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POPULATION AND ECONOMY IN CENTRAL NEPAL: A STUDY OF THE GURUNGS.

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(Thesis presented for the degree of Ph.D. at the University of London, 1972)

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Abstract

This study of the Gurungs, a mountain tribe of central Nepal, analyses the way in which population growth occurs and its effects on economy and society. Thus it continues the work of Bernard Pignède's Les Gurungs. The population of the Gurungs has increased about five-fold during the last hundred years; at present rates it will increase at least eight-fold in the next century. The way in which this occurs is examined through analysis of the age/sex structure, fertility and mortality patterns. The social factors affecting demographic rates, for example attitudes to children, army service, marriage customs, the treatment of disease, are outlined. It appears that in all demographic and medical features the Gurungs occupy a position half way between the 'ideal type' Asian society and western industrialized countries. The age pyramid is not very steeply tapered, men and women marry relatively late, fertility and mortality rates are low for Nepal. As yet there do not appear to be marked differences between different sub-groups in the population, though the installation of a water pipe in the village is already giving an advantage to some villagers.

During the last hundred years the economic system of the Gurungs has entirely altered from one based on trading and pastoral activities to heavy dependence on arable farming and army service. The possibility of future expansion to meet continued population growth is considered by analysing the various resources of forest, land, labour and non-productive goods. Family budgeting is then closely examined in order to see how particular households deal with the problems of earning a living; which have deficits, which have labour surpluses, which are malnourished. The question of whether population pressure is leading to greater inequality, and the enormous effects of army employment on Gurung society are among the topics discussed. Land tax records are used to see how landownership has changed over the last eighty years.

The general conclusion is that the outlook is bleak. Unless effective population control is introduced, unemployment, inequality, landlessness, malnutrition, erosion, and a number of as yet barely recognized problems will grow very rapidly. Finally population will be stabilized by a rise in the death rate.

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Preface and acknowledgements.

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Abbreviations and conventions

All references to rupees (rs.) are to Nepalese currency, unless otherwise stated(for their value see next page).

Several Nepalese and Gurung terms are frequently used because there is no real English equivalent; they are italicized. A *poju* (spelt *pucu* by Pignède) is a local diviner and magician. A *panchayat* is the local area of government, roughly equivalent to an English parish. The Gurungs are split into two strata, the *carjat*(four *jat*) and *sorajat*(sixteen *jat*). The words 'class' and 'caste' do not either of them exactly translate *jat* for it contains and omits elements of both. Where possible the word *jat*, meaning an endogamous group with certain restrictions on eating with other *jats*, is employed. Where it is translated as 'class' or 'caste' the misleading nature of such translation should be borne in mind. It should also be stressed that when *sora* and *car jats* are translated as 'upper' or 'lower' in the following pages, this implies nothing concerning their relative status, but only reflects the fact that the *carjat* tend to be wealthier in most Gurung villages(for a more detailed discussion of this problem, see pp.233ff.).

Throughout,the term Gurung is used, though in the Gurung launguage itself(*tumul-kwi*) these peoples know themselves as *tumul-mae*(*mae*= a plural suffix). I also write of the village of Thak, though it is known in Gurung as Tolson.

All Nepalese and Gurung terms are italicized and,wherever possible, the pronunciation is indicated according to R.L.Turner's *A Comparative and Etymological Dictionary of the Nepali Language*(1931). Gurung words that do not appear in Turner's book have been spelt as they are pronounced. The only stress added in such words is to the letter 'e' when it has the same sound as an é in French.

Castes as opposed to occupations are indicated by a capital letter; thus Blacksmith caste, blacksmith occupation.

As indicated on the next page, a *muri* can be a measure of either area or volume. When it is used as a measure of land area it written *sa muri*(*sa* = earth).

Weights, measures, and conversion factors.

Monetary (Nepalese) 1969)

1 mohr = ½ rupee (rs.)
1 rs. = 4p (approx)
24 rs. = £1 (approx)
10 rs. = $1 (approx)

Weight

Tola = one third of an ounce (approx.)

Dharni = 3 kg.(approx.)
1 kg. = 2.2046 lb.
1 lb. = 0.4536 kg.

Metric equivalents of weight, grains (from Nepal, Ministry of Economic Planning, Physical- Input-Output Characteristics of Cereal Grain Production...Nepal, 1965/6).

Unhusked rice, 1 muri	= 50 kg.
Rice (husked), 1 muri	= 68.6 kg.
Wheat, 1 muri	= 67.3 kg.
Maize, 1 muri	= 62.7 kg.
Millet, 1 muri	= 67.3 kg.

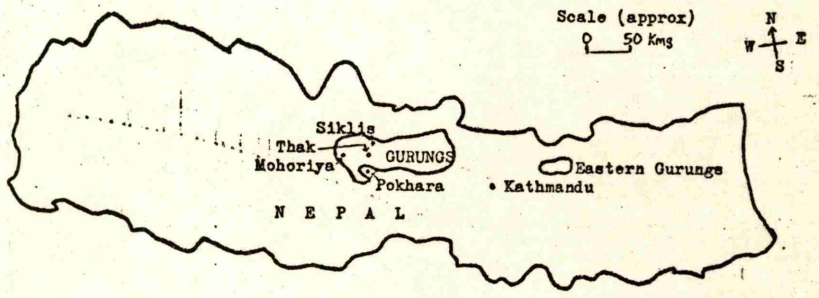
Volume of grain

1 muthi = handful (closed)
1 mana = 10 muthi (about 1 pint or 57ccm.)
1 poti = 8 mana
1 muri = 20 poti (Nep. pāthi)

Measures of area

4 pathi = 1 anna
16 anna = 1 ropani
1 ropani = 0.13 acres
1 ropani = 4 sa muri
1 ropani = 0.051 hectares
1 hectare = 2.4711 acres
1 sq.mile = 640 acres

MAP 1:1. Location of the Gurungs and of village studies.



(Adapted from Pignède, Les Gurungs, p.25, fig.1)

CHAPTER ONE. INTRODUCTORY; BACKGROUND TO THE GURUNGS.

The Gurungs and Thak

The Gurungs are a Tibeto-Burman tribe living at an altitude of between four and seven thousand feet in central Nepal. The location of the tribe and of the villages where intensive study has been conducted is shown in map 1.
for map 1:1 see across

The Gurungs only represent a small part of the Nepalese population. Of a total national population of some 9,412,996 in the 1961 national census, some 157,778 were said to have Gurung as their mother tongue.[1] This is only a rough estimate since language spoken is not a reliable index. For instance, those Gurungs cut off to the east of Kathmandu, followers of the eighteenth century conqueror Prithvi Narayan, may increasingly claim Nepali as their native tongue.

The major part of the material upon which the following account is based was gathered in the panchayat (Nep:'village district') of Thak, which is situated some twelve miles north-west of the second largest Nepalese town, Pokhara. Within the nine wards of Thak, our study was especially concentrated on the main village of Thak and nearby hamlets; these constituted wards six to eight. In order to see how fair a sample of Gurung culture this was we also made a visit to the village of Mohoriya to the west. Mohoriya had been studied by a previous field-worker, the late Bernard Pignède, some twelve years earlier.

In the first chapter of his book Pignède has already provided a thorough description of the geography, flora, and fauna of the Gurung area, and of many other characteristics of the rough hills amongst which they live. In order to avoid needless repetition, only a very brief summary of some features will be given here. The majority of Gurungs live on the north-south ridges that run down from the Annapurna and Dhaulagiri ranges of central Nepal. Once heavily forested, much of the lower slopes down to the river valleys have now been cleared to grow maize, millet, and rice. The climate changes considerably with season and altitude. The monsoon rains fall during June through to August; the hottest time is just before the monsoon breaks. Thanks to the altitude, the temperature very seldom goes above 100 degrees fahr. There is usually a cold spell,

lasting a few weeks and with a little snow, towards the end of January. The hillsides are extremely steep and rocky so that communications are still primitive; almost all travel is done on foot and during the summer months swollen rivers make it difficult to travel east-west, except near the bottom of river valleys where bridges are being constructed. Almost everything is carried on the human back.

The Gurungs share these hills with many other tribes and groups, though none of these are, by themselves, as numerous as they. In Thak panchayat, for example, there are as well as Gurungs, Brahmins, Blacksmiths Thakuri, Tamang, Tailors, Chetris, Magars, Ghartis, Leather-workers. The Gurungs themselves are undoubtedly an amalgam of several different peoples who have migrated into this area during the last thousand years. Later we shall see that they incorporate elements of both Tibeto-Burman and Indo-Aryan origin. This is especially evident in their religion, which is a bewildering mixture of Hindu, Buddhist and what looks like old bon. Their language is predominantly Tibeto-Burman. It seems likely that they overlap in origins and culture with many of the neighbouring tribes, particularly the Tamangs. Therefore to isolate the 'Gurungs' as an object of study is artificial. It is one approach which has as many advantages and draw-backs as any other artificial demarcation of the community of study.

The flora and fauna of the region have been described by Pignède. The most important feature in the past has been the huge deciduous forest with its bi-products of wild game, wild vegetables, and fuel. One main theme of this study will be to trace the way in which such natural resources have evaporated at an increasing rate in the face of mounting population. The chief crops grown in Gurung villages are rice, maize, millet, and wheat. The most important livestock at present are sheep, buffaloes, cows, goats and oxen.

The most important external influence on the Gurungs has undoubtedly been recruitment into the army. During the past century many thousands of Gurungs, as well as Magars and other tribal peoples, have been drafted into the British and Indian armies. The enormous effects of this situation on the indigenous social, demographic and economic situation will be apparent throughout the following chapters. Almost everything is modified in some way by life in the 'Gurkhas' and the Gurungs are, in fact, a tribe of migrant labourers,

a strange off-shoot of the British Empire set among other less affluent and mobile peoples.

Previous studies of the Gurungs.

A number of books and articles have touched on the language, health and other aspects of the life of the Gurungs. These works are cited in the text below and in the bibliography at the end. A few writers, however, deserve especial attention since they have notably influenced the study of this tribe. Brian Hodgson, for many years British Resident at Kathmandu during the nineteenth-century, collected vast quantities of material on most of the tribal groups in Nepal. A tiny part of this was published,[2] but many dozens of volumes of manuscript notes on the history and customs of Magars, Tamangs, Gurungs, Limbus and others have not even been translated from the original Nepali.[3] Passages relating to the Gurungs are utilized in the following chapters.

For most of this century Nepal has been closed to outside investigators, but the flow of army recruits provided army officers with ready-made informants. The sketches of Gurung customs by John Morris, an officer with some anthropological training, give us a valuable picture of certain aspects of the culture in the 1920's,[4] though it needs to be remembered that some of the features have been distorted by distance. The 'ideal' order suggested by informants could not be checked by actual observation. Similar caution has to be exercised when using the useful general description of the Gurungs by Dor Bahadur Bista.[5]

By far the most important contribution to the study of the Gurungs is Bernard Pignède's Les Gurungs (Paris, 1966). The author spent some seven months living among the Gurungs in 1958, the major portion of which time was spent in the village of Mohoriya. He learnt Gurung and was fortunate in obtaining an extremely good research assistant. Despite his moderately short stay, lack of any previous anthropological training, and tragic death soon after his return, he was able to collect and analyze a large amount of material posthumously published under the direction of Professor Louis Dumont. Although one is bound to find small mistakes of fact and interpretation in such a long book, my experience with the Gurungs amply corroborated most of

Pignède's material and underlined its great accuracy and value. Since he covered almost all aspects of Gurung society in considerable detail it is difficult not merely to repeat his work. What I have done, therefore, is to concentrate on particular aspects of the society, particularly those which need quantitative study such as demography and economics. Although Pignède gave a general account of both these topics, a longer period in the field, plus the existence of his prior description as a framework, enabled me to go into certain questions more deeply. But it should be stressed very forcefully that the following chapters must be read in conjunction with Pignède's work. My chapters omit a number of obvious topics, and these omissions can only be understood if we realize that he has already covered the ground. Cross-references are frequently made to the passages in his book which deal with topics here described briefly or omitted. It is hoped that one day a joint English version, in which our two complementary accounts are integrated, will be possible.

One final source of considerable value is an unpublished thesis by Dr. N. Allen.[6] Though it is based on secondary material, particularly (for the Gurungs) on Pignède's work, it suggests many interesting hypotheses. Among the arguments found most useful were the suggestion of the dual origin of the Gurungs, and the guess that Pignède had given a wrong emphasis to the cross-cousin marriage system. Dr. Allen's general account of the way in which the various Nepalese societies came together and overlap is the best we yet have.

Methods of study and sources used.

My wife and I rented a small Gurung house in the centre of the village and from there conducted interviews and watched the life around us. Since most village conversation was in Gurung we learnt this rather than Nepali. We were able to carry out fairly simple investigation after about two and a half months, but it was not for at least six months that we were at all fluent and could understand a fraction of what was being said around us. We found the villagers extremely friendly and co-operative, especially those families in which the man had served with the Gurkhas.

Our health throughout was reasonable with only minor colds, coughs and stomach upsets, though my wife contracted amoebic dysentery. We paid key informants Rs.2 an hour, but still found they were irregular in coming. We lived on a diet half-way between village and western standards. Dispensing simple medicines and the promise of a stock of such medicines when we left undoubtedly helped to ensure friendly co-operation.

The methods of investigation will emerge more clearly from the chapters below. Basically they were the 'participant-observation' techniques and simple surveys common to most anthropological work. Economic, social, religious and other activities were observed and people asked what they were doing. Other key informants were interviewed for several hours at a time on specific subjects. The topic about which people were most reluctant to talk was diet. There was some verbal opposition to our simple questions on this subject, wholly understandable given the very great symbolic importance of food in such a society. A different difficulty emerged when studying kinship relationships. Unlike many of the African societies about which anthropologists have written, the Gurungs were little interested in genealogy and seldom knew anything about ancestors above the generation of their grandparents.

As a historian by training I was especially on the look-out for documentary material that might supplement oral information about the past. Two main sources were found. In the Land Reform Office at Pokhara were the schedules collected a few years previously by the Land Reform Commission, principally on debt and landholding. Though notoriously inaccurate, such records were useful. Even more important for this study, however, were the land taxation records, one copy of which was with the chairman of the village panchayat and the other at the Land Tax Office in Pokhara. These had been compiled by the leading members of the village after surveys in 1883 and 1933. Such records appear to exist for all Gurung villages, but they were not used by Pignède. These records provide the one detailed source for studying economic change over the last ninety years. They are notoriously difficult to use, and few people in the village could even decipher them. Their lay-out is described below.[7] Unfortunately it proved impossible to look at the names of those present in the 1952-4 and 1961-2 censuses, which are confidential.

Nor was I allowed to look at a very detailed map of the village fields which had been completed at great expense by the Land Reform Commission a few years before my visit and subsequently locked away.

For the demographic analysis which follows I principally used the following information. For the whole of Thak panchayat there was a jana sankhyā pharam or population form, collected during the years 1968-9 by the head of each ward. This gives name, ethnic group, age and sex, and sometimes absence in the army. Although not entirely accurate, this material gives a useful framework for a more intensive census of one hundred households. The questionnaire for this census is given in appdx. one below. A number of questions concerning mortality and other topics were included in it. The response was good, though later checking showed that people had frequently omitted to mention former marriages or illegitimate births. Pignède had undertaken a less detailed census for the village of Mohoriya in 1958 and I obtained a copy of this.[8] This copy was then checked against a census of age, sex, jat and other simple characteristics that I made in 1969. During the year in Thak I also recorded all births, deaths and marriages, but the inability to collect vital statistics over a longer period is, of course, one of the major defects in the following demographic analysis.

Supplementing the above are some figures and questions concerning illness. Hospital records at the local mission hospital in Pokhara were examined, covering the years since 1965, and some 108 persons from Thak panchayat were discovered among them. With the aid of Dr. Gerald Turner from the same hospital, I carried out a brief medical inspection of some 68 inhabitants, chiefly for minor ailments such as skin diseases, goitre and malnutrition. Concepts of illness, and the numerous rituals for dealing with pain were studied as part of the enquiry into Gurung religion. This medical enquiry is obviously only very superficial and amateur. But in view of our total ignorance as to the health of any particular tribal village community, it seems worth reproducing my findings, however tentative.

Most of the material concerning social structure was collected by observation and informal discussion, but a few more formal investigations were also carried out. The census contained questions about marriage distance and preferential marriage partners. Inquiries were also made in an attempt to build up a complete genealogy of village families. The kinship terminology, as outlined by Pignède, was also checked. Special efforts were made to find out to whom people gave things and with whom they worked; for instance the pattern of giving at the great autumn feast of Dasain, the various types of work groups, and to whom persons would go if they wanted to borrow something. Three informants were also asked to place people on a five-point scale of wealth, and one informant to do the same for 'prestige'. The latter scale was not attempted with anyone else since it was clearly a task which the informant disliked considerably.

As regards children, a formal set of questions was put to a number of married women concerning the way they brought up their children. The children attending school were also set a number of essays, questions, and a drawing competition, in order to find out something about their beliefs. At a more formal level, the school records for the last few years were examined. Children's games and local songs were also recorded, though I was unable to get more than a few of each.

Economic life is obviously particularly susceptible to quantification so that I employed a number of types of numerical survey. A daily schedule of three households over a number of months, inventories of household possessions of seven households, the amount of crops harvested by ten families, the amount of labour/other capital needed to produce certain goods, all were collected. The diet of three households at several points in time, money and other loans, land ownership at present and in the land records, all these and other topics were also investigated. One or two of the surveys were also carried out for Mohoriya when they could be made to correspond to Pignède's earlier work.

Undoubtedly the most interesting thing about the Gurungs, from a purely academic point of view, is their complex religious life, in which Hinduism, Buddhism, and a local form of animism are blended. I observed many propitiatory rituals, and with the help of the local magician or poju[9] I was able to collect a good deal of further information. Pignède wrote down the texts of some 41 myths or pé which are recited by the poju during the rituals he performed. His transcripts are almost verbatim but have not, as yet, been published though they contain much fascinating information and Pignède refers to them frequently in his book. I collected some 61 myths, in somewhat less detail, of which some 12-15 had already been noted by Pignède. Thus between us, we had collected some 92-5 myths in all. It seems likely that further investigation in the field would reveal many more, since there was so little overlap between our two collections. These myths vary in length, some lasting only a few minutes, some several hours. Information on some forty-three rituals, not counting the long and dramatic funeral ritual, was also collected. The descriptions given by the poju were checked, where possible, against ritual performances. The following are the main types of information obtained: the name of the rite, time and place performed; duration; purpose and spiritual power towards which it was directed; how often and at whose houses they had recently been performed; names of the myths (pé) recited during it; methods of performing it and, if possible, the supposed meaning of the various symbols used. Many of the rituals were long and complex, lasting up to 12 hours. There is a list of the main ones and their main features in appendix three. From this appendix it will be seen that Pignède was able to record less than a quarter of these rites. I also asked a set of questions concerning beliefs about causation, the after-life and other topics. Information about witchcraft beliefs, which are widespread, was also collected. Unfortunately it has been impossible to analyze this very rich material in this thesis, but I hope to do so in a second volume on the Gurungs, at a later date.

I also hope, later, to make a more detailed study of Gurung mentality and history. Pignède cites a number of legends telling of the origin of the Gurungs but, as in the case of other tribes in Nepal, many years of wandering has left it almost impossible to trace their origins. It is hoped that the picture will be made clearer by the legends told by the local poju which recite the various named places visited by the Gurungs in the past. More important than this, however, was the discovery in Thak of a copy of the old history of the Gurungs known as the bamsabāli for which Pignède fruitlessly searched. The document's existence is a guarded secret since it deals with the origins of the two jats (sets of clans) and leads to ill-feelings between them. How far the list of places visited by the Gurungs given in the bamsabāli is correct or useful is not yet known. But it may soon be possible to explore the connections with Tibet by methods other than linguistic.

A number of other conventional ways of recording information may also be mentioned. I kept a journal throughout my visit and this, plus many long letters, gives an insight into the reactions of the investigator. While learning the language a simple grammar and dictionary were compiled, considerably aided by the nearby presence of two researchers from the Summer Institute of Linguistics.[10] A couple of hours of 8 mm. cine film were shot, and a number of colour and black and white photographs were taken. A couple of hours of tape recordings included songs, speech, and a few passages from the poju's pé.

Aims of the following analysis.

The general theme of this analysis is ecological. It is a study of the relationship between man and his resources in a particular setting. The permanent settlement and proliferation of a hitherto nomadic tribe has altered the whole balance of natural resources in the area. In the meantime the tribe itself has changed from pastoral/nomadic patterns to arable/settled ones. To study this change as much use as possible has been made of all available historical sources, so that we have some idea of change

from at least the mid-nineteenth century. The pressures correlated with fertility and mortality are particularly stressed since I believe it to be demographic fluctuations which underly many of the social and economic changes in the area. The general conclusion of the study is a familiar one. Increasing population is destroying the natural environment and erosion, under-employment, incipient inequalities, and a decline in the protein value of diets are only some of the symptoms of decline.

It is hoped that the following study will make a contribution to three fields of study. Firstly, in the area of Nepalese studies it provides, taken in conjunction with Les Gurungs, the most detailed study we have of any hill people in the country. Much information of a very detailed kind has been included here since the anthropologist has the responsibility of recording material for future generations. Secondly, we attempt to show the way in which demography and anthropology might make some contribution to each other; hitherto anthropologists have been very wary of attempting demographic analysis.[11] Thirdly, we have applied the techniques and concepts recently worked out for the study of peasant economics to a tribal group.[12]

NOTES. CHAPTER ONE.

1. 1961 Census, Table 8.
2. Hodgson, Essays, 2 vols.
3. The Hodgson Ms. are in the India Office Library, 197 Blackfriar's Road, London. There are a few other Ms. in the Bodleian Library, Oxford.
4. Northey & Morris, Gurkhas; Morris, Gurkhas; Morris, Winter in Nepal; Morris 'Thesis on Central Nepal'.
5. Bista, People of Nepal, pp.72-79.
6. N. Allen, 'Ethnography of Nepal'.
7. See p. 374 below.
8. I was able to copy these through the kind permission of Professor Louis Dumont; they are at the Centre d'Études Indiennes in Paris.
9. The Gurung term (which is pronounced poju rather than pucu - as Pignède spelt it - both in Thak and Mohoriya) has been preferred to the Nepali term used for a wide range of magical practitioners, i.e. jhankri, a term I did not hear used in Thak.
10. The various papers by Mr. and Mrs. Warren Glover are listed in the bibliography.
11. Some of the reasons for this demographic naivity are suggested by Macfarlane, New Society, 10 Oct. 1968.
12. The principal sources used are indicated in the bibliography.

CHAPTER TWO. SOME FEATURES OF SOCIAL STRUCTURE

It is normal to describe the demographic and economic aspects first, and then to proceed to social structure. But, since it is these demographic and economic subjects which are the main topic for analysis here, the order is reversed and social structure forms the background. Pignède's thorough description, in part two of his book, of clan, lineage, the life cycle, marriage, inheritance and kindship terminology makes it unnecessary to provide another detailed account. Yet a brief analaysis is necessary for several reasons. Firstly, the village of Thak exhibits certain differences from the village where Pignède worked. Secondly, his brief stay made it impossible for him to collect information on certain topics, so that it is possible to fill out his account a little. Thirdly, and more generally, the following analyses of demographic and economic subjects need to be placed within a certain 'universe'. Only with a cross-section of 'social structure' at a point in time will the attempts to study change take on any meaning.

Occupational and caste structure.

The major activity of all those resident in Thak is agriculture. Even for the 'service castes' such as Blacksmiths and Tailors their particular trade was of secondary importance. Yet caste and ethnic differentiation, often overlapping with minor occupational differences, are vital when considering social relations, so that we need to have some idea of the relative size of the major groups with whom the Gurungs co-exist. The distribution in Thak panchayat is given in the following table. It is based on the population figures collected by the heads of the nine wards (jana sankhya pharam).

TABLE 2:1. Ethnic and occupational groups in Thak panchayat, 1968-9.

	households number	%
Gurung	150	44.5
Brahmin	84	24.9
Blacksmith **	31	9.2
Thakuri	20	5.9
Tamang	19	5.6
Tailor **	12	3.6
Chetri	7	2.1
Magar	5	1.5
Gharti	3	0.9
Leather-worker **	2	0.6
Other	4	1.2
	337	

(** considered by Gurungs to be lower caste and polluting)

It will be seen from the above table that even in a supposedly Gurung panchayat, in the centre of Gurung culture, the Gurungs are outnumbered by all other groups combined. It will also be seen that by far the most significant numerical rivals to Gurungs are the Brahmins.

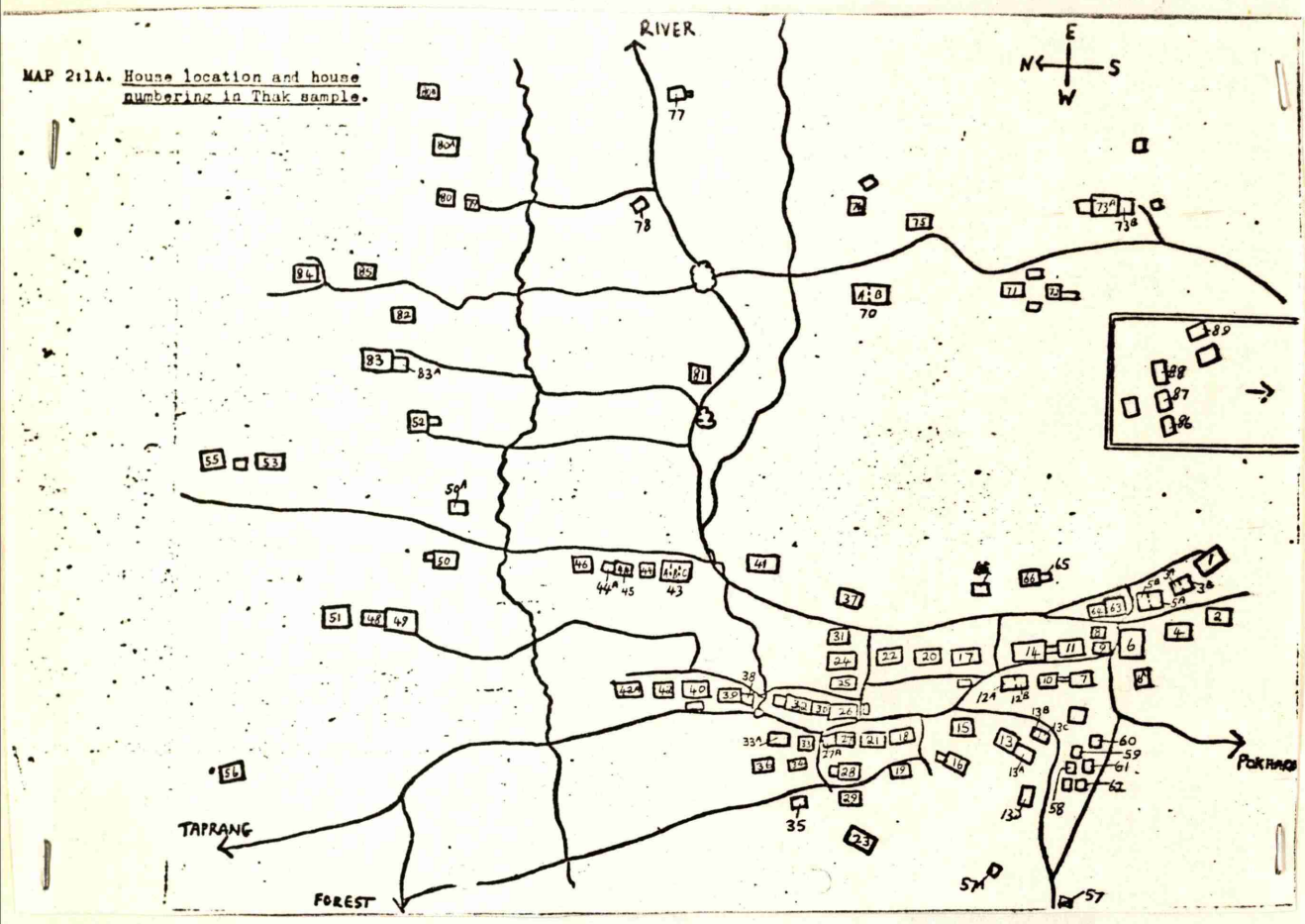
Within Thak a detailed census of one hundred households in wards 5-8 was the real unit of study. These households were divided as follows.

TABLE 2:2. Ethnic groups in the sample census area, 1969

	nos. of households	nos. of persons
Gurung	77	386
Blacksmith	12	61
Tailor	6	38
Tamang	3	26
Magar	2	17
	100	528

(note: both those temporarily present and those temporarily absent are included in the above table)

MAP 2:1A. House location and house numbering in Thak sample.



It is clear that in the limited area of intensive study Gurungs predominate, while Brahmins are completely absent. By taking the central village where the Gurungs, as the first to arrive, established themselves, the sample is not representative of the whole panchayat. The distribution of houses is shown in map 2:1A across.

Household and family structure.

The Kaski district, within which Thak is located, has one of the lowest mean average household sizes in Nepal, some 4.6 persons per household, according to the 1961 census. The mode is four persons per household.[1] This suggests that most households are likely to be of the simple, non-joint-family, type. This is what we might expect in any case, since it has been observed that "a majority of the population in most societies has lived in a 'nuclear household', whatever the ideal family system".[2] There has been, as yet, little statistical analysis of household types in other parts of Nepal, so it is difficult to compare the Gurungs with other groups. We do know, however, that among Bhoteas the nuclear family is the pattern, except in one settlement.[3] An analysis of a tribe to the east of the Gurungs, the Limbus, showed that 43/85 families live in nuclear family households. Only 9.4% of Limbu households in the sample were joint-type,[4] where joint-type is defined as where two married males, whether father and son, or brothers, are co-resident.

The importance of the household unit is very considerable among the Gurungs. There is no local term for the nuclear family as such, a group of parents and children is not distinguished. The only unit smaller than the lineage (santan or khalak, Nep;) or kin generally (ísta mitra, Nep; rajamajame, Gg.) is the household (jahan or parìwār, Nep.). Anyone sharing the same part of a house and, therefore, eating from the same hearth, are of the same jahan. This household unit has important functions as a labour, ritual, commensual, and child-rearing group. All members, except servants, also have property rights. In the very fluid social structure of the Gurungs where, as we shall see, larger kinship groupings are not of great importance, this

TABLE 2:3. Structure of 100 households in Thak, 1969. (contd.)

notes: (1) As described in Appdx. 7 below, the hundred households were stratified into 5 economic groups by three informants. Thus classes 1-3 are the middling to rich Gurungs, 4-5 the poorer to very poor.

(2) The reasons for adding this category are described on the page above. Only three Gurung households, nos. 22, 49, 73B, fall into it.

TABLE 2:3 Structure of 100 households in Thak, 1969.

Type of household	No. of such households				No. of such persons		
	Gurung class (1) 1-3	4-5	Non-Gg.	%	Gurung	Non-Gg.	%
Elementary: fa./mo. & unmarried children, & unmarried siblings. Also 'broken' nuclear families where a parent is dead or abroad.	23	21	18	62	215	101	61
Stem: either, fa. and/or mo. + children + one married child and spouse. or, fa/mo + children and more than one married child, but only one couple present - i.e., other husbands away abroad. (2)	14	6	4	24	131	24	30
Extended: elementary family, plus some other relative other than parents or married siblings.	-	-	-	-	-	-	-
Joint: married brothers or sisters living together.	-	-	1	1	-	13	2.5
Others:							
two sisters unmarried	1	-	-	1	2	-	0.4
single	2	3	-	5	5	-	1
fa., fawife, children and divorced son	1	-	-	1	6	-	1.2
parents & children, son's wife and wife's fa.	1	-	-	1	9	-	1.7
informant, stepdada, broda.& dadada	1	-	-	1	4	-	0.8
	1	-	-	1	2	-	0.4
grandmo & granda	1	1	-	2	3	-	0.6
mo.da.& da's illeg.son.	1	-	-	1	2	-	0.4
bro.& sister (unmarried)	46	31	23	100	379	138	100%

P.T.O

smallest atom of the social structure has a very great significance in daily life.

