanti Nagar offered to pay the mother's brother's Nai Barber; the mother's brother declined the offer,

remarking that he had not brought his Nai and so it was unnecessary to give anything.

We never observed the presentation of the *bhat* among the lower castes but we did interview several lower caste individuals. A Gola Potter reported that a mother's brother gave Rs. 51 at a girl's wedding and either Rs. 21 or Rs. 51 at a boy's wedding. A Chamar Leatherworker told us that a number of Leatherworkers from Shanti Nagar had attended the wedding of his father's sister's son's daughter, some two weeks earlier; at that occasion, an unspecified number of mother's brothers combined to give Rs. 550. In accounting for this large gift, the Leatherworker explained that the men involved were rich landowners. Although the gift was apparently large and its size was possibly exaggerated, we are inclined to accept our informant's figure because he mentioned it during the discussion of a modest *bara bhat* of Rs. 22 and clothing, that he and his father had presented at the same wedding. Had the informant been given to exaggeration, we believe that he would have mentioned a larger figure for his own gift. A Chuhra Sweeper told us that her three brothers jointly had given her a *bhat* of Rs. 51 and clothing at the wedding of her two daughters.

A man gave less money for a *bara bhat* than for a *bhat*; in a specific wedding, the *bara bhat* was less than the *bhat*. At one of the Bairagi Beggar weddings in which the *bhat* was Rs. 200, a father's mother's brother gave a *bara bhat* of Rs. 51. At a Brahman Priest wedding, where a *bhat* of Rs. 500 was presented, an unspecified number of relatives, together, gave a *bara bhat* of Rs. 101 and some clothing. As noted in the preceding paragraph, a Chamar Leatherworker gave Rs. 11 at the wedding of his sister's son's daughter and his son presented a woman's costume and Rs. 11 to make a total cash *bara bhat* of Rs. 22. A relatively prosperous Brahman reported that he gave a *bara bhat* of Rs. 150 and clothes at a bride's wedding and Rs. 100 and clothes for a bridegroom's wedding.

Invitation (*Neota*)

This was an occasion during the course of a wedding in which many friends of the family of either a bride or bridegroom made small loans to the family to assist with meeting the wedding expenses. Although each individual loan was small, the total generally amounted to several hundred rupees. All the transactions were recorded in the books of the donor, the recipient, and the village (fig. 65). Generally, a Baniya Merchant was summoned to record the invitation loans. Such loans were considered to be not only a moral obligation but also a legal debt; a recipient had to repay the debt at the appropriate occasion. If a debtor failed to pay, a lender could take legal action if he so desired; however, we never heard of such a case.

A relationship was initiated when one family lent a sum of money (*chalat*, beginning) to another at *neota*. The borrowing family paid back the original loan on the occasion of a wedding in the household of the lending family and added to it an amount equal to the original sum in order to maintain the relationship. For example, the head of Family A lent Rs. 5 to the head of Family B at the wedding of one of the latter's children. Family B celebrated another wedding and Family A lent an additional Rs. 5. When there was a wedding in Family A, Family B had to pay Rs. 15. Of this sum, Rs. 10 represented the repayment of outstanding loans, and Rs. 5, equal to the original loan, was for the purpose of maintaining the relationship. Had Family B desired to terminate the relationship, they would have paid only Rs. 10 to Family A. It followed that a family head, with many such credits recorded in his *neota* book, would receive a substantial sum of money when one of his children was married. *Neota* debts and credits were inherited; a relationship between families might continue for generations. When a joint family divided into two or more separate families, the accumulated debts and credits of the original family were apportioned among the newly established families.

We recorded *neota* credits that ranged from one or two hundred to 1000 rupees for a specific family. A prominent Jat Farmer was reputed to have a credit balance derived from invitation loans amounting to Rs. 1000. A Brahman Priest told us that he had received Rs. 550 in *neota* at the wedding of one of his daughters several years earlier. He reported that

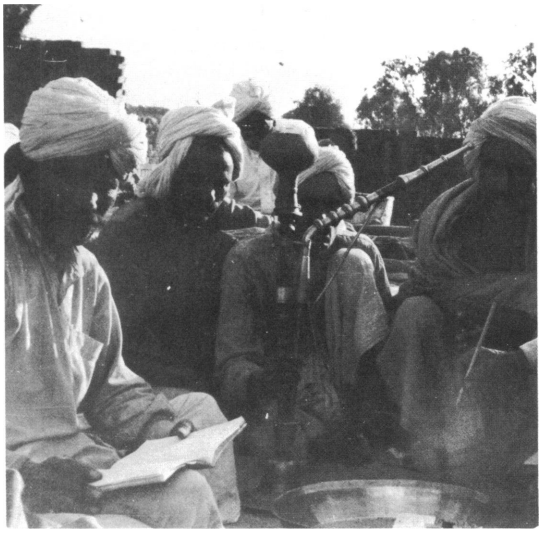

FIG. 65. Collecting donations of money at a wedding. A man makes entries in a register.

he had since then paid the loans incurred at that wedding and was currently carrying a credit balance of Rs. 300. Therefore, he anticipated that he would receive about Rs. 600 at the future wedding of his eldest son. It was possible for lower caste landless men, as well as more prosperous upper caste men, to accumulate considerable cash credits from *neota* loans. At the double wedding of two Chuhra Sweeper brides that we attended, a Chuhra told us that Rs. 300 had been collected at *neota*.

Neota loans were confined neither to castemates nor to people from Shanti Nagar. We attended the invitation ceremony at the wedding of a Brahman Priest bridegroom; we observed that Jat Farmers, Nai Barbers, and Mali Gardeners as well as Brahman Priests participated. The basic loan apparently ranged from Rs. 2 to Rs. 5; because of accumulated debts, however, many men paid about Rs. 10 to Rs. 15. Representatives of those families that had recently divided requested the recipient to establish separate accounts for each newly established family. As occurred with relative frequency in the course of many finanicial transactions, there were disputes. For example, the bridegroom's father, upon being offered Rs. 2, protested that the donor was not helping him and requested more money. The donor then gave him Rs. 4. Apparently, the basic loan that had initiated the relationship was Rs. 2, and the bridegroom's father did not wish to have the relationship terminated. However, he did not always argue for more money. A Brahman Priest with a debt of Rs. 4 wanted to give Rs. 8 in order to maintain a credit of Rs. 4. However, the recipient requested that he be given Rs. 6 so that he would have a debt of only Rs. 2. The collection of the invitation loans continued for several hours. Some of the donors came from a neighboring village.

An advantage of the *neota* system of interest-free loans was illustrated by the Chuhra Sweeper wedding at which Rs. 300 were received. The mother of the two brides told us that she had borrowed Rs. 350 from a village moneylender for a few days to finance the wedding; she had paid 5 percent interest, a total of Rs. 17.50. The Rs. 300 collected at *neota* were used to repay the loan. Without the *neota* money, the Sweeper woman would have had to carry a long-term loan of some Rs. 300 at the normal rate of interest which was slightly less than 1.6 percent per month (1 pice per rupee). If the loan had not been repaid, interest charges would have amounted to Rs. 4.69 per month. We do not know the size of the salary of the head of this Sweeper family, who worked in a distant city; we can, however, estimate it at Rs. 82 per month, the average salary earned by Shanti Nagar Sweepers who worked in cities. Thus, interest payments on the wedding loan would have amounted to 5.7 percent of the monthly salary of the head of the family. However, at the conclusion of the wedding, the Sweeper was carrying a *neota* debt of only about Rs. 150 on which he paid no interest. Moreover, the debt would be repaid in small amounts over a period of a few years.

A disadvantage of the *neota* system was that an individual who had loaned more money than he had borrowed received no interest on his capital. However, to evaluate this disadvantage properly, one must consider the relatively inadequate financial institutions available to the average villager. It was not easy for a person who had a few extra rupees to invest them and, in return, receive a reasonable rate of interest. To become an independent moneylender required considerably more capital than was

available to the average villager. It was possible for a number of individuals each with limited capital to organize a credit society (Freed and Freed, 1976a, pp. 133-134), but the effective management of such an enterprise required both time and effort. The savings bank, the customary investment resource in western countries of the individual who has occasional small sums of money in excess of living costs, was for the most part unavailable to the villagers principally because none was located near Shanti Nagar. Because villagers had to borrow to finance weddings, but had only limited means of earning interest on small sums of money, the advantages of a system of interest-free loans far surpassed the disadvantages. An additional advantage was that *neota* served as a means of social integration. The villagers summarized the advantages of such an institution very well when they observed that the distribution of money not only increased affection among people but also made a large sum of money available when needed.

Donation (*Kanyadan*)

Kanyadan was the part of the wedding ceremony in which the bride and an installment of her dowry were given to the groom and his family. The term also referred to two other donations made at that time. In the first, villagers who were friends of the bride's family presented small cash gifts, usually 1 rupee, to the bride's father. The second donation was given, only by her relatives, to the bride rather than to her father. Such donations included jewelry, possibly a cow, and cash. The bride presented the cash to her father-in-law, who, in turn, was expected to use the money generally on her behalf, perhaps to purchase clothes. All gifts of jewelry presented to the bride at *kanyadan* were considered to be her property.

Like *neota* loans, the money received at *kanyadan* by the bride's father assisted significantly in financing his daughter's wedding. However, *kanyadan* and *neota* differed in several respects. First, *neota* was a feature of the weddings of both a bride and bridegroom; *kanyadan* was given only at a girl's wedding. Second, *kanyadan* was actually a donation; *neota* was a loan. Theoretically, it was not obligatory to repay the gifts received at *kanyadan*; they were considered to be religious in nature. In practice, however, a record was kept of the donors and the amounts they gave. Consequently, when a donor had a wedding in his house, he confidently expected that the men who had received donations from him would reciprocate. Third, on the average, *neota* loans were larger than donations. However, an especially close friend might make a substantial donation at *kanyadan*; such a large gift was considered reciprocal.

We recorded the total donation at only two weddings. At a Chuhra Sweeper wedding that we attended (two sisters were brides), friends of the brides' family donated Rs. 72. This was the wedding, described above (p. 119), at which the Sweeper parents had borrowed Rs. 350 on which they paid interest of Rs. 17.50. They received Rs. 300 at *neota* and Rs. 72 at *kanyadan*. The importance of *neota* and *kanyadan* in the financing of weddings can be understood from the fact that the total sum received at *neota* and *kanyadan* was more than sufficient to repay the loan.

The father of a Brahman girl was said to have spent Rs. 6000 for her wedding. He received Rs. 950 as *kanyadan*. This sum and Rs. 550 in *neota* repayments and loans covered 25 percent of the cost of the wedding. However, one should also bear in mind that those people who made donations were served a meal at the bride's house. "It's useless," complained a Brahman informant. "If a man comes and pays 1 rupee, he eats food worth 2 rupees."

We failed to collect a complete list of the donations presented to a bride at a specific wedding. The gifts of jewelry could have substantial value. We attended a Brahman Priest wedding at which the bride received a ring, a necklace, and earrings. The older brother of the father of the bride gave the ring and the gold necklace which weighed 2 tolas (.82 oz., 23 gm.). The gold earrings, the gift of the bride's mother, weighed 1 tola. A Chuhra Sweeper mother presented each of her daughters with a piece of silver jewelry. A Brahman Priest reported that he had given his daughter a cow at her wedding. That such a gift had to be a cow,

the sacred animal, and not a water buffalo, symbolized the religious nature of *kanyadan*. That jewelry received by a bride at *kanyadan* remained her property and was not considered to belong to her husband's family was confirmed by the fact that when a joint family separated into its component nuclear families, each wife took with her the jewelry that she had received at *kanyadan*; it was not divided equally as was all property belonging to the joint family (Freed and Freed, 1976a, p. 79).

Kanyadan usually took place just before the ritual climax of the marriage ceremony, the circling of the sacred fire by the bride and bridegroom; sometimes, however, it occurred afterward. Prior to the circling of the fire, the bride received her gifts of jewelry and clothing from the bridegroom's father in a ceremony called *chunri*. Jewelry for the bride was the major single expense incurred by the family of the bridegroom. For example, in a Brahman Priest wedding, the bridegroom's father spent a total of Rs. 2300 of which Rs. 1150 (50%) represented the cost of the bride's jewelry. Both the jewelry presented to the bride at *kanyadan* and at *chunri* were considered to be her property; however, her claim to the latter jewelry, which she received from her husband's family, was less strong than to the jewelry presented to her by her consanguineal kin at *kanyadan* (Jacobson, 1976, pp. 161-163).

Reception of the Wedding Party (*Barat Lena*), Farewell (*Bida*), and Consummation (*Gauna*)

The bride's father paid installments of the dowry at the reception of the wedding party, the farewell, and at the second visit of the bride to her husband's household, at which time the marriage was consummated, as well as at the engagement, the reception of the letter of reminder, and *kanyadan*. At the reception of a wedding party, which took place preceding the wedding in the bride's village, representatives of the bride's family met the groom and the wedding party, performed a ceremony, and presented gifts, principally a cash installment of the dowry. A Brahman Priest told us that he had given Rs. 101, sweets, and the two brass pots containing the sweets which he said were worth 15 or 20 rupees apiece. We attended a Jat Farmer reception at which the bridegroom received Rs. 101, sweets, and a coconut. At the farewell, which took place after the wedding, he received 500 to 700 rupees, a watch, a bicycle, clothes, and a sewing machine. An argument at this farewell ceremony revolved around a charitable donation. Customarily, the bride's family had made such a donation to a school or temple. The representatives of the bridegroom asked that the bride's family make a substantial contribution for a school. Sums of Rs. 500 and Rs. 1000 were mentioned. The people of Shanti Nagar explained that a panchayat representing Shanti Nagar and two neighboring villages had decided to discontinue this practice. A Brahman Priest told us that some years earlier, at the marriage of his daughter, he had donated Rs. 25 to charity at the farewell ceremony. A Jat Farmer claimed to have given a charitable donation of Rs. 200.

At the farewell ceremony for another Jat wedding that we attended, the bride's family gave some 300 to 400 rupees to the bridegroom who handed the money to his father. Then the bride's representative gave 1-rupee notes to each of the 165 members of the wedding party and to those sons-in-law of the village who were present. The installment of the dowry presented at this farewell included the portion that was customarily given at *gauna*. When a bride was old enough to go to her husband immediately following the wedding for the consummation of the marriage, the gifts usually presented at *gauna* might be given at *kanyadan* or at the farewell. Usually, the bride's family paid one-half of the transportation costs of the wedding party. This payment might be made at the farewell ceremony.

A Chuhra Sweeper reported that at his first wedding, he had received Rs. 21 and a ring at the reception and Rs. 100 at the farewell. His bride received Rs. 100 at *kanyadan*, a sum which ultimately came to him. He said also that his father was given Rs. 100 as part of the dowry. He reported that he received no installment of the dowry at *gauna*, but that his bride brought jewelry and clothing. The bride's family also gave him Rs. 100 for clothing but he

did not specify the rite at which he received the money. He did not do so well at his second wedding. At the farewell, he received Rs. 51, seven household utensils, and nine women's costumes which were of poor quality. At the reception of the letter of reminder, the bride's family presented one woman's costume, one pair of shoes, and a few rupees.

An individual who had previously been married was considered a less suitable spouse than one who had never before been married, an attitude that was reflected in the financial details of a second wedding. For a man's second marriage, he might receive a small dowry; occasionally, a previously married man had to pay a brideprice. It was considered disreputable for a girl's family to accept such a payment.

Dowry

The dowry, presented in installments, consisted of two principal components: part was given to the bridegroom and his family and part to the bride. The bride received principally gold and silver jewelry, clothing, and brass pots, all of which were considered to be her personal property. Customarily the bridegroom and his family received a large amount of cash and other presents; principally clothing, a bicycle, a wristwatch, and a ring. Occasionally, he received a motorcycle instead of a bicycle. The cash given in a dowry in Brahman Priest and Jat Farmer landowning families ranged approximately from Rs. 500 to Rs. 1000. We recorded only one dowry in excess of Rs. 1000 and none of less than Rs. 500. The figures were not distributed evenly throughout the interval, but clustered at the extreme values: two dowries of Rs. 500, one of Rs. 601, and one (possibly two) of Rs. 1000. A few low-caste dowries that we recorded were all less than Rs. 500, ranging from Rs. 100 to Rs. 325. Since the amount of the dowry was settled in the negotiations that preceded the wedding, we always assumed that all the members of both families were aware of the agreement and had accepted it. Therefore, we were surprised when during one Jat wedding a bridegroom became angry about his bride's dowry. He received Rs. 1000, but complained that he should have been given a larger sum of money and a motorcycle instead of a bicycle.

Miscellaneous

In addition to the principal ceremonial exchanges that involved substantial sums of money, such as the mother's brother's present and *kanyadan*, small sums of money were paid on many other occasions to various participants in a wedding. Although we will not make an attempt to provide a complete list of such exchanges, which would not only be tedious but would contribute little additional understanding of the economic exchange that took place at weddings, we will present a few pertinent examples. Before the wedding party left the village of the bridegroom for the bride's village, the bridegroom riding a mare or a bicycle toured the village shrines on his way to the bus stop. The man who tied the ceremonial headdress on the bridegroom, in preparation for the tour, and who also led the mare around the village, a husband of one of the bridegroom's agnates, received a small payment. The only such payment that we recorded consisted of 1 rupee.

At the bus stop, several ceremonies were enacted; each was accompanied by the distribution of small sums of money, for example, an older brother's wife decorated the bridegroom's eyes with black color. We witnessed the ceremony at a Brahman wedding at which the fee was Rs. 10; at a Bairagi Beggar wedding, the woman was paid Rs. 4; at a Chuhra Sweeper wedding, the woman received only 1 rupee. The woman selected for this ceremony sometimes demanded ourtageous sums of money to complete the rite. For example, a Brahman woman, having colored the bridegroom's left eye, refused to decorate his right eye unless she were paid Rs. 100. Exasperated, the father of the bridegroom told her to accept 10 rupees and to stop wasting time.

At the farewell ceremony, when the wedding party left the bride's village, a woman belonging to the bride's family colored her hands and made hand impressions on the shirt of a member of the wedding party at which time the bride's relative gave 1 rupee to the

person so marked. Usually, the bride's mother marked the shirt of the bridegroom's father. In accordance with the villagers' generally meticulous approach to the financial details of a wedding, we overheard a discussion of the proper fee for a hand mark that occurred on a bus immediately following its departure from the bride's village. Learning that 1 rupee had been paid, the villagers decided that the amount was correct.

When the bride first arrived at her husband's home, she was heavily veiled. Her arrival was followed by a ceremony, called "showing the face," attended by friends of the bridegroom's family who came to see the face of the newly wed bride. They paid 1 rupee for the privilege. Some individuals might pay more; at one such ceremony, the mother's brothers of the groom each gave the bride Rs. 10. In return, each of them received a woolen shawl from the bride when she came again at *gauna*. We attended one "showing the face." Although we paid the required fee, we were accorded only the most fleeting glimpse of the bride's face. We have no record of the amount of money collected at these events.

The very numerous financial and ritual details connected with a Hindu wedding demanded considerable organizational ability on the part of those charged with managing these complex affairs. The course of events was not always smooth. We overheard the harried father of a Brahman Priest bridegroom soundly curse the young men of his household who had forgotten to bring, with the wedding party, a large carpet for which he had made special arrangements. The resourceful Nai Barber of Shanti Nagar saved the situation by locating a similar carpet in the bride's village. This same Brahman man had also forgotten to have the jewelry made that he was to present to the bride, a truly embarrassing omission. In discussing this episode in the context of the many details that one had to remember in a wedding, a Brahman Priest observed dourly that weddings were hell.

Birth

Birth was celebrated by a number of ceremonies; several of these involved costly gifts and other expenditures. Usually, a woman gave birth in the house of her husband. The birth was followed by a series of ceremonies, most of which occurred within 40 days. A few months following childbirth, especially after the birth of her first child, a woman visited her parents. Her departure at the end of this first visit to return to her husband's home served as the occasion for a substantial gift by her parents. The basic principle that a married woman's family gave gifts to her and to her husband's family characterized the gifts related to birth as well as those presented at weddings. On the occasion of a birth, the families of both the new mother and the new father presented gifts. The mother's family gave presents to her and to her husband's family. The new father's family presented gifts to the married sisters and daughters of the family who customarily returned to their natal home to assist with the rites of childbirth. Most of the rites, gifts, and other expenses related to childbirth were standard in the sense that they were a feature of all, or most, births. There were, however, special ceremonies and feasts that a couple might observe who had for many years desired a son without fulfillment of their hopes or whose children had died shortly after birth. The following presentation will emphasize the economic rather than the ritual aspects of childbirth. Therefore, some important rites, such as Well Worship, will be discussed only briefly or omitted entirely because they were not occasions for significant expenditures. The ceremonies of childbirth, from the point of view of ritual and symbolism, will be presented in a subsequent monograph.

Piliya and *Chhuchak*

The family of the new mother sent two substantial gifts to her and to her husband's family. *Piliya*, the first gift, was sent three to five days after birth, but some families took as long as 15 days. *Piliya* included both clothing for the mother and child and high carbohydrate luxury foods for the new mother; therefore, it was necessary to send *piliya* early so that she could eat this required food during her seclusion. The new father's family dispatched their

Nai Barber, provided they were of high enough caste to be served by one, to his wife's parents to announce the birth. Some families had begun to use the mails instead of a Nai. If the infant was a male, the Nai brought a token gift of 4 seers of gur; there was no comparable gift for a female baby. For his services, the Nai Barber received 1 rupee and a meal from the new mother's family and half of his bus fare from each family. He might also receive a meal from the new father's family. *Piliya* was often sent for every child born in a family. *Chhuchak*, on the other hand, was presented for a woman's first child and occasionally for the second, but, in general, not for all her children. A new mother usually visited her parents for several months following the birth of a first child. *Chhuchak* was given when she departed from her natal home at the end of this visit to return to her husband. Although the postnatal visit was an important feature of a woman's first childbirth, it often was omitted following subsequent births, so that her parents would not feel obligated to give *chhuchak*. A Brahman Priest told us that he had presented gifts for *chhuchak* valued at some 200 or 300 rupees for his sister's first child. When her second child was born, her parents-in-law did not send her to her natal family because, the Brahman said, they did not want to burden him with the obligatory gifts. For the same reason, the Brahman did not send his wife to her parents under similar circumstances. Occasionally, a family attempted to save money by combining *piliya* and *chhuchak* into a single gift.