The actual household structure in two Gurung villages is given in tables 2:3-4 below. The categories are based on those initially devised by Donald S. Pitkin and used in Edward C. Banfield, Moral Basis of a Backward Society.[5] It has been necessary to add one extra category to make the classification fit the Gurung situation. This is a particular instance of the long-debated problem of how one is to define a 'joint-family'. A common feature of Gurung villages is the 'stem family' which would be a 'joint family' but for the fact that one or more of the married males are away, usually on army service. One of the most extreme examples of this is household 49 in Thak.[6] The eldest brother has already built a separate house and works his own share of the land. The other three brothers, all of whom are married and whose wives live together, still hold their property in common and have no other house than that in which their mother lives. At first sight this might appear to be a typical joint family. What prevents it being so is that only one brother, recently retired from the army, is permanently resident. The youngest two are away in the army for most of the time. There are three such situations in Mohoriya also, at least when I visited it. In one sense they are joint families, but in actual residential terms they are now. This is just one example of the general theoretical problems caused by the considerable absence of men in the army. The second most common household structure in the village is the broken nuclear family, mother and children living alone - with the father away abroad. The situation among Gurungs and others in Thak and Mohoriya can best be shown in tabular form, as follows.

- for table 2:3, see across.

Before commenting on the table we may provide a simplified version for another Gurung village, Mohoriya, in order to see whether the figures in table 2:3 across are likely to be typical of the Gurungs generally. A comparison of my census taken in 1969, with that by Pignède in 1958 also enables us to see if there has been any onvious change in the last ten years.

TABLE 2:4. Structure of 87 households in Mohoriya, 1969.

Type of household	No. of households	%
Elementary	59	67.9
Stem	25	28.8
Extended	-	
Joint	1	1.1
Other	2	2.2
	87	100

It will be obvious from the above tables that the majority of those living in Gurung villages, Gurungs and non-Gurungs-alike, live in elementary families; over 60% in both cases. If we define joint families as co-residing siblings (married), then there is only one case in each of the samples.[7] Even if we adopt the broader definition employed by Caplan, where a widower lives in the same house as his married son, then there are still only a few cases. In Thak, as well as the case included in the table as 'joint' above (where a father, his wife, and two married sons and their wives lived together) and a Magar family, there are only three other Gurung examples. In one case an eighty-four year old widower lives with his married son and his wife; in the third a father of fifty-two in a poor family had a married son and his wife living in his house. They had only been living together a year, and there were no young children. Thus even the 5% of 'joint' families in Thak under this wider definition appear exceptional.

Caplan has remarked of the Limbus that "There is some reason to suppose that the incidence of joint-type households was higher in former times".[8]

This may also be the case with the Gurungs. John Morris, on the basis of observations made some forty years ago, notes that "A Gurkha village is more a series of extended family groups than a collection of unrelated individuals" and that the "extended-joint-family" is the common ideal, though it usually breaks up fairly quickly.[9] One of my older informants in Thak said that some fifty or so years ago each household was bigger than it is now and usually contained a joint family of all the brothers and their children. He thought households often consisted of 20-25 persons. The economy was much more pastoral then, he explained, so that at least one of the brothers would be away grazing large flocks of sheep or herds of cows. That this is both an idealized picture, and refers mainly to the richer households, is obvious. It is possible, however, that the shift from a primarily pastoral to arable economy has led to a decline in the proportion of fraternal joint families.[10] This is a tendency reinforced by large-scale army recruitment which has meant that sons do not need to wait until their fathers die in order to set up a separate unit. Army pay helps them to finance a new house. Army service may, on the other hand, delay the splitting of potential joint households since adult male brothers are seldom home on leave together. Comparison of the 1969 census of Mohoriya with Pignède's 1958 census notes shows that there has been no decrease in the size of households or in the proportion of joint households. If anything, households were larger in 1969 than they had been in 1958; in both years there was only one fraternal joint household.

What does seem certain is that the 'extended' family, that is those families where some more distant relative is resident, have always been rare among the Gurungs. There were no cases in either Thak or Mohoriya in 1969. Nor, for demographic reasons, can the percentage of 'stem' families, those with three generations or

more present, ever have been much greater than it is now. It has been calculated for another pre-industrial society that, given the then prevailing mortality and nuptiality rates, three-generation households were only likely in 29% of the cases at the most.[11] Though there have probably been some fluctuations in both mortality and age-at-marriage rates among the Gurungs, these have probably not been great enough, as yet, to alter household composition very greatly. The situation is probably long established; some 2/3 of the population live in two-generation households, and ⅓ in three-generation ones. This is largely because only in approximately one in three instances do parents live to see their own children produce offspring. Thus 24% of the Thak sample and 19.5% of the Mohoriya households in 1969 were three-generation ones. One of the probable long-term consequences of improved health in Nepal will be a movement towards the recent European phenomenon. In contemporary Europe the four-generations-all-alive-simultaneously structure, where great-grandchildren overlap with great-grandparents, is a common experience,[12] and three generations overlap in well over half the total of families. Naturally such a demographic change will have immense consequences for the structure of the household unit.

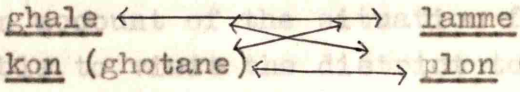
It has frequently been suggested that the size and structure of households is correlated with the absolute wealth of the community. The structure will also differ with the varying economic levels within the community. Thus we are told that the greater the food supply, the larger the household size; the extended family will only occur where the supply is large.[13] It has been shown that in a number of societies the larger the family estate, the larger the household.[14] For Nepal, Caplan has noted for the Limbus that the wealthiest families split up latest.[15] There appears to be a slight correlation between wealth and household size

in Thak. If we compare the wealthier carjat to the sorajat households, the mean average household sizes are 5.01 and 4.92 respectively. This is hardly a marked difference. If we look at the actual structure of the households, as analyzed in table 2:3 across, it will be seen that the poorest families in the village, the non-Gurung Tailors and Blacksmiths, almost all live in elementary households. Likewise the poorer Gurungs, in classes 4-5, have a significantly lower proportion living in stem households than the wealthier Gurungs, as the table shows. Furthermore the stem households of the wealthier group are, on average, considerably larger than those of groups 4-5; the former average over 7 persons per household, the poorer households, some 5 per household. A relatively large estate appears to hold sons and daughters together longer, perhaps because their labour is more needed. We may therefore expect that as estates are increasingly subdivided in the next few years, under the pressure of population, family units will shrink in size. It is probable that this is the continuation of a process which has been in operation over the last thirty years as population presses on land resources. It does not appear in a comparison between the 1969 and 1958 Mohoriya censuses because considerable emigration from the village in the intervening years kept the total population static and momentarily halted sub-division.

Clan and kin groupings.

In chapters five and six of Les Gurungs Pignede has given a full account of the clan and lineage structure of the Gurungs and since most of his description fitted the situation as we observed it in Thak there seems little point in duplicating his work. All that will be given here is a brief summary of the chief features of the system, and a number of points at which Pignède's interpretations can be carried further or appear to need modification.

Pignède describes the Gurungs as having a two-tiered structure. The upper tier ideally has four exogamous clans and is hence called the carjat (car, Nep. = four). It is known in Gurung as the plegi (ple or pli, Gg. = four). The most commonly encountered names and their theoretically permitted marriage relationships are, as Pignède illustrated them, as follows.



The permitted marriages are shown by arrows; the names in brackets are the Nepali terms. As Pignède observed, there is some evidence here of a dual system, divided between lords (on the left in the diagram), and priests on the right. This has undoubtedly been accentuated by recent pressures from Hindu classification systems. In practice the system is more muddled. To begin with the marriage rules are not strictly observed; thus in Thak, in household 13A, a lamme had married a plon and this seemed to be considered quite normal. An upper jat informant was positive that ghale and kon could intermarry, while lower jat informants told me that in practice any of the clans could intermarry. Another informant told me that among the Gurungs to the south of Pokhara lemme and lamme might inter-marry and often did. Pignède also observed that in fact there are more than four clans. In Thak, for example, lemme replaced plonme (me is the Gg. plural ending meaning people), yet informants did not think the two were identical. In the nearly village of Bisgu I was told there were Thowlme who married with the other carjat and in Taprang there were Panjo (though they were probably a sub-clan of the lamme).

It is also likely that the ghale are of a different kind to the rest. There are very few of this clan in the area mainly inhabited by the Gurungs, at least in the western parts; none, for example, were present in Thak or Mohoriya in 1969. One of the myths recited by the poju

told how the ghale were once kings of the Gurungs, but split off from the other clans towards the end of their wanderings and went to establish villages elsewhere. This may, in fact, have happened. The ghale appear to be mostly centred in the region of Nepal known as no.2 west, from ghalegaõ (the town of the ghale, Nep.) eastwards. The degree to which these ghale are cut off from the other Gurungs appeared from a conversation I had with one ghale from that area, though it would be useful to have an account of the situation from a field-worker who was able to visit the district to the north of Gorkha. According to my one informant, he and the other ghale were separated from the Gurungs who, he said, were a "different" peoples. In between there were many Tamang settlements. Most ghale, he said, did not speak or understand Gurung, and intermarriage with Gurungs is prohibited. Unlike the Gurungs, the ghale do not eat buffalo or goat, only sheep. The central ritual, which really defines the Gurungs as a separate entity, the funeral or pae lava, is also different for the ghale. Many do the kirie, which is a rite done by Hindu groups in the hills; those who do some kind of pae do a seven-day version, in which many of the central features, for instance the killing of sheep to act as companions for the dead man or the making of the a-la or flag to guide the spirit down to its former dwelling house, are omitted. Although some of the poorer ghale use the poju (or jhankri as he is known in Nep;), the klevri priest of the Gurungs is not used. The lama is their main officiant. As with Gurungs, cross-cousin marriage on both sides is permitted. Apparently the ghale are themselves split into two pairs of intermarrying clans; the Ghalang and Sabri may marry each other, but may not marry either Dhage or Titto. From the above it would seem that while the small groups of ghale living in Gurung territory have been absorbed into the Gurung carjat, the Gurung informants were positive that they were no other than ordinary Gurungs, they are also possibly a separate tribe.

The other class[16] consists of several dozen exogamous clans, variously termed the 'nine jats' (naujat, Nep.; kwogi, Gg.), the 'sixteen jats' (sora or sola-jat, Nep.) or, in the old ~~bunxawhale~~ vamsavāli history of the Gurungs, the 'twelve twenty-seven' jats' (bara sattais jat, Nep.). Long lists of forty or more actual clans belonging to the sorajat may be found in myths and historical documents, and some of these have already been printed.[17] Whether there really were once only nine clans it is impossible to say. Nowadays there are certainly over fifty such clans and possibly many more. Pignède states that they may all intermarry, though, in fact, there appear to be small sets of clans who prohibit such inter-marriages. These possibly reflect fairly recent subdivisions from one clan. Informants were very uncertain about this and only appeared to know about prohibitions affecting their own clan, or other clans actually present in the village. Such prohibitions, based on the fact that people were said to be 'of related clan' (thar (Nep.) pordiba, (Gg.); clan, to be related), were only discovered to exist in the following clans in Thak: Bucha-Kromje and Kebje-Iojme-Mobje-Ngobje-Laimme. On the whole, however, the sorajat have a wider choice in marriage partners and tend to be less localized to specific villages than the carjat. Thus while Gurung villages such as Thak and Mohoriya have a central core of one upper jat clan, they are also inhabited by a dozen or so smaller sorajat clans.

Marriage between upper and lower classes is theoretically forbidden and, according to the vamsavāli, there was a twenty rupee fine to be paid if this was infringed. As early as the 1920's an observer noted the barriers were breaking down and Pignède stated that such marriages occasionally occur, though they are still frowned upon.[18] He noted a case in Mohoriya, and there was also one in Thak, where a man had, for his third wife, married a sorajat woman. The children took the class

of their father, as they had done in another case where the father is now dead. Marriage within the clan is absolutely forbidden and no cases were encountered, although in one case a man in Thak had been forced to pay several thousand rupees fine within the village for getting a girl of the same clan as himself pregnant. The child was destroyed at birth.

A full treatment of the complex historical material bearing on the relationship between the two jats in the past and their possible origins must await a later analysis. Pignède assumed that carjat and sorajat had a similar origin and had always been together. Dr. N.Allen, on the basis of Pignède's work and arguments concerning Gurung ritual and social structure, suggested that the sorajat may have been of Tibetan pastoralist origin, the carjat from "settled agricultural villages of pre-Aryan India".[19] In view of this suggestion it is interesting that the poju's myths, the legendary history in the vamsavāli, and statements of some informants, also suggest different origins. For example, the vamsavāli tells how the original 'Gurungs' were the nauthar (Nep. 'nine clans') who later were joined by a Hindu group who adopted their ways. According to one of my sorajat informants, who claimed to have derived the information from an old history of the Gurungs, the carjat came up from the south and there met, at a place called kolasongbre (khola (Nep.) = river; song (Gg.) = three), the sorajat who were coming from the north. It is also interesting that while the carjat are known as the krohme (kroh, Gg. = chief), the sorajat are sometimes known as pwaeme (pwae, Gg. = Tibetan).

There are certainly still great difficulties to clear away before accepting the theory of different origins. Observations of the tyes of the two classes showed no significant variation in mongolization. This, of course, could be the result of fairly frequent intermarriage over hundreds of years. The carjat use the

klevri and lama priests at funerals, both of tibeto-burman origin. It has even been suggested by one writer that carjat villages are situated higher on the mountain ridges, to the north of the sorajat villages which border the Magars[20] If they are of separate origin, there is then the problem of when the two intermingled. A document of 1694 quoted by Pignède only refers to the four carjat clans as the 'Gurungs', and it could be deduced from this that it is since that time that the main encounter has taken place.[21] Even in 1802 Buchanan could write that there were only four Gurung jats, the 'Nisi, Bhuji, Gali, & Thagsi' - possibly old names for the carjat.[22] It was during the nineteenth century that most of the legal battles between the two classes took place, in these they attempted to work out their relative status and how they were to treat each other. This possibly reflects initial contacts. The period coincides with the founding of many new villages, including those in the Modi valley where Pignède worked. The reconstruction of the history of both Thak and Mohoriya supports Dr. Allen's hypothesis that it was the members of carjat clans who arrived first in any numbers and thus obtained the best land. Though they were said, in Thak, to have brought a few sorajat servants from a particular clan, the majority of the sorajat clans came in several generations later. The way in which cultural differences between the two classes could easily be obliterated can easily be observed even today. For instance, in Mohoriya, there are a group of pun Magars who have accepted Gurung customs, intermarried with Gurungs, and now claim to be Gurungs. Though privately the Gurungs still see them as Magars, openly they accept them as Gurungs.[23]

As we discovered in Thak, and Pignède in Mohoriya, there was clearly considerable rivalry and bitterness between the two Gurung classes until recently. But even in the last ten years the situation appears to have eased considerably. Pignède's informant was not willing to ask lower jat informants their clan name, for fear of stirring up bitterness, and Pignède himself was asked

not to write about the subject since it would only cause trouble. When I took a census in Mohoriya, however, people asked for clan names openly and, when I mentioned the topic, seemed quite happy to discuss the relationship between the two jats. They admitted that the situation was much easier than it had been ten years before. On the surface there is amity in Thak also; but beneath there is still bitterness, especially between old-established carjat families which are losing land and those sorajat households where a successful army career has brought in a large amount of cash. Thus one elderly carjat man spoke bitterly of how, when he was young, certain sorajat families acted as his servants and carried his goods around for him. Now they were wealthy and behaved as equals. I was shown an old history of the Gurungs, which purports to show that the sorajat are the 'real' Gurungs and the carjat the offspring of a monster, but was warned that I must not show this book or mention its presence to carjat villagers. Apparently a copy of this work had been destroyed by a very wealthy carjat man some forty years previously because of its unpleasant message.

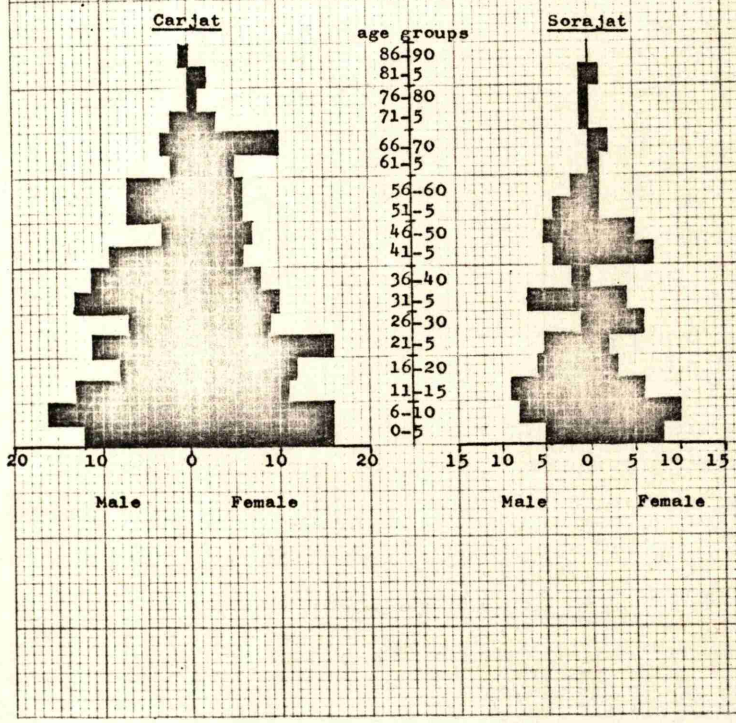
Indeed there are still traces of an older menial relationship in village life. Thus, when a wedding party of young carjat villagers went to escort a bride to her husband's village, a sorajat girl accompanied them especially to carry the millet beer and rice which were taken as a ceremonial gift. For this she received a headcloth and a little money. I was told that it was essential to have a lower class attendant. Furthermore, the most important Gurung dance (though it probably originates in south Nepal) the garda sheba (or gar sheba; sheba, Gg. = to dance) can only be performed by sorajat girls. Another difference lies in the rules concerning cooked foods. Although a carjat may eat food and consume drink prepared by a sorajat, he will not eat from a dish that has been eaten from, or food that has been tasted by, a sorajat. Thus when we used to distribute hot drinks round the fire, even when the recipients were boys and girls of only ten or eleven

years of age, we had to ensure that the shared cups were given to carjat children first.

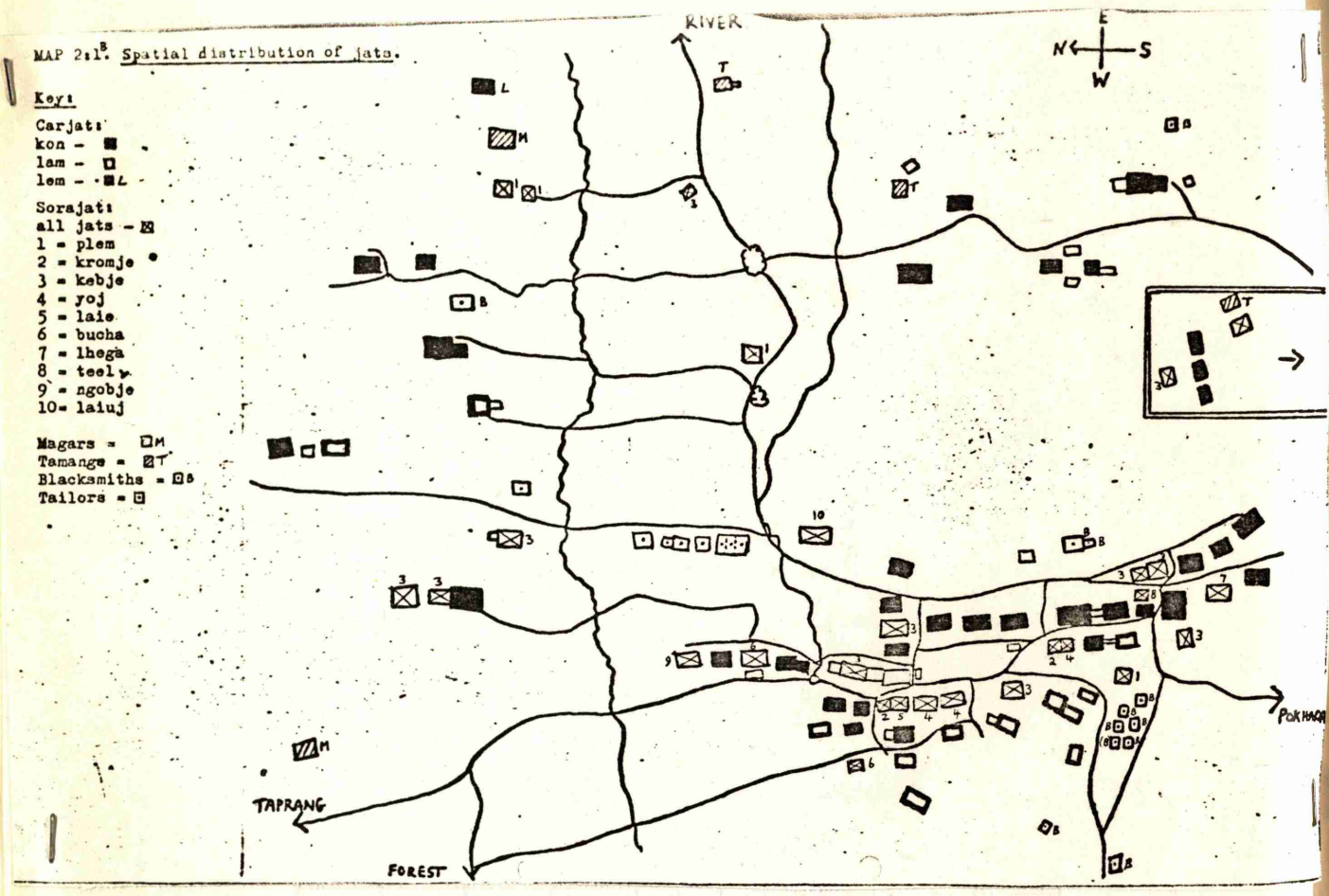
There are many cross-cutting ties between the two jats, but these also illustrate an implicit difference in kind. There appears to have been a special relationship in the past between a particular carjat clan and a particular sorajat one; this may have been of a patron-client kind. Those of which informants could tell me were as follows: Lamme-Teelme, Lemme-Kebje, Konme-Ngobje. This meant that, according to tradition, when the Konme first came down into Thak they brought with them some meanme ('servants'), who belonged to the Ngobje clan, to help work for them. Likewise in Mohoriya, where the Konme brought down some Yojme with them. In Thak, the Ngobje no longer inhabit the main village, except for one household; they have moved down to found a new settlement at Panigat. But in Mohoriya the original Yojme form a big block in the centre of the village.

Another link is through the institution of 'ritual friendship', a widespread phenomenon in Nepal.[24] Pignède discusses the arrangement among the Gurungs,[25] but he seems to have missed the central feature, that is that it is only people of different jats who are thus connected. He describes a case between a lamme and a konme, yet all the informants I asked about this, including some in Mohoriya, said that this was impossible, for such ritual links could not occur 'between people with whom intermarriage was possible'. In other words such ties are an alternative to affinal links. All the cases I gathered in Thak were thus either between Gurungs and other ethnic groups (Newars, Chetris, Brahmins), or between lower and upper jat Gurungs. For example a young man of twenty-one had as his nyela (fem. = nyelshaw, which is the same word as that used for cross-cousin whom one may marry) the following; a Tailor, two Tamangs, one Chetri, one Brahmin, two upper jat Gurungs. All were male, since such ritual friends are always of the same sex. This institution is suggestive evidence that the gap between sora and carjat Gurungs is conceived to be of the same order as that between Gurungs, Magars, Tamangs and others.

DIAGRAM 2:1. Age/sex structure of Carjat and Sorajat Gurungs, Thak 1969.



MAP 2:1[B]. Spatial distribution of jats.



The actual spatial distribution of the various clans in Thak, which may be compared to Pignède's similar map for Mohoriya,[26] can be seen in the following map.

see across for map 2:1[B]

The map shows that the two carjat clans, konme and lamme, are residentially fairly distinct, while the sorajat and other families are scattered around them. There are, in all, some 53 carjat households, containing 268 individuals, and 24 sorajat households, with 118 individuals. In order to compare the demographic structure of the two groups, and to see to what extent the sorajat have arrived after the carjat we may look at their relative age/sex structures, as across.

see across for diagram 2:1

The diagram shows plainly how few sorajat households there must have been in the village some 60 years ago; now the proportion is almost 1:2. Of those aged over sixty years, there are only seven sorajat and 28 carjat. If we allow for a slightly higher adult mortality among the sorajat, there is still a very considerable difference.[27]

Kinship structure and terminology.

Pignède has once again provided a detailed and usually accurate account of Gurung kinship and this makes it unnecessary to do more than record differences of interpretation.[28] The system as he describes it is an asymmetrical one, with preferential matrilateral cross-cousin marriage. His evidence for this asymmetry is threefold; the statistics of actual marriages in Mohoriya, the structure of kinship terminology, and the pattern of gift-giving at the pae (funeral).

The attitude to cross-cousin marriage varies considerably between different and often adjacent tribal groups in the Hymalayas. For the Lepchas of Sikkim any such marriage is "the most horrifying form of incest"[29] and the Sherpas, also, do not favour such marriages.[30] Yet the Bhoteas, who live to the north-east of the

Gurungs and have close ties with Tibet, do permit cross-cousin marriage on both sides, though they are said to prefer matrilateral cross-cousin marriages.[31] Clearly the system fluctuates over time; the Sherpas are said to be relaxing their prohibitions against it, while the Magars probably once allowed marriage on both sides but now, probably under Hindu pressure, only matrilateral marriages are allowed.[32] Pignède states that while both patrilaterial and matrilateral cross-cousin marriages are allowed among the Gurungs, usually marriages are with the latter. His evidence comes from genealogies he took in Mohoriya, where cases of marriage with a paternal cross cousin were 'rare' and those with cross-cousins on the mother's side 'frequent'. He also stated that cross-cousin marriage were much more frequent among upper than lower jat families. Cases and statistics are not, however, given.

When I visited Mohoriya in 1969 I was told of nine cross-cousin marriages which had occurred during the past few years. These were as follows.

TABLE 2:5. Cross-cousin marriages in Mohoriya, before 1969

	Carjat	Sorajat	both
Matrilateral	3	2	5
Patrilateral	1	3**	4**
	4	5	9

(** All three patrilateral marriages here were, in fact, of Magars, who claimed to be Gurungs.)

This table shows a very slight preference for matrilateral marriages, though if we confine ourselves to Gurungs proper the ratio is 5:1. It is not surprising that Pignède received the impression of asymmetry. Yet even in Mohoriya there is no explicit recognition of preference or statistical bias. My main informant in that village, the elder brother of Pignède's helper, stated that both types of marriage were equally good and, as far as he knew, equally common. The same view was expressed in Thak. Several informants, from both jats, stated that matrilateral and patrilateral marriages were equally good. Indeed, one young informant, the village schoolmaster,

stated that patrilateral marriages were to be preferred above all others. One of the questions in the household census of Thak was whether a marriage had been with a cross-cousin. The results from one hundred households are as follows.

TABLE 2:6 Cross-cousin marriage among Gurungs in Thak, 1969.

	Carjat	Sorajat	Both
Matrilateral	3	-	3
Patrilateral	8	2	10
	11	2	13
Total marriages	79	32	111
% cross cousin	13.9	6.25	11.7

It will be seen that the table bears out Pignède's contention that cross-cousin marriage is more frequent among the upper than the lower jats; the proportion is roughly twice as high in the former. Even allowing for some forgetfulness, however, in neither jat do rates even approach a fifth of the total of marriages. Even more striking is the apparently marked predominance of patrilateral marriages, in the ratio of 10:3. If we had generalized from this tiny sample we would have gained the impression that the Gurungs do have an asymmetrical system, but with a patrilateral bias. What seems most likely is that each village differs in its recent ratio, and to generalize from too small a sample is unwise. That the marriage system as a whole is asymmetrical is not yet proven by such statistics.

One author has recently written that "Among some Gurungs it is even a custom to pay compensation of thirty rupees to the other party if one does not wish to marry one's own cross-cousin".[33] I did not come across such a practice in either Thak or Mohoriya, though it may occur elsewhere. I was told that there was no compulsion to marry a cross-cousin, but that people were happy if one did so. There were mixed reasons for their popularity. People liked to keep the marriage in the family and not to lose the daughter to some distant village and strangers. Young people who had grown up

together grew fond of each other, and their friends had frequently teased them about the likelihood of their future marriage. One informant suggested that there were financial motives; one did not have to give as much gold with a daughter who was going to marry a cross-cousin, but actual instances and other informants contradicted this. It was admitted, however, that if the girl cross-cousin was an only child or only daughter it was sensible to marry her to keep the property in the family.

The argument for asymmetry based on kinship terminology has been examined in some detail by Dr. Allen and his argument is as follows.