Informants representing 16 families and six castes provided information about *piliya* and *chhuchak*. Their accounts ranged from offering generally complete lists of gifts to the bare mention that such gifts were obligatory for childbirth. Five informants estimated the total value of such gifts given by their families. We view their estimates with reservations similar to those we expressed for the estimates of wedding expenses quoted by our informants. Cross-checking of the figures is of limited utility because the value of gifts was largely determined by the economic circumstances and generosity of specific families, which varied considerably. Moreover, the value of gifts generally diminished as successive children were born in a family. That our estimates must be viewed with caution is illustrated by the fact that one of our informants, a generally reliable Chamar Leatherworker, gave us substantially different figures for the same *chhuchak* gift at two different interviews. His first estimate was Rs. 225. A year later, he told us that he had spent Rs. 125. We believe that the second figure was probably the more accurate estimate. We base this conclusion on the fact that toward the end of our residence in Shanti Nagar most people were aware that we understood and knew a great deal more than when we were new in the village and that we were less likely to accept exaggerated statements of expenses.

Despite the fact that, potentially, there is an assumedly fair amount of error in some of the estimates that we were given, the figures that we recorded do present a fairly reasonable idea of the value of gifts sent for *piliya* and *chhuchak*. Two of the estimates were for *piliya*: Rs. 200 for a Jat Farmer family and Rs. 150 for a Chamar Leatherworker family. The three estimates for *chhuchak* were: Rs. 250 for a Brahman Priest family, Rs. 500 for a Jat family, and Rs. 175 for a Chamar family (the average of the informant's two estimates of Rs. 125 and Rs. 225). When a family presented both gifts, the value of *chhuchak* was apparently greater than that of *piliya*. However, some families gave a single gift, and called it either *piliya* or *chhuchak*. All other considerations being equal, we had the impression that the value of gifts for a male infant was greater than for a female.

The gifts for *piliya* consisted of clothing for the new mother and other members of her husband's family, food especially for the new mother, and clothing and jewelry for the baby. The gifts particularly characteristic of *piliya* were a yellow headcloth for the new mother, protective charms, usually of gold, representing the sun and the moon for the baby,[1] and a food preparation known as *gund* or *gond* (gum) which was believed to be especially good for new mothers. In general, *gund* consisted of

[1]One informant told us that he sent no ornaments for a female infant.

ground gum, sometimes flour, dried coconut or almonds, occasionally raisins and other dried fruits, and sugar cooked in ghee. *Kasar,* another food commonly given for *piliya*, consisting of wheat flour and gur cooked together, was distributed by the new father's family to people in his village. We present several lists of *piliya* gifts chosen not only for their apparent completeness but also to represent gifts of both high- and low-caste families as well as gifts for both first-born and later children.

A Brahman Priest woman told us that her family had sent the following items for *piliya* when a daughter of the family had given birth to a female, her first-born: 5 seers each of rice, *kasar,* and ghee, 1 seer of dried coconut, 1 seer of *gund*, and about 15 seers of sugar. Both the new mother and her mother-in-law received a woman's costume; the new mother was also given slippers. A small protective ring worn on the head while carrying burdens (fig. 66) and a string worn in the hair, listed in the *piliya*, were probably also intended for the new mother. Her husband was given a shawl. The infant girl was to receive clothing, including a cap, and protective charms representing the sun and the moon. She died nine days after birth, however, and so the presents destined solely for her were not sent. When an infant died before *piliya* and *chhuchak* had been given, all the gifts nevertheless were sent except those intended for the baby.

A Jat Farmer family, one of the wealthiest and most generous in the village, sent the following *piliya* gifts to their daughter and her husband's family when she bore her first child, a girl: 10 seers of sugar, 10 seers of rice, 6 seers of ghee, 1.5 seers of dry coconut, 1 seer of *gund*, and 2 seers of a pulse. The new mother received a costume including a string for her hair; her husband's mother was given a costume; the new father received a wool shawl and various other items of clothing, such as shirts and undershorts; his father was given a wool shawl. Gifts for the infant included five utensils, such as a spoon and cup, toys, clothing, and gold charms representing the sun and the moon. A rubber bed mat, two towels, and 1 seer of soda for washing clothes were part of the gift. We were invited to see the gifts before they were sent. The family told us that they also expected to give gifts for *chhuchak* worth some Rs. 500. The senior lady of the family wondered whether Rs. 500 would suffice because the new mother had requested a great many gifts. This scale of gift-giving was commensurate both with the wealth of the family, and the fact that the child was their daughter's first-born.

FIG. 66. Ring made of fiber cord (*indi*). Women wear such rings on their heads when carrying pots or other burdens. AMNH 70.2-6482.

Families not so affluent as wealthy landowners gave *piliya* gifts of less value. For example, the Lohar Blacksmith family showed us the gifts that they had received as *piliya* for the first son, who was the second child, of one of

the wives of the family; 7 seers of *gund*, 3 seers of rice, sweets, a woman's costume for the new mother, a duster for cleaning the baby's body, a headcloth for the mother-in-law, and a headcloth and bangles for the new mother's daughter. The baby received a bonnet or hat, a customary gift at *piliya*, silver ornaments worth 10 rupees, and protective charms representing the sun and the moon.

We visited a Chamar Leatherworker family when they were in the process of assembling gifts to send to one of their daughters whose first son had just been born. The gifts were valued at Rs. 150, an impressive sum in view of the modest economic circumstances of this family. The new mother's husband, who was visiting, assisted the family in the preparation of the gift of food. Family members were cooking 5 seers of a sweet (*ladu*), some of which was for the new mother and some for distribution in her husband's village. Other foods to be sent consisted of uncooked mixtures of dry coconut and gur (2.5 seers) and coconut and sugar (5 seers). For the infant, there was a lovely pink hat embroidered with golden material as well as silver jewelry weighing 20 tolas, worth Rs. 40. Clothing for the new mother and the women of her husband's family included two saris, six headcloths, and a shirt.

We were once visiting the Chuhra Sweeper quarter when a woman's brother arrived bringing her the *piliya* gift for her fourth child, and also fourth daughter. The gift was relatively modest as befitted both a fourth daughter and the generally poor economic circumstances of the Sweepers. Yet we found the gift, nonetheless, impressive: a nose ornament, a woman's costume including a yellow headcloth, a string for the hair, Rs. 2 for the purchase of ghee, a shawl for the husband, two shirts for the infant, about two-dozen bangles for the three older daughters, some rice, and some sugar. The new mother said that, had the child been a boy, she would have received more. Although the gift can be considered modest when compared with others we recorded, it was by no means insignificant. Moreover, the brother of the new mother had journeyed 15 miles by bicycle to deliver the gift. Such an effort provides substantial evidence that the presentation of gifts for childbirth was considered a most serious observance.

We recorded fewer accounts of gifts for *chhuchak* than for *piliya*, probably because *piliya* was generally sent for all children in contrast to *chhuchak*, which was usually sent only for the first-born. Moreover, some families gave essentially a single gift for childbirth, because they could not afford more, which they might call either *piliya* or *chhuchak*. We had the impression that such a practice may have been somewhat more common among the lower than the higher castes. For example, a Chuhra Sweeper woman told us that when her daughter bore her first child, a son, she sent a gift that she called *chhuchak*. To judge from the items included and the time that it was sent, it was as much a *piliya* as a *chhuchak* gift. The gift consisted of 15 seers of *gund*, 10 seers of *kasar*, one costume each for the new mother and her husband's mother, a shawl each for the new father and four of his male relatives, as well as headcloths for the wives of members of the new father's family. The baby received one gold and four silver ornaments. All these gifts were sent within 10 days of the infant's birth. However, when the new mother visited her natal family a few months after childbirth, she received few presents when she departed to return to her husband's family, the traditional time for the presentation of *chhuchak*; she was given only a shirt, a headcloth, and a cap for her son.

A Brahman Priest woman described a *chhuchak* gift that her family had given: it consisted of unspecified quantities of clothing, ghee, rice, a pulse, jewelry, and bed sheets. Although apparently modest, the value of the gift would have depended upon the actual quantity of clothing and jewelry, neither of which was specified. In general, gifts at *chhuchak* were substantial; one informant described *chhuchak* as comparable to a dowry in that all sorts of presents were given to the new mother and her relatives-in-law.

Nipple Washing (*Chuchi Dhona*) and Gifts to Female Relatives

The daughters, sisters, and, sometimes, other female relatives of a new father's family

received presents from the family head. When a married daughter or sister visited her natal household for a birth, the gifts she received were often substantial. One of these gifts was given in return for participation in the ceremony of washing the new mother's nipples, a service customarily performed by a sister of the new father. Nipple Washing usually occurred on the third day after childbirth when the mother first nursed the baby. Prior to the ceremony, the baby was fed sugar water (*guti*). A moderately prosperous Jat Farmer listed for us both the gifts that he had given for the nipple-washing ceremony for his first son and those presented to female relatives who either attended the birth or visited shortly thereafter. He paid his father's brother's son's daughter 2 rupees to perform the ceremonial washing of the nipples because the older of his two sisters, who should have officiated, was not present. Despite her absence, he nonetheless gave her a present of Rs. 50 because the ceremony was her prerogative. In addition, he gave 5 rupees and a costume (skirt, shirt, and headcloth) to each of his two sisters, to five daughters of his father's brother, and to the wife of his father's sister's son. Shirts were also given to the sons of these women. He told us that all these gifts were customary for the birth of a first son. The cash involved in the gifts amounted to Rs. 92. One of the wealthiest Jat families of the village gave their only daughter Rs. 250 when she returned to her natal household to attend the childbirth of one of her sisters-in-law.

Tenth Arising (*Dasuthan*) and Other Ceremonies of Birth

The economically significant gifts of the ceremonies of birth were those given for *piliya*, *chhuchak*, Nipple Washing, and those presented to the married sisters and daughters who returned to their natal household for the birth. Although other important rituals of childbirth ordinarily involved the expenditure of only a few rupees, the birth of a first son often resulted in an increase in the costs of specific ceremonies. For example, the wife of the village potter usually received a small quantity of grain in payment for her services at the ceremony of Well Worship. However, if the ceremony was held for a first son, she might be given a complete costume.

Some rituals could become the occasions for costly feasts when a newborn child was a first son who had long been desired by his family. The ceremony of Tenth Arising, which was held almost always nine days after all births, might involve an expensive feast when a long-awaited first son was born. However, such feasts were apparently rare. None occurred in Shanti Nagar during our residence there, but informants described for us a few such feasts that had taken place in the preceding 10 or 12 years. Moreover, one such feast was held in a neighboring village while we were living in Shanti Nagar. A wealthy Jat Farmer invited people of all castes from Shanti Nagar and several other villages to a feast to celebrate Tenth Arising for his son. The quantity and variety of food offered was truly impressive; seven different kinds of sweets were served. We do not know the cost of the feast, but it was necessarily a considerable amount of money. Usually, an entire day was required to feed the guests at such an affair. On behalf of the village as a whole, the people of Shanti Nagar presented a traditional gift to their host. It consisted of 1 rupee and a towel or cloth which was to be placed under the baby. Such a gift (*rupiya potra*) might also be given by a woman to her relatives or to a friend to celebrate a birth.

When a male infant was born under an inauspicious astrological sign, a ceremony and an expensive feast might be given to forestall the unfortunate effects that such a conjunction could have on the boy and his family. As the moon revolves through the heavens, it passes near 27 conspicuous stars or groups of stars which were recognized and named in ancient times (Freed and Freed, 1964, p. 68). Of these 27 lunar mansions (nakshatras), some were believed to be auspicious and some inauspicious. The Mula Nakshatra was believed to have the most evil influence. A male infant born under this sign was said either to be destined for an early death or, if he lived, to ruin the property of his family. A Brahman Priest, moderately prosperous, told us that his second son had been born during the Mula Nakshatra. Our informant's father performed a ceremony and

provided a feast for people from Shanti Nagar and several nearby villages. The feast had cost about Rs. 550, a figure which would probably also approximate the cost of a feast given for Tenth Arising by a family in similar economic circumstances.

Women who had no sons often vowed to go to Gurgaon, a large town situated about 25 miles (40 km.) from Shanti Nagar, to make an offering to the Mother Goddess of Gurgaon if they gave birth to a son who lived for a specified time. Since many infants died during the first year of life and the object of the vow was not merely to bear a son but to have him attain adulthood, the prudent devotee specified a definite period of time after which an offering would be made. A Chuhra Sweeper described such a pilgrimage for his one-year-old son for which he spent about Rs. 16 (Freed and Freed, 1976a, p. 207).

The Chuhra Sweepers had a ceremony, called *Dasaundh*, that often involved a relatively expensive feast. When a child attained the age of five years, its hair was cut and two pigs were sacrificed to the Mother Goddess of Gurgaon. Their flesh served as part of a feast consumed by relatives and by other Sweepers both from Shanti Nagar and other villages. We attended one such feast. Although it was held one month after the birth of a daughter, this *Dasaundh* was actually for the infant's brother who had died. The children's mother explained that the situation was complex. One year following the birth of her son, she had designated two pigs that were to have been sacrificed when he became five years old. Pigs were usually designated for sacrifice when a child was one, two, or three years old. Although the boy died when he was one and a half years old, the pigs had been designated as a sacrifice to the Mother Goddess of Gurgaon; they therefore had to be killed and consumed in a feast similar to that customarily given at *Dasaundh*. However, the pigs could not be sacrificed until another child was born. If the woman and her husband had no more children, the pigs had to be allowed to die of a natural death at which time they would be buried. Thus, the birth of their daughter provided the proper occasion for the sacrifice of the two pigs that had been reserved for their deceased son. The two pigs sacrificed were valued at Rs. 90; the family spent, in addition, about Rs. 20. The mother told us, that when her daughter became two years of age, two other pigs would be reserved for sacrifice at her *Dasaundh*.

One economical Chuhra Sweeper woman reported that, during the marriages of her daughters, she had sacrificed pigs to fulfill her vow to the Mother Goddess of Gurgaon for the welfare of her sons. Thus, a single feast served both to satisfy the vow and to provide food for the wedding feast. She effected further economies by marrying her two daughters at the same time and by also holding a single ceremony for both of her sons, the older five years of age and the younger two years. She succeeded in fulfilling four ceremonial obligations with a single feast. She told us that her three brothers who attended the ceremony brought clothing for each of her sons, as did her husband's sister.

Death

The expenses at death were much less than those incurred for weddings and births; most families spent relatively little. We recorded only one death, that of one of the wealthiest and most important men of the village, that involved heavy ceremonial expenses, far more than was normal for the village. Even in this case, the most elaborate of the several rites for death cost only between 200 and 300 rupees. In comparison with the amount spent on a wedding feast or a dowry in a wealthy family, such a sum was quite modest. No ceremonies followed the death of a child.

The principal rites of death involved the cremation, a trip to the Ganges River to dispose of the fragments of bone that remained after the cremation, and ceremonies held 13 days, six months, and one year after death. After the first year, a death was commemorated during the annual ceremony (Shraddha) for the commemoration of ancestors and other deceased members of a family.

The cremation involved expenses that were shared by the family of the deceased and their friends and castemates who attended the rite.

The clothes that the deceased had worn when he died, were given to the family's Sweeper; the new sheet that served as a shroud to cover the corpse on the way to the funeral pyre was incinerated with it. If the corpse was carried to the cremation grounds on a cot, it was given away; if on a ladder, it was burned. The ritual of cremation required ghee, sandalwood, dry fodder, dung cakes, and wood. The participants in the cremation ritual provided part of the fuel. Three days following the cremation, relatives of the deceased collected ashes from the area where the head of the corpse had rested and whatever bone fragments remained, with the intention of disposing of them in the Ganges River. Such a trip cost about 10 or 15 rupees. However, a family did not necessarily incur this expense. The bones might be placed in the nearby Jumna River or they might be saved and later given to someone who planned a trip to the Ganges for another purpose and was willing to take the bones for disposal in the river.

On the thirteenth day after death, the family of the deceased, depending on caste, held a fire ceremony and fed the family priest. If he did not wish to accept a meal, because of the association of pollution with death, children were fed. The bereaved family also provided food for those who visited them because of the death. The clothing of the deceased person was given away. At the end of a month, the deceased's sister's husband paid a visit, was fed, and returned to his home. Such a visit might be repeated every month for one year. Six months and one year after the death, relatives, such as a sister's or daughter's husband or son received new clothes and individuals who gathered to celebrate the day were fed. The Jat Farmers held a large feast at the end of a year if the man who died was important. If the individual who had died was either young or important, relatives and local Brahmans were greatly saddened and reluctant to accept gifts. Under such circumstances, the traditional gifts might be given to a caste of Brahman Priests known as Panda.

The ceremonies of death involved considerable spending only when a very important member of a wealthy and prominent family died. In such a case, the major outlays were incurred for the memorial ceremony one year after death. We recorded one such event. Relatives and friends from other villages attended the ceremony. Most of the relatives were those to whom a family customarily gave gifts, for example, the husbands and sons of women born in the family. The guests were fed two meals and were given 1 rupee when they departed. A sister's son of the deceased received one costume (dhoti, shoes, shirt, turban, and shawl). The sister received five costumes; her other children were given clothing. The daughter of the deceased and her two daughters each received two costumes; her husband, a shawl; her husband's father's mother, three costumes. A son of the deceased Jat reported that his father's death anniversary had cost 200 to 300 rupees. He was unable to provide more exact figures because the clothing had been given in small lots at different times.

Perhaps the major expenses that this family planned to incur was for the construction of a shrine for the deceased. Following the cremation, his remains had been collected and buried just outside the village habitation site. At first, the spot was marked by only a few bricks; somewhat later, a building was constructed (fig. 67). We do not know its cost. The family also planned to have a well dug at the site and hoped to persuade a holy man to live there permanently, to plant and maintain some greenery. The family believed that the shrine would serve very well as a guest house.

The annual memorial ceremony (Shraddha or Kanagat) was held for 16 days during the first half of the month of Ashivan (Freed and Freed, 1964, table 5, p. 87). During this period lasting slightly over a fortnight, a family commemorated the death anniversaries of important relatives. For example, we were told by one family that they performed rituals for five individuals: the father of the family head, father's mother, father's father, father's father's father, and one son of the family head who had died at the age of 15 years.

We attended one Shraddha ceremony in the house of a moderately prosperous Brahman Priest. The simple rites cost relatively little. Each of four Brahman men who attended the

FIG. 67. Jat Farmer stands near a temporary shrine for his father. Stacks of stored dung cakes, protected by mats, background.

ceremony was given 4 annas and a good although not an elaborate meal. On the basis of information from other families about their observances on Shraddha, we think that the cost incurred by this Brahman Priest was above average for the higher castes; members of the lower castes ordinarily spent less. Part of the reason that the Brahmans spent more is that they were the caste who always observed a full fortnight of mourning. Other castes observed only the last day of the fortnight; some families might not celebrate Shraddha at all.

A family incurred expenses not only for the death of one of its own members, but also at similar occasions in affinally related families. Such expenditures were based on the familiar principle that a family sent gifts to married sisters and married daughters and their husbands' families. For example, one woman reported that when her husband's sister died, her family had sent a gift to the deceased sister's husband's family consisting of a woman's costume, flour, 5 seers of rice, and one pair of bangles. For the ceremony that took place six months after death, another gift was sent that consisted of 2 seers each of flour, rice, and sugar. The gift for the ceremony one year after the death was somewhat larger; it consisted of one woman's costume, 4 or 5 seers of flour, 1 seer of a pulse, 2.5 seers of rice, and two seers of sugar.

Yearly Festivals

Freed and Freed (1964, table 5) have provided a complete list of the festivals held in Shanti Nagar and the dates of their observance. Most of these festivals were celebrated annually, but a few were held more frequently or irregularly. We have limited the following discussion to those festivals that regularly involved significant expenditures on the part of a family. Consequently, some popular and ritually important festivals will not be discussed. For example, the festival of Charm Tying (Rakhi Bandhan or Salono), at which sisters tied charms on the wrists of their brothers and received a rupee or two in return, was economically unimportant.

Although some festivals were ordinarily inexpensive, a festival could become the occasion for a fairly costly ceremony when a family

desired to commemorate a significant event. For example, those families that observed the festival of the Cooking Pot of the Goddess (Devi Ki Karahi) usually did little more than cook some sweet food and distribute a little to friendly castemates and, perhaps, to a Brahman Priest. Two informants, however, described more elaborate feasts that they had given for their castemates. One Gola Potter gave such a feast to fulfill a vow that he had made for the recovery of his sick wife. A Chuhra Sweeper had vowed that if he sold his cow for a good price, he would give a feast for his castemates. He received Rs. 100 for the cow which had cost him Rs. 15 six years earlier. Consequently, he gave a feast that cost about Rs. 15.