> "Like several of the other (Nepalese) terminologies we have examined it (Gurung) contains a mixture of symmetrical and asymmetrical features. The cousin terminology is symmetrical, cross-cousins and potential marriage partners belonging to one category, siblings and parallel cousins to another...In relating ke and syome to MB and MBW respectively Pignède remarks (p.286) that the relationship is "tout à fait naturel dans une société où le mariage matrilatéral est prédominant". This is tendentious, since these terms like the others for parents-in-law are symmetrical: MB and WF can be the same individual in a matrilateral cross-cousin marriage, but MB and HF can only be the same in a patrilateral one...Thus the Gurung show lineal equations among both wife-givers and wife-takers very much in the same way as the Sherpas. This appears not only in the downward extension of asyõ from MB to WB and in the upward extension of moh but also in koe (cf. Byansi khwe or Chaudansi khe, both meaning grandson); as well as meaning CS, CCS, this category reaches up to include ZS. Pignède was right in citing these equations as evidence of an asymmetrical system, but in attempting to see the system as consistently asymmetrical, he was led to see difficulties where none exist (e.g. in the parent-in-law terminology - "un problème difficile à résoudre", p.285)."[34]

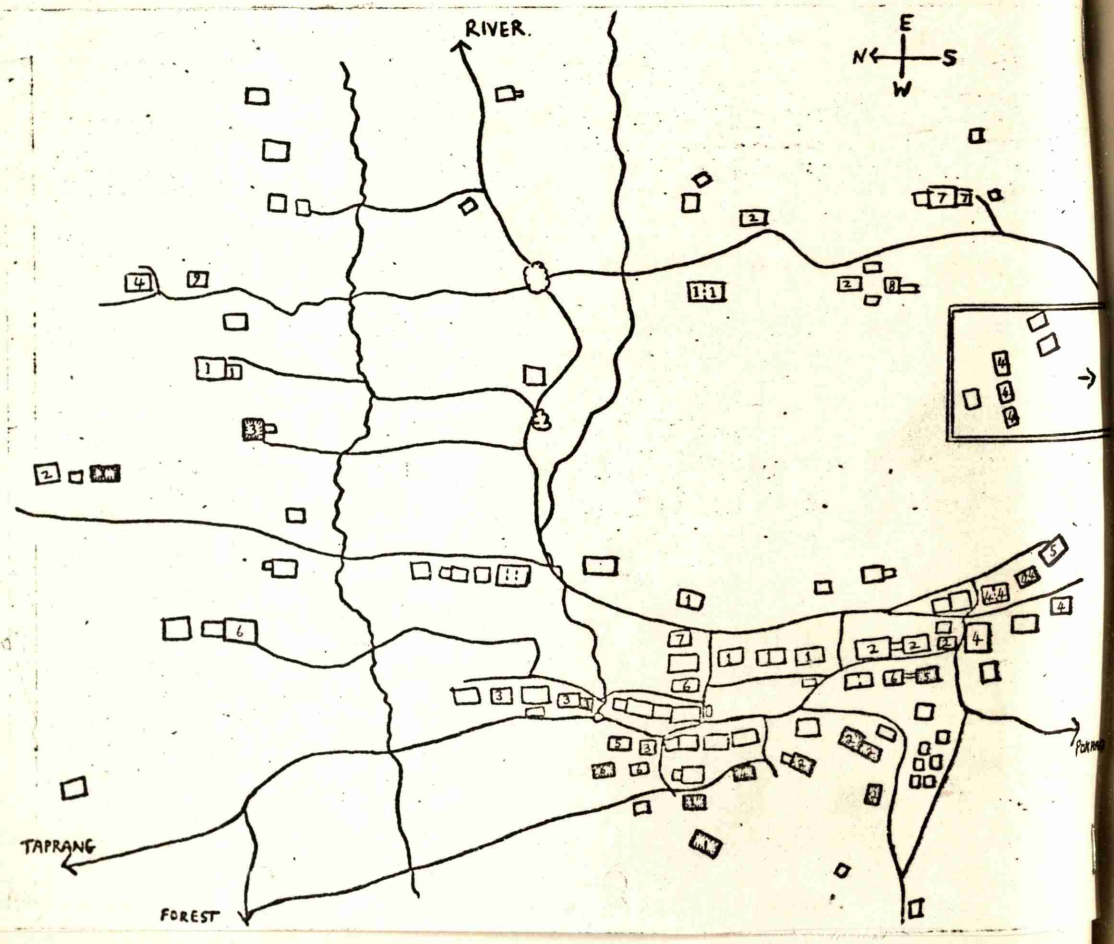
Dr. Allen then goes on to point out the inconsistencies of Pignède's own statements on the matter. He also stresses the fact that British officers in their handbooks on Gurkha recruiting did not note any lateral preference.

All members of the same carjat clan are said to be of one santan (Nep, offspring, children) and are called by the Gurungs thar-me (thar, Nep. = clan). Within this clan there are smaller lineages, which Pignède

MAP 2:2. Spatial distribution of carjat lineages.

Key:
kon = □
lam = □

(those with identical numbers in each jat are recognized to belong to the same lineage; thus all kon 1 belong to the lineage known as suba-mae)



described as "local descent groups". He assumed that all members of the same clan living in one village would belong to one such group and would thus be thar-me.[35] This was the case in Mohoriya. In the older village of Thak, however, the dominant konme clan had broken into a number of smaller named lineages, which recognized that they were linked, but were unable to trace their connection to each other. Thar-me were restricted to those who shared a common great-grandfather. This is known as a tinpũstā relationship (tin, Nep.= three; pũstā, Nep. = generation). If a person within this range dies, then a man must shave his head and refrain from eating salt for thirteen days after the dead relative's funeral. Thus such relatives are also known as 'thirteen day brothers' (tierādina bhai, Nep.). To a certain extent they are a property-sharing group; if a man dies without a male heir and without a will, his thar-me inherit. This is, in fact, the effective lineage. The distribution of such lineages among the konme and lamme clan in Thak is illustrated in the following map.

see across for map 2:2.

It will be seen that there is considerable residential unity in each lineage, and that none of the lineages are very large, the biggest containing eight households. They were named after the title or name of one of the ancestors; thus Suba-me, Jamdar-me, Kaji-me, but these names were not often employed, and informants were often hazy or contradictory in ascribing such names. I was unable to ascertain the names for the lamme lineages. Whether the absence of the concept of the tinpustā group among the sorajat in Thak is due to the fact that the sorajat clans are much smaller in that village, being scattered between villages, or due to some other principle of kinship organization has not yet been established. It seems likely that the tinpustā concept, as well as the fact that those within seven generations are known as satpustā/satdina bhai, those at thirteen generations as tierapustā/tindina bhai, is partly a reflection of pressure from high caste Hindus.[36]

In the latter cases people must not eat salt for seven and three days respectively. Heads are not shaven in the last case, and people at this distance are definitely regarded as outside the khalak or minor lineage. Some informants thought that satpustā males were all members of one santan.

In the case of ritual and ownership, therefore, the patrilateral minor lineage is a functioning group. In everyday village life, however, it does not appear to have any great significance. This lack of importance is reflected in the lack of interest in genealogy on the part of most Gurungs. Pignede wrote that "In his genealogy, a Gurung knows more or less five preceding generations".[37] Though certain older men do know about ancestors as far back as this, as a general statement about Gurungs it is misleading. It is the shallow depth of knowledge and lack of interest in genealogy, especially in contrast to many of the societies described by anthropologists, that is striking. Most children did not know the name of even their grandfathers; most adults could not go back further than two generations, and some less. This is partly explained by the fact that kinship terms, rather than personal names, are ordinarily employed and one may never find out, for example, that the old man addressed by all as 'grandfather' is really Tekbahadur. Yet there is also lack of interest. In my frequent attempts to trace back the major village lineages the furthest that anyone could help me was three generations above themselves. At the third generation there was extreme vagueness; brothers of the great-grandfather were not remembered, for example. The same was true of both jats; for example, one intelligent male informant of forty-five, who had admittedly spent many years abroad in the army, knew nothing about his father's father, not even his name, nor did he know whether his father or mother had siblings. Such vagueness does not suggest that, in his case at least, there was great interest in looking for a cross-cousin marriage. There is equally little interest or knowledge about santan or khalak membership. When I asked a young male informant of 25 years of age (who had been away for some

years from the village, until two years previously) who his santan were, he had great difficulty in answering. After a considerable pause and calculations he came out with a list of six families. These should have all belonged to the eight families in lineage 1 in Map 2:2 above; instead they came from the following lineages, 1, 1, 1, 5, 5, 5. Thus he had missed out five households, and included the whole of what others told me was a distantly connected lineage.

The shallowness is also shown in the beliefs about ancestors. It is widely believed by the Gurungs that ancestors, under pressure from various evil spirits, often injure their descendants. To propitiate them a chicken is sacrificed to them at full-moon in the month of Baisakh (April-May). Questioning of those who had just made such sacrifices revealed the following list of ancesters who were said to have injured their living descendants.

TABLE 2:7 Dead relatives to whom chickens sacrificed, Thak, 1969

relationship	no. of cases
Father's father's wife	1
Father's father	4
Father's mother	4
Mother's mother	1
Father	5
Mother	5
Father's sister	2
Father's brother	3
Father's sister's husband	1
Sibling	1
Child	1
	28

Apart from the obvious paternal bias and the interesting fact that over one third of the sacrifices were to parents, this table clearly shows that there were no offerings to relatives higher than two generations above the informant. Over half the cases were one generation or less. If this can be accepted as an index of emotional concern, the genealogical depth it shows is very slight.

DIAGRAM 2:2. Ceremonial relationships of household 32 during Desain.

key:
'rih tsami kae' = ↓
'tsee kaba' = ↓↓
members of (husband's) santan = ■

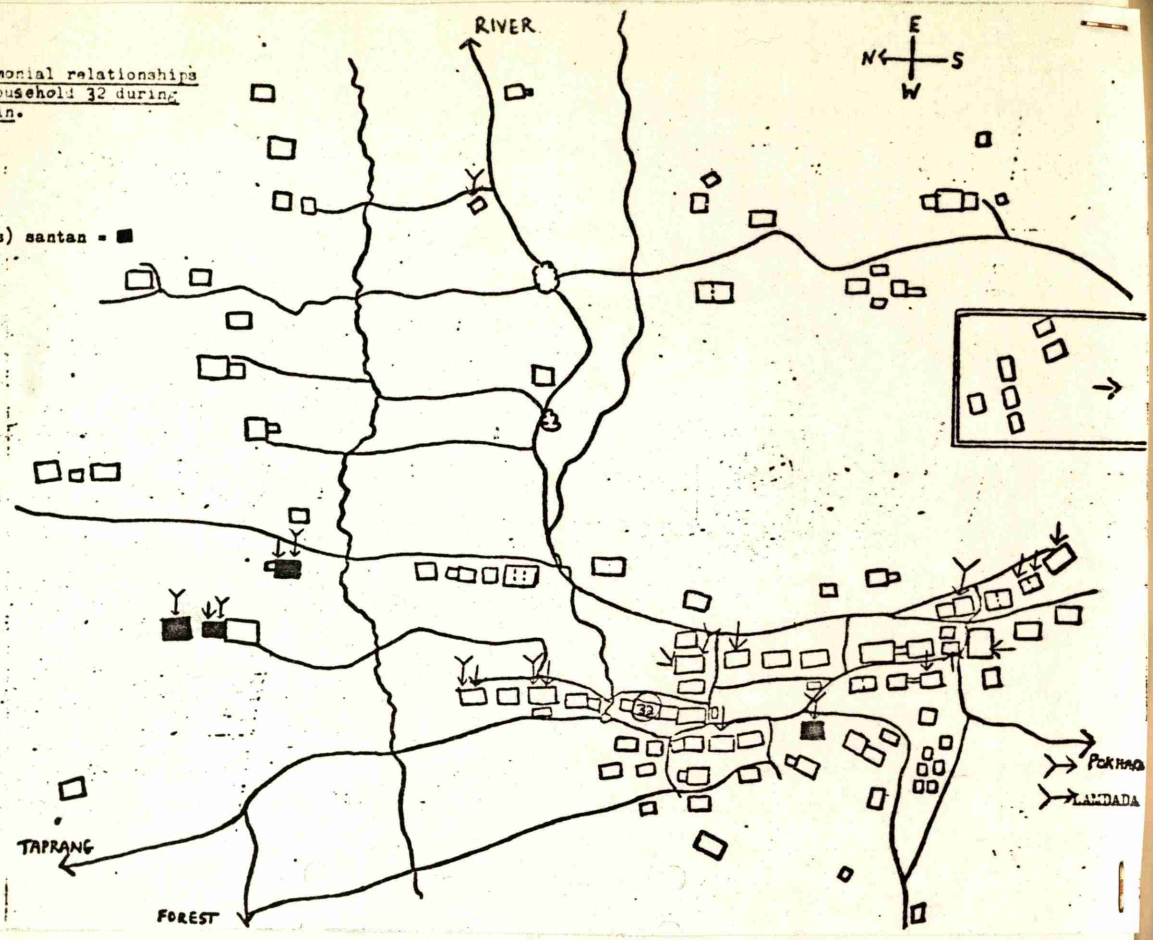
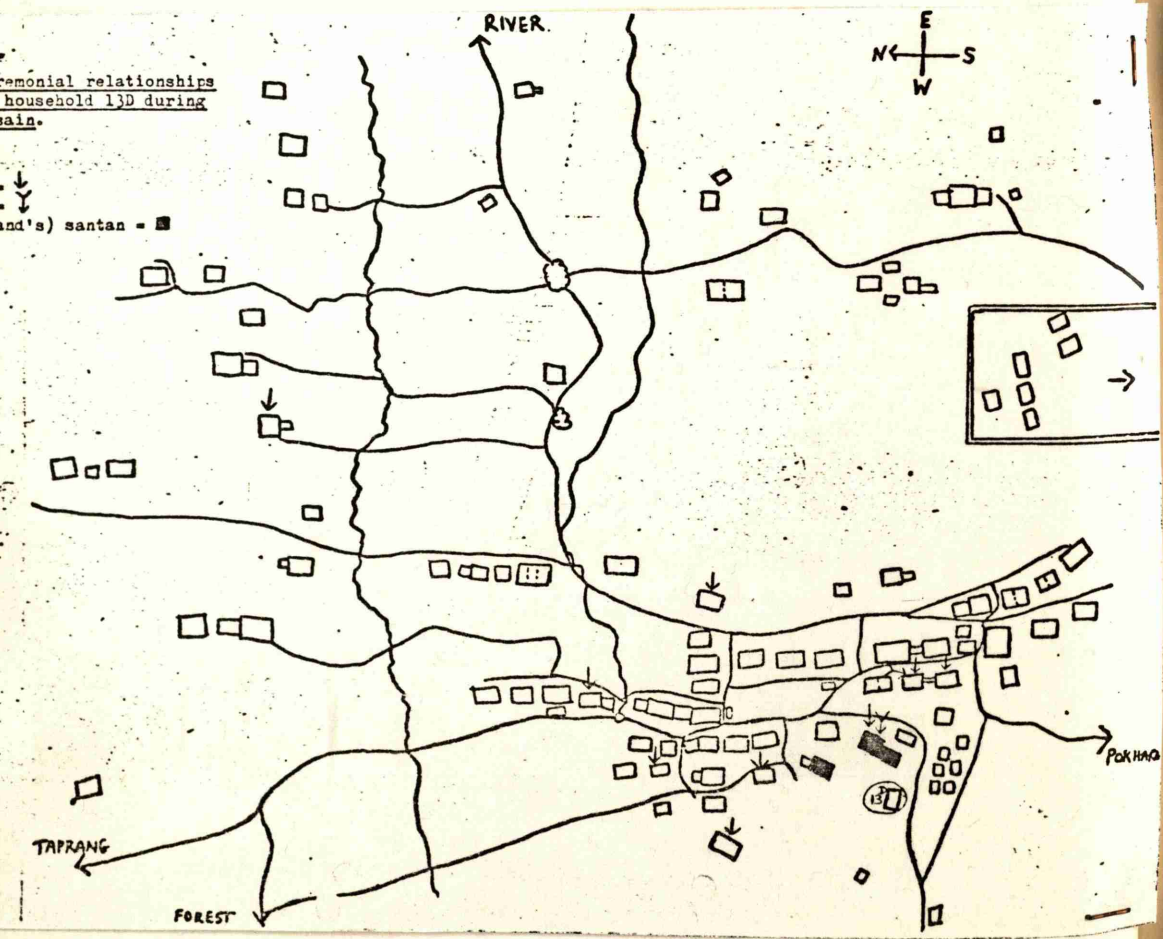


DIAGRAM 2:3. Ceremonial relationships of household 13D during Desain.

key:
'rih tsami kae' = ↓
'tsee kaba' = ↓↓
members of (husband's) santan = ■



Although the basic links in Gurung society are patrilineal, clan membership and property flowing through the male line, there is a strong emphasis on female members of the lineage also. When, for example, lists of ancestors are read out in Gurung households during the Dasain rites, these lists include women as well as men. Those married to male ancestors, as well as unmarried daughters were included. But the most explicit recognition of the importance of female kinship ties during Dasain is in a rite called rih tsami kãe peeba or 'giving rice to sisters and daughters' (rih, Gg. = generally women, usually of same family, and often 'sister'; tsami, Gg. = daughter; kãe, Gg. = rice; peeba, Gg. = to give), and also known simply as Dasain kãe (kãe, Gg., rice).[39] Those to whom such gifts of rice were made in two Gurung families in Thak are listed in the following table and the relationships illustrated in the accompanying diagrams.

for diagram 2:2 see across.

for diagram 2:3 see across.

The table and diagrams also illustrate the ties recognized on tika day during Dasain. On this occasion the oldest member of a household, male or female, places milk, rice and a herb on the visiting kin and wishes them wealth and long life. This is known as Tsee kaba by the Gurungs.

TABLE 2:8 Ritual recognition of ties at Dasain, Thak, 1969

Household 13D, Lamme (whose close kin were in houses 13A, 13, 16)

i. rih tsami kae

house number - 23, 19, 39, 34, tea house, 10, 37, 52, 7, 13, 13

lineage - in every case the female lamme in the household

ii. tsee kaba

house number	relationship	lineage
10	son (second)	
13D	son (third)	all
13	son (fourth)	lamme
13A	father's brother's son	
13D	son's son	
13	son's son	
13	son's daughter	
10	son's daughter	
10	son's wife	
13D	son's wife	
13D	step-daughter.	

(In the above order, given by the 83 year old woman in house 13D = 'ego')

Household 32, Kebje (close kin were 32,48,50,51,15)

i. rih tsami kae

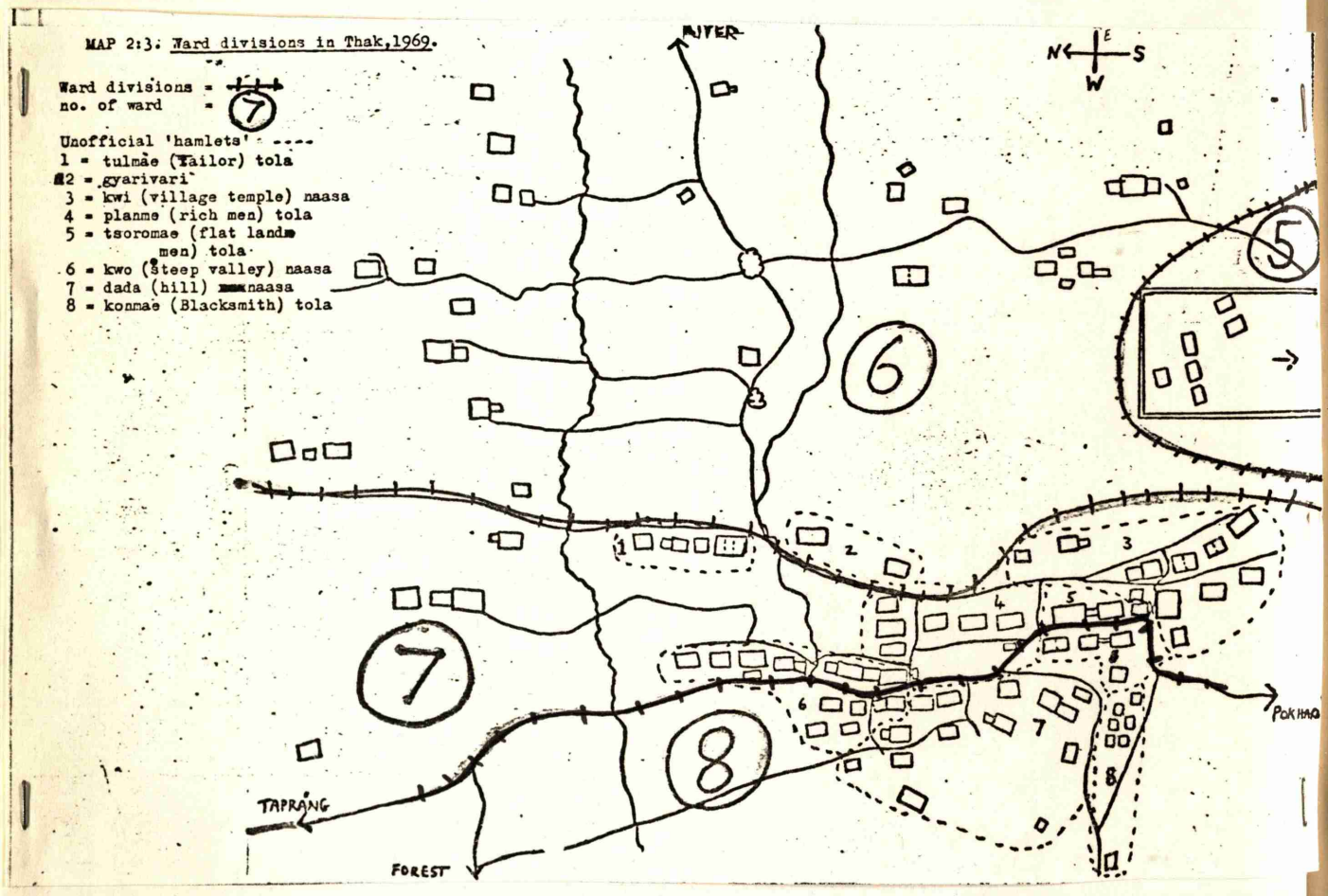
house no.	lineage	person	stated relationship to female head of house 32
21	kromje	wife	"elder sister's daughter"
1	kebje	wife	"daughter"
3B	lemme	wife	her original village=same
3A	lemme	wife	(as above, sister)
24	kebje	2nd da.	"grandaughter"
6	konme	4th da.	ritual friend of daughter
9	konme	daughter	"brother's wife's daughter"
24	kebje	1st da.	"grandaughter"
22	konme	mother	daughter of ritual friend
7	lemme	inft.	"relative"
50	kebje	daughter	"brother's wife's grandaughter"
48	kebje	daughter	"close relative"
40	kebje	son's wife	"close relative"
40	bucha	1st. da.	"close relative"
40	bucha	2nd da.	"close relative"

ii.tsee kaba

40	bucha	informant	brother
Pokhara	bucha	boy	son's son
40	bucha	1st son	bro's son
51	kebje	1st son	"close relative"
32	kebje	little boy	son's son
40	bucha	2nd son	bro's son
40	bucha	3rd son	bro's son
32	kebje	little girl	son's daughter
40	bucha	1st da.	bro's daughter
24	kebje	informant	"close relative"
63	kebje	informant	"close relative" brothers
78	kebje	informant	"close relative"
78	kebje	1st son	" " 's son
24	kebje	2nd son	" " 's son
78	kebje	2nd son	" " 's son
42A	ngobje	informant	married to same jat(kebje)
50	kebje	informant	"close relative"
15	kebje	informant	"close relative"
48	kebje	informant	"close relative"
51	lhoa	informant	married to same jat
Lamdada	?	Tsanbir	bro's wife's son

It will be seen from the above that a wealthy sorajat family such as household 32 will establish "kinship" links with many village households, in this case with over one quarter of the Gurung households in the village. Although the lineage only theoretically consisted of five families, 22 households became linked at Dasain, and these included five konme families from the carjat.

MAP 2:3. Ward divisions in Thak,1969.



Thus, although intermarriage is forbidden, the two jats emphasize their kin relations on ritual occasions. The size of the network is almost certainly connected to wealth. Thus household 13D, although of the upper lamme lineage, is considerably less wealthy than number 32, and is only linked to 10 other households, all lamme. The case of house 13D shows how women originally of the lamme clan, now married to the dominant konme clan, are still seen to be linked to their former clan, a link emphasized ritually in the giving of rih tsami kãe. They are said to be ista mitra (Nep, friends and relations).

Poorer families in the village appear to have a very limited range of ritual ties. Thus household 33, a konme family, but descended from an illegitimate son and hence with almost no land, only gave rih tsami kãe to three households, and house 12B to the same number. House 16, only a generation ago a powerful and rich lamme household, now presided over by an impoverished old woman much suspected as a witch, has very tenuous kin ties. It will be noted that it is omitted from house 13D's ritual relationships, though the two households are, in fact, closely related. The process whereby families activated ties as their wealth increased, or found such ties being neglected as their wealth decreased, was not studied in the short period of our stay in Thak.

Neighbourhood groupings.

The central village of Thak is divided for administrative purposes into two official wards, but it is also conceptually divided into a number of smaller units known as tol (Nep., ward) or naasa (Gg., meaning anything from a town of 500 houses to a hamlet of two or three). These named areas, which are constantly in use in conversation, are illustrated for the central part of Thak in the accompanying map.

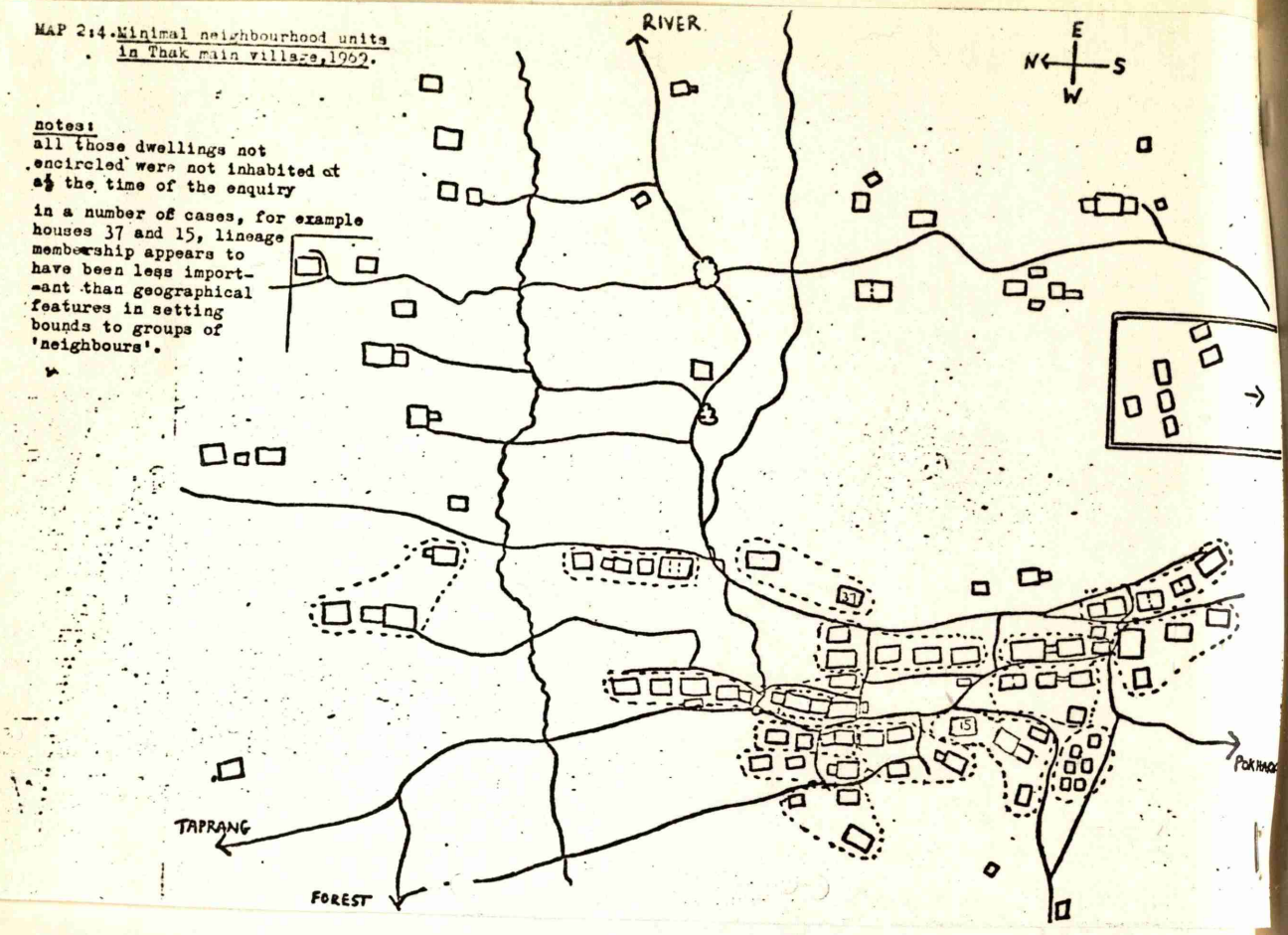
for map 2:3 see across.

Thus the two-fold administrative division is broken down into eight separately named 'villages', each based on a combination of geographical and social criteria. These maximal 'neighbourhoods' are again broken down into sets of what may be termed 'minimal neighbourhoods'.

MAP 2:4. Minimal neighbourhood units in Thak main village, 1969.

notes:
all those dwellings not encircled were not inhabited at the time of the enquiry

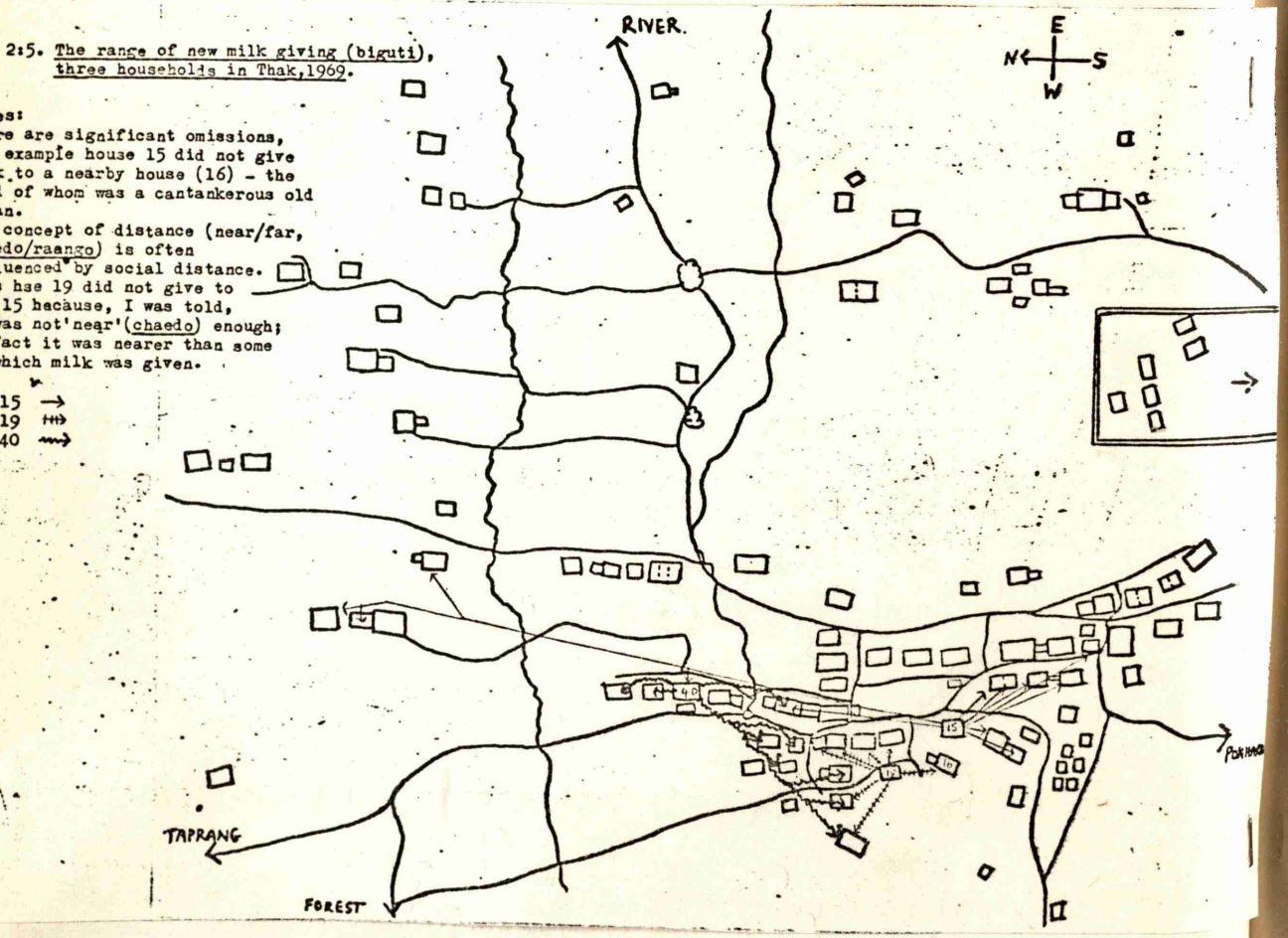
in a number of cases, for example houses 37 and 15, lineage membership appears to have been less important than geographical features in setting bounds to groups of 'neighbours'.