Third (Tijo or Tij)

For the Third, the joyous festival of swings, women and girls dressed in their best clothes, sang, and swung on swings that were suspended from trees throughout the village (fig. 68). On this festival, married women received gifts from both their parents and their parents-in-law. The size of a gift depended upon the wealth of a family and whether a married woman was a bride or had been married for a number of years. A bride's parents gave her an expensive gift for the first Tijo following her marriage. Thereafter, the value of presents diminished; a few years after marriage the value of gifts could be relatively small. However, in evaluating such a gift, it should be noted that a present given for the Third was only one of several annual gifts that a married woman received from her natal family. Although a specific gift might be relatively inexpensive, the total value of the gifts given throughout the year was often significant.

The character of a gift depended upon whether it came from parents or parents-in-law and also whether a married woman was present in her natal home or in her husband's home at the time of the festival. Our observations indicated that young married women often visited their natal households at this time. Under these circumstances, the parents-in-law sent a gift for

FIG. 68. Women swinging on the festival of the Third.

the young wife and her relatives that, typically, contained a wooden board that served as the seat for a swing, clothes for the wife, and sweets for the members of her natal family. Her parents reciprocated with somewhat more expensive gifts to their daughter and her parents-in-law that included food, clothing for the daughter, and money for the father-in-law. If a married woman were living with her husband's family during the festival, her parents-in-law did not send her gift to her parents' house. Nonetheless, her parents sent her the normal presents for the Third.

We recorded a gift sent by a Brahman Priest family to the parental home of their son's bride. It included a beautiful seat for a swing made of wood and tin with embossed and perforated designs of flowers and trees, a colored rope for the swing, clothing for the bride (a handsome sari, blouse, petticoat, embroidered shoes, a string for the hair, and a ring to be worn on the head when carrying burdens), two sheets (*chadar*), about 14 seers of sweets, henna for coloring the hands, bangles, toys, and a considerable quantity of clothing, including caps for the children of the family. This handsome gift, valued well in excess of Rs. 50, given by the parents-in-law, reflected the fact that their son's wife was still a bride.

The Lohar Blacksmiths sent their two married daughters more modest gifts; they had been married for some time and large gifts were not customary long after marriage. The two sisters and their four daughters each received a shirt, string for the hair, bangles, a ring for the head, and 2 rupees worth of sweets.

The gifts received by a Jat woman illustrate the relative value of the gifts given by parents and parents-in-law. The Jat woman's parents-in-law sent her a skirt and a seat and rope for a swing. Her parents gave her two women's costumes, four sheets, two children's costumes, 5 rupees for the father-in-law, and 2 rupees to the Nai from the husband's village who carried their gifts to the husband's family.

The relative value of the gifts sent to younger and older women is illustrated by those given by a generous Jat family to one daughter and two sisters of the family head. The daughter received Rs. 20 (which probably went to her father-in-law) and a costume. Each of three sisters received Rs. 5, but no clothing. A Chuhra Sweeper family sent their daughter 4 seers of food, a headcloth, a shirt, and another shirt for her son. The most costly gift of which we learned was seven women's costumes, 14 sheets, and Rs. 100 that a wealthy Jat family gave to a newly married daughter.

Pitcher Fourth (Karva Cauth) and Hoi (a Mother Goddess)

Pitcher Fourth, observed by married women of only the Brahman Priests and Baniya Merchants, and Hoi, celebrated by married women of all the castes of Shanti Nagar, occurred within five days of each other. On Pitcher Fourth, if a married woman was in her parental home, her parents sent a gift to her husband's family. The gift included food, especially sweets, and usually a costume for the woman's mother-in-law and cash, perhaps 1 rupee. We visited one Brahman Priest family to view the present that had been sent to them by the parents of their son's bride; it consisted of two women's costumes, a headcloth, a small metal pitcher full of rice, two pairs of glass bangles, 1 rupee, and 15 sweets which were broken and distributed to friends, including Jat Farmers, Brahmans, Baniya Merchants, Jhinvar Watermen, and Nai Barbers. Sometimes, the gifts were reciprocal; the husband's family sent a present to the family of their daughter-in-law. The Brahman family who showed us the gifts that they had received for Karva Cauth told us that they had sent an even more valuable gift to the family of their son's wife: a large pot, sweets, and a considerable quantity of clothing. They said that because they had given more valuable presents than they had received from the family of their daughter-in-law, the next time that she came from her natal home she would undoubtedly bring a busload of presents.

For Hoi, a married woman customarily gave her mother-in-law, or her husband's sister if her mother-in-law were dead, a costume, or at least a headcloth, or enough material to make a

shirt. Sometimes sweets might be given to a young unmarried sister-in-law instead of to a mother-in-law. Although the gifts given for Pitcher Fourth and Hoi were not particularly impressive, we have included these two festivals because they were characterized by an exchange of gifts between families related by marriage, the relationship that was basic to most of the ceremonial spending in Shanti Nagar.

Festival of Lights (Diwali) and Holi (a Saturnalia)

The major festivals of Diwali and Holi, though quite different ritually and mythologically, closely resemble one another with regard to the presentation of gifts. During both festivals, a woman's parents often presented gifts to her and to her husband's family. If the woman was at her husband's house, the gifts were sent; however, if she was with her natal family, no gifts were presented. Although such gifts were not elaborate, their value often amounted to several rupees. A specific family generally sent similar gifts for the two festivals. For example, for Holi, a Brahman Priest family gave their daughter's husband's family 10 seers of rice, 5 seers of sugar, and 1 rupee; for Diwali, the gift consisted of 5 seers of rice, 5 seers of sugar, and 1 rupee. A Chuhra Sweeper family gave 2 seers of rice, 1.5 seers of sugar, and 1 rupee for ghee for each festival. At Diwali, a Jat Farmer family received 1.5 seers of ghee, 1.5 seers of raisins, 2 seers of *rawa* (a special flour), 1 rupee, and a woman's costume from the parents of their son's wife. The costume was intended for the wife; the food and money were for the family. The gift for Holi was similar; 1 seer of ghee, 1 seer of ground rice, 5 seers of sugar, 3 rupees, a costume, and a headcloth.

As was true of all gifts, the size of those for Diwali and Holi, or whether any were presented at all, depended largely upon the economic circumstances of a family. A Chamar Leatherworker, a landless laborer, told us that he had given his married sister 3 rupees for Holi to buy sugar, ghee, and rice, but that he had been unable to send her anything for Diwali. As for gifts from his own relatives-in-law, they had ceased to send them for some time. He thought that they had just forgotten.

Winter Solstice (Makara Sankranti)

For the Winter Solstice, a married woman received gifts, principally clothing and money, from her parents. She then passed these gifts on to her husband's relatives. A married woman was expected to give these relatives substantial gifts at the Winter Solstice at least once; if her parents, who were the source of the gifts, could afford it, she might present gifts on several occasions. If her husband had many relatives, a woman might choose to present the customary gifts at several solstices, honoring some relatives at one solstice and other relatives at subsequent solstices. In this way, the expenses of the ceremony would be spread over several years. The presentation ceremony was dramatic. Dressed in their best clothes, the women who planned to present gifts piled them on trays or into baskets and carried them on their heads through the village, accompanied by large groups of singing women (fig. 69). At this season, the men were usually working at their sugarcane crushers. Arriving at a crusher, a wife laid her gifts in the laps of her husband's male relatives. Female relatives received their gifts in the lane in front of the crusher.

We observed several such processions and presentations. We watched a senior Jat man receive a blanket, a white wool shawl, and Rs. 10 from each of two young wives of his family. An older wife gave him a small white cloth and either Rs. 5 or Rs. 10. Because the older woman was not dressed up especially for the occasion and gave a more modest present than those of the younger wives, we assume that she had given gifts at previous solstices. A senior Jat woman listed the gifts presented by her eldest son's wife: Rs. 10 and a wool shawl to her husband's father and to her husband's father's brother, Rs. 5 and a shawl to each of the two younger brothers of her husband, and costumes to each of seven women of the family and lineage.

FIG. 69. Woman with a tray of presents for distribution during Makara Sankranti. The women are singing as they parade through the village lanes.

At a Brahman Priest ceremony, a young wife gave presents for the first time at a solstice. She honored her husband and his mother, father's brother, two sisters, two older brothers and their wives, and a married woman of Shanti Nagar who came from a village close to that of the husband's mother and was therefore considered to be her fictive sister, a total of 10 persons. The uncle received Rs. 5 and a cloth worth Rs. 35, the two older brothers each were given a cloth worth Rs. 5, and the husband received a bush-shirt. Each woman received a costume of varying value. The sisters received the most expensive clothing and also Rs. 2 each, the mother, the next most expensive clothing and, in addition, Rs. 3.75, and the brothers' wives, the least expensive clothing. Within categories of relatives, gifts had to be of equal value. On this occasion, a quarrel broke out between the wives of the two brothers; the value of the headcloths each was to receive was judged to be unequal. Consequently, some adjustment of the gifts became necessary. Some idea of the value of the

women's clothing can be gained from the fact that the most expensive skirt was valued at Rs. 60, the most expensive headcloth, at Rs. 16.

Religious Discourse (*Katha*)

A villager who had experienced good fortune or one who wished to perform a religious act sometimes arranged a religious discourse in honor of Satyanarayan (another name for Vishnu) on the day of the full moon. The ceremony could be held on any full-moon day. Its principal feature was the reading of sacred texts to an audience by a Brahman Priest. Many people were invited to attend the discourse; they were given a feast. Such affairs could involve hundreds of guests and be quite expensive. No elaborate *katha* occurred while we were in Shanti Nagar but a number of such events had taken place in the past. A Gola Potter claimed to have arranged a religious discourse in the year prior to our visit that had cost from Rs. 150 to Rs. 175. His only reason for sponsoring the discourse was his desire to perform a religious act. A wealthy Jat Farmer told us that he had held a *katha* some 10 years earlier because it was a good thing to do. He invited people from several neighboring villages, as well as from Shanti Nagar. He asserted that the discourse had cost a great deal of money. He added that such elaborate ceremonies were no longer held because people had less money and, moreover, were reluctant to spend it for ceremonies.

OTHER SOURCES OF INCOME AND EXPENSES

The villagers received money from various governmental programs. Although such payments totaled much less than the income obtained from either agriculture or service, the programs of the government, nonetheless, occasionally put considerable amounts of money into the hands of the villagers. During our period of residence in Shanti Nagar, the governmental program that produced the largest payments to individuals was a plan, administered by the Harijan Welfare Board, to subsidize rural housing. The Harijans (low castes) of Shanti Nagar took advantage of the program to replace their mud houses with brick houses. The details of the plan are summarized in Freed and Freed (1976a, pp. 195-197). It was possible for a family to receive a maximum subsidy of Rs. 750. We estimate that some 17 brick structures were erected to take advantage of the program. Had the government subsidized all of these buildings to the maximum extent possible, the villagers would have received a total of Rs. 12,750, a sum of considerable significance in the context of the economic situation of the Harijans.