MAP 2:5. The range of new milk giving (biguti), three households in Thak, 1969.

notes:
there are significant omissions, for example house 15 did not give milk to a nearby house (16) - the head of whom was a cantankerous old woman.
the concept of distance (near/far, chaedo/raango) is often influenced by social distance. Thus hse 19 did not give to hse 15 because, I was told, it was not 'near' (chaedo) enough; in fact it was nearer than some to which milk was given.

hse 15 →
hse 19 ⇢
hse 40 ⇝



It could be argued that in daily life residential propinquity is of more importance to the Gurungs than are ties of blood and marriage. The significance of this principle of grouping seems to have been overlooked by Pignède. The term for neighbours is ngie-me (Gg.) or chemā (Nep.) -gi (Gg.)? (wife's people), and the village is clearly and overtly divided up into groups of neighbours, though in one or two cases there is ambiguity. The neighbourhood units, as they were described to me by one informant, and checked in particular cases by others, are illustrated for Thak in the following map.

for map 2:4 see across.

These 'close neighbours' with whom one gossipped, did simple jobs and rituals, and constantly interracted, were frequently supplemented for other occasions. If we use another index of neighbourhood, the groupings are larger and cut across previous boundaries. For example, it is the custom for a household to which a new buffalo calf has been born to give a present of the rich milk from the mother buffalo (bighauti, Nep.) to 'neighbours'. The people to whom such milk was given by three Gurung households is illustrated in another map.

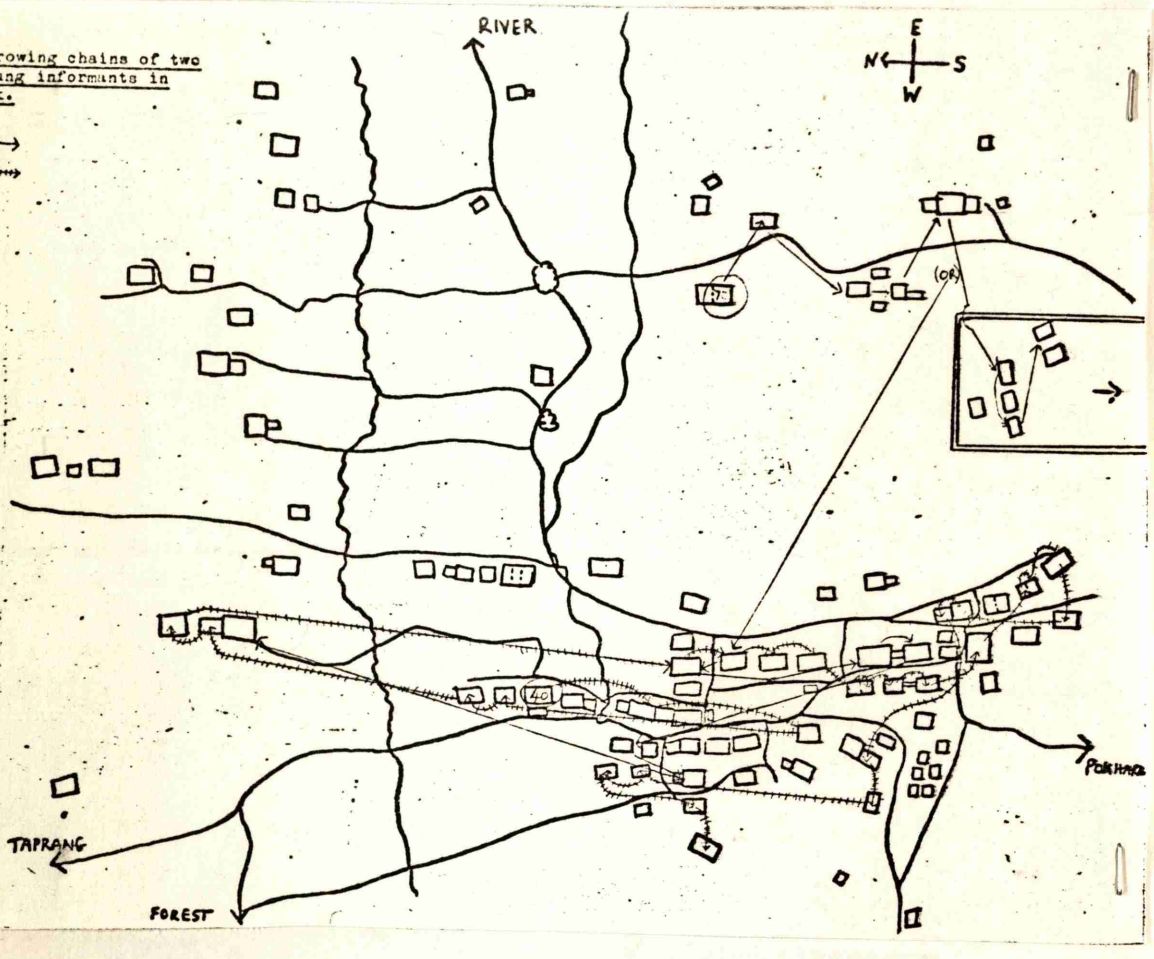
for map 2:5 see across.

If we compare the above maps to the previous one of lineage distribution we find a certain, but not complete overlap. Thus, for example, in Map 2:4, houses 37 and 15 could have aligned with same jat households nearby, but chose not to. But one gives bighauti to more distant 'neighbours' because they are also kin. Personal factors obviously are of considerable importance. Thus a comparatively wealthy family living below our house was said to have only one 'neighbour', partly because of the uncharacteristically Gurung meanness and vindicative gossip associated with the members of the household. The economic importance of neighbours will come out in later chapters. Their ritual importance is recognized in many of the poju's rites where it is necessary to have neighbours, sometimes a specified number such as nine, in order for the rite to be efficacious.

MAP 2:6. Borrowing chains of two Gurung informants in Thak.

hsehold 703 ⟶

hsehold 40 ⇢



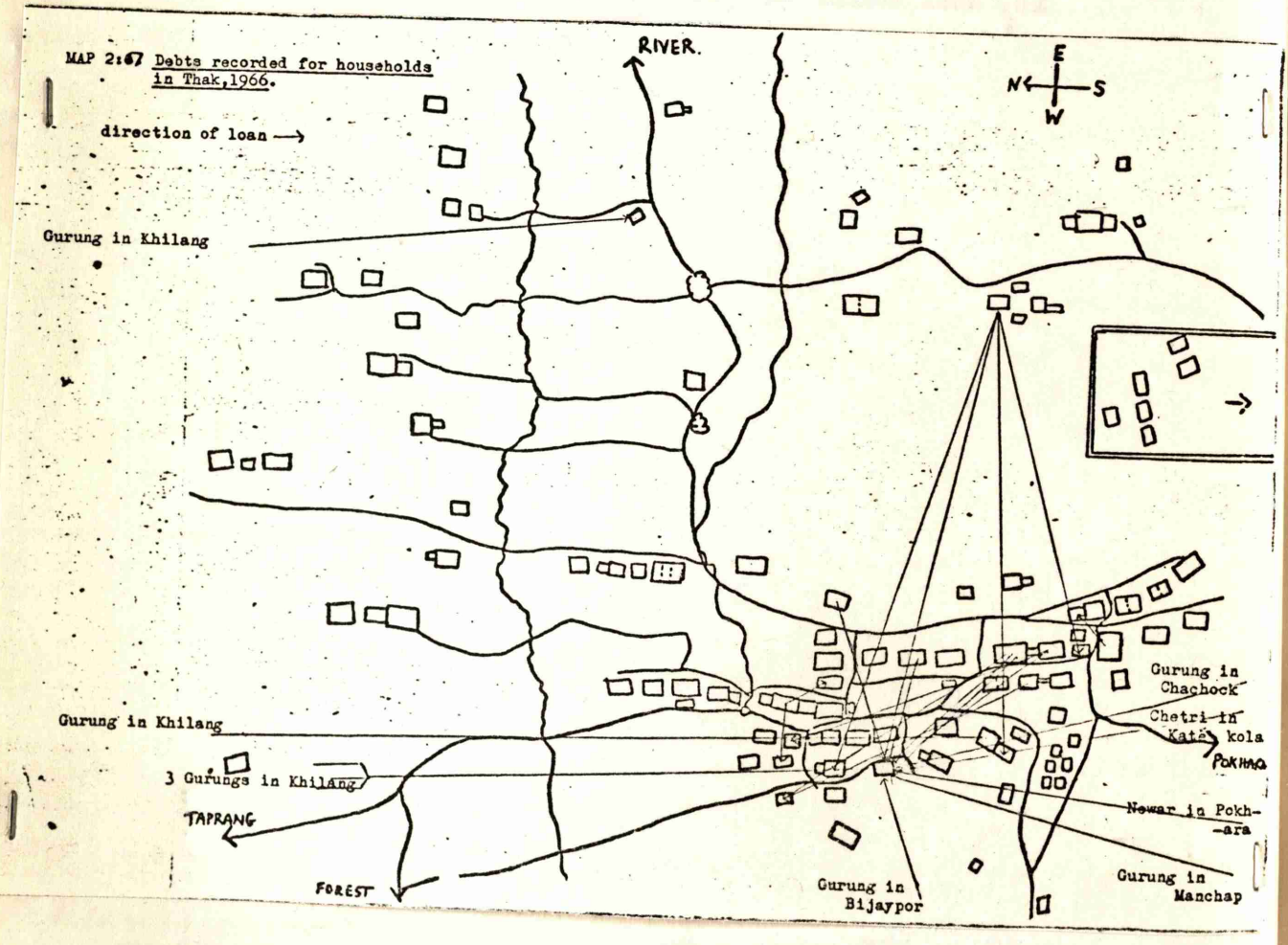
It will be clear that most Gurung families have a large number of friends, neighbours and real and fictive kin with whom they may co-operate if needed. We may wonder how this works in action; what principles of recruitment are there behind the ever-fluctuating groupings in a Gurung village? One index is to find out from whom people would borrow, if in need. I asked two informants who they would go to if they needed a small sum of money, or to borrow some sugar (a commodity which can only be bought in Pokhara, and is needed if guests arrive unexpectedly). Then, if that person did not have it, who would be the next person to whom they would go, and so on. The reported, necessarily ideal, borrowing chains are analysed in the following map and table.

for map 2:6 see across.

TABLE 2:9 Reasons given for borrowing from certain households

House no.	neighbour?	same jat?	stated reason	other possible reason
house 70B, son aged 25, konme = informant.				
75	yes	yes	because near neighbour	
71	yes	yes	" " "	
72	yes	yes	" " "	
73A	yes	yes	" " "	
86-9	(yes)	yes	" " "	
22	no	yes	a close relative	
24	no	no	ritual bro. of above	wealthy close relative
14	no	yes		friend of same age
11	no	yes	relative	" " " "
33A	no	yes	relative	
28	no	yes	relative	
49	no	yes	just returned from Malaya, likely to have	

house no.	neighbour?	same jat?	stated reason	other possible reason
house no.40, son aged 21, kebje = informant				
32	yes	yes		father's sister
15	no	yes		near relative.
42	yes	no		next-door neighbour
42A	yes	yes		near neighbour
48	no	yes		relative
51	no	yes		wife's family
24	no	yes		wealthy ex-soldier
22	no	no		friend of fa.in youth?
20	no	no		
17	no	no		wealthy
12A	no	yes		same age & once pojus (as 40)


MAP 2:67 Debts recorded for households in Thak, 1966.
direction of loan →
RIVER.
E
N
S
W
Gurung in Khilang
Gurung in Khilang
3 Gurungs in Khilang
TAPRANG
FOREST
Gurung in Chachock
Chetri in Kate kola
POKHARA
Newar in Pokh-ara
Gurung in Manchap
Gurung in Bijaypor

(table 2:9, continued)

house no.	neighbour?	same jat?	stated reason	other possible reason
12B	no	yes		next house to above
10	no	no		" " " "
7	no	no		" " " "
6	no	no		wealthy
3A	no	no		near above
3B	no	no		" "
1	no	no		" "

then to houses 2, 63, 64, 13A, 13D, 34, 36, 29, 23 - some of same jat, but mostly carjat, for no particular reason.

Household 70B, being a member of the biggest konme lineage in the village, has many more kin from whom it may borrow, but its neighbours are fewer. Perhaps more interesting than the reasons for borrowing from certain people, are the reasons given for avoiding others. Thus household 70B informant said that he would not go to the nearby Tamang house (76) because it was of a different caste, nor to the scattered houses at 78-80B for the same reason (and because they were poor and unlikely to have the commodities needed). Likewise, it is worth noting that household 40 seems to scrupulously avoid its next-door neighbours 38,39, though for what reason I failed to find out.

The above tells something about small acts of borrowing, though it must be remembered that people notoriously do not necessarily behave as they say, hypothetically, they would behave. When a large loan of money, from twenty rupees or so upwards, is required, other motives come into action. These principles may be deduced from the actual pattern of loans as registered by the Land-Reform Commission for Thak. According to the law, all debts had to be registered in the year 1966, or else they were without legal force. Although it seems likely that a good many debts were not so registered the pattern of indebtedness which emerges is probably a fair sample of such relationships.[40] The situation is again most easily represented in a map.

for map 2:7 see across.

The amount of money loaned usually consisted of between several hundred and several thousand rupees. It will be seen that none of the Tailors or Blacksmiths

are recorded as being in debt, though in fact they were. Most of the eleven Gurungs who were in debt had borrowed inside the village, and even when borrowing outside the village they borrowed from other Gurungs. No Brahmin money-lenders are mentioned, and only one Chetri and one Newar. All but one of the lenders in the village were from the carjat, one of them the only notorious money-lender in the community. As far as the degree of overlap with previously discussed ties is concerned, the striking thing is the almost complete absence of any correlation. Lamme do not borrow from lamme, kebje from kebje and so on, nor do people borrow from neighbours in preference to others. When large sums are needed it is necessary to go to wealthier families with whom one may have no special ties. It is preferable to borrow within the village, but there is also considerable borrowing from the affluent village of Khilang, some ten miles to the north.

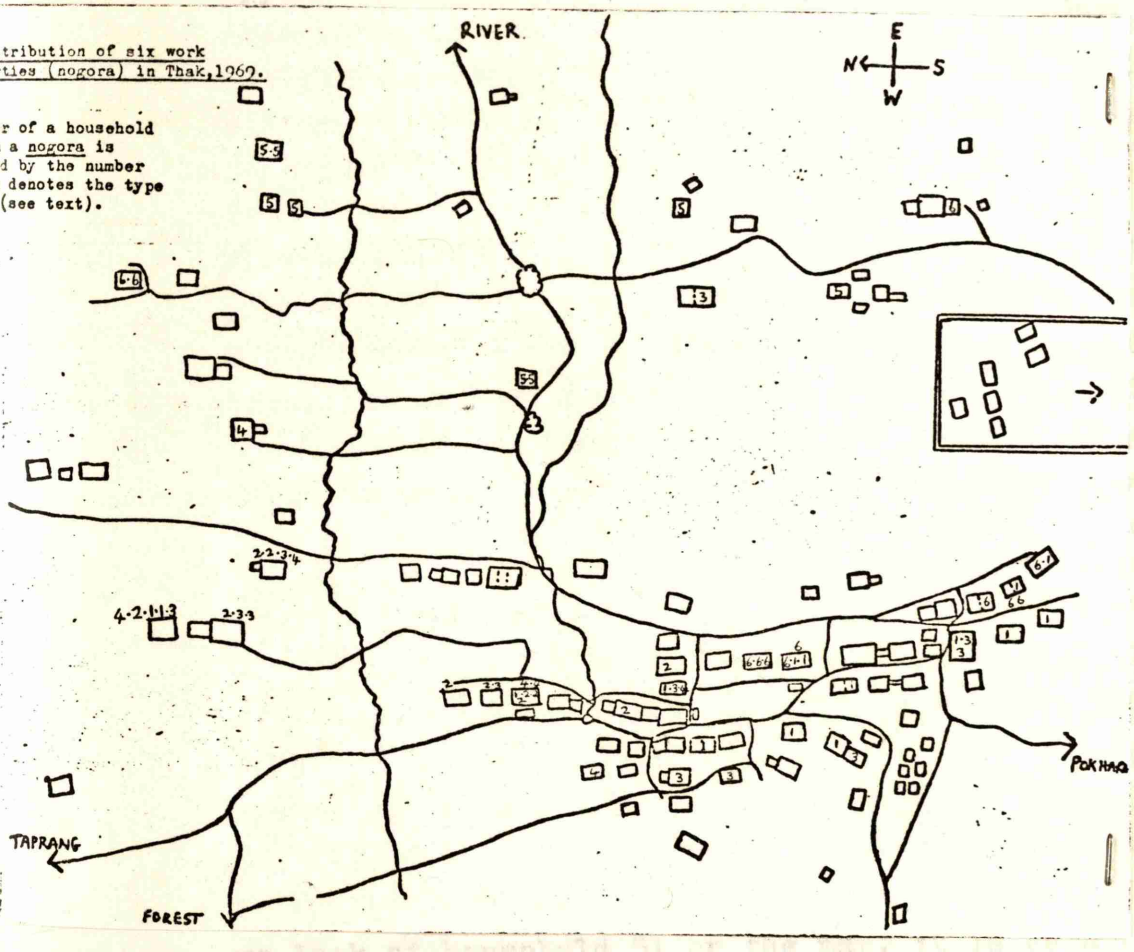
A final illustration of the way in which people act when they need help occurs in labour groupings. There are a number of types of work group among the Gurungs, one of which is the nogor or nogora. Pignède has given a detailed description of how this functions among the Gurungs.[41] He shows how such joint work makes labour more pleasant, gathering groups of a dozen or so Gurungs together so that they move from field to field of those contributing. He suggests that recruitment is based mainly on age, those between fifteen and twenty-five years of age, and friendship. His analysis shows clearly how the absence of males aged twenty years and over in the army is reflected by a preponderance of females aged twenty-five and older. Pignède was only present in Mohoriya for the spring and early summer and he was therefore unable to study more than a part of the economic calendar. His account of nogora therefore needs supplementing. There are in Thak, as shown in the following table, at least seven types of nogora, of which Pignède only described those two occurring in May-June. As a result of this he was unaware that the principles upon which Gurungs group themselves vary

TABLE 2:10 Types of nogora work group in Thak, 1969.

Months	Gg. name	Purpose	Principle of recruitment
1. Dec-Jan	Mal kwoba	Dung carrying	Almost entirely same age group, (children 11-15), all Gurung, but wide spectrum of lineage & wealth
Jan-Feb	" "	" "	
2. Feb-March	Shee Kwoba	Wood carrying	Mainly neighbourhood, but also wealth and jat
March-Apr	" "	" "	
	Nor tsaba	Prepare maize fields	
3-6 April-May	Nari pluva	Plant millet	
May-June	Mokhai taba	Weed maize	3. not konme, but misc. wealthy
	Nor tsaba	Prepare rice fields	4. neighbours in n. of village
			5. neighbours (out of village)
			6. konme lineage
June-July	None		
July-Aug	None		
7,8 Aug-Sept	Mla Shwiva	Weeding rice fields	7. All konme/lamme (+ 1 Tamang)
			8. All sorajat clans.
Sept-Dec	None		

8. Distribution of six work parties (nogora) in Thak, 1969.

member of a household ing in a nogora is esented by the number which denotes the type ogora (see text).



depending on the work to be done. The outlines may be summarized as follows.

for table 2:10 see across.

The actual composition of the eight sample nogoras, with the age and sex compositions may be seen in appdx. four, below. The distribution of members of six of them over the village is best illustrated in a map.

for map 2:8 see across.

The lists show that, except very strikingly in the children's dung-carrying nogora, the recruitment does not appear to be on the basis of age. Pignede may be describing an older situation when age was a more important principle of organization than it now is in village life, when the young people's meeting house (rodi, Gg.), and age groups generally, thrived. That this is so is indicated by Pignede's description of the dancing and singing after work of the young people who worked together. This no longer happens in Thak. It would seem that nowadays neighbourhood is the most important single basis for work co-operation, neighbourhood both in the village and in the fields. Neighbourhood is especially important in wood-carrying, and in the hamlets outside the main village. Only in weeding rice is there a work group almost solely divided along carjat/sorajat lines. How far this is a matter of clan solidarity, how far the convenience of working with other people whose lands are adjacent (since the rice lands of each clan tend to be together to a considerable extent) it is impossible to say. What is certain is that labour co-operation is an extremely important factor in integrating households. For instance, if we look at household 51 on the map, it is seen to be linked to 27 other Gurung houses in the four nogoras of which it is a member. Furthermore, the composition of the children's nogora illustrates the way in which Gurungs have, in the past, been brought up to ignore boundaries of wealth, sex, or jat. Thus such work groups may be seen as both cause and effect of the, as yet, highly flexible and egalitarian structure of Gurung society. If wealth divisions grow with an

increased use of cash, and the pressure of labour on land is heavier, one of the first signs will be a breakdown of this co-operative work system. For the system is based on labour shortage and the fairly equal distribution of resources of labour and capital. The system is likely to be succeeded by a strengthening of the gola or communal work-party which works for wages on the lands of richer villagers.

Age grouping.

Although young and old mix freely and Gurung society appears to be the extreme opposite of authoritarian, it is clear that relative age is an extremely important principle of social organization. Gurung kinship terminology, for instance, recognizes relative age, both in birth order among siblings and as between speaker and spoken of in terms of address. The difficulty of estimating how important age-grade systems were in the past is increased by the speed at which customs are changing. Of central importance here is the institution of the rodi or young people's meeting house. Pignede gives a short description of this for Mohoriya.[42] He writes that there is sometimes a special building known as the young people's house, but sometimes the young meet in groups in ordinary houses. Any Gurungs, rich or poor, upper or lower jat, and of either sex may attend. He states that such meetings are confined to young people aged between seventeen and twenty-one years of age. This agrees with the description given me by a young woman of thirty in Thak. She said that between the age of seventeen and twenty-three she used, almost every evening, to gather with the other girls and boys after working together all day. They would go to a selected house and sing and joke; then they would promenade round the village in a group (raha lava, Gg). It seems likely that in the past even young children attended, though it is not certain whether they had a separate, junior, rodi, or went to the main one. In one description of the institution it is stated that people entered at the age of ten or eleven and left at seventeen.[43] A man of forty-six in Thak, describing the situation when he was a young man, said that everyone from the age of fourteen or fifteen upwards attended.

Nor did they necessarily cease attendance at marriage, he claimed. Married women often attended, especially when their husband's were away in the army; they were, in fact, a useful method of dealing with male absence after marriage.

It seems clear that the rodi were only one feature of a complex age-grade system of which little remains. One young informant told me that there are distinguished age groups in Thak known as torvé (Gg.), consisting of Gurungs of all types who are roughly of the same age. There are twelve such divisions in Thak, each covering roughly 8-10 years. Thus the first would cover the years 1-8, the next 9-16 and so on. But such age boundaries are very fluid; a person's membership depended largely on his physical development, the number of young people at certain ages, and other factors. There were no age rites, as far as I can ascertain, nor were the groups given particular names or emblems, except that the group aged roughly 17-24 is known as the 'little' (chomba, Gg.) torvé, while the next one, up to the age of about 32 was the great (theba) one. Marriage made no difference to membership. Groups of members in the past worked together during the day as nogora work groups, then, having eaten comunally if payment was in this form, or at home, they would congregate to joke, sing and flirt. Members would all be given nick-names and called by these; thus gumrani (clever person), lassarani (slow and portly person), kubilrani (very nice person; kubil is apparently a small flower) and so on. Rani was added on in the case of girls, ron in that of boys (the same endings are found to old Gurung names of up to 250 years ago; thus the founder of Thak was called Maleron). Walking about arm-in-arm in the evenings through the village streets was also an important activity of such groups.

Terminologies concerning age divisions, and changes in clothing also fitted in with these loose groupings.

A child of either sex until about its fifteenth year, in other words until joining the chomba torvé, is referred to as a kolo (Nep.). Then, during the years covered by the next two torvé, up to about 32 years of age, a man was a preshi (related to Nep. preyasi, sweetheart?) and a girl a tsami (or daughter). Marriage made no difference to such terms, nor, it seems, did childbearing. Then from about 33-45 years a person is adha bainse (Nep., 'half his years have gone'). Then from about 45 a woman is maba, a man khiba, or 'old person'. The major change in clothing for both boys and girls occurs at between 6 and 10 years of age. A girl will be given the long patterned cloth worn by adult women and is placed for a moment on top of a rice tray with some unhusked rice. She is now fully adult and 'able to wear the cloth', though not all girls do immediately change their clothes, especially since frocks from the bazaar have become popular. This simple ceremony could be done by any female member of a household, and it is not necessary to invite other people in to witness it. Likewise boys are given the crossed-over over-shirt (renga) which adult men usually wear, but they do not don this permanently until they are much older. It will be obvious from this description that no stress is placed on either puberty or marriage as times of ritual change. Both events are smoothed over and not taken as important boundaries between different status groupings.[44]

Although a number of informants stated that the rodi and torvé customs have declined greatly even during the last ten years, the relics may still be seen in Thak. Thus during our visit a group of boys and girls aged 14-16 were beginning to meet occasionally to puff secretively at cigarettes and to joke. But it is unlikely that there was any open sexual play between the two sexes, though much of their joking and gestures revolved round the topic. Another group, aged between 18-25, used to go off occasionally to rodi in other

villages, or to organize tetara sheba ('theatre' dancing, a mixture of dancing, singing and comedy). They were forced to seek some of their sexual pleasures elsewhere partly because there was no longer a special communal house or rodi in Thak. There were two of these houses in the village some four or so years ago; one of them still stands, a small hut now used for animals, wedged between two houses. But, according to the young schoolmaster, some "bad things" were done there and the "gentlemen of the village" (i.e. panchayat and middle aged men), decided they should be closed. The schoolmaster was clearly embarassed when discussing the subject. We learnt that people in Pokhara were scandalized by the way young unmarried people of both sexes, without discrimination of wealth or jat (though non-Gurungs did not attend) were allowed to meet unchaperoned. As Pignède has pointed out, Hindu disapproval was likely to be considerable, and the Gurungs are now clearly aware of it.[45] It is ironic, however, that the middle-aged men who, on their own proud confessions, were great philanderers in their youth, should now try to eradicate the custom. Other villages seem to be less affected than Thak; many of the villages round Thak have rodi proper, and Siklis is supposed to have six or seven. Even in Thak there is one house, headed by a young woman of twenty-nine whose husband is away in the army, where the young people often congregate to sing and joke.

Dor Bahadur Bista describes the sleeping arrangements of the rodi as follows.

> "In the evenings girls bring their rugs and blankets and sleep in their dormitory every night except during the monsoon; the boys usually spend their evenings in the girls dormitory and come back late to sleep in their own. The seniormost member of a rodi acts as chiva, the leader. The members are called rog yo me. The male and female guardians of the rodi are known as neva ava and neva ama respectively."[46]

He thus tactfully avoids the question of whether sexual relations occur. Pignède goes further and says that girls and boys show very great restraint in their relations in the rodi.[47] This does not always seem to have been so, as the arguments which led to their closure in Thak suggests. The boys from Thak who went to rodi

in other villages from Thak were thought (and claimed) to have slept with girls. An actual case was instanced to me which involved a married girl in another village. It is unlikely that this was merely boasting. Nowadays, one older man told me, there was little sexual intercourse before marriage, but there used to be much more once. Sometimes people would retire to the rodi and almost immediately put out the little light. This informant said that there had been no proper rodi in Thak for some twenty years. Some idea of what they used to be like can be obtained from one of the poju's myths, which described how a girl was seduced every night in a rodi. She wished to find out who was responsible and so asked the rodi ama (the elder woman who was in charge) for help. The older woman suggested marking the man with blood from the young girl's anus (not menstrual blood). The girl then discovered the seducer was her own brother. The pair subsequently committed suicide. Illegitimate children are fairly common in the village genealogies and census.[48] As a whole, therefore, the institution bears many resemblances to the young people's dormitories of Assam and India, for example that described by Verrier Elwin.[49] It is found among the Magars with the same name.[50]

Conclusion.

Only a superficial sketch of some of the principles upon which Gurung social structure is based has been given, in order to amplify and modify slightly Pignede's thorough account. Statistical groupings based on age and sex will be considered in a later chapter. The overall impression from living with Gurungs is, however, of an incredibly flexible and fluctuating system. There are few permanent 'groups' of people; it is easier to analyse the situation in terms of 'quasi-groups' or 'ego-centred networks'.[51] Even a brief analysis of the ties that link Gurungs shows that almost everyone in the village is bound to everyone else by a multiplicity of bonds. These multiple and many-stranded relationships, which are

characteristic of village life in most societies, enable an individual to select other individuals from a wide range of alternatives for particular occasions. What appears to be exceptional about the Gurungs is that the various criteria - age, kinship, residence, sex, jat, wealth - are so evenly balanced. Consequently the actual groupings into which people form in daily life are extremely fragile, dissolving and forming from day to day. The boundaries are not tightly set, the contrasts between old and young, rich and poor, upper and lower jat, one neighbourhood and another, are not stressed. Unlike the situation in many tribal and other societies, children and adults, male and female, upper and lower caste, work together, play together, and talk and joke more or less as equals.

This over-all fluidity, which makes the word 'structure' too rigid to describe the social situation, and in which no single principle of alignment is dominant, borders easily crossed between groupings, is extremely important in explaining the adaptable nature of the Gurungs. It helps to explain their amazing ability to change with their social environment, to become world-renowned for their courage and practicality as warriors, when, in their own homes, the men are gentle, impractical, and extremely unaggressive. The detailed exploration of the causes and consequences of this flexible situation and its relationship to mentality and ritual must await a later analysis in another work. The consequence for the anthropologist in the field is that it is often impossible to discover the criteria on which people have come together; too many principles are at work simultaneously.[52]

CHAPTER TWO. NOTES.

1. Census of Nepal, 1961, pp.2,15.
2. Goode, World Revolution and Family Patterns, p.240.
3. Peoples of Nepal Himalaya, iii, ed. Kihara. p.243.
4. Caplan, Land and Social Change, p.33
5. New York, paperback edn., (1967), p.174.
6. The household numbers refer to the numbering in the household census.
7. The Mohoriya case, is, in fact, doubtful. The head of the household is at present away in Bhairuwa, though his wife still lives in the village, as do his brother and father.
8. Caplan, Land and Social Change, p.33.
9. Morris, Winter in Nepal, pp.99,103,104.
10. S.Iijima, 'Ecology, Economy, and Social System in the Nepal Himalayas', The Developing Economies, ii, March 1964, no.1, p.102 suggests, however, that arable farming is correlated with extended households, pastoral with nuclear ones.
11. Wrigley, Population and History, p.134.
12. There is a brief discussion of this change in Peter Willmott, 'The Four Generation Family', New Society,
13. E. Wolf, Peasants, p.65.
14. Examples are south India (Epstein, Economic and Social Change, p.178); and seventeenth century England (Laslett, World we have lost, p.46).
15. Caplan, Land and Social Change, p.34.
16. The term 'class', unsatisfactory as it is, has been preferred to 'caste' since many features of the latter, e.g. ritual pollution through touching, are absent.
17. Gurungs, pp.178-9; Morris, Gurkhas, pp.69-72.
18. Gurungs, p.225; Northey & Morris, Gurkhas, p.191, also said the barrier was breaking down in the 1920's.
19. N. Allen, 'Ethnography of Nepal', p.146.
20. Bista, People of Nepal, p.72.
21. Gurungs, p.163.
22. Buchanan, Account of...Nepal, p.28.
23. Gurungs, p.225 noted this phenomenon and in his map of the distribution of Gurung clans (p.64) included 'Pun' among the sorajat Gurungs. He may have come under the same pressure as I did, for when I took a census of the village I was first told by a Gurung

informant that these households were 'Pun' (Magars), but later a deputation came from these houses and asked me to change the entries to 'planme' - an upper jat Gurung clan. My informant was clearly uneasy about this, but in their presence did not dispute the change.

24. F. E. Okada, 'Ritual Brotherhood: A Cohesive Factor in Nepalese Society', S-Western Jnl. of Anthropology, 13 (1957), pp.212-221; Hitchcock, Magars, p.66.
25. Gurungs, pp.250-1.
26. Gurungs, p.64.
27. For further evidence concerning those present fifty years ago, see pp. 374ff. below.
28. His account is in Gurungs, ch.VI and pp.195, 228ff, 273ff, 282ff.
29. Gorer, Himalayan Village, p.163.
30. Fürer-Haimendorf, Sherpas, p.47.
31. Peoples of Nepal Himalaya, iii, ed. Kihara, p.286.
32. Fürer-Haimendorf, Sherpas, p.47; Hitchcock, Magars, p.4; Morris, Winter in Nepal, p.123
33. Bista, People of Nepal, p.73.
34. N. Allen, 'Ethnography of Nepal' pp.138-142. MB= mother's brother; WF = wife's father; CS = child's son; CCS = child's child's son; ZS = sister's son.
35. Gurungs, p.189.
36. As Professor Fürer-Haimendorf kindly pointed out.
37. Gurungs, p.193.
38. NO NOTE
39. This rite is also performed by other Nepales tribes and castes, for example the Magars, Hitchcock, Magars, p.71.
40. This map is constructed from form 14, which lists people's debts to others.
41. Gurungs, pp.127-9; Hitchcock, Magars, p.88, also described work groups that cut across neighbourhood and age lines.
42. Gurungs, p.260.
43. Bista, People of Nepal, p.78.

44. Thus Pignede repeatedly states that marriage and adulthood are closely linked (e.g., Gurungs, p.234), but on the basis of the above evidence, and remarks of informants (see p. 132 below) it seems to me that he was mistaken. According to Morris, 'Thesis on Nepal' p.127 there is not in Nepali any word which denotes the specific state of puberty.
45. Gurungs, p.260; Hitchcock, Magars, p.90, also remarks on the waning of the rodi.
46. Bista, People of Nepal, pp.78-9.
47. Gurungs, p.260. This may have been true in Mohoriya, but the author was probably also trying to shield the institution from outside criticism. Morris, 'Thesis on Nepal' p.125 stated on hearsay that "sexual intercourse often takes place...", though even in the 1930's attempts were made to cover up the existence of rodis.
48. For a discussion of illegitimacy, see pp. 117-9 below.
49. V. Elwin, The Muria and their Ghotul (Bombay, 1947), chs.16,17.
50. Hitchcock, Magars, p.90.
51. Among the many recent discussions and definitions of these concepts is Adrian Mayer, 'The Significance of Quasi-Groups in the Study of Complex Societies' in A.S.A. no.4.
52. The situation is very reminiscent of that described by C. Geertz, 'Form and Variation in Balinese Village Structure', American Anth., 61 (1959), pp.991-1012.

II. POPULATION AND HEALTH.

CHAPTER THREE. POPULATION CHANGE IN NEPAL.

General features of Nepalese population structure.

The sources for the study of Nepal's population are extremely restricted in quantity and quality. All calculations are therefore extremely uncertain. There have been a number of national censuses since 1911, but the difficult terrain, financial shortages, and lack of experience make all such attempts before 1952-4 very suspect. Furthermore, the absence of any satisfactory vital registration in the country has made it impossible to produce even such elementary yet crucial statistics as crude birth and death rates, or to chart the general growth rate of the population. Yet a number of features of the population are now clearly established. Firstly, Nepal is an almost entirely rural and agricultural country: in the 1952-4 Census, 94% of the population gave their primary occupation as agriculture, only 2% as manufacturing, and there has been little change since.[1] The population lives predominantly in small settlements: in 1952-4 "nearly three-fourths of the population live in villages with fewer than 1000 inhabitants, whereas only 3 per cent of the population live in the 10 largest cities."[2] On the whole, people still work their own land: in 1952-4, 78% of the active male workers claimed to be either self-employed or unpaid family workers.[3] These farming communities show many of the features which we associate with what is termed 'stage one' of demographic development; high fertility, high mortality, a large number of young people dependent on adults, and a moderate to high population growth rate.[4]

The over-all changes in Nepal's population from 1911-1971, as indicated in the censuses, may be seen in the following table.

(for table 3:1 see next page)

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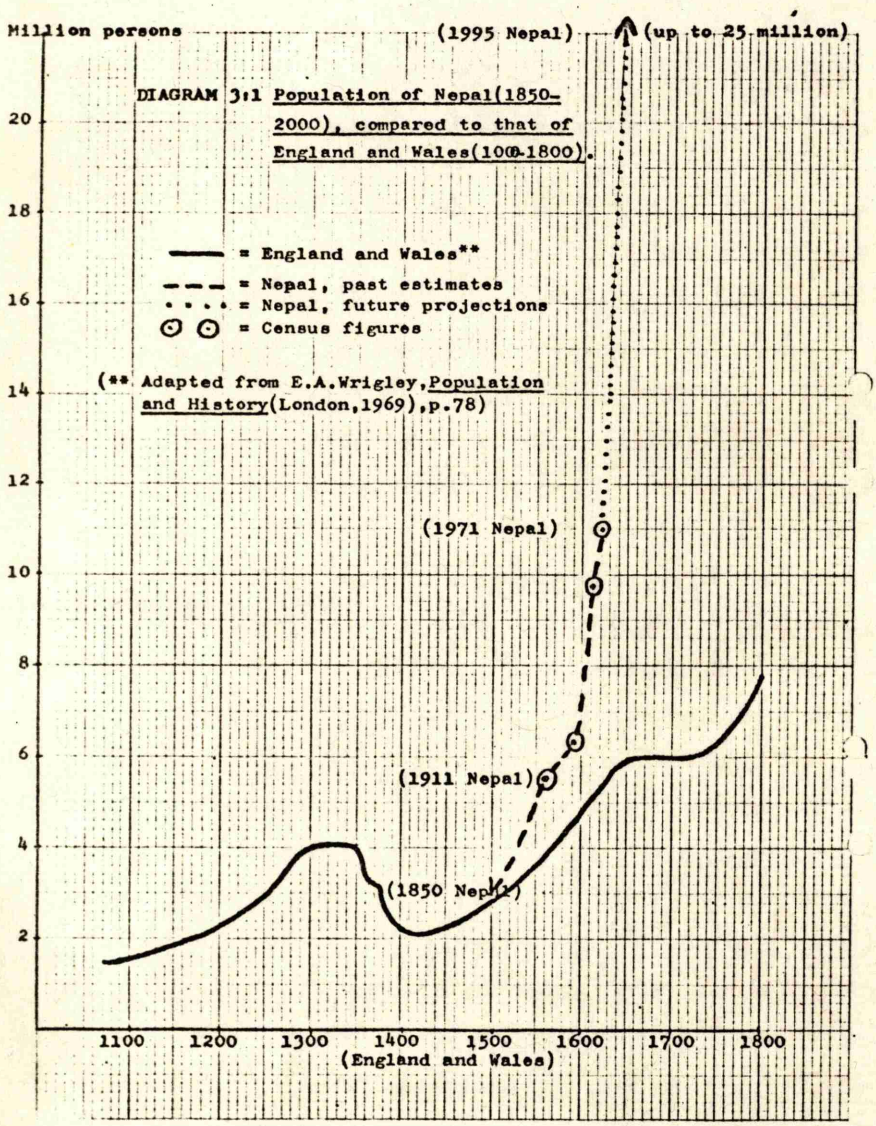
(for table 3:1 see next page)

TABLE 3:1. Growth of Population 1911-1961.

Year	Population	Percentage change
1911	5,638,749	-
1920	5,573,788	-1.2
1930	5,532,574	-0.8
1941	6,283,649	+13.5
**1954	8,661,853	+37.8
1961	9,753,378	+12.6
@1971	11,289,000	+15.7

(Adapted from B.P. Shreshta, The Economy of Nepal (Bombay, 1967), p.34. **, the total for 1954 is adjusted from the census of 1952-4). This is a provisional estimate, kindly supplied by the Royal Nepalese Embassy in London.

The decline to 1920 is ascribed by Shreshta to First World War casualties and the influenza outbreak of 1918, though there was probably also under-enumeration in 1920. The 1930 census was vitiated by a threat of war with Tibet, which meant that people thought that the census might be used for conscription purposes, and hence there is considerable under-registration. The 1941 census was affected by the large numbers recruited for the Second World War, and the casualties in an earth-quake in 1934 also lowered the numbers. Shreshta summarizes the growth rates up to 1954 as follows, "The average rate of growth during the period of 43 years from 1911 was 1.2 per cent a year. It was 2.2 per cent over the period of 24 years from 1930 to 1954 and 2.9 per cent over 13 years from 1941 to 1954".[5] The population in 1971 was 11,289,000 . By 1975 it is estimated that it will be between 11,750,000 and 13,100,000 according to U.N. estimates, though even the latter figure may be too low.[6] The Government Family Planning office unofficially calculated in 1969 that if family planning is not successful, and as yet there are few signs that it will be, then by 1995 there will be approximately 25,700,000 people in Nepal. In the 84 years since 1911 the population will have increased nearly fivefold. From the various community studies to be considered shortly, it seems that the population of many villages increased roughly five-fold between 1850-1950.


Million persons
(1995 Nepal)
(up to 25 million)
DIAGRAM 3:1 Population of Nepal(1850-2000), compared to that of England and Wales(1000-1800).
= England and Wales**
= Nepal, past estimates
= Nepal, future projections
= Census figures
(** Adapted from E.A.Wrigley, Population and History(London,1969),p.78)
(1971 Nepal)
(1911 Nepal)
(1850 Nepal)
20
18
16
14
12
10
8
6
4
2
1100
1200
1300
1400
1500
1600
1700
1800
(England and Wales)

If we allow a generous margin, and assume that only a three-fold increase occurred throughout Nepal, then the population of Nepal in 1850 was, at the very most, 3 million. Thus in the 150 years after 1850 the population is predicted to increase by a factor of ten. This enormous growth, which was already having huge effects early this century, can best be seen on a diagram. for diagram 3:1 see across.

In order to illustrate how dramatic is this rise in an almost purely agrarian country, with little initial capital, the graph has been compared to that for a period in pre-industrial England when that country may fairly be considered already to have been economically and socially more advanced than Nepal in 1950.

Much guesswork is involved in working out the probable present growth rate of Nepal's population. Between 1954 and 1961 it was calculated to be 1.8% p.a., and this was a widely accepted figure. Then a detailed medical and demographic survey of some 5,011 people, carried out by the Dooley Foundation and Hawaii University, produced the much higher growth rate of 2.7% p.a. for the years 1965-6.[7] It is possible that the growth rate was already rising as health improved, but it is more probable that the more intensive survey collected information on children missed in the national census. The Government Family Planning office accepted this figure in 1967, but in 1969 went back to an intermediate figure of 2.03% p.a.[8] Even with this lower figure, population will double in less than 35 years. This is a particularly high rate of growth when we consider that it is achieved against a background of continued high mortality. As has been pointed out, a major improvement in Nepalese health without fertility decline "would cause a disastrously rapid increase in non-productive children".[9]

The situation in particular tribal areas.

Anthropologists have noted population growth in most of the areas in which they have worked. Thus Hitchcock writes of the Magar village of 'Banyan Hill', "Figures from land records (although they are to be relied on with caution) suggest that during the past century, the thum's population has increased about fivefold".[10]

Since the thum now consists of about six hundred households,[11] it must then have consisted of about 120. Of the Sherpas we are told that "the great increase of the last hundred years coincided with the introduction and spread of the potato. In 1836 there were in the whole of Khumbu only 169 households, compared with the 596 households in 1957."[12] In other words the population increased 3½-fold in 120 years. If this rate continued there would be over a thousand households by the end of the century. For the Limbu, Caplan was unable to provide any of his own figures, but he quotes census figures for the Ilam district which show an approximate 40% increase in population between 1920-1961, a rate he believes applies to the Limbus. He records that "pressure on land was recognized as the principal cause of emigration as early as the 1890's".[13]

None of the above authors have, as yet, published any detailed demographic analysis, for instance of mortality rates, age-structure and so on. A brief attempt to provide such demographic statistics was undertaken in 1952-3 on a small sample of 218 persons living in a Bhotea village. Professor Kawakita attempted to show age and sex structures, number of children per mother, age at birth of first children of mothers, and age at death. His results are hardly satisfactory, and his conclusions somewhat vague; thus he writes "the death rate is fairly high, while the birth rate is not so high" and "on the whole the number of population remains almost stationary".[14] A somewhat similar investigation was carried out by Gorer on the Lepchas of Sikkim. He took a census of 176 villagers in 1937 and analyzed sex and age distribution, and the fecundity of married women. His figures for the latter suggest that women aged 50-70 were only producing on average two live children, but somehow the village managed to grow quite considerably. The oldest man in the village claimed that some 85 years previously there had been only four houses in the village, in 1937 there were thirty-three.[15] We have few studies of the non-tribal peoples of Nepal,

so that one small unpublished item is worth including. Gaborieau[16] informs me that in the Muslim sector of a village west of Pokhara where he did fieldwork, in 1803 there was one family of three brothers; in 1820, on the same piece of land there were 3 families, now (1965) there are 24 families. This was despite some migration to the Terai and India from the beginning of this century.

Undoubtedly the most detailed treatment of the demography of a Nepalese community as yet published is that by Pignede on the Gurungs. On the basis of a census of 496 inhabitants taken in June 1958 Pignede calculated the following: the age and sex structure of the population, age of mothers at the birth of their first child, age at marriage, age-specific fertility rates, the number of persons absent and their ranks in the army. He also briefly discussed mortality rates, and the effects of army service on the sex ratio. His findings will be discussed in detail later. Here it may be noted that he made no attempt to estimate the general population growth rate, or the long-term causes and effects of demographic change. He does, however, write that,

> "Without statistical information allowing one to study the population increase of the Gurungs during the last centuries it is not possible to verify the hypothesis that over-population has forced the Gurungs to serve under princes or governments abroad in order to relieve the situation. From the material I have been able to collect, one fact seems certain: the present situation, in the upper valley of the Modi for example, is that they (the Gurungs) can hardly feed their population which has, without doubt, increased considerably during the last eighty years".17A

The detailed analysis of the stages by which such growth has occurred in two Gurung villages will be given below.

General consequences of population growth in Nepal.

The causes of population growth and high fertility rates have hardly been discussed by those writing on Nepal. The probable consequences of continued or even accelerated population growth have received a little more attention, though anthropologists tend to refer to some of the effects - increased pressure on land leading to the splitting of holdings and emigration -

without going into much detail. The effects on work opportunities and unemployment, on capital accumulation and the distribution of wealth in the community, on diet and maternal health, on the rate of destruction of natural resources, on the availability of social services such as education, on family structure, and on the whole area which may loosely be termed 'religion and thought', have hardly been mentioned. Economists have shown interest in some of the problems. B.P. Shreshta of Kathmandu points out the following features of the Nepalese economy. The age-structure consequent on very high fertility is such that there is "heavy youth dependency". About 40% of the population in Nepal is aged fifteen or under. He continues, "the decline in the level of fertility can alone be an effective solution to the problem of huge waste of scarce resources on account of maintaining the growing army of children in countries like Nepal".[17B] The present population growth rates have a disastrous effect on any chance of economic growth. For example, there will be in the next few years a huge growth in the labour force, anything up to 2 million extra persons in the period 1955-75. He calculates that "The magnitude of investment required to absorb the annually growing labour force in the non-agricultural sector may not probably be less than Rs.400 million a year - the amount which is almost twice as much as the total outlay on the Five Year Plan financed largely from external resources in the form of outright grants!" He contines by saying that "the prospect for initiating a fairly high rate of economic growth in Nepal in the fact of mounting pressure of population is very bleak".[18] Put at the very simplest level, that of feeding the extra mouths, in order to keep the (very inadequate) 1961 standard of consumption and export of cereals, cereal production would have to be increased by about 42% by 1975, merely to keep pace with population.[19] Though it could be argued that this could be achieved by the

increased use of new hybrid seeds and fertilizers, the already acute shortage of protein and vitamins would still be exacerbated. As population pressure forces the use of more and more pasture land for cereal growing, the nutritional situation will deteriorate, even if absolute starvation were warded off temporarily.[20] Likewise the already over-grazed and over-cut lands, suffering increasing erosion, will deteriorate rapidly. After a very detailed study of the economics, soil, grass, cereals, livestock of an area to the north of Kathmandu, the investigating team came to the conclusion that the only possible solution to an already serious situation was that some of the present cereal land must be taken out of production, and thus "A policy of resettlement of the population is recommended".[21]

As the percentage and absolute number of unemployed is likely to rise considerably, the trickle to the towns will turn into a flood. In the villages the mutilated forests will finally be cleared to the ground. Meanwhile the attempt to improve social services will find it increasingly difficult to cope with the rising numbers. For instance, the Government Family Planning office informed me that universal education, planned for 5-11 year olds by 1985, cannot possibly be achieved. By 1995, they calculate, there will be nearly five million children aged 5-11, if present population trends continue; a number which equals half the total population of Nepal in 1960. Perhaps the most alarming feature of all is that this growth rate is being achieved <u>before</u> the very high mortality rate has really been affected by western medical and hygienic measures. Nepal has one of the highest mortality rates in the world, approximately 27 per thousand is the crude rate, and 150 per thousand for infants.[22] Such a high rate is not surprising since in the 1960's Nepal had the lowest health expenditure per head of any country in the world, and the second lowest doctor to patient ratio in the world.[23] The results of the rapidly

growing public water, anti-malaria, and anti-tuberculosis campaigns will therefore be enormous. Without a corresponding effective control of births, the population growth rate could rise to over 4% p.a. in the next ten years, or a doubling of the population in as little as twenty years.

The very serious effects of the present population situation is influencing the whole social and economic structures of the communities studied by anthropologists. This alone justifies us in taking demography as a central theme for anthropological analysis. Another justification is that through the analysis of demographic factors, which are principally a series of events over time, the inevitable tendency of anthropological accounts to be static cross-sections of a society and to give a false sense of equilibrium, may be partially corrected. Finally, as above indicated, anthropologists and other students, Pignède partially excepted, have given us very little information as yet on the health and demography of communities in Nepal. There are a few short preliminary studies of health conditions in certain regions of Nepal,[24] but we still know practically nothing about the medical demographic situation in particular communities.

Population change among the Gurungs.

There are four principal sources for the study of Gurung population; a nineteenth-century land tax on the whole of Nepal copied out by Brian Bodgson, official censuses since 1911, army recruitment records, and land tax records for particular villages. Each has great deficiencies and must be used with the utmost caution. Our first rough estimate of the number of Gurungs was made at the beginning of the nineteenth century by Buchanan, who wrote that in Kaski district "the Gurungs remain in these parts in great numbers" while in Parbat district "In the whole country it is supposed that there are 100,000 families, of whom three fourths are Gurungs".[25] It is important to be certain of the area of which Buchanan was speaking. Modern Parbat

in the 1952-4 census, only had some 164,962 inhabitants, or approximately 33,000 families at five to a family. Either Buchanan was speaking of a wider area or, as seems likely, he was accepting grossly exaggerated totals. It hardly seems credible that in an area where there are now certainly less than 50,000 Gurungs, there were one hundred and fifty years ago 75,000 Gurung families.

Not until the 1952-4 census were Gurungs distinguished from other ethnic groups: they then constituted some 2% of the total population of Nepal.[26] The only index the census enumerators could use of 'Gurunghood' is the fact that people speak Gurung as their 'mother tongue'. The total number of persons claiming to do so in censuses since 1952-4 is as follows.

TABLE 3:1B. Number of Gurung speakers in national census, present in Nepal

date	number
1952/4	162,192
1961	157,778

It would appear, at first sight, as if Gurung population declined during the 1960's. But it is more likely that these figures show that more people speaking and/or claiming Nepali as their mother tongue, especially among more isolated groups of Gurungs. This phenomenon was noted long ago in the Linguistic Survey of India, where it was shown that, for example in Sikkim, Gurungs were abandoning their old dialect in favour of what was then known as 'Khas'.[27] A more detailed analysis of the distribution of Gurung speakers is given in the following table.

TABLE 3:2 Distribution of Gurung speakers present in national census

	1952-4	1961
Eastern Hills	9,147	6,915
East Inner Terai	13	23
Eastern Terai	233	524
Kathmandu Valley	505	589
Western Hills **	149,554	147,499
Centre Inner Terai	2,511	1,157
West Inner Terai	30	1
Mid Western Terai	189	469
Far Western Terai	10	1
	162,192	157,778

** the two areas of 'Western Hills' and 'Far Western Hills' in the 1961 census have been amalgamated to compare them with the 1952-4 divisions.

The overwhelming majority of Gurungs live in the Western Hills area, but, as Pignede has explained,[28] the number of erstwhile Gurungs, who have often lost their language but not all their customs, is probably much greater in the Eastern Hills than indicated in the table above. It will be noted that the number of 'Gurungs' in the Eastern Hills has supposedly dropped by over 2,000 in the years between the censuses. This undoubtedly indicates linguistic change rather than emigration. Behind this difficulty lies the whole problem of "what is a Gurung"? This must await discussion until a later analysis of 'Gurung' history and religion. Yet it must be recognized that there is a very great difficulty in distinguishing tribal groups as mixed as those in Nepal. To select out one such "tribe" for study, as has often been pointed out, is somewhat artificial.

Even in the areas where Gurungs are congregated, they only form a minority of the population: in the Western Hills area in 1954, for example, they constituted only 4.7% of the total population.[29] Even in an area such as Kaski district, one of the longest-inhabited Gurung regions, there were only 21,413 resident Gurung speakers in a total resident population of 127,515 in 1961.[30] Furthermore, we have already seen that in a particular Gurung village, Thak, less than half the total of households were Gurung. This means, among other things, that it is difficult to infer too much from a general rise in population in areas where Gurungs are concentrated. Nevertheless it is worth examining the changes in population in the Kaski district as a whole.

TABLE 3:3 Population change in Kaski district, 1820-1961

Date	No. of households
1820/1	5,318
1952/4	23,982
1961	27,882

The 1952/4 and 1961 figures are based on the censuses of those years. The 1820/1 figure is based on Brian Hodgson's manuscripts where there is a transcript

of the "returns of the tax called Sāwani-phagu" collected in the year 1877-8 (Nepal style; western dating 1820/1).[31] This lists, village by village, the number of households and the amount of tax paid per village. It occasionally gives the type of landowners, number of widows heading households and other details. It is impossible to be sure of its accuracy, but the marginal notes and comparison of the names of villages with later censuses suggest that it may well be fairly reliable. From the table we can see that between 1821 and 1961 the number of households increased between five and six-fold. This seems to fit well with what we know of the expansion of the individual villages of Thak and Mohoriya. The households in 1821 were distributed in 47 named villages. The 1952/4 census showed nearly five times the total of households, but the number of villages had only increased by 13 to a total of 60.[32] Though it is impossible to be sure that they are speaking of the same area when they refer to the same named village, a comparison of the situation in selected villages is interesting.

TABLE 3:4. Comparison of selected villages.

Name(as in 1820/1)	Total number of persons 1820-1**	1952-4
Armalla	384	2,248
Arva	504	1,719
Bijaypoor	318	1,229
Galel	930	2,540
Ghachock	894	2,214
Harpan	498	1,353
Mouja	306	1,817

** The 1820 figures are only for households. It has been assumed that there were six persons per household. This is probably a generously large estimate, but allows for any decrease in size over the last 130 years down to the present size of about 5 per household (according to the censuses).

Thus some villages, for example Mouja, a village very near to Thak, increased six-fold, while others, such as Harpan, less than three-fold. Unfortunately it is impossible to identify Thak itself, but it seems possible that it is represented in the 1820/1 list by Chah-chock. Chah-chock is a hamlet south of Thak, but in the same panchayat, and it is given in the 1820/1 document as containing 65 households. This cannot merely refer to the modern Chah-chock which, in the 1952-4 census,[33] still only contained some 391 persons. The fact

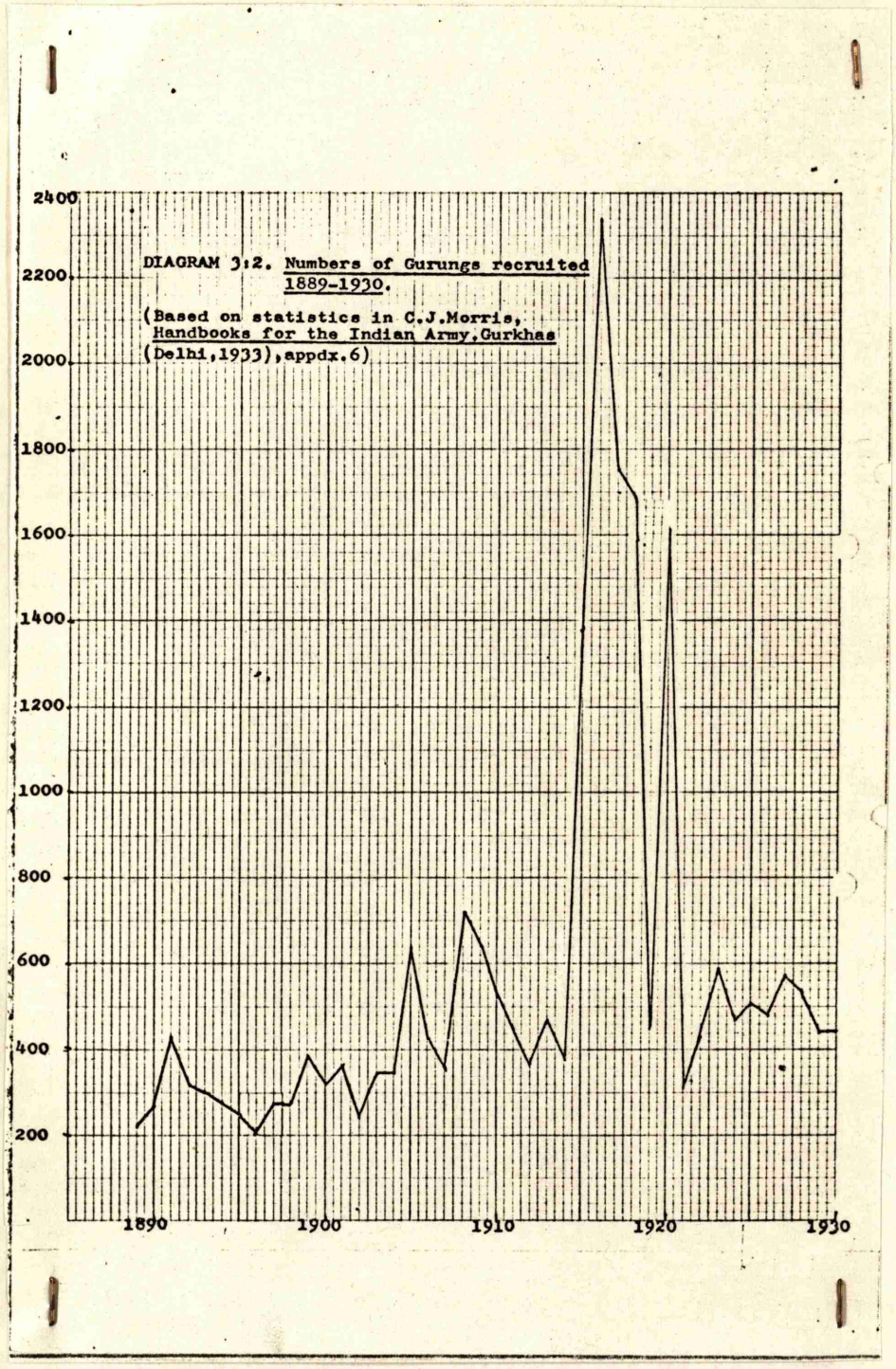


DIAGRAM 3.2. Numbers of Gurungs recruited 1889-1930.

(Based on statistics in C.J.Morris, Handbooks for the Indian Army, Gurkhas (Delhi, 1933), appdx.6)

that it referred to Thak seems all the more likely since the old name for Thak is 'Tolson sarti' or the Tolson (Gg. name for Thak) sixty, meaning sixty households. This fits with the actual 65 households fairly well. The total population of Thak and Chachok in 1952-4 was 1504, which suggests just under a four-fold increase.

From 1850 on Gurungs were officially recruited for the British army. Fluctuations in the numbers of recruits per recruiting season, for Gurungs in western Nepal, are shown in the accompanying diagram.
for diagram 3:2 see across.
During the years up to the First World War the numbers fluctuated between 200 and 719 p.a., but since we do not know the proportion of young men who were enlisted, we cannot estimate the total population. During the war, however, it seems likely that at least three quarters of the suitably-aged males were recruited. For instance, in the village of Thak, 5/6 of those who were aged 17 by the end of the war have served in the army. In Mohoriya, according to my census of 1969, 7/10 of the Gurungs who were aged 17 by the end of the war served in the army then. If, as seems likely, some areas had a slightly less intensive recruitment than these two fairly accessible villages, then the total Gurung population in 1961 will be higher than that stated below.

The figures upon which the diagram are based are only those for the men who enlisted in regular battalions. During the First World War it is estimated that some 55,000 enlisted thus, but altogether over 200,000 'Gurkhas' joined the British service in one capacity or another.[34] It is impossible to know whether Gurungs formed as high a proportion of all those who went to the army in some capacity, as they did of those enlisted in the regulars. During the four recruiting seasons 1914-5 to 1917-18 some 8,168 Gurungs were recruited, of which 996 or approximately 1/9 came from East Nepal. If we assume that Gurungs did join the non-regular forces as much as other groups, then approximately

between 20 and 30 thousand Gurung men would have left Western Nepal to servce during the First World War. If we make the assumption that the age structure was similar at that time to that for the Kaski district in 1961, or Mohoriya in 1958, where respectively 25% and 26% of the males were aged between 15-29 and 16-29 years,[35] and if we make the assumption that it was during this 15-year band that troops were recruited, then we have the following total numbers of Gurungs at that time. Assuming that 75% of the males of that age group were recruited, then there must have been, taking the lower figure of 20,000 total recruited, roughly some 108,000 Gurungs in all, in the Western region in about 1916. There are so many unprovable assumptions here, that the figure is hardly reliable, but however we juggle with the figures, it is clear that already by the First World War, the Gurungs were numerous in western Nepal.

Growth of a Gurung village: Mohoriya.

From genealogies, Pignède calculated that the village of Mohoriya was founded in about 1815-20. Some thirty years later there are said to have been 12 houses.[36] A list of those paying taxes for maize and millet land which I saw during my visit to Mohoriya gave a total of 69 households; it was undated but was probably compiled in about 1940. In June 1958, at Pignède's census, there were 98 households; the total population, including those absent, was 496. Thus the number of households had increased eight-fold in the hundred years after 1850. This very great increase was undoubtedly caused partly by migration from other villages, especially from Dansing to the south. Between 1958 and December 1969, when I undertook a census of Mohoriya, the population had only increased by twelve persons.[37] But this, in fact, conceals a considerable natural growth in the intervening 11½ years. Comparing the censuses we find that there had been 115 births (52 male and 63 female) to families present in both enumerations. Another 21 girls had come in as wives from other villages. Against this total influx of 136, some 30 males and 43 females had disappeared from the village either through death or marriage out. Thus there had been a natural increase of 63 persons on a total population of 418.[38]

Assuming that roughly the same number of girls married out as into the village, this is a growth of just over 15% in 11½ years, which suggests a natural rate of growth of a little over 1% p.a. This, as we have seen, is lower than that for Nepal as a whole, and it may also be unnaturally low for a Gurung village due to the distortion created by emigration.