The government provided financial assistance for families of castes classified as scheduled or backward who had children in schools that did not charge tuition. In Shanti Nagar, all families except those of the Brahman Priest, Baniya Merchant, and Jat Farmer castes were eligible. This assistance was adequate not only to pay the fees of the schools close to Shanti Nagar, where most of the village schoolchildren were enrolled, but also the cost of their books and other necessary supplies. Moreover, the subventions were apparently also large enough to cover additional expenses associated with attendance at school, such as extra clothing, and also, to some extent, to compensate a family for the child's labor that was lost because of such attendance. According to our informants, the subventions did not begin until the fifth grade (one woman said the third grade) and ranged from Rs. 30 annually in the lower grades to Rs. 50 in the higher grades. The monthly school fees varied from 2 or 3 annas to Rs. 2. Most of our informants who received governmental assistance paid monthly fees of less than 6 annas. In addition, informants said that they usually gave a present to the teacher to insure the good treatment of their children. One informant reported that children who did not receive governmental aid paid higher fees (Rs. 6.22 per month) than children who were eligible for assistance.

Pensions as a source of income were not particularly important during our residence in Shanti Nagar. Only three men of the village received pensions. A Chuhra Sweeper who had been in military service received a monthly pension of Rs. 15. Another Sweeper who had

worked 30 years for a railroad told us that he had received a lump sum of Rs. 608.50 when he retired at the age of 55 years. A Jat Farmer, a retired army lieutenant, had a pension of Rs. 85 per month. Although the Jat was a member of a family of Shanti Nagar, he was living in Delhi at the time of our study. Income from pensions was not important because only a few of the older men had ever worked long enough, either for the government or for a company that paid pensions, to qualify for one. This source of income is certain to grow in importance as people live longer and as relatively long careers in business, industry, and, especially, in government become increasingly common for both sexes.

Some villagers had investments in land and buildings outside of Shanti Nagar. For a few families, such investments were substantial. One Jat family owned farmland at a considerable distance from Shanti Nagar. Although family members reported different figures for its extent, one member asserting that the farm measured 910 acres (368 ha.), and another, that it measured only 421 acres (170 ha.), the farm was admittedly very large, much larger than any single landholding in Shanti Nagar. A Brahman family owned 70 bighas of farmland in another village. One Brahman and two Jat families owned large houses in the City of Delhi; these were not only used by family members but also produced income from rentals.

A few families conducted various enterprises outside of Shanti Nagar. As we have previously mentioned, one Gola Potter was part owner of a gristmill in a neighboring village and the Lohar Blacksmith family operated a shop in Narela. In addition, one Nai Barber owned a barbershop in Delhi from which he cleared Rs. 100 per month after paying all expenses. Two Jat families operated small enterprises in Delhi: a milk business and a transport business based on a single bullock cart. It is worthy of note that all but two of the families who owned land, buildings, and/or business enterprises outside of Shanti Nagar were joint families. Usually a stronger economic unit than the nuclear family, the joint family was in a better position to finance economic activity outside the village. Some family members were responsible for family interests in Shanti Nagar while others emigrated to exploit new economic niches.

Occasionally, families incurred large expenses for medical treatment but, in general, annual medical costs were relatively low. A Jat family of five members, during what was probably an average year in the sense that no family member had a serious illness, spent Rs. 57 on medicine and doctors (see Appendix 2). A Chamar Leatherworker family, consisting of three members, estimated their medical expenses at an average of Rs. 2 per month. When we collected budget information, some families failed to mention any medical expenses, at least for the year preceding the interview. For example, a Chuhra Sweeper family of four members reported that no member of the family had been sick during the year preceding the inteview, but that in the year before that, the family head had contracted jaundice and had spent Rs. 10 for medicine. The largest average annual medical expenditure that we recorded was incurred by a large Jat joint family; 14 of its members resided in Shanti Nagar and five members lived elsewhere. One family member claimed that they spent Rs. 500 annually for doctors and medicine. The cost of taxi fares for the doctors who came from Delhi was included in this sum. In general, a family did not impoverish itself for medical treatment. The economic welfare of a family usually took precedence over the health of its individual members.

Although legal expenses could be quite large, in excess of Rs. 1000 in cases that involved litigation (e.g., Freed and Freed, 1976a, p. 171), most of the families of Shanti Nagar incurred such expenses infrequently or never. Routine legal costs that did not involve litigation were modest. For example, in the annual budget of the Jat Farmer reported in Appendix 2, legal expenses amounted only to Rs. 22. Except for a few young men who spent a good deal of time in Delhi, expenses for entertainment were infrequent and relatively low. A rare day spent in Delhi or at a rural fair might cost a family 10 to 20 rupees. From time to time, charitable contributions were solicited in the village. A family gave as much as it could afford. While we were in Shanti Nagar, con-

tributions were sought for a school; we recorded donations of as much as Rs. 100. We do not know the amount that could be considered an average or normal charitable expense for a year. However, a wealthy Jat Farmer told us that he had given only Rs. 30 for one year; his use of "only" indicated that this figure was less than normal. The construction of a house was perhaps the greatest single expense incurred by many families. The costs of houses are discussed in Appendix 1.

CONCLUSION

The situation of gradual economic and technological change which we observed in Shanti Nagar in 1958-1959 reflected the fact that the adjustments resulting from the Green Revolution of the nineteenth century that followed the introduction of canal irrigation had largely been effected, and the second Green Revolution, resulting from the adoption of high-yielding varieties of food grains during the latter half of the 1960s, was still some years in the future. Canal irrigation was of considerable antiquity in the Delhi region; its adoption, however, had early caused considerable water-logging which had spoiled large areas of agricultural land. Consequently, canal irrigation was abandoned, only to be reintroduced by the British in the second decade of the nineteenth century (India, 1912, p. 9). Canal irrigation has produced other consequences: a considerable increase in double cropping, the expanded cultivation of commercial crops, the greater importance of the rabi (winter-spring) crops as compared to the kharif (summer-autumn) crops, which are grown during the period when Delhi receives most of its annual rainfall, and, with regard to animal husbandry, in the creation of conditions more favorable for the water buffalo than for the cow. A general result of canal irrigation has been the greater prosperity of the farmers living in irrigated villages as compared to those who live in villages that are largely dependent on rainfall for their crops.

Canal irrigation and other features of modernization, the construction of roads and railroads, have not been introduced without producing some unfavorable consequences; chief of these has been the resultant problem of water-logging. Roads and railroads, inadequately provided with culverts, interfere with natural drainage channels. Unlined irrigation channels, which furnish no barrier to the seepage of water, and irrigation attained by flooding fields, which are sometimes inadequately leveled, may bring more water into an area than it becomes possible to drain off, either vertically or horizontally, especially during a cycle of several years of relatively heavy rains. Under these circumstances evaporation draws alkaline subsoil water to the upper levels of the soil where the salts accumulate in toxic quantities in the root zone and spread on the surface in their dehydrated crystalline form, known as *reh* or *shor* (cf. Whitcombe, 1972, pp. 36-37). India (1912, p. 104) dramatically described the condition: "Whole tracts of land, formerly most productive, are lying barren; white with the saline efflorescence when dry, or when wet, foul with a stagnant and sickening vapour that, once perceived, is characteristically distinguishable, and is at times so strong in its odour as to give the sense of being eaten like food. At this point there is no doubt of the damage. . . . There is, however, even before [this final] stage an inceptive one, where the devastation has only just began. Here no *shor* is apparent on the surface of the soil, but the unhealthy look of the crop, or it may be (as in wheat), a kind of withered precociousness in the ears, shows that things are not as they should be. The fields, to a casual glance, bear their usual variegated burden of yellow and white and green; but the *zamindar* [farmer] knows to his cost that the curse has come upon him."

The villagers of Shanti Nagar perceived water-logging as one of their most pressing problems. Considerable political activity was directed to enlist governmental aid to open an important drainage ditch that had become blocked (Freed and Freed, 1976a, pp. 159-164).

The current Green Revolution is based upon exotic and genetically unstable dwarf varieties of wheat, rice, and hybrid maize and millets, supplemented by heavy inputs of fertilizers, and, like the earlier Green Revolution, upon intensive irrigation. Although irrigation is basic to both agricultural revolutions, high-yielding varieties of food grains, because of the recommended heavy doses of fertilizer and their capacity to absorb twice the nitrogen of indigenous varieties, require double the quantity of water, not only to dissolve fertilizer for plant use but also to sustain growth. Furthermore, it is imperative that the water be delivered to the plants at specific times in their life-cycles. For example, five to six precisely timed irrigations are recommended for wheat. The requirement for more water and precisely timed control of irrigation has led to a major innovation: the utilization of the electric- or diesel-powered tubewell. Canal water is dependable neither in quantity nor in timing. In contrast, the farmer who owns a tubewell is assured of water when he needs it. Gavan and Dixon (1975, p. 547) note, "The grain growers . . . in Haryana [Shanti Nagar lies in the old Haryana Tract although not in the new state of Haryana] obtained the same increase in yield when they changed from canal to tubewall irrigation as they had obtained in going from no irrigation to canal irrigation. Moreover, . . . in many cases, with the existing canal irrigation, the HYV's [high yielding varieties] did no better than TV's [traditional varieties], and some farmers had reverted back to the latter. The spread of HYV's is therefore likely to be closely tied to the use of private tubewells, which allow more careful control of water supplies. Large, state-operated tubewells are often more like canal irrigation, in that they require a large distribution network over which individual farmers have little effective control."

The outcome of the second Green Revolution is beyond the scope of this report; we have not observed it and, in any case, it has, as yet, not been finally determined although a few general observations are possible. Initially, the new varieties of grain reach a minimum of twice, frequently three times, and occasionally four or five times the yield of the indigenous strains; thereafter if the original seed is maintained locally, the yield declines. Nonetheless, the high-yielding varieties seem to be clearly superior in yield to improved indigenous varieties. On the other hand, their cultivation costs are greater, their flavor is not so satisfactory, and their sale price is less than the improved indigenous varieties (Whitcombe, 1972, pp. 43-44). Additional problems are derived from the effects of the new hydrological regime and of the extensive quantities of chemical fertilizer added to the soil. Initially, the withdrawal of groundwater by tubewells could ameliorate the water-logging problem, but, in the longer run, it is possible that the water table might be lowered to the point where the older masonry wells become dry. It cannot be assumed that the supply of groundwater will be inexhaustible. The use of fertilizer can have adverse consequences with regard to plant diseases. Intensive fertilization may lead to a deficiency in particular trace elements in the soil which, in turn, may render plants more susceptible to specific diseases. On the other hand, inadequate applications of nitrogen may have similar effects (Whitcombe, 1972, p. 45). The high-yielding varieties of grains have a notoriously low threshold of resistance to disease which, on occasion, can assume epidemic form. From the point of view of the farmer, the high-yielding varieties present a dilemma. Ordinarily, their yield exceeds that of the improved indigenous varieties, but they require a larger quantity of costly fertilizer, are more susceptible to disease, have a less desirable flavor, and sell for less. Finally, their successful cultivation demands a standard of precision in the management of agricultural operations that is difficult to achieve. Despite the problems associated with their cultivation, most farmers will in all probability adopt the new varieties of grains because of their superior yield.