In 1963 some twelve Gurung households and one Sunwar family left the village, in order to take the free land in the Terai being opened up as a result of malaria eradication. These were more than averagely large households, and prolific ones (one, for example, is known to have had seven children since it left the village). They have only been replaced by some 30 immigrants, so that the natural increase of 63 persons is offset by a new outflow of 48. There is some difficulty in matching the two censuses, and this accounts for the slight discrepancy of three persons which is left after we add in the recorded population increase of 12 persons.

Undoubtedly natural increase has been uneven, and therefore it is not entirely fair to take as an example the successful Gurung lineage which dominates Mohoriya. But the details are recorded by Pignede in unusual detail and illustrate the swift growth that is possible.[39] The number of surviving males at each generation from the founder is as follows: founder -1, 2nd -4, 3rd -11, 4th -18, 5th(so far) -29.[40] Thus the surviving males have been increasing at a rate of between 65 and 400% per generation. In the eleven years between censuses, some seven males had died in this lineage and 25 had been born. We will see that this is, as compared to Thak, an unusually swift growth for Gurung families.

Growth of a Gurung village: Thak.

A detailed analysis of the growth of this village as indicated in genealogies and land records will be given in chapter 21 below. Such figures as we have may be summarised as follows.

TABLE 3:5 Population change in Thak, 1954-1971.

	No. of houses	households	total persons (present)	male (present)	female (present)	absent
1954 Thak	174	174	898	438	460	68
*N.D.	36	36	215	109	106	27
total	210	210	1113	547	566	95
1961 Thak	201	206	1000	444	556	121
N.D.	39	41	214	103	111	47
total	240	247	1214	547	667	168
1971 total	?	?	1733	828	905	?

The above totals are based on the respective censuses of those years. * Naule danda, a hamlet to the south of the main village.

Although it seems likely that the boundary was not changed with the introduction of the panchayat system in the early 1960's, I was unable to confirm this. Assuming that there has been no change in boundary, then the total resident population has risen from 1113 in 1954 to 1733 in 1971. This is probably lower than the true total, due to under-registration.[41] Thus in the seven years after 1954 the population appears to have risen by less than 10% (though the absentee population grew much faster than this), while in the ten years after 1961 the total resident increased by at least 40%. ~~Vital registration or an earlier census~~, it is impossible to know the reasons for this apparent change. Improvement in public health (a piped water supply was installed in the main village of Thak in c.1960), or increased immigration from the south are obvious hypotheses.

The degree to which there have been changes in mortality patterns in recent years will be one of the questions analysed in the following pages. The central theme of the discussion will be the way in which service in the army has affected Gurung demography; has the absence of many males for periods of three years at a time raised the age of marriage and interrupted sexual intercourse, hence lowering fertility? Have the deaths in two World Wars and the introduction of diseases from abroad further lowered the Gurung growth rate?

More generally, what are the social institutions which influence fertility and mortality patterns? Although the analyses are perforce based on inadequate numbers, the importance of the subject makes it imperative that we have some discussion, however tentative. Already there has been much emigration from the Hills region. In 1967-8, Charles McDougall discovered that "Although their numbers are still relatively small, the widespread eradication of malaria in the Terai and mounting economic pressure in the Hills have created conditions which make it extremely likely that not only will resettlement continue, but that its magnitude will increase greatly in the future". His "best solution" is to "strengthen the economy of the Hills region", though his only real suggestion as to how this should be done is to improve horticulture, "especially fruit orchards".[42] This study hopes to show some of the reasons for "mounting economic pressure", and to show that no solution which does not deal with demographic factors behind such pressure can begin to deal with the problem. Population control is absolutely necessary.

CHAPTER THREE. NOTES.

1. 1952-4 Census, p.xv and table 17, p.69.
2. Ibid., p.viii.
3. 1952-4 Census, p.xiv and table 17.
4. For a description of these 'stages', now somewhat discredited but still a useful preliminary typology, see UN, Determinants and Consequences of Population Trends, p.44.
5. Shreshta, Nepal Economy, p.36. (Krotki and Thakur 'Population of Nepal', give strong evidence for thinking that there has been considerable under-enumeration in the 1952/4 and 1961 censuses.)
6. Ibid., p.37 cites the UN. figures. The Nepal Central Bureau of Statistics, in its 1968 'Population Projections for Nepal, 1961-81', p.4, gives an estimate of 12,392,794 for the year 1976.
7. Worth, Nepal Health, p.31.
8. Figures were given informally in an interview. Krotki and Thakur, 'Population Size..in Nepal', p.21 estimate a growth rate of 15 per thousand by subtracting death rates from birth rates.
9. Worth, Nepal Health, p.31.
10. Hitchcock, Magars, p.104.
11. Ibid., p.14.
12. Fürer-Haimendorf, Sherpas, p.10.
13. Caplan, Land and Social Change, pp.55,6.
14. Peoples of Nepal Himalaya, iii, ed. Kihara, pp.232-8. There is also a brief demographic analysis in Lang 'Kunde Hospital', which also concludes that population, this time mainly Sherpa, is static (p.7).
15. Gorer, Himalayan Village, p.69 and village plan, p.437.
16. I am indebted to Monsieur Marc Gaborieau for these approximate figures, given to me in conversation.

17B. Shreshta, Nepal Economy, p.30. 17A. Gurungs, p.219.

18. Shreshta, Nepal Economy, p.40
19. Ibid., p.84.

20. The already serious deficiencies are shown in Worth, Nepal Health, ch.5, esp.p.52, table 10. While 100% of the villages had, by W.H.O. standards, enough cereals, under 40% had enough beans/nuts, milk and only 11% enough fats and oils. 0% had enough vegetables, fruit, meat, fish or poultry.
21. Wye College Report, unfortunately unpaginated; "Recommendations" of 'Crop Production' report.
22. Figures for mortality are given in Worth, Nepal Health, p.28 and are discussed in more detail in ch.8 of this thesis. An even higher rate of 32 is suggested by Krotki and Thakur, 'Population Size... in Nepal', p.91.
23. King (ed.), Medical Care in Developing Countries, 1:1.
24. The few existing studies are listed in the bibliography.
25. Buchanan, Account of Nepal, pp.27,374.
26. 1952-4 Census, p.46.
27. Grierson, Linguistic Survey of India, p.182.
28. Gurungs, p.47. It is also worth noting that 1/9 of the Gurungs recruited during the 1914-8 War came from East Nepal, whereas by the 1952-4 Census, only 1/16 of the 'Gurungs' were shown as coming from E. Nepal. Although recruiting may have been more intense in the East in the earlier period, it is unlikely to have decreased (as a proportion) to a half of its former level.
29. 1952-4 Census, p.46. It is not made clear whether this refers only to those present at the time of the census, or includes those absent. From the previous table it is probably the former.
30. 1961 Census, tables 7,8.
31. The document is in the India Office Library, Hodgson Ms, vol.3, fol.139ff. I am grateful to Dr. N. Allen for help with its dating.
32. 1952-4 Census, table 3.
33. Idem.
34. Northey and Morris, The Gurkhas, p.267.
35. 1961 Census, i, table 1; also Gurungs, p.48.
36. Gurungs, p.62.

37. Four Brahmin and one Leather-worker families, numbering 21 persons in all, who had settled in the fields below Mohoriya have not been included in my calculations, partly because they were outside the area studied by Pignède, partly because I was unable to obtain full details concerning them.
38. Since 78 persons, out of Pignède's original 496, emigrated out, we only have figures for the 418 who did not leave.
39. Gurungs, p.190 contains details in a diagram.
40. Pignède, Gurungs, p.190, gives 21 males, but at his visit not all of generation 4 had married; even eleven years later there were some male children still likely to be born.
41. But a comparison of the census with the figures obtained by a janasankyā pharam does not indicate that the under-registration was very great. In 1968/9 the total of persons listed (which has a margin of error of about ± 15, due to the failure of one ward head to fill in his form) was 1810. This includes those absent; if the same numbers were absent as in 1961 this would give a total of 1642, as opposed to the census total of 1733 persons in 1971.
42. McDougall, Family Economy, pp.118-9. For a further discussion of emigration see the next chapter, below.

CHAPTER FOUR. AGE/SEX STRUCTURE AND MIGRATION.

There are many ways in which the age/sex structure of a population, both at a point in time, and over time, are important. Such a structure will have a great influence on economic life, for example the proportion of the population aged between 15 and 49 will have an enormous influence on general economic growth and employment rates.[1] It will also affect the possibility of providing social services.[2] The proportion of elderly people is also likely to influence the attitude to old age and authority in general.[3] Furthermore, analysis of age/sex structures is particularly important in societies, such as the Gurungs, where we have no registration of births and deaths and little information about past fluctuations in population. The age-composition of a population reflects the past demographic history of a community, the balance between births and deaths, the presence of past famines and epidemics, particularly high mortality among certain age and sex groups.[4]

There are a number of problems in even the simplest analysis of sex and age structures. Often it is impossible to obtain accurate ages in non-literate societies, but this problem is largely absent among the Gurungs because everyone knows the year in which he was born in a twelve-year cycle of lho.[5] Nevertheless there is still some inaccuracy among very young children, and in the ensuing tables and graphs, children aged up to one year are probably under-represented, partly because of the characteristic omission of very young infants, partly because of the difficulties of interpreting the lho system. This is unlikely to affect the first five-year age group of young children as a whole or later ages to any significant extent. Another difficulty which will constantly recur in the following analysis is whether to count those temporarily absent in the army and elsewhere as part of a Gurung village or not; in other words whether to speak of the de jure

or de facto structure. For certain purposes their existence is the significant fact, for instance when we work out the total productive assets of the village, either economic or demographic, whereas for other analyses, for instance the way in which the land is worked and the supply of labour, it is their absence or non-existence that is important. For this reason it is necessary to give an analysis of both de jure and de facto populations.

For purposes of analysis we will divide the discussion into 'age structure' and 'sex structure' although, in fact, the two are too interlinked to be really divisible. We may also adopt an over-simple, but useful, classification of age-structures originally suggested by Sundbärg and summarized as follows: "He identified three types of population: (a) progressive, having a high proportion of children and a high rate of growth; (b) stationary, having moderate proportions of children and aged person with slow growth or stationary numbers; (c) regressive, having a high proportion of aged persons and declining number".[6] Most non-industrial societies exhibit pattern (a) in having a high proportion of children, but not necessarily in having a high growth rate. It will be one of the tasks of this chapter to see to what extent the Gurungs fit into this simple model, and to see how their age and sex structure differs from other technologically comparable societies. In the final section there will be a brief discussion of the other crucial demographic variable, migration.

Age Structure.

The stated ages of the members of 100 households in Thak, 1969, are as follows.

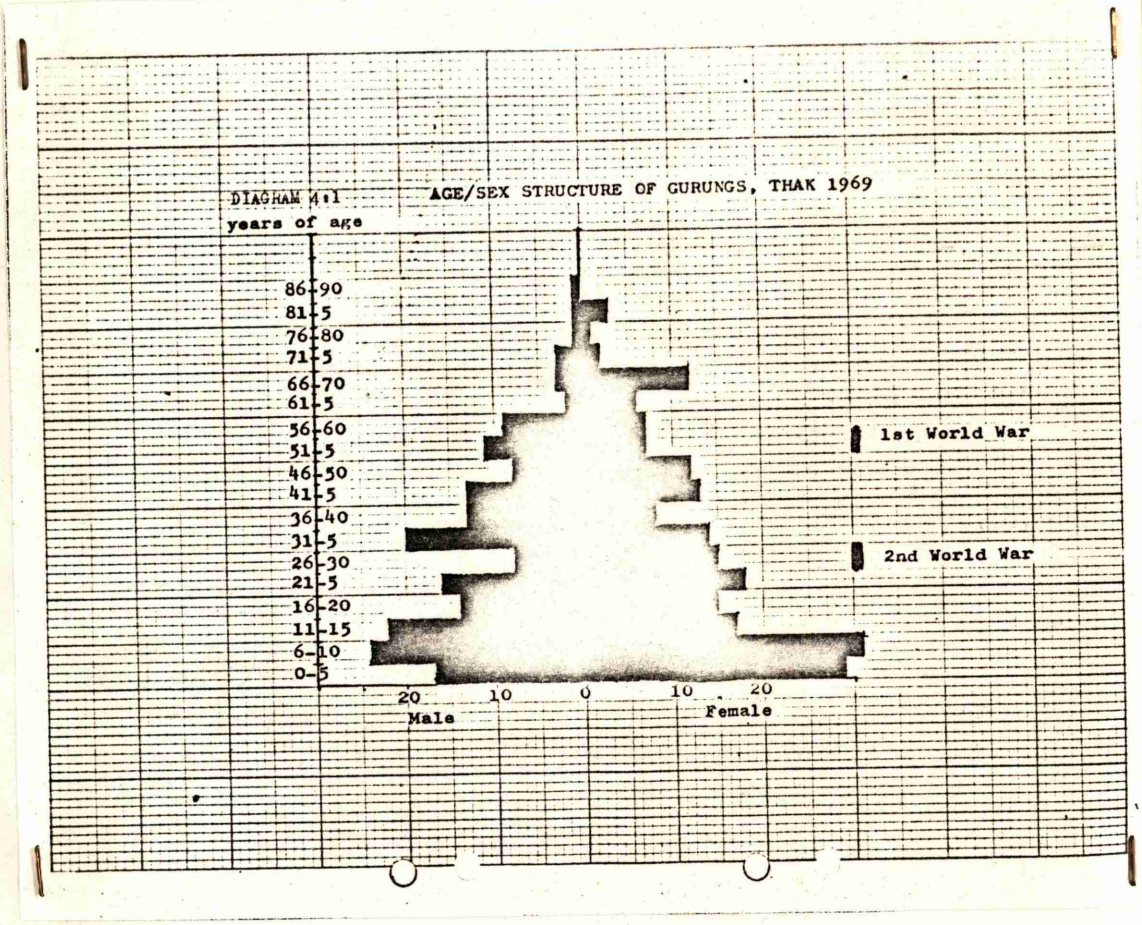


DIAGRAM 4:1
AGE/SEX STRUCTURE OF GURUNGS, THAK 1969
years of age
86-90
81-5
76-80
71-5
66-70
61-5
56-60
51-5
46-50
41-5
36-40
31-5
26-30
21-5
16-20
11-15
6-10
0-5
20
10
0
10
20
Male
Female
1st World War
2nd World War

TABLE 4:1. Gurung and non-Gurung age structure, Thak.

Ages(years)	Gurungs		Non-Gurungs		Total	
	male	female	male	female	male	female
0-5	17	24	8	9	25	33
6-10	24	26	11	13	35	39
11-15	22	17	7	15	29	32
16-20	14	15	8	7	22	22
21-5	16	18	5	6	21	24
26-30	8	15	3	5	11	20
31-5	20	14	3	2	23	16
36-40	13	8	4	3	17	11
41-5	13	13	3	3	16	16
46-50	8	12	6	4	14	16
51-5	11	7	4	2	15	9
56-60	9	7	2	5	11	12
61-5	2	6	0	1	2	7
66-70	3	12	1	0	4	12
71-5	3	2	1	0	4	2
76-80	1	1	0	0	1	1
81-5	1	3	0	1	1	4
85+	1	0	0	0	1	0
	186	200	66	76	252	276

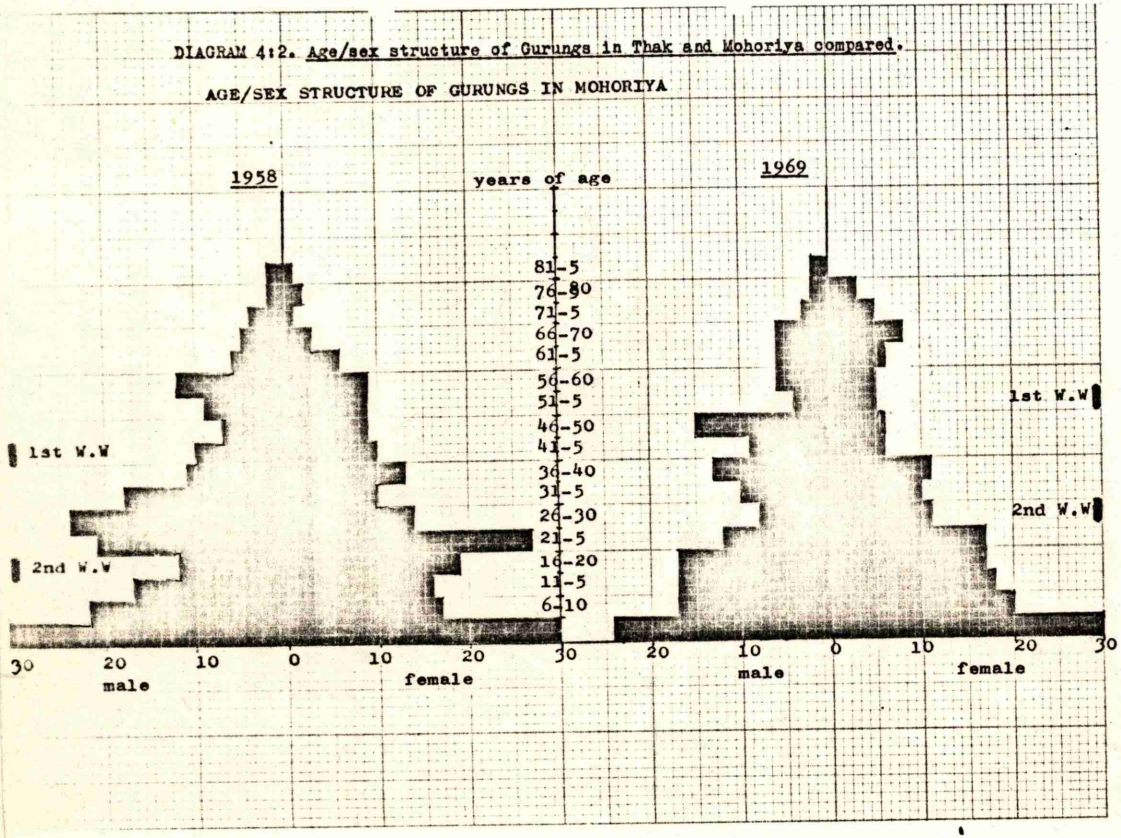
Note: those temporarily absent at school, in the army, or in other work are counted in the above table, but those making a short visit to Thak at the time of the Census are not included.

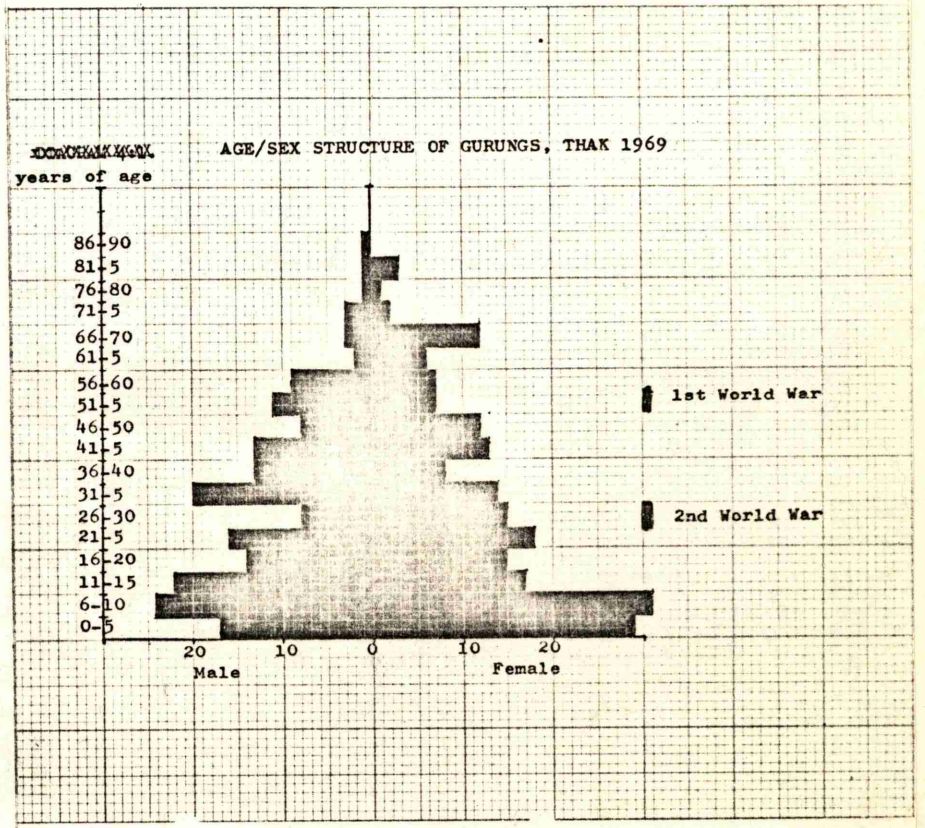
The figures may be more easily assimilated in diagramatic form, as in the following.

for diagram 4:1 see across.

The first, and most general, point, is that the shape of the diagram is half-way between the 'ideal-type' shape of pre and post-industrial populations. It lacks the wide base and very sharply tapering pyramid of a rapidly expanding population, or the bell-shape of some modern western countries such as Sweden.[7] Another way to illustrate this intermediate position is to look at the proportion of the total population in various age-groups. It is characteristic of many developing countries that up to 50% of the population is aged under twenty; thus Ceylon in 1955 had 50.4% of its population under this age. On the other hand, so-called 'developed' countries characteristically have 20-30% of their population under this age, thus England and Wales in 1958 had 29%, whereas in 1821 it had had 49%.[8] Of the total 386 Gurungs in Thak, some 153 or 39.64% were aged under twenty. This is almost exactly half-way between

DIAGRAM 4:2. Age/sex structure of Gurungs in Thak and Mohoriya compared.





England and Ceylon. If we turn to the non-Gurungs, however, we find that 71/142, or exactly 50% were aged nineteen or less. The latter figure is much closer to the national average for Nepal; for example, in 1961 the proportion under 20 in the Kaski district as a whole, in which Thak is situated, was 48.87%.[9] For Nepal as a whole it was 50%.[10]

Another way of analysing the data, makes it possible to work out the proportion of the population who are too young or too old to be maximum economic producers. We may compare the figures to those for two other societies, a tribal group in Africa, and a western society.

TABLE 4:2. Thak and other groups compared: Sundbärg's age-divisions.

Group	Year	% Youth, 0-15	Middle age 15-49	Old age over 50
Thak, total	1969	33.7	49.4	16.9
Thak (Gurungs only)	1969	31.4	50.3	18.4
Yao (with absentees)	1946	42.6	47.4	10.0
Sweden	1940	20.4	54.8	24.6

note: The figures for Yao and Sweden and the general lay-out of the table are taken from J.C. Mitchell, 'An Estimate of Yao Fertility', Africa, xix (1949), no.4, pp.301.

It will be seen that the Gurungs on their own have a pattern which is nearest to that for Sweden, with less young people, over 50% in the age range 15-49, and a considerable number of people aged over 50. As far as economic productivity is concerned, this would appear to be a reasonably favourable balance.

It could be objected that an analysis based on only one (very small) sample is not very convincing and that we need to know whether the Thak age structure is typical of the Gurungs. Fortunately we have figures for another Gurung village, Mohoriya, in a different valley, obtained at two points in time, in 1958 and 1969.[12] The age-sex structure of that village at these two dates and that of Thak in 1969 are shown in the accompanying diagram.

for diagram 4:2 see across.

There are considerable differences between the three diagrams. For example if we look at those in the 0-5 year age-group we find a much smaller proportion in Thak than in Mohoriya. This may be related to the fact that there seem to have been less males born in Thak during the 2nd World War than in Mohoriya. But if we look at the diagrams as a whole their shape is very alike, neither particularly steeply graduated nor having the characteristic 'bell-like' shape of an ageing population. The situation in the two villages in 1969 is particularly alike. Nor is it possible to see a very great change over time in the single village of Mohoriya. Particular features have undoubtedly changed. Thus the large number of girls aged 21-5 in the earlier census has disappeared by the latter date - presumably through marrying out of the village since, as we shall see, maternal mortality is not high among the Gurungs. It is possible, however, to note one major change; the latter pyramid is getting steeper, the bulge at middle age of earlier days is disappearing, and one is perhaps moving towards a situation of increasing youth-dependence. To investigate this and other differences further we need to break the diagrams down into figures.

In the following table we compare the proportion of Gurungs in three age categories.

TABLE 4:3 Percentage of Gurungs in three age categories.

Place, year	% aged 0-15	16-50	51+
Thak, 1969	33.7	48.4	17.9
Mohoriya, 1958	32.5	50.1	17.4
Mohoriya, 1969	36.1	46.4	17.5

The most striking similarity is in the proportion aged 51+ years; all three fall within an amazingly narrow range. There is also considerable similarity between the situation in Thak in 1969 and that in Mohoriya in 1958. But between 1958 and 1969 the situation in Mohoriya changed considerably and the ratio of those 0-15/16-50 changed from 32/50 to 36/46. It is probable that the reason for this change was the migration of a number of Gurung families, containing a larger than average number of young adults, down to newly-opened lands in South Nepal. This migration will be discussed later in the chapter. With such migration, the situation in Thak

appears to be normal - unless the Gurungs in Mohoriya are also, for some reason, exceptional.

The Gurungs themselves are divided into two strata or jats as we have seen in an earlier chapter. The carjat who are normally wealthier probably arrived earlier in Thak and Mohoriya than the sorajat and we might therefore expect there to be a difference in their respective age-structures, with more old people among the former. That this is in fact so may be seen from the following table.

TABLE 4:4. Percentage of Gurungs of the two jats in each age group, Thak, 1969.

JAT	% aged 0-15	16-50	51+	Total Persons
sorajat	39.0	48.3	12.7	118
carjat	31.3	48.5	20.1	268

While the proportion aged 16-50 is almost identical, the sorajat have a considerably higher proportion of young members and fewer old people. We will see later that this cannot be accounted for by higher mortality rates among the sorajat, nor is it due to different emigration rates. It must therefore be due to differences in immigration or fertility. For example a larger number of sorajat households have come into the village fairly recently and have not had time to grow old.

Table 4:2 above, where Gurungs and all those living in Thak were compared, already suggested that Gurungs and non-Gurungs in Thak exhibit different age-structures. This can be seen more precisely in the following table.

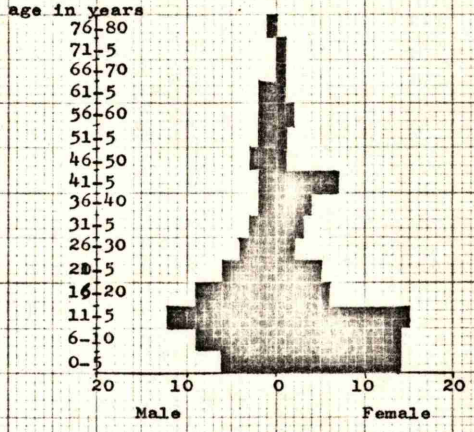
TABLE 4:5. Percentage of Gurungs and non-Gurungs in each age group, Thak, 1969.

	% aged 0-15	16-50	51+	Total persons
Gurungs	33.7	48.4	17.9	386
Non-Gurungs	44.4	43.7	11.9	142

By 'Non-Gurungs' in this context we are, in fact, largely talking about Blacksmith and Tailor castes who represent 18/23 of the families involved. The most striking fact about these predominantly lower caste families is that here, for the first time, we find a higher proportion

DIAGRAM 4:3. Age/sex structure of non-Gurungs* in Mohoriya, 1969.

(* Pun Magars have not been included here, but under Gurungs, for reasons explained in the text)



aged 0-15 than 16-50. Thus the economically weakest group, who own little land, also have to support a higher child-dependency ratio. But if we break down the figures still further we find that the situation is more complex than this; for example the Tailors only have 34.2% of their members aged under 16, which is similar to the Gurungs, whereas the Blacksmiths have 45.8% of their members aged under 16 and the same percentage aged 16-50. But we are beginning to get into such small numbers with these sub-groups that very small fluctuations in numbers can make a huge percentage difference. If we turn to Mohoriya in 1969, the situation of non-Gurungs can be seen in the accompanying diagram.

for diagram 4:3 see across.

The diagram shows the large proportion aged under 16 and the rapidly narrowing pyramid characteristic of a group whose population is increasing fast. I am unable to explain the curious difference between the males and females under ten years of age; the numbers are so small, it could be due to chance.

Finally, we may re-look at Diagram 4:2 to see whether it provides any evidence concerning particular features of mortality or fertility in the past. This is an extremely complicated operation since a bulge or gap in certain age groups may as easily represent features of the fertility history of a previous generation as a certain mortality pattern at the time of the bulge/gap. Another complication, that of in-marrying girls from other villages adding to the female side of the diagrams from the age of 20 on, means that over that age we have to restrict ourselves to males only. The diagrams show when the First and Second World Wars occurred, both in relation to people being born and to those aged 20-5 at the time (the fit is only approximate since the wars did not exactly over-lap with the five-year age-groupings) It is noticeable that in all three groupings, during both wars, there is a considerable indentation in

the male births during the war (except in Thak for the First World War). It is hardly likely that all these cases can be accounted for by a shortage of young males or females in the previous generation and indeed we can see that this is not so in several cases. Therefore it seems that we can accept the suggestion made by Pignède[13] that the mass exodus of men during the Wars led to a low number of conceptions in certain villages.

If we assume that those aged 20-5 at the time were the most likely to be killed during the Wars we may test the effect of actual mortality on the male age structure. The diagrams do not show any striking correlation, though there may be slight traces of a relationship in the Mohoriya, 1958, diagram. For Thak there seems no obvious effect, a fact which will be explained later when it is shown that deaths during war have not been a major cause of mortality, and were, in any case, spread out over men aged 20-40.

Although the evidence is not conclusive, there is no obvious sign of a really serious epidemic or famine in the past in either village. This negative suggestion is, we shall see, corroborated by villager's statements in Thak and by an analysis of the actual date when deaths occurred.[14]

Sex-ratio.

The question of sex-ratio must be divided into two when speaking of a people such as the Gurungs where there is very considerable labour migration. There is the sex-ratio of all those who are de jure members of a Gurung community, and there is the ratio of those actually living in such a community at a point in time. Both are important facts, and may influence many other features of social life, for example age and economic transactions at marriage, relations between the sexes, the organization of labour and so on. For example, it has been suggested of another society where the males migrate to work that "the abnormally low masculinity of the adult Reserve population, which is mainly the result of labour migration, is conducive to problems such as adultery, prostitution and the excessive dependence of married women on their matrilineal male relatives".[15]

The society of which this was written was one where between 46.8 and 69.3% of the males aged 18+ were away on wage labour.[16] This is remarkably similar to the figure in many Gurung villages where, for example, when Pignède visited such a village, some 62% of the men aged 19 to 45 were away from the village on wage labour in the army or elsewhere.[17] We may wonder, therefore, how the situation with regard to morals and economics compares to that in other migrant labour situations.

Pignède found that when he visited Mohoriya there were more males than females (220/198) if all those temporarily absent were counted in. He then goes on to argue that this is a general phenomenon in Gurung villages: "In all the villages one encounters more men than women in the under 65 age group" and "I have noted this fact in all Gurung territory". Having decided that this is so, he suggested possible reasons, "It seems that infant mortality among girls is higher than among boys. But above all, women die in childbirth".[18] But impressions are not the same as censuses and it was once again, as in the case of preferential marriage, fatal to generalize from too small a sample. The ratio I discovered among Gurungs when in Thak and re-visiting Mohoriya is shown in the following table.

TABLE 4:6. Sex-ratio of Gurungs in two villages.

	Aged to 65		All ages	
	male	female	male	female
Thak, 1969	177	182	186	200
Mohoriya "	158	162	171	178

It will be seen that in both villages, both in those aged under 65 and in all ages combined, females outnumbered males. Thus, if Pignède had visited his village ten years later he would have come to a different conclusion. Later it will be argued that maternal mortality is relatively low among the Gurungs and the above figures support this conclusion rather than Pignède's arguments about high female mortality. In fact the ratio of females to males may be higher in Gurung villages than in Nepal as a whole, where in 1954 it was calculated that there were 99 females to 100 males.[19] But until we have more studies it would be foolish to generalize f

DIAGRAM 4:4. Proportion of Gurung men undergoing army service, now or in the past, Thak,1969.

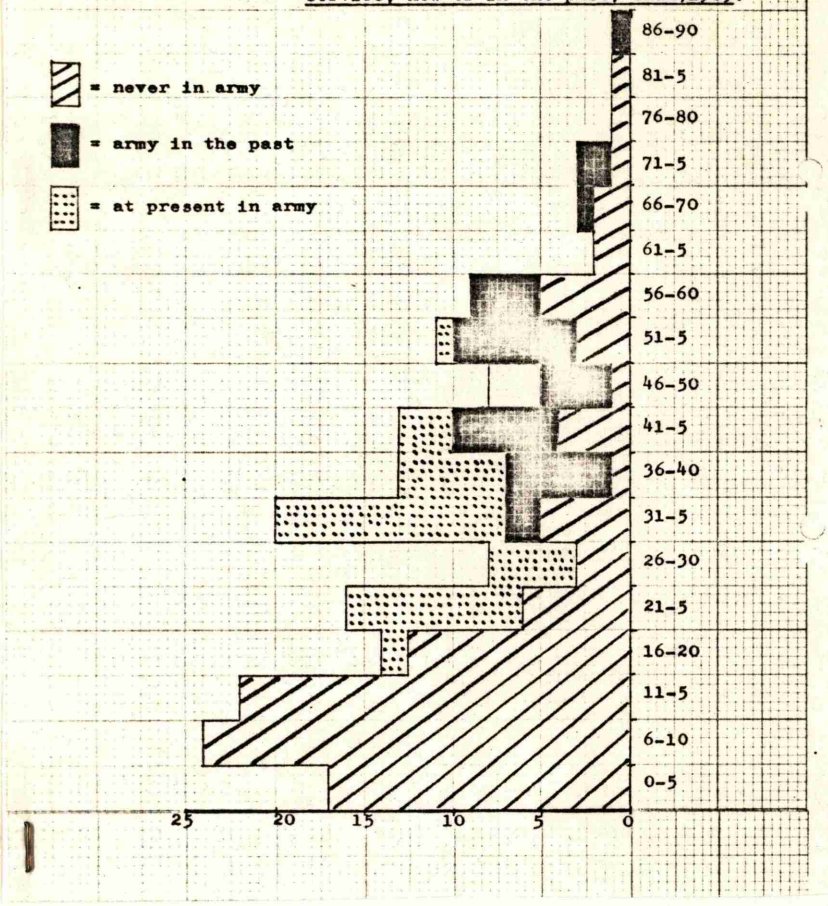
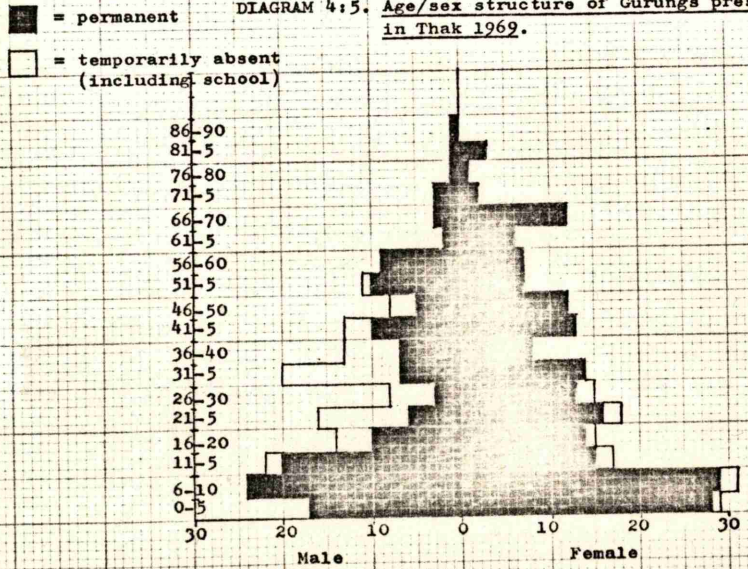


DIAGRAM 4:5. Age/sex structure of Gurungs present full-time in Thak 1969.



from a sample almost as inadequate as Pignède's.

Temporary migration.

From before the beginning of the present century, but more intensively since the First World War, the Gurungs have been a society based on migrant labour. Almost all those leaving the village have enlisted in the British, or, since partition, Indian armies and they serve between three and twenty-five years (normally between ten and fifteen) in India or the Far East.[20] The proportion of Gurungs in Thak in 1969 who had spent a year or more in the army (including police, and civilian work at army camps)[21] is shown in diagram 4:4.

for diagram 4:4 see across.

It will be seen that a majority in each five-year period from 21 to 55 have been in the army. Of 109 Gurung men in Thak aged twenty-one or over, some 74 (67.9%) are, or have been, in the army. The diagram distinguishes past and present service, and shows that in 1969 of 57 men aged 21-40, some 34 or 59.6% were serving in the army. Another eight had already completed a spell of army service. The effect of the absence of up to 60% of the males at the peak of their productive labour on village agriculture will be discussed later, as will the effects on fertility and marriage. As Pignède rightly emphasized, we are looking at a society "in demographic disequilibrium, composed of children, women, old people and a small number of men aged over 30 year".[22] Thus he found that in Mohoriya, 20/24 of the young men aged between 19 and 25 (Gurungs only) were soldiers.

The effect of this on the sex ratio may most easily be demonstrated in another diagram.

for diagram 4:5 see across.

The lop-sided figure which emerges if we only count those actually present full-time in Thak is easily seen. The result was that there were 139/191 males to females permanently in the village, and in the important economic group 21-50 there were 38/76, or exactly two females for every male. It will be seen later how young men from the untouchable castes, particularly

Blacksmiths and Tailors, replace this absent labour force. Thus of a total labour force of 67 males aged 16-45 in Thak, some 24, or just over one third, were lower caste. The 39 absent Gurungs, earning relatively high wages in the army, were replaced by some 24 lower caste men aged 16-45.

It is likely, however, that the pattern is beginning to change, and traces of this may be seen in the age-group 21-5 in Thak, 1969. Some 6/16 of the males in this age-group were unable to obtain a military job, although most of them wanted to do so. The British army has been drastically cutting down its recruitment of Gurkhas and it is quite possible that the Indian army will do likewise. The problem now and in the future will probably not be labour shortage and imbalance in the sex-ratio, but labour surplus and too many males in the village. The effect on village life and attitudes will be dealt with elsewhere. It will, for example, be necessary to explain why, while one anthropologist has described another society where there is extensive male labour migration as accompanied by "an atmosphere of decay and frustration...granaries and huts (are) neglected, the women lustreless, the gardens poor"[23] the same has not happened in Thak. On the contrary the women are cheerful and the men scarcely seem to be missed. One reason for this could well be that there has for long been a tradition of male labour migration. Even before the army recruited men, the Gurungs were traders and herdsmen and were consequently away from the home village for long periods. Thus wage labour in the army did not come as a new and sudden change; furthermore the numbers recruited increased gradually over half a century.[24]

Permanent migration.

In the past the Gurungs were to a certain extent nomadic hunters, and there is still considerable geographical mobility as population pressure builds up in the older-established settlements. Both Thak and Mohoriya saw a very considerable influx of settlers during the C19 and early C20, and their arrival is

analyzed elsewhere.[25] Here we will deal briefly with migration out of these villages in recent years. In Thak there has been scarcely any permanent emigration during recent years, at least in the sample census area. One soldier, instead of retiring to the village, remained near Bhairuwa, and one woman has set up a boarding house in Pokhara. But there is very little evidence of the sometimes widespread tendency not to return to the village after military service. Nor was there any migration from Thak when free land was offered near Chitwan in the early 1960's (after the malaria eradication campaign). While other villages in the same valley were affected, for example Siklis is said to have had an exodus of at least one hundred persons, pressure in Thak was not great enough to force people to move.

In Mohoriya, however, the man-resources ratio was much worse, even when Pignède visited it, and in between his visit in 1958 and my census in 1969 members of 16 households had disappeared, all but three of them to near Chitwan, the other three to India. Some 78 persons left the village, out of a total population of 496 or some 15.7% of the census population. The majority of the families were of the lower (poorer) jat, ten in fact were either sorajat or 'Pun Gurungs'.[26] Four were upper jat and there was one Gharti and one Brahmin. The jat of those who left, as well as the size of the houses that still stand, once occupied by them, suggest, not surprisingly, that it was poorer villagers who left to take advantage of the new land. In the case of the konme families (3), however, the husbands were in the army and may have found life in India attractive. The sexes were not equally represented with 48/30 men/women; it is not surprising to find that those who would have to stay in the village to earn a living (i.e. men) are most anxious, if cramped, to move out. Although there are exceptions, more than half of the emigrating families consisted of young married couples with one or two children, classic settler material. The loss to the village was thus predominantly in the age-group 16-50. While in

Mohoriya in 1958, some 50.1% of the census population were aged 16-50, of those who emigrated, some 56% were in this age-group. That they were at an early stage in their marriage is suggested by the fact that people aged 0-15 only constituted 29% of those who migrated, while in the census they had constituted 32.5% of the total population. In several cases, we were told that subsequently emigrants had had large families, having left the village with only one or two children. But the difference in the above figures is not really very great.

CHAPTER FOUR. NOTES.

1. Many demographers and economists have commented on the difficulty of economic growth in the face of an unfavourable age-structure, e.g. Spengler in Daedulus, Spring 1968, p.443 and (Wrigley, Population and History, p.24), Wrigley, 'Family Limitation, p.107 note 1.
2. E.g. Titmuss, Essays on the Welfare State, p.56ff.
3. As suggested, e.g., by Roberts, 'Dinka Demography', p.347 &, in general, Platt (ed.) Life and Death, p.148ff.
4. There are some remarks on this in UN, Determinants and Consequences of Population Trends, p.141 and Wrigley, Population in History, pp.27-9.
5. For a discussion of the lho system, ~~and ambiguities such a reckoning system creates~~, see Nepal and the Gurkhas, p.91.
6. UN, Determinants..., p.141.
7. There are diagrams of both the 'ideal type' and actual age-structures in, for example, Wrigley, Population in History, pp.24-5.
8. The figures from Ceylon and England and Wales have been taken from the table on p.103 of Laslett, World we have lost.
9. Calculated from the Nepal 1961 Census, vol.i, table 1.
10. Worth, Nepal Health, p.30.
11. NO NOTE
12. In 1958 by Pignède and 1969 by myself.
13. Gurungs, p.51.
14. For a discussion, see p. 199.
15. Marwick, Sorcery in its Social Setting, p.50.
16. Ibid., p.48.
17. Gurungs, p.56.
18. Ibid., p.50.
19. 1954 Census, p.ix.
20. For some statistics of recruitment, see p. 75.
21. For simplicity's sake these three kinds of wage-labour connected to the army have been amalgamated; in fact, over 90% of those from Thak were serving in the military ranks, rather than as civilians or in Indian or Assam police.
22. Gurungs, p.56. 23. Gluckman, 'Review of Land and Labour' p.71.

24. M. Mead(ed.), Cultural Patterns..., p.248 has pointed out that an earlier pattern will soften the effects of migrant labour.
25. See pp.403-7. above.
26. For 'Pun Gurungs' see p. 37, note 23.

CHAPTER FIVE. FERTILITY STATISTICS.

Introduction

Very little is known about fertility patterns in Nepal. Even the crude birth rate of the population as a whole, the simplest of all measures, is in dispute. Thus the Family Planning Office informed me that they had reckoned it to be 43/1000 in 1961, in 1965 their estimate jumped to 54, in 1969 it was 48; meanwhile the official figure for 1969, in the U.N.[1] publication of that year, was given as 41/1000. The only detailed study of fertility in the country found, on the basis of urine tests and current pregnancy history, a CBR of 57/1000.[2] This latter report concluded that "fertility in Nepal is about as high as could be observed anywhere in the world, with a crude annual birth rate in the neighbourhood of 50 to 55 per 1,000 population, and an annual fertility rate of about 220 births per 1,000 women aged 15-49".[3] The same survey also contains some study of age-specific and other fertility rates, and this will be cited when we come to deal with particular fertility analyses for the Gurungs. A recent re-analysis of the 1952/4 and 1961 censuses leads the authors to suggest a CBR of 47.[3B] Anthropological research into fertility is, so far, sketchy. Hitchcock writes of the Magars that "Since there is no taboo on sexual relations once the mother has recovered from the birth, children can follow each other in almost yearly succession", but no figures are given to show whether they do.[4] If we re-work the figures of Gorer for the Lepchas of Sikkim, we find that the number of live-born children to women aged 50-69 is extremely low. Even if we assume that there has been a complete omission of female children who died young, the 13 women only had an average of 3-4 children each,[5] though allowing for the four who said they had never had any, this rises to about 4.75 each. The study by Kihara of a Bhotea village suffers from the same defects as Gorer's analysis, especially the inadequate size of the sample. But since the Bhoteas are closely related to the Gurungs it is worth looking at them more attentively for a moment.

The number of children said to be born to mothers in three age groups among the Bhoteas, based on a total of only 21 mothers in all, shows how small numbers give distorted fluctuations. It also shows how deteriorating memory affects the statistics. Those aged 40-9 showed the high fertility of 6.4 per mother, those 50-7 an average of 3.75, those 60-78, 2.75. If we take those aged 50-69, we find that some 14 women bore 46 children (now dead or alive). This gives a rate very similar to Gorer's, but loss of memory among older informants probably lowers such a rate considerably. The reason why the rate in both Lepcha and Bhotea cases is lower than that for Nepal as a whole seems fairly clear. It lies in the age at giving birth to the first child. Thus the Nepalese population as a whole usually give birth to their first child at between 18-20,[6] while the Lepchas usually do so between 20-22 (only 3/23 reported a birth at the age of under 20),[7] and, according to Kihara, the average age of the 43 Bhotea women at first childbirth was 27.1, though he thinks that "the actual age (was).... probably about 25-26 years old".[8] But why childbirths should occur so late, especially since, as among the Lepchas, marriage occurs young, is a far more difficult problem.

Thus there are indications of two different patterns of marriage in Nepal, with upland tribal groups showing lower fertility than the lowland areas.[9] We may now turn to the Gurungs to see how they compare with the brief figures given above.

The following account is based on two very small samples. In 1958, Pignède recorded the fertility histories of 102 women in the village of Mohoriya. He seems to have excluded women who had had no children.[10] He does not state the present age of the women, but it is likely that they were of all ages - in other words many of them had not yet completed their childbearing. In the village of Thak I recorded all the births which took place within a sample of 100 households. I also undertook a questionnaire/census which included retrospective questions on fertility. These questions are listed in Appdx. One. Usually, but not always, it

was possible to get the woman concerned to answer the questions. As will become clear, there was definitely omission of foetal deaths, miscarriages and stillbirths. The main defects, however, were the very small size of the sample, the fact that it was impossible to make it a "random sample" since nothing was known about Gurung fertility as a whole and therefore this village may not be representative of Gurung villages; and finally that not all women within the sample were questioned. On the first point, this makes many of the statistics too small for significance. On the second, though there is nothing to suggest that Thak is atypical, and a comparison with Mohoriya makes a partial check, it should be stressed that the situation may, indeed, vary very much between different villages. On the third, it is necessary to state precisely how the women within the sample were selected.

When I took the census of a household, I recorded the full fertility history of the oldest female in that household, provided she did not appear to be senile. At the time of the census there were a total of 185 women aged 15 or over, including those temporarily present and those temporarily absent. Of these some 47 were still unmarried. Of those who had been married at least once, I recorded the fertility history of 105 (of all ages) and omitted that of 33 women who were the second women in a household. It is possible that such a selection will bias the following calculations. For example, those selected tended to be older women, and thus we do not have a fair age-distribution.[11] If the sample were bigger and more carefully drawn, it might have been worthwhile to work out some statistical procedures for overcoming this bias. At it is, all the following figures are highly impressionistic and do not merit the application of highly refined corrective techniques.

Crude birth rate.

During our year in the village, 1969, there were some 9 live-births in a total de facto population of 496. This gives a CBR of 18.1 for Thak in the year 1969. If we include those temporarily absent, mainly husbands whose wives are living in the village, then

the rate is 17. These are extremely low rates for a pre-industrial society and are more in line with modern western patterns. Since they are based on an extremely small sample for only one year they may be totally unrepresentative. A tentative attempt may be made to widen the base by adding together all the reported live-births, to mothers now living in Thak for the last five years. Since there is not very great female geographical mobility, it is unlikely that many women have left the village in that time. In the total are included children now dead, who died in infancy. A total of 47 livebirths are recorded over the five-year period 1965-9. If we assume that the base population was approximately 515 in 1967,[12] then the annual CBR was 18.3 - which is remarkably close to the estimate for 1969. Yet even this seems far too low and is probably the result of particular features of the age-structure. Thus, for example, if we take the births in another five-year period, 1957-61, some 73 children born during that period are still alive and another 18 are known to have been born and died. Thus, even if we assume that no other children have been forgotten, and that the base population in 1959 was 65 less than 1967 (i.e. 450) the annual CBR was still 40.4. This is much closer to the Nepal figures. Looking at the age structure, it would seem that 1957-61 witnessed a bulge in births, while 1965-9 saw less than normal. Probably the CBR lies somewhere between the two extremes - perhaps at around 30 per thousand. This is substantially lower than Nepal as a whole. But the inadequacies of the evidence make it imperative that we look to other types of measure.

Fertility ratios.

The Survey of Nepal Health found that the general fertility rate (number of live-births in a year divided by total women aged 15-49 x 1,000) for their sample was 257 or 219, according to two different methods.[13] For Thak in 1969 the rate for Gurungs and service castes (Tamangs/Magars and those only temporarily present were omitted) was 72.6 (9 births to 124 women aged 15-49). This very low figure, based on the same tiny sample as the CBR, is probably not representative.

A slightly more satisfactory rate is the fertility ratio (proportion of surviving children under 5 to women 15-50[14]) For Gurungs/service castes in Thak, 1969, the rate was 335(42 surviving children to 125 women). This is in line with European nations in the 1930's (Czechoslovakia, 1930 = 342; Norway, 1930-1 = 322) rather than that of developing countries (Chile, 1930-2 = 574; Yao in Africa, 1956 = 738).[15] Again it is based on too small a sample to be reliable, and its unrepresentative nature can be seen if we look at figures for another Gurung village, Mohoriya. On the basis of Pignède's census in 1958, it appears that the fertility ratio at that date was approx. 675. Eleven years later I took a census of the same village and found a fertility ratio of 496.[16] Both totals are substantially higher than Thak, and suggest a level somewhere between the European and African levels of fertility.

Total completed family size.

The Nepal Health Survey discovered that the sample of women aged 50 or over throughout Nepal reported a mean average of 6.0 live births. The mean average of surviving children to 249 women aged 50+ was 3.02.[17] These figures undoubtedly underrepresent completed fertility, since older women tend to forget children who die young. Nevertheless we may wonder how the figures compare to those for the Gurungs. This particular index of fertility will be explored in some detail because it is somewhat more satisfactory for a small village analysis than the previous rates discussed. Being based on livebirths over the last fifty or so years it tends to overcome the temporary fluctuations which were seen to undermine previous rates. It will therefore be used to make a preliminary analysis of differential fertility among various groups in Thak and Mohoriya. In order to make the basis for analysis larger, it has been decided to analyze all women aged 40 and over, instead of the traditional 45 or even 50 and over. In Thak, for example, this means that instead of the reproductive histories of 24 married women aged 50+, one has that of 53

women aged 40+. The disadvantage, of course, is that one is no longer dealing with completed families; women may still bear one or more children over the age of 40. Of sixteen Gurung women in Thak, aged 50+, whose age at last child-birth is recorded, five had children at between 40-3. This suggests that roughly 1/3 Gurung women will have a child at over the age of 40. Fourteen women aged 40-4 are included in the following statistics; given the fact that they are distributed over all the years to 44 and hence may, for example, have had a birth at 42 or 43, it seems likely that only approximately between one and three livebirths will have been missed by including women from age 40. This will hardly alter the following statistics, and the same is likely to be true of Mohoriya.

One other defect of the Thak material must be mentioned. As far as possible, retrospective fertility histories of women within the sample (as defined above) covered all their marriages. It is likely, however, that if a woman had been married several times, a live-birth by a former husband might be overlooked. Thus the mean average of children born to women aged 40+ (Gurungs) still on their first marriage, was 6.0; while the same average for women married more than once (11/53 women) was only 4.6. The difference may be wholly or partly accounted for by lowered fertility due to disturbance of marriage. But it may also be partly due to omitted births. If we assume that these eleven women failed to record an average of just under 0.5 livebirths each - a generous estimate - then subsequent figures need to be adjusted upwards by another 5 livebirths to obtain true fertility. Finally, the following calculations omit four women who had married and had no livebirths, three women who had not married, a mentally unbalanced woman, and an old woman who could not remember how many of her children had died. Thus we are discussing the marital fertility rate of the small sample.
The figures for Thak may be seen in the next table.

TABLE 5:1 'Completed family size', women aged 40+, Thak, 1969.

	Total births	Total women	Mean average
Gurungs	171	34	5.0
Tailors/Blacksmiths	66	12	5.5
Total	237	46	5.2

Thus the average completed family size for all the women was 5.2. If we allow for 2 children not yet born to the women aged 40-4, 5 children unrecorded by women who were several times married, and another 10 children forgotten by old people, then we have a rate of 5.5. The Gurung rate is on average one child lower than that for Nepal as a whole, and even allowing for under-recording, it is probably a little below the mode of 6 for a representative selection of societies.[18]

In order to see whether Thak is exceptional we may look at the evidence for another Gurung village. Pignede stated that among women of all ages there was a mean average of about 4 pregnancies in the village of Mohoriya[19] Using his unpublished census notes we can refine this further; a table comparable to that for Thak is as follows.

TABLE 5:2 'Completed family size', women aged 40+, Mohoriya, 1958.

	Total births	Women	Mean Average
Gurungs*	205	40	5.1
Tailors etc.	22	4	5.5
Total	227	44	5.2

* The Magars in Mohoriya are included under Gurungs in this table. Women with no children, omitted.

The most striking thing is that the mean average size is almost exactly similar for each group and for the total population as that for Thak. This gives further confidence in both sets of figures, and in the accuracy of reproductive histories. It also encourages one to use this type of index to test various hypotheses concerning the distribution of fertility.

The first hypothesis we might test is whether there has been any obvious change in the size of completed families, in other words a change in over-all fertility. The simplified results may be seen in the following table.

TABLE 5:3. Mean average number of live births to women of various ages.

	Women aged 40-9	50-9	60+
Mohoriya,1958	4.3(17)	5.9(14)	7.1(11)
Thak,1969	5.1(27)	5.5(10)	3.9(9)*

* This rate is only for Thak women aged 60-9, since those over 70 appear to have forgotten many livebirths. The table is only for women who have had one or more livebirths. Figures in brackets indicate the number of women upon which the averages are based.

It will immediately be seen that the trend is entirely different in these two sets of figures. In Mohoriya the completed family size appears to have been getting smaller up to the present, while in Thak the opposite is true. No obvious explanations, except poor recall among older Thak informants, can be given, but we will return to this problem later. Meanwhile another possible explanation could be changes in the proportion of men away doing army service.

It may seem obvious, at first, that if men are away for fifteen or so years of their adult lives even though they come home on leave at least every three years, this will lower fertility. Yet it has been suggested that military service, or other forms of migrant labour, may, in fact, increase fertility, for example by spacing births and hence improving maternal health.[20] We may therefore look with interest at what happens among the Gurungs. The figures for the two villages are summarized in the following table.

TABLE 5:4 Army service and mean average number of livebirths per woman (aged 40+).

	Husbands 10+ years away from village	Less than 10 years
Mohoriya,1958	4(12)	5.9(18)
Thak, 1969	5.3(16)	5.6(12)

Note: all the above were Gurungs. Only those with one or more livebirth were counted. ( )= no. of women.

In Mohoriya the difference is almost 2 livebirths per woman, in Thak it is only 0.3 per woman. Therefore it is impossible, as yet, to state confidently that army service has a substantial effect in all Gurung villages, though it may have in some. It does seem likely, however, that the fact that the Gurung completed family size is lower than that in Nepal as a whole, is largely due to

migrant labour in the army. Again we will consider this further below.

The Gurungs are split into two classes, the carjat and the sorajat. In both Thak and Mohoriya the major part of the village fields are controlled by the former, earlier established, carjat families. Although the correlation with wealth is not absolute, to compare the completed fertility of the two jats is a useful preliminary way to see whether wealth and fertility are related, especially in view of Pignède's remark that part of the reason for carjat dominance has been their larger families.[21] Gurungs in the two villages, classified on the basis of this division, are analysed below.

TABLE 5:5. Jat membership and average number of livebirths per woman aged 40+ (with one or more children).

	Carjat	Sorajat
Mohoriya, 1958	5.4(16)	5.5(22)
Thak, 1969	5.3(23)	5.0(10)

Note: Pun Magars in Mohoriya have been counted in under 'sorajat'. ( ) = number of women on which average is based.

The position in the two villages is different; in Mohoriya the sorajat had fractionally more children, in Thak, the carjat had a higher average. But the difference is not big enough to suggest that there is a different fertility pattern in the two groups either because of different ethnic origin, or because the wealthier marry younger/older etc.

In Tables 5:1 and 5:2 evidence was presented to show that the poorest inhabitants of two Gurung villages, the 'untouchable' castes of Tailors, Blacksmiths and Goldsmiths had slightly larger completed families than the Gurungs, on average 0.5 more livebirths. This lends further support to the argument that wealth does not necessarily become correlated with large families. Further evidence for Thak may be obtained by comparing groups within the Gurung population, stratified by wealth The way in which the population was divided into five economic groups is discussed elsewhere and can only be a rough division in such a society.[22] Of the five groupings, only the middle three had enough women aged over 40 to

produce any kind of meaningful statistics. The figures are as follows. (Nothing similar could be computed from Pignède's notes on Mohoriya).

TABLE 5:6 Wealth and average number of livebirths to Gurung women aged 40-79, Thak, 1969.

	rich(II)	medium(III)	poor (IV)
Avge.livebirths	4(7)	5.8(15)	5.5(11)

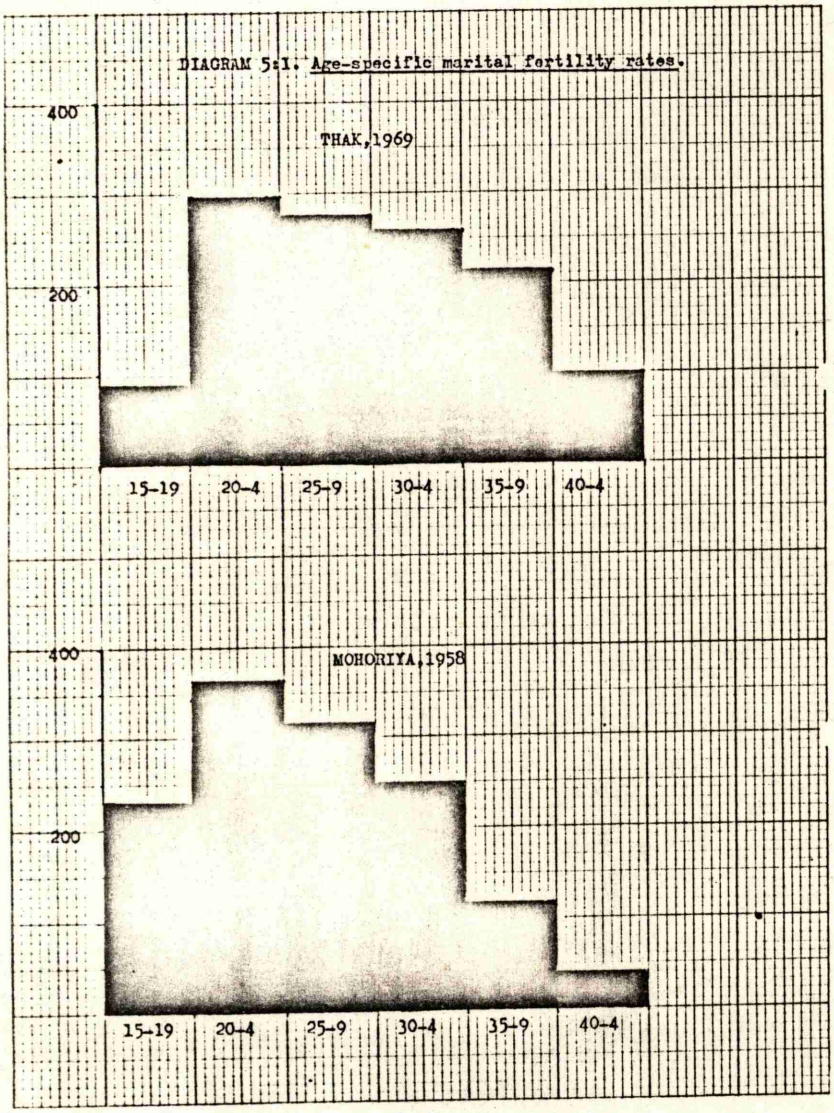
Note: figures in brackets = no. of women.

It will be seen that middling Gurungs had the largest number of children, followed by poor Gurungs, followed by the rich. In fact, it is likely that there is very little difference caused by relative wealth, and that the above figures mainly reflect differences in age structure. We saw earlier that younger women in Thak record a higher number of livebirths than older ones, either because of better memories, or because of a real change in fertility. Now it happens that at present in Thak the rich, class II, also happen to be the oldest group of women (only 2/7 were under 60), whereas in class IV, 6/11 of the women were aged under 60. Thus we would expect class IV to have a larger number of livebirths, merely on account of their age. Yet the table certainly does not provide support for the thesis that fertility and class are correlated.

Age-specific fertility rates.

In the absence of accurate registration of births it is extremely difficult to compile satisfactory age-specific fertility rates. Yet this is such an important measure that some attempt to calculate it must be made. The following analysis is based on recalled reproductive histories in two Gurung villages, one set collected by myself, the other from the unpublished notes collected by Pignède. It was not possible to include 17 married women in Mohoriya, since Pignède's notes did not give full details concerning marriage and fertility, and likewise in Thak the data was found to be inadequate for eleven women.[23] It is possible that the women omitted had had somewhat more disturbed marriages than those included and that therefore their fertility would be slightly lower than that of the sample analysed below. Married women who had had no livebirths are included below; there were five in Thak and three in Mohoriya. Nine women in Pignede's Mohoriya census who had died before the

DIAGRAM 5:1. Age-specific marital fertility rates.



taking of the census are omitted in the following analysis, although reproductive histories are available for them, for their inclusion would confuse the issue.[24] All those inhabiting the two villages, Gurungs, Pun Magars and lower caste, are included together in most of the analysis, but 2 households of Magars and 2 of Tamangs in Thak are omitted. Stillbirths have been counted as ordinary births, but the very occasional reported miscarriage has been omitted. Twins have been counted as one birth.

The figures for the two villages, and for a general Nepalese sample, may be summarized as follows.

TABLE 5:7. Age-specific fertility rates, three samples.