Some of the effects of the current Green Revolution upon village society ultimately pose serious social problems. From his study of farm income in the Punjab, Nandal (1972, p. 19) concluded that the economic gains of the Green Revolution have been distributed among all farmers, but that ". . . both the absolute and the relative income gains have tended to in-

crease with the increase in the size of holding, level of mechanization, formal education of the head of the family and the number of earners in the family." Billings and Singh (1970, p. A-171), also writing with reference to the Punjab, noted that an important part of the increased agricultural costs that resulted from the adoption of high-yielding varieties was accounted for by the increased cost of human labor. The augmented demand for farm labor led to a sharp rise in wages (see also Wyon and Gordon, 1971, p. 305), followed by the greatly expanded use of new machines in critical agricultural operations, epecially for threshing and reaping wheat, for which farmers were largely dependent upon non-family labor. It has been predicted that by 1983-1984, all the Punjab wheat crop would be mechanically threshed and half of it would be harvested by mechanical reapers. Tractors, used in a large variety of agricultural operations, potentially can displace a considerable amount of human labor; the Green Revolution has greatly increased the demand for tractors. A reduced need for agricultural labor would produce a most serious situation for the landless laborers because traditionally such labor has provided the principal part of their incomes. If, among farmers, the Green Revolution disproportionately benefits those who are already well off, and, if one of its long range effects will be reduced opportunities for employment for landless laborers, the existing very substantial economic differences between the large and medium-sized landowners, as compared with farmers with small holdings and landless laborers, would be expanded. The proportion of rural poor in the population is substantial. If additional aggravation of rural economic inequality cannot be minimized by greatly expanded opportunities for commercial and industrial employment, a potentially explosive social situation is predictable.

On the basis of interviews with farmers in both the Punjab and Mysore who owned a minimum of 4.7 bighas of land, Blanckenberg (1972) has arrived at less somber conclusions. Although he noted that the majority of the empirical findings of some investigators tend to demonstrate that farmers with large landholdings have benefited more from new agricultural developments than those with small holdings, Blanckenberg (1972, pp. A-94, A-99) believed that the available empirical evidence is inadequate for final judgment. The villagers whom he interviewed were aware, however, that improvement in economic status had been unequal and that small farmers and laborers had benefited least from the new developments (Blanckenberg, 1972, p. A-106). Despite this awareness, only five of Blanckenberg's 176 Punjabi informants had observed an increase in social tensions as a result of economic change. In evaluating these data from the point of view of Shanti Nagar (and perhaps from that of much of rural India), one must bear in mind that if families with less than 4.7 bighas of land and landless families were disregarded, 71 of the 110 families of Shanti Nagar (65%) would be eliminated from consideration.

We do not propose here to modify the conclusions drawn on the basis of the data that we collected in 1958-1959 and attempt to take into account the potential effects of the Green Revolution. Such an endeavor would distort the analysis based on our own field data and would therefore reduce its value. We are aware, however, that some of our statements may impress subsequent observers as having become outdated by the rush of events. We believe, for example, that if the population of the village were to increase substantially, as appeared inevitable, a greater proportion of the people would be compelled to find jobs in Delhi. The alternative would be to accept a significant reduction in the standard of living in the village. Although some increase in agricultural income would result from both the solution of the water-logging problem and the continued gradual improvement of the crops grown in the village, we did not, before the Green Revolution, foresee any major increase in actual agricultural income (with inflation taken into account) because it was impossible to increase the land area of the village. Furthermore, the economic problems of the landless villagers and the farmers with small holdings would not be appreciably ameliorated by such developments. Land reform legislation had done little to help them. Therefore, we concluded that the future

economic well-being of the villagers depended principally upon training their young people for modern occupations in government, business, and industry. In all probability, the Green Revolution or Draconian legislation to equalize the distribution of land could delay the need for such a development, but could not forestall it indefinitely.

Because the economic life of Shanti Nagar is so profoundly affected by governmental initiatives and economic conditions beyond the limits of Shanti Nagar, it is hazardous to attempt to predict even short-range trends. For example, *India Abroad*, a New York newspaper (March 25, 1977, p. 9), reported that the recent change of political power in India, in which the Janata Party replaced the Congress Party, presages a greater emphasis on agriculture and cottage and small industry accompanied by a diminished concentration on heavy industry. Such a change, if it should occur, might result in a reduced concern for urban employment among the villagers. In 1958-1959, people desired urban employment for their sons. They recognized education as an important qualification for many urban jobs and valued it highly. "I want my son to be educated and have a good job" was a frequently recurring statement. Such an orientation could be affected both by governmental policies that emphasize agriculture at the expense of industry as well as by changing conditions in urban areas. Urban employment, for example, will directly affect the economic strategies of villagers. *India Abroad* (February 4, 1977, p. 8) reported 9.74 million urban unemployed in July 1976, as compared with 4.6 million in 1971, and 1.83 million in 1961. P. K. Mehta, writing in *India Abroad* (February 25, 1977, p. 2) with regard to unemployment among the highly educated, reported 288,487 unemployed college graduates in 1971, a tenfold increase in a decade. The number is predicted to grow to 3 million in 15 years, even if the Indian economy should continue to grow at an optimistic annual rate of 5.5 percent. If this projection is accurate, the well-known Indian saying, "Studied Persian (the Classics), set up an oilman's store" (India, 1942, p. 44), might more accurately reflect the potential economic advantages of higher education than did the attitudes that seemed to characterize Shanti Nagar in 1958-1959. Although the strategies of economic advancement that were favored in the late 1950s may not continue to confer as great an economic advantage as formerly and the pessimist proverb quoted above may strike a responsive chord, nonetheless, we believe that families will continue to invest in education for their sons and daughters. In a modern economy there is little alternative.

Irrespective of the future course of governmental policy or economic trends, we believe that the village family will continue to be the most important social unit with regard to economizing decisions. Family heads will continue to appraise the potential value of innovations, to accept or to reject them as they see fit, and to control the educational and occupational activities of family members. The Indian family, especially in its joint form, is an institution well adapted to exploit the agricultural-and-service economy that currently characterizes Shanti Nagar. One branch of a family can remain in the village to farm, or to practice its other traditional occupation, while supporting, at the same time, those family members who are seeking to establish themselves in urban occupations. Such an arrangement minimizes the problems involved in attempting to exploit new economic niches and ultimately strengthens the part of the family resident in the village through the remittances of urban family members. However, the family, no less than other institutions, can be changed either deliberately, or inadvertently, by legislation. A situation in which specific aspects of the traditional family are perceived as an impediment to economic development can lead to attempts to legislate changes in family life. If such a policy results in a weakening of the structure of authority and mutual obligations that currently gives the family its strength, India may well find that she has lost more than she has gained.

In this report we hoped to document the economic life of a single village located in space and time as strategically as possible to reflect a traditional village economy at the beginning of intensive modernization. This moment will soon pass in India, as it has

elsewhere in the world. It is important that the moment be captured in as much detail as possible not only because of its intrinsic interest but also to serve as a baseline for future research.

APPENDIX 1

HOUSEHOLD INVENTORIES

We made inventories of the household property of eight selected families, four of which owned land. By caste, we selected two Brahman Priests, two Jat Farmers, two Chamar Leatherworkers, and two Chuhra Sweepers. The inventories were taken by interviewing family members rather than by inspecting and counting objects, an impractical process. With the assistance of our informants, we first prepared a list of property that we believed to be generally comprehensive; then we asked each of our informants the number of each kind of object his family owned, its approximate cost, and where the objects had been obtained. In the course of the inteviews, the list of objects was expanded as informants occasionally mentioned items that initially had been overlooked. The interviews were long and tedious for all participants; consequently, we selected the most cooperative families for this project. All of our informants did their best to provide accurate information. However, we must emphasize that many of their figures were estimates. The classification of most of the objects into categories presented no problems, but a few objects could as easily have been included in one category as in another, for example, a cutting implement used interchangeably in the kitchen and for agricultural work. A student assistant tabulated the data. The tabulation, occasionally, required her to make interpretations; it also included numerous calculations. We checked selected samples of her interpretations and calculations; in general, her figures were close enough to those that we obtained so that we could accept her work as substantially accurate. The fact that our informants were providing information from memory and that the independent interpretations and calculations varied somewhat means that all of our figures should be viewed with some caution. Nevertheless, we believe that they do provide a reasonable idea of the value of the household property of representative families of Shanti Nagar.

The most noteworthy feature of the data presented in table 2 is the value of family jewelry, which was calculated on the basis of Rs. 130 for a tola of gold. Villagers quoted Rs. 105 per tola as the minimum value for gold. Had we used the minimum figure in the calculations, the percentage of the value

TABLE 2

Value of Household Property, by Category, of Eight Families[a]

	Landowners				Landless			
Category	Brahman 1	Braham 2	Jat 1	Jat 2	Chamar 1	Chamar 2	Chuhra 1	Chuhra 2
Kitchen utensils	4	4	6	4	12	19	11	14
Furniture	2	3	10	7	15	13	3	14
Bedding	5	4	3	6	12	6	1	4
Clothing	22	25	11	33	24	5	42	14
Jewelry[b]	51	60	62	39	15	26	41	50
Farm implements	11	1	6	9	9	6	1	1
Miscellaneous	5	3	2	2	13	25	1	3
Total percentage	100	100	100	100	100	100	100	100
Total value (Rs.)	7709	9546	15,273	10,059	2398	1800	1458	2031

[a]Except for the total value, which is given in rupees, the figures in the cells are column percentages.
[b]Gold was calculated at Rs. 130 per tola; silver at Rs. 2 per tola.

FIG. 70. Paved village lane with mud houses, left, and brick houses, right.

FIG. 71. Woman digging the foundation for a brick house.

of family property that was represented by jewelry would have been somewhat lower than the figures presented in table 2. Nonetheless, a large proportion of the value of family household property would still be represented by jewelry. The value of farm equipment owned by a family largely reflected the degree to which its members were involved in agriculture. This consideration is obvious in the figures for the landowning families where the single family with relatively little involvement in agricultural work (Brahman 2) owned much less agricultural equipment than the other three landowning families.

The value of household property does not adequately reflect the difference in wealth among families, especially the difference between landowning and landless families, because land, houses, and livestock are excluded from the figures. For example, the value of the household property of Brahman 2 is 4.7 times that of Chuhra 2. However, Brahman 2 owned a house valued at Rs. 22,000, land worth at a minimum Rs. 12,000, and two water buffalo and two buffalo calves whose value we do not know. Chuhra 2, who was landless, owned a mud house, a cow, her calf, and three chickens, the total value of which we do not know. Thus, the property owned by Brahman 2 was valued at roughly 21 times that of Chuhra 2, if we disregard the value of all livestock and the mud house.

It is difficult to evaluate the statements of informants as to the value of brick houses. Houses differed considerably in size, details of construction, and ornamentation. Moreover, they were built in different years, so that sometimes inflation had to be taken into account in making comparisons. For these reasons, the validity of an informant's statement of the value of a specific house was difficult to appraise by comparing it with the figures provided by informants for other houses. In the single example where two informants evaluated the same building, the figures agreed closely; in some cases where houses appeared to be generally comparable in size and quality, informants quoted similar figures for their values. The values that we report are only for the structures; the value of the land under the houses has been excluded from our figures.