	Women aged (rates per 1,000)						
	15-19	20-4	25-9	30-4	35-9	40-4	Total (avge)
Mohoriya, 1958**	230	365	317	251	120	42	246
Thak, 1969**	90	297	278	260	216	101	230
Nepal, 1965++ (approx)	145	340	240	250	100	110	-

** These are, in fact, marital fertility rates, being based on the number of 'married women years' lived.

++ This is deduced from fig.3, Worth, Nepal Health, p.25, which is based on urine tests of a sample of 1006 women in all. Worth states that the figures for those aged 35+ are too small for reliability.

It will be seen that in all groups, the rates are highest in the 20-4 age-group, and that in both Gurung samples each age-group that follows has a lower rate than the previous one. The contrasts with other societies, as well as the differences between two villages, may best be shown diagramatically, as across.

for diagram 5:1 see across.

It will be seen from the diagram that both villages exhibit very high rates, but the two patterns are different. In Mohoriya there is very high fertility in all the age-groups up to 34, then rates are low. In Thak the distribution is more even, with consistently high average rates, maintained until age 39. These may seem improbably high rates, but if we compare them to an English village before the industrial revolution, where marriage was even later than in Thak, it will be seen that they are not so extraordinary.

TABLE 5:9. Age-specific marital fertility; two Gurung villages.

Present Age ***		Women aged 15-19	20-4	25-9	30-4	35-9	40-4	Avge.
20-9	T	62(16)	257(35)	166(18)	--	-	-	188(69)
	M	233(60)	426(101)	156(45)				310(206)
30-9	T	37(27)	355(76)	313(83)	222(72)	142(14)	-	265(272)
	M	348(23)	420(69)	418(91)	339(59)	83(12)	-	378(254)
40-9	T	94(32)	282(85)	280(107)	289(128)	224(125)	137(102)	235(579)
	M	148(27)	209(67)	256(82)	179(90)	64(78)	15(65)	149(409)
50-9	T	333(9)	345(29)	244(41)	256(39)	191(42)	67(45)	215(205)
	M	148(27)	467(45)	388(67)	267(75)	127(71)	34(59)	238(344)
60-9	T	- -	167(24)	286(35)	239(46)	260(27)	50(40)	192(177)*
	M	363(11)	214(28)	265(34)	257(35)	231(39)	100(40)	219(187)

*'Present age' was the age of the woman at the time of the Census; Thak,1969 = T, and Mohoriya, 1958 = M. Thus a woman aged 30-9 in the Mohoriya Census of 1958 would be in the 40-9 group by the time of the Thak Census. The number of 'married woman years at risk' is given in brackets. This was computed by finding out how many women lived (being married) through a certain group of years; if they died, married, separated, or reached a certain age as the census was taken, in each case this was counted as a ½ year. Although in some cases such events would happen near the beginning or end of the year, over enough cases they ought to even out.

TABLE 5:8. Age-specific marital fertility rates compared.

	15-19	20-4	25-9	30-4	35-9	40-4
Thak, 1969	90	297	278	260	216	101
Colyton, 1647-1719**	500	346	395	272	182	104

--** From Wrigley, 'Family Limitation',p.89.

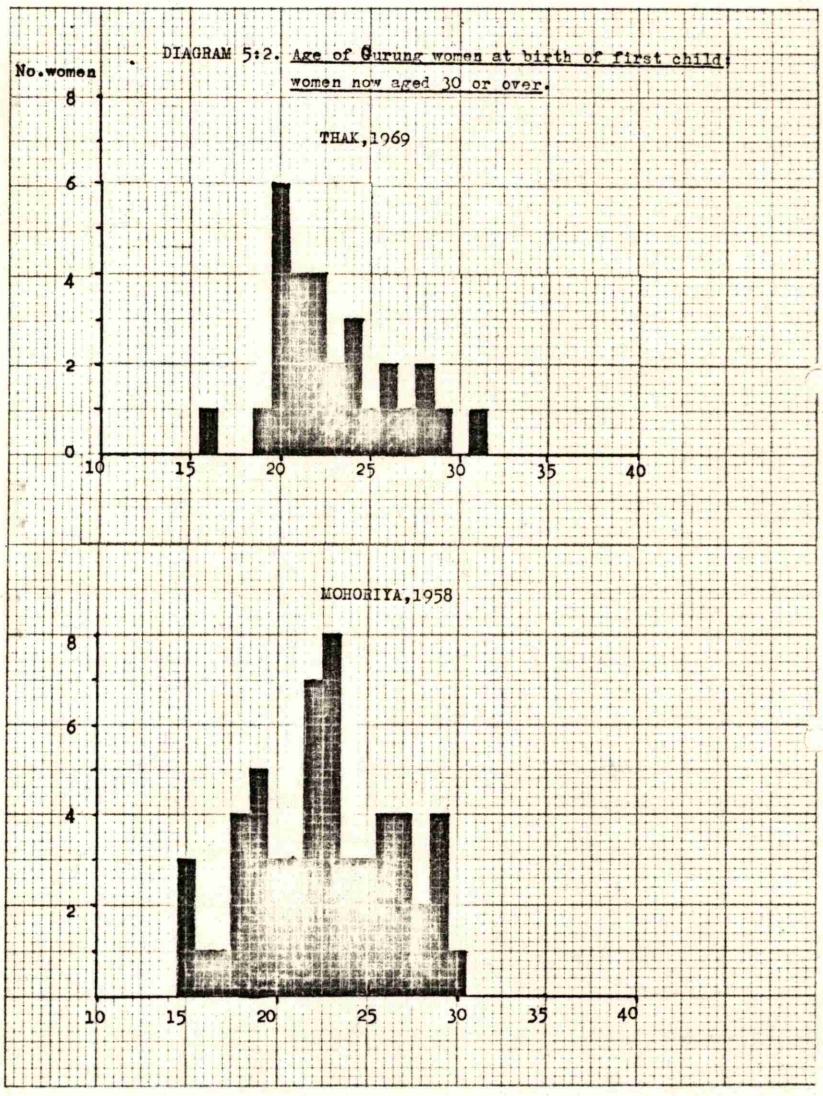
The very low rate in Thak at age 15-19 is probably accounted for by the custom whereby men and women do not cohabit much during the first few years, the man going off to the army, or the woman returning to her home village for long periods. It is especially interesting to compare the above figures since the English rates, higher though they were through all ages 15-35, were achieved at a time when it is believed that birth control was practised.

Although the samples are really too small for statistical significance, it still seems worth-while to try to add to our slender information about the demography of small tribal societies by breaking down the age-specific marital fertility rates somewhat further. The figures for the two villages of Thak and Mohoriya, with the number of married woman years upon which they are based, may be seen in the following table.

for table 5:9 see across.

None of the rates in table 5:9 are really based on sufficient women years for certainty, and those where the figure falls below 50 or thereabouts become subject to large random fluctuations. Nevertheless, some tentative hypotheses can be drawn. If we compare the different cohorts in Mohoriya, for example, we find different patterns from group to group. Thus the fertility rates for cohorts aged 30-9 and 50-9 are much higher than those for those aged 40-9. In Thak, however, the rates have declined as one moves backwards in time from those aged 30-9, though the youngest cohort also has a low rate. The highest rate was achieved by Mohoriya women now (1958) aged 50-9 during the age 20-4 - a rate of 467. It is possible that the very high rate for Thak women aged 50-9 during the years 15-19 (based on a tiny

DIAGRAM 5:2. Age of Gurung women at birth of first child; women now aged 30 or over.



sample), reflects a higher frequency of premarital pregnancies in the past.

A comparison of the rates of Gurungs as opposed to Tailors/Blacksmiths in Thak showed no great differences. The over-all level was slightly lower for the Gurungs, and while Gurungs reached their highest fertility in the age-group 20-4, the Blacksmiths and Tailors did so in the age-group 25-9. But the figures are really much too small to be depended upon.

Age at bearing children and birth intervals.

The normal age at bearing a first child varied considerably throughout Nepal. While the Nepal Health Survey discovered that nearly half of their sample had given birth to a first child by the age of 18,[25] the author of a brief study of Bhotea fertility concludes that the average age at giving birth to a first child is probably "about 25-26 years old".[26] Pignède published some figures for the village of Mohoriya, which showed that in only 15/102 cases did the first birth occur at under the age of 19; 19-22 was the most common age for such births.[27] The situation in Thak, for once-married Gurung women now aged 30+, may be seen in the following diagram.

for diagram 5:2 see across.

The mode of this very small group is 20, the mean average 23. If we compare this to the situation for Mohoriya, shown on the same diagram and based on Pignède's original census, it will be seen that the peak comes at an older age, the mode being 23. This relatively high age at first childbirth is undoubtedly of great importance in lowering Gurung fertility; despite high marital fertility rates, the Gurungs have a completed family size below the national average.

Despite their Hindu origins, lower castes in Thak and Mohoriya appear to exhibit the same age at first childbearing as the Gurungs. In Thak only 2/12 Blacksmith/Tailor women aged over 30 had had a child at under the age of 18; in Mohoriya exactly the same figures are found - 2/12. In both, the majority have their first child at between 20-23.

DIAGRAM 5:3. Age of Gurung women at last child-birth.

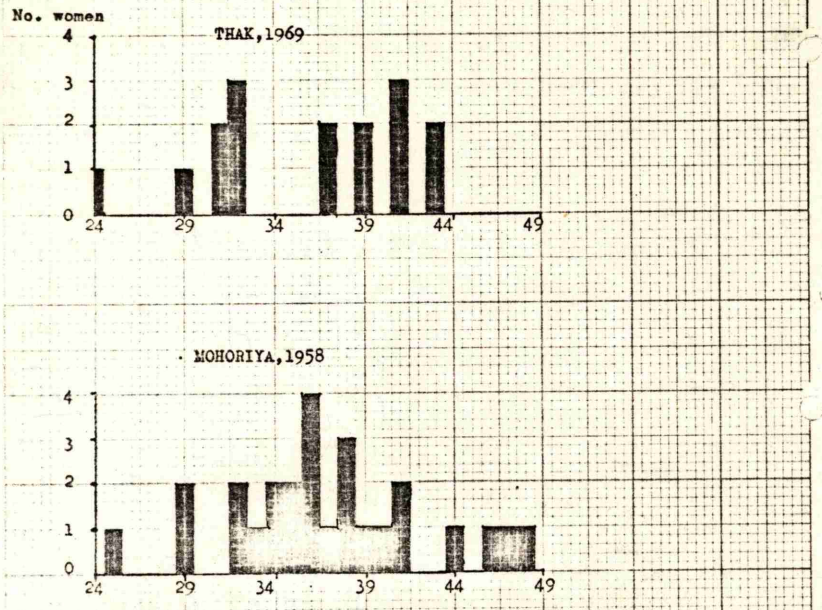
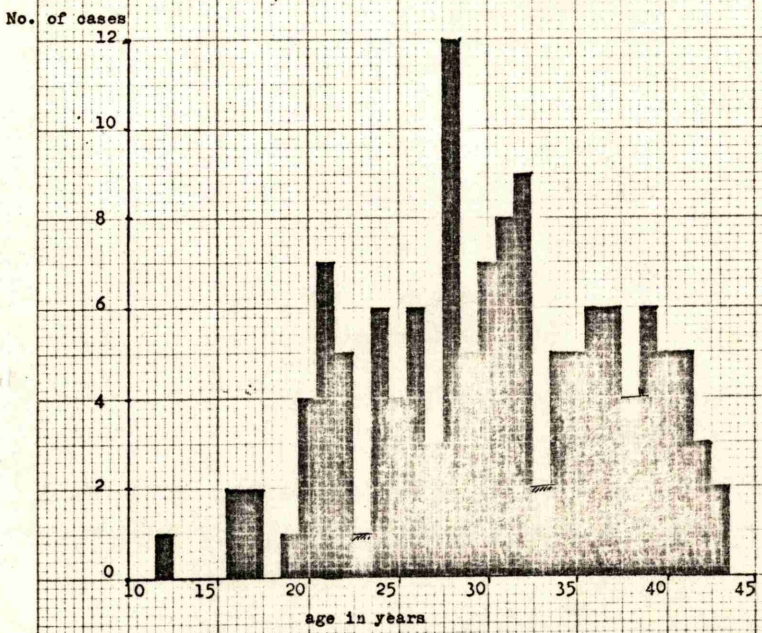


DIAGRAM 5:4 Age of mothers at birth of all children: Gurung women aged 45+, Thak 1969



The Nepal Health Survey included a diagram of age at final pregnancy of women aged 50 or more. The mean age was 36.6 years, the mode was 39. This fairly early cessation of fertility also seems to occur among the Gurungs. Pignède calculated that 88% of the births in his sample occurred in the group aged between 19 and 38 years.[28] The situation in Mohoriya and Thak may be seen more clearly by way of a diagram; that for Mohoriya is based on Pignède's field notes.

for diagram 5:3 see across.

It will be seen that the mode in Thak was split between 32 and 41, in Mohoriya it was 36. The mean in Thak was 35.8, in Mohoriya 37. Thus, despite the fact that Gurungs start their childbearing comparatively late, they also finish fairly early. It is not possible, however, to draw the conclusion that Pignède did from this, namely that "the menopause seems to occur quite early".[29] It is well known that there may be a long gap between the average age at last birth and the menopause; thus, for example, in a sample of 93 Bengali women the average age at last birth was 35.1, while the age at menopause was 47.5.[30] The Gurung mean age at menopause almost certainly falls within the normal range 44-49 years, but social factors intervene to inhibit pregnancies during the last few years of marriage.

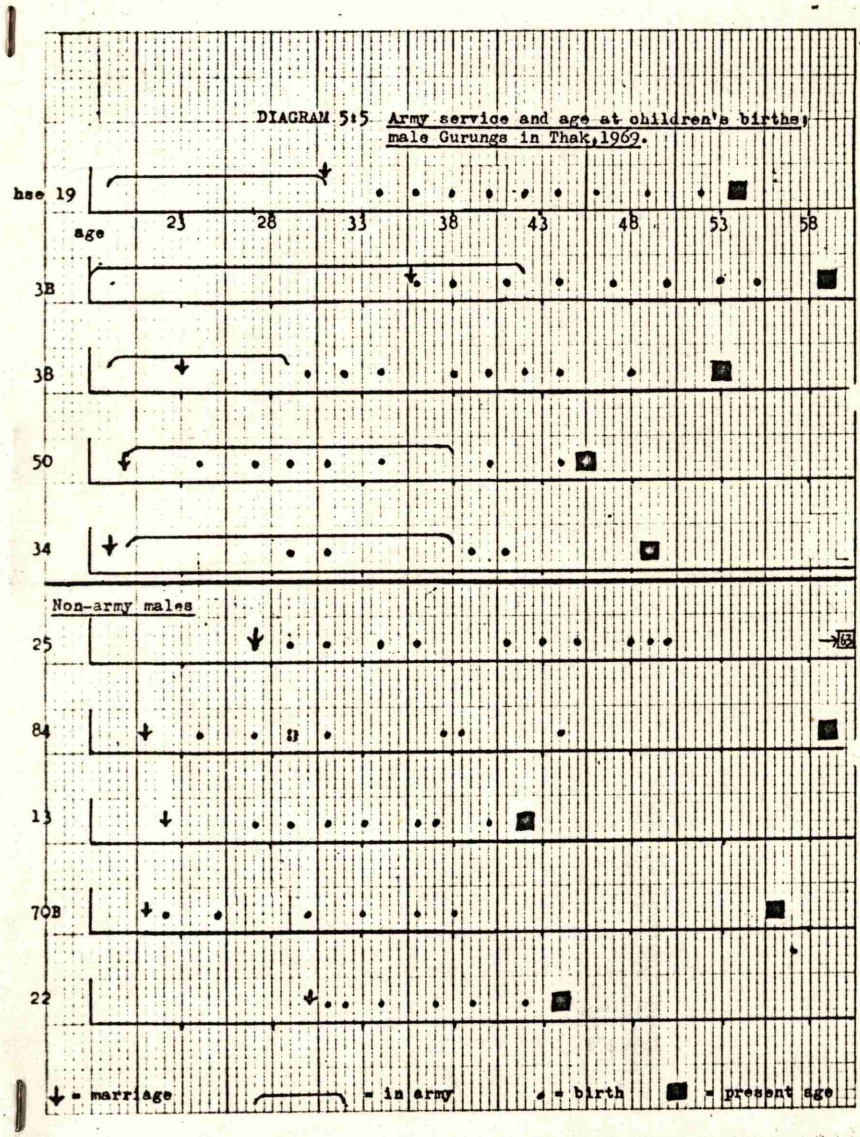
We may now look at the culmination of the forgoing rates - the actual age at which women bore children. Pignède published figures which showed peaks in the age groups 19-22, 23-26, 27-30 - all roughly equal.[31] The situation among the Gurungs in Thak may most clearly be shown by another diagram.

for diagram 5:4 see across.

The individual peak was at age 28, with high levels for most of the period between 21 and 41. But the numbers are too small to make any definite conclusions.

Pignède remarks that "three or four years separate each pregnancy. This interval corresponds to the time during which the husband is absent (in the army)".[32] Since he does not give any actual examples, we may be permitted to examine this contention a little further

DIAGRAM 5:5 Army service and age at children's births, male Gurungs in Thak, 1969.



since spacing of births is indeed a good index of the influence of army service on fertility. Again diagrammatic presentation is the easiest method of seeing the situation; the diagram compares five Gurung men who have served ten or more years in the army with five who have not served at all, or, at the most, a couple of years. It will be seen that those who served in the army tend to marry later and hence they begin to produce children later.

for diagram 5:5 see across.

There is also a tendency for most births to occur after early service is over. This does not necessarily inhibit the creation of large families - thus household 19 produced nine children, though the man was 34 when his wife gave birth to her first child. House 50 illustrates how births may occur during army service, and at less than three-year intervals. Indeed the gaps are by no means regularly three years, and those not serving in the army appear to produce children at the same intervals as those who are away in the army. The over-all impression is that, as noted from other statistics, army service does lower fertility a little, but its effect is probably mainly indirect - by raising living standards and encouraging men to wait a little longer until they marry. One direct influence, however, is on the gap between marriage and first birth; there is often a long interval between these two events for soldiers, a good deal longer on average than that for non-soldiers.

CHAPTER FIVE. NOTES.

1. The Family Planning figs. were given in a private communication. The figure from the UN.population data sheet for 1969 was taken from Ehrlich, Population, p.331.
2. Worth, Nepal Health, p.24
3. Worth, Nepal Health, p.19. The report does point out that it did not cover the mid-western and high altitude areas where late age at marriage would probably lower the fertility rate.
4. Hitchcock, Magars, p.49.
5. Gorer, Himalayan Village, pp.435-6; for comparative figures showing the normal range between 4.5-6.5 for completed fertility, see Nag, Factors Affecting Fertility, pp.169-170.
6. Worth, Nepal Health, pp.19 & p.20 fig.1.
7. Gorer, Himalayan Village, pp.435-6.
8. Peoples of Nepal Himalaya, iii, p.236. Among a Sherpa group recently studied the mean average age at first birth was 23-5 years (Lang, 'Kunde Hospital', p.14).
9. This is suggested by Worth, Nepal Health, p.19.
10. Gurungs, p.53.
11. This omission could have been avoided if pre-field-work training at the London School of Economics had included a formal training in demography.
12. In 1969 there was a de jure population of 528, which had been increasing annually.
13. Worth, Nepal Health, p.23 (table 2).
14. I have followed the method adopted by Mitchell, 'Yao Fertility', pp.301-2, where comparative rates may be found.
15. Figures are from Mitchell, 'Yao Fertility', table 7, p.302.
16. The calculations were made as follows. According to the table on p.48 of Gurungs, there were, in 1958, 81 children aged 0-5 and 115 women aged 16-50. If we adjust these (subtracting 1/8 or 10 children at age 5, and adding 5 women for age 15) we

16.(contd.)
then have an approximate rate of children aged 0-4 to women aged 15-50. From my census for 1969 I was able to work out the figures exactly; there were 59 children aged 0-4, and 119 women aged 15-50.

17. Worth, Nepal Health, pp.21,25.

18. Nag, Factors Affecting Fertility, pp.169-170 runs from an average of 10.4 (Hutterites) to 2.6 (some Pacific groups).

19. Gurungs, p.53.

20. Malthus, Essay on Population, i, p.223 suggested this and Myrdal, Asian Drama, ii, p.1435, note 1, cites a modern study of labour migration which shows its heightening effect on fertility.

21. Pignède Gurungs, p.54, in fact, did not suggest that the carjat were more fertile, but that they suffered a lower mortality rate; that he was wrong in thinking this is suggested on p.172 below.

22. See Appendix 7.

23. Women omitted in Mohoriya were (according to P's census) 3,12,14,18,19B,28,34,36,45A,47B,52,66,68A, 75A,83C,84A,89. In Thak there were 6A,9,11A,28, 35,36,43C,44A,53,57A,80B.

24. Because, in fact, they would belong to an older cohort than their age at death would suggest, since they died some time before.

25. Worth, Nepal Health, p.20, fig.1. There appears to be some discrepancy between this figure, which shows that a little over half the total married under the age of 18, and the comment on p.20, which states that "most" marriages took place over the age of 18.

26. Peoples of Nepal Himalaya, iii(ed.Kihara)p.236.

27. Gurungs, p.51

28. Gurungs, p.52.

29. Idem.

30. Cited in Nag, Factors Affecting Fertility, p.114.

31. Gurungs, p.53.

32. Idem.

CHAPTER SIX. SOCIAL STRUCTURE AND FERTILITY (1): INTERCOURSE VARIABLES.

The continued rapid growth of world population has made the study of variables affecting fertility an urgent problem for population experts. Each new study, however, merely shows that previous models have been too simple. Anthropologists, though providing much raw data, have contributed surprisingly little analysis to this debate. Their contributions are summarized by Moni Nag and Burton Benedict, and the only really useful studies one might add to their bibliographies are those by Douglas and Mitchell.[1] The state of sociological research by the early 1960's was excellently summarized by Freedman, and has recently been resurveyed by Hawthorn.[2] Recent research in historical demography has shown that any simple links between economic/social change and the transition to low fertility can no longer be maintained.[3] It is now realized that it is necessary to consider many non-economic variables when considering fertility changes. As David Riesman, among others, has pointed out, the decision to have children is affected by a people's outlook on chance, on children, on the place of women, on sexuality, and even on the meaning of existence.[4] Certainly the attitude to the after-life, to marriage, to old age, to menstruation, breast-feeding, sterility and many other subjects will have a great influence. These are all within the normal range of anthropological discussion, and therefore it seems clear that anthropological study should be useful in elucidating the pressures which bear on human fertility.

The title of this and the following chapters, as well as their arrangement, are based on the 'Analytic Framework' proposed by Kingsley Davis and Judith Blake in an important article.[5] Although their model does not overtly deal with every possible factor, it provides an extremely useful way of organising the material.

Davis and Blake divide their framework into three parts: factors affecting exposure to intercourse ("Intercourse Variables"), those affecting exposure to conception ("Conception Variables"), and those affecting gestation and successful parturition ("Gestation Variables"). This chapter will deal with the former, the next chapter the latter two. "Intercourse variables" are divided into two parts; the former concerns features "governing the formation and dissolution of unions in the reproductive period", the latter "those governing exposure to intercourse within unions". The first of the factors listed under "Intercourse Variables" is "Age of entry into sexual unions". This is the most complex and important of all the variables which influence fertility in human societies: in most societies throughout the history of the world it has been the major mechanism for regulating fertility, because a few years delay in entering upon sexual unions may have a profound effect on fertility. "The fact that pre-industrial Europeans usually married, at least in Western Europe after about 1500, at the age of roughly twenty-five or more and disapproved of pre-marital intercourse, whereas many non-European societies have married their children off at puberty or shortly afterwards, is one of the most significant reasons for the present differences between East and West."[6]

1. Age at entry into sexual unions.

It seems likely that the age at which Gurungs normally enter sexual relations has risen during the last twenty years in most Gurung villages. This is due to a change in the attitude to pre-marital sexual intercourse and not to any change in the age at onset of puberty. There is no evidence that physical maturation occurs earlier now than it used to. Gurung children still look much younger for their years than their western counterparts. Boys of 17 or 18 would often have unbroken voices, girls of 14 or 15 look like girls of 8 or 9 in our society. The first sign of the swelling of breasts usually occurs in girls at the age of 12 or 13, but some of 14 still had no sign of such swelling. There is no indication of any belief

to parallel that of the Lepchas that sexual intercourse is needed to stimulate the onset of puberty,[7] or evidence of sexual relations before puberty. It is thought that the age of procreation for boys is 15-16, girls 12-13, and that intercourse is, theoretically, permissable from then on. It seems likely that pre-marital sexual relations were once normal and not greatly disapproved of; marriage and sexual intercourse were not linked. The institutional setting for this, the rodi or communal house, has been described above, where there is a discussion of some of the evidence for this relaxed attitude.[8] From the evidence we have, it seems likely that until recently sexual relations among the Gurungs would start at the age of 17-18 for both sexes, either in the rodi or in fields and forest.[9] The men would then marry some 3-5 years later, the women 2-4 years later. We might, therefore, expect a considerable number of illegitimate births, as is said to happen at Siklis. More recently the Gurungs have come under pressure from their Hinduized neighbours to the south to wait until marriage before commencing sexual relations.

It is impossible to tell accurately how many women in Thak have conceived before marriage. In some cases the fact was concealed from me, in others a subsequent marriage between the two partners covered the event, in still others the foetus or newborn child were destroyed. I was told that the only occasion on which people would attempt to procure an abortion (Gg.pasi (child) waba (discard, throw away)), apart from when a lower caste woman conceived by a Gurung man or vice versa, was when an unmarried woman became pregnant after intercourse in the rodi. Women are also said to go off to the forest to have their child, which their clothing allows them to bear without being noticed, and there to strangle it at birth. How often either abortion or infanticide occurs it is impossible to say; I only heard of one case of each occurring in the village during the last five years. Such practices

do suggest, however, that while intercourse may have been accepted, to become pregnant was shameful. At the present generation I encountered five women who have had pre-marital livebirths, in one case, two separate infants. Their age at first delivery was 18,19 and three at 21, which suggests that, even allowing for the period of reduced fertility after menarche, it is likely that few women start sexual intercourse before the age of 17. Such illegitimate children are known as pregya (Gg.?).[10]

It is difficult to say whether the mothers of illegitimate children suffer as a consequence, since the situation is probably changing. One informant said their chance of marriage was lessened, and pointed out a woman who had remained unmarried to the age of 36, and then married a very poor man, after having an illegitimate child. This case, however, could also be explained by the evil reputation of the woman's mother, and the general decline in the family's position in the village. In the other case where a mother of an illegitimate child had remained unmarried, possibly no-one had wanted to take on the spastic son, and the woman herself was needed to look after the woman who had adopted her as her daughter. In another case a woman had remarried several times, and was not in the least ashamed that her first child was illegitimate (it had subsequently died). She was from Siklis, where older Gurung attitudes appear to remain. At Siklis, and in the past, the situation may have been close to that among the Lepchas where "the production of a bastard is no draw-back on the girl's subsequent marriage; on the contrary the fact that she has shown herself fertile makes her if anything more desirable".[11] Certainly there was no stress on marital virginity as a particular virtue, no testing of the unbroken hymen or emphasis on chastity as a religious virtue. As with the Lepchas, there appears to be no specific word in Gurung meaning 'virgin'.[12] 'Bastard' or its equivalent was not used as a term of abuse and several informants spoke fondly and proudly of their past illegitimate offspring.

As to the legal treatment of bastards, there appears to be some divergences of opinion. Pignède states quite categorically that male bastards inherit a full share of goods and lands from their putative fathers.[13] This is certainly not the case in Thak or Siklis, however. Informants in Thak were adamant that illegitimate sons were not given a full ansha (Nep.,share) and the current poverty of the poorest konme families in the village was explained by the fact that one or two generations ago the male heir had been an illegitimate son and was hence only given a small portion of the land. The amount given depends on a number of factors. An informant from Siklis said that village pressure would be put on the father, if he were reluctant, to give the illegitimate son enough to live on. The division would, as in all ansha making, be decided between the father and a group of village elders. Although they were the "unwanted men in the society" according to this young informant, they would inherit in preference to a father's brother if there was no legitimate sons, and he thought that a bastard and daughter would inherit equally in a similar case.

If a woman is found to be pregnant before marriage, we were told, she would be shouted at and occasionally hit by her parents, but she would not be turned out of the house. She would be forced to admit who was responsible. If the man was eligible for marriage, then the pair should marry, and if either party refused he or she would have to pay a fine of the same size as in a divorce case, Eighty rupees to be paid by the woman, forty rupees by a man are the basic sums, though they might be much higher if one partner was really eager to marry. If the partners were respectively from sora and carjat, theoretically endogamous, they should still marry. But if they are from the same clan, for example both are lamme, then they would have to pay a very heavy fine, depending on their means and going up to several thousand rupees. This is partly punishment, partly a

bribe to the village elders to keep quiet about the incident since, by the national law, they should be imprisoned. One case of the latter occurred, but I was unable to discover how, in actual practice, a case of pre-marital pregnancy is treated by a family.

It thus seems likely that, until recently, most people would commence sexual intercourse at about 17 or 18 years of age, and that fairly frequently this would lead to marriage. Pignède, however, believed that sexual relations before marriage were "rare", mainly because there was little time in which they could occur. Men, he argued, went away to the army when they were physically mature, at about 19, and girls were married at between 15-18.[14] In fact Pignède's own statistics suggest that over half the girls in Mohoriya married at 18 years or over[15] and this is also true of Thak. Likewise, both in Thak and Mohoriya men often did not go to the army until the age of 20 or over, although this was over the official age for recruitment. Thus in both sexes there was a gap of up to five years between puberty and marriage/departure. My informants agreed, however, that engaged couples seldom had sexual relations before marriage, although there would have been no social condemnation if they had done so.[16] Pignède stated that a young couple might be teased by their friends if caught in flagrente delicto, a teasing which suggests at least a measure of tolerance. He goes on to argue that there would be no condemnation of the boy, but that the girl would be reprimanded by her parents.[17] Such a rigid "double standard" does not seem to have been held in Thak, at least in theory, and in cases where intercourse led to pregnancy. Although the girl might receive the worse scolding, as we have seen, strenuous efforts would be made to find the man responsible and make him marry her or pay a fine. Several informants said that the man was as much to blame as the girl.

The first overt sexual experience of most Gurung boys is homosexual. From about the age of 12 until 16 or 17, boys will masturbate, either individually

or in groups when out working in the forest.[18] This is known in Gurung as ngyoh laba [illegible] (laba = to do/make; ngyoh = ?possibly 'oneself') as opposed to mrih laba which is ordinary intercourse with a woman (Gg. mrih = wife). I was told that if boys were seen doing this they would be shouted at, but not otherwise punished. The activity does not appear to bring guilt or shame. In later years grown men who, as boys, masturbated together will sometimes jokingly reminisce about their shared enjoyment. Girls are believed to occasionally masturbate themselves with their fingers, and a story is told of a girl (not Gurung) in south Nepal who became ill when she lost the egg-plant (Nep. bhendā) she was using for this purpose inside her. I found no trace of intercourse with girls before puberty, nor of the sexual initiation of boys by elder married women, both characteristic of other Himalayan tribal societies.[19] I did not ask a specific question in the census as to age at first intercourse or with whom it first occurred, but it was clearly not a topic of central interest as it was among the Lepchas.

Age at marriage

Although marriage-age and child bearing are not as closely linked among the Gurungs as among, for example, western Europeans, fertility is still considerably affected by marital habits. The ideal age for Gurungs to marry, for both men and women, is said to be between 15 and 25. Several informants in Thak agreed that men should marry from the age of 20 on, women from the age of 15. One informant, who had himself been married at 18 and felt strongly that this had been too young, argued that marriage was best delayed for both sexes until they were about 23-4 because it would stop people from having too many children. This was the only occasion when informants drew