Among the potentially most reliable figures, we believe, were those involved in situations where a joint family divided or where two families shared the cost of the construction of a building. When joint families divided, one of the two resultant families often retained the house and paid half of its value to the second family who then built a new house. Because such figures involved an agreement between two families with regard to a substantial sum of money, the figures would necessarily have had to be realistic. We recorded one example of the financial division of a brick house, a moderately large two-story Jat house which was appraised at Rs. 8,000. However, an informant appraised a very similar house next door to it at Rs. 15,000, a substantially larger figure. We have no means of judging which of these two figures is the more probable. In general, we favor the values used in the division of property. In this example, however, the higher figure accords well with estimates for other comparable houses. Considerations of financial realism, similar to those involved in the division of families, occurred when individual families shared the expenses of construction. We recorded one such case, concerned with a small Jat house and cattle shed which was valued at Rs. 4000. In size and construction, this house, we believe, was roughly comparable to three Chamar Leatherworker houses, each of which was said to have cost Rs. 4000.

We recorded estimates of the value of 16 brick houses. One house was valued at Rs. 3000, four at Rs. 4000, one at Rs. 8000, two at Rs. 10,000, three at Rs. 15,000, one at Rs. 22,000, three at 30,000 to 35,000 rupees, and one at Rs. 47,000. The most expensive house in Shanti Nagar, built in the 1920s, had cost Rs. 47,000, according to a family member. He claimed a current value of Rs. 100,000. The least expensive brick house for which we have information had cost Rs. 3000, according to its owner, and had been built in 1952. It appeared to be much superior to slightly more costly houses built six years later. Of the 16 houses, 10 were owned by Jats, three by Brahmans, and three by Chamars. In general, the most expensive houses were owned by Jats and the least expensive by Chamars. The Brahmans owned moderately expensive houses. The median value of brick houses was Rs. 12,500. Values tended to cluster at the extremes of the distribution: Rs. 3000 to Rs. 4000 at the lower end and Rs. 30,000 and over at the upper end.

Mud houses were considerably less costly than those constructed of brick. Their value was represented by their wooden parts; the mud cost nothing. Variation in the value of mud houses depended principally on their size and the number of rooms. The larger the house, the more wood was necessary. We recorded only two statements concerning the value of mud houses. A Chuhra Sweeper told us that he had built his house for Rs. 150; a Jat informant estimated the value of a Brahman's mud house at Rs. 400.

Table 3 deals with the provenience of the household objects of the eight families whose property we inventoried. Provenience generally refers to manufactured articles, not to raw materials. For example, the provenience of an agricultural implement made by the village blacksmith was considered to be Shanti Nagar even though the iron used in the imple-

FIG. 72. An unpaved village lane flanked by mud houses. A three-legged harvesting stool is in the foreground.

FIG. 73. Grass that grows on the roofs of mud houses is collected and used as fodder for cattle.

FIG. 74. Detail of a mud house. Bags, used by Gola Potters to transport loads on donkeys, mules, and horses are suspended from the ceiling.

TABLE 3
Provenience of Household Property, by Category, of Eight Families[a]

	Landowners					Landless				
Category	Self Made	Shanti Nagar	Delhi	Other Cities and Villages	Total	Self Made	Shanti Nagar	Delhi	Other Cities and Villages	Total
Kitchen utensils	10	20	31	39	248	11	19	45	25	188
Furniture	2	18	47	33	49	3	0	53	43	30
Bedding	19	21	10	50	42	14	4	9	73	22
Clothing	4	15	43	38	143	4	18	42	36	107
Jewelry	0	2	13	85	53	0	0	29	71	38
Farm implements	8	48	6	38	82	4	58	4	35	26
Miscellaneous	3	39	38	20	76	0	19	63	18	57
Total	7	23	30	40	693	6	17	42	35	468

[a]In this table, data for four landowning families have been combined, as have data for four landless families. A particular kind of item was tabulated once, no matter how many of that kind of item there were. For example, one family owned 100 metal goblets, all of which had been obtained by attending weddings outside of Shanti Nagar. For purposes of this table, these goblets were tabulated as a single unit. All cell figures are row percentages except the two "total" columns each of which contains the total number of kinds of items for four families. Row percentages that do not total 100 are due to rounding error.

ment had ultimately come from outside the village. The data in table 3 provide an indication of the extent to which Shanti Nagar was an independent economic unit. Approximately 73 percent of the household items in use in Shanti Nagar came from sources outside the village. The interpretation of such figures depends upon one's point of view. One could find it remarkable that in the 1950s a small village in a modern industrial nation was still producing a quarter of its household equipment or, with equal justification, select a different emphasis and argue that the economic independence of the Indian village was largely a myth. It is noteworthy that there is considerable variation among the categories. Virtually none of the jewelry originated in Shanti Nagar; on the other hand, 57 percent of the farming implements were made there. Such figures reflect the fact that the goldsmiths who traditionally served Shanti Nagar lived in a neighboring village, while a family of Lohar Blacksmiths, who made agricultural implements, lived in Shanti Nagar.

APPENDIX 2
FARMER'S BUDGET

A farmer of Shanti Nagar who, for his own purposes, kept a detailed record of his cash expenses during 1958 made it available to us. It is by far the most complete accounting of family expenditures that we were able to collect; we present an analysis of it in this appendix. The various expenditures for the entire year have been classified in table 4. However, in order that the reader may have an adequate idea of the detailed character of our informant's account, we present his record for a single month, the month of November, as follows: fencing a field (labor) Rs. 15, digging trees to make the fence (labor) Rs. 15, gifts to two sisters for the festival of Diwali Rs. 4, Gola Potter for moving earth Rs. 20, Bairagi Beggar for sowing crops Rs. 10, wheat Rs. 9, sugar Rs. 3, wheat (5 maunds) Rs. 85, cloth for mother Rs. 4, village store Rs. 2, Nai Barber gift for Diwali Re. 1, cotton for quilts Rs. 4, clothes for wife Rs. 4, watch strap Re. 1, pulses and sugar Rs. 10, gram, bajra, and *gowar* for cattle Rs. 154, transportation of those grains Rs. 4, grinding wheat for cattle Rs. 2, sickles Rs. 4, feast Rs. 2, cloth for children Re. 1, rent for sugarcane crusher Rs. 20, cutting fodder Rs. 2, labor Rs. 5.

The farmer included only cash expenditures in his record; not included as expenses were the crops that he grew for the consumption of his family and his cattle. His family numbered five persons: three adults and two children. He owned one water buffalo throughout the year and two bullocks for the last seven months of the year. He cultivated 29 bighas of land. During the kharif season, he had 5 bighas in sugarcane and 12 in jowar; during the rabi season, 5 bighas were in sugar cane, 12 bighas were in wheat, and 12 bighas in gram. He fed all the jowar and gram to his cattle. He kept the wheat, about 30 maunds, for his own consumption and for seed. We assume that the figure of 30 maunds represents the quantity left after he had paid the harvesting expenses and the customary fee to the Lohar Blacksmith. The sugarcane yielded 43 maunds of gur and 2 maunds of sugar. The farmer reserved the 2

TABLE 4
A Farmer's Cash Expenses in 1958

	Rupees	Percent
Agriculture		
Hired labor	329	12
Seed	13	0.5
Fertilizer	20	1
Equipment (purchase)	111	4
Sugarcane crusher (rent)	20	1
Other	3	0.1
Subtotal	496	18.6
Cattle		
Purchase (2 bullocks)	900	33
Food	546	20
Veterinarian	10	0.4
Other	5	0.2
Subtotal	1461	53.6
Household		
Food	134	5
Soap	11	0.4
Village store (monthly account)	28	1
Clothing	78	3
Washerman	2	0.1
House construction (installment)	200	7
Tinker	1	0
Subtotal	454	16.5
Taxes and fees		
Land revenue	34	1
Village panchayat	4	0.1
Bicycle license	2	0.1
Subtotal	40	1.2
Ceremonies	159	6
Charity	16	0.6
Entertainment	8	0.3
Legal	22	1
Medical	57	2
Transportation (personal)	7	0.3
Total	2720	100.1

maunds of sugar and 5 maunds of gur for family consumption; he paid 3 maunds of gur to the workers at the sugarcane crusher, and sold 35 maunds for Rs. 560. In addition to his income from agriculture, the farmer earned an annual salary of Rs. 1620. Thus his cash income was Rs. 2180 and his cash expenses, Rs. 2720. He found it unnecessary to borrow to meet the deficit of Rs. 540 because he had accumulated sufficient funds in a savings bank.

The expenses for 1958 were probably not typical for this family because they had separated from a large joint family during that year. As a result, the family had to purchase bullocks (Rs. 900) and farm equipment (Rs. 111), expenditures that under normal conditions would recur only infrequently. These special costs resulted in a total cash expenditure during the year that was larger than normal and, moreover, distorted the percentage of funds that were spent for various purposes. For example, the cost of food for cattle, which amounted to 20 percent of the annual total, would have been 30 percent had it not been necessary to purchase bullocks during the year. Expenses other than the purchase of bullocks, the large expenditure on equipment, and the last installment (Rs. 200) for the construction of a house occurred annually and were probably generally stable from year to year.

This record of expenses contains several noteworthy features. The major costs, exclusive of the purchase of bullocks, were for agricultural labor and for cattle maintenance. The farmer's expenses for labor were high because he had a full-time salaried job away from the village and no son old enough to help with agricultural work. Consequently, he depended on hired labor. The maintenance of cattle was expensive. He used 41 percent of his acreage to raise crops for his cattle and, in addition, devoted 31 percent[1] of his cash expenditures (minus the cost of his bullocks) to the maintenance of his cattle. The cost of food for the family was relatively low; however, the crops he grew that were consumed by the family are not included in the list of expenses. The cost of ceremonies reflected the fact that his wife bore a son during the year. However, the expenses of ceremonies would be significant in most years for this farmer because he had eight female relatives to whom he was obligated to give gifts at births and weddings. Taxes were miniscule, amounting to only one percent of expenditures.

The significant features of this farmer's budget can best be appreciated by the western reader if he compares them to his own yearly budget. Taxes amounted to only 1.2 percent and transportation, to only 0.3 percent of the yearly expenditure. The average American need think only of his own income taxes or the cost of operating an automobile to realize how different was the economic world of the resident of Shanti Nagar.

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[1]In Freed and Freed (1972, p. 406), this percentage is quoted at 33 percent. The difference involved the classification of the cost of a fodder-cutting machine. In the earlier paper, it was classified as an expense of maintaining cattle. In table 4, it has been included as an equipment expense.

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[1] This index also serves as a glossary. Each Hindi word used in the text, not listed in Webster's *Third New International Dictionary of the English Language, Unabridged*, has its own entry. The reader should refer to the listed pages, usually the earlier ones, for a definition.

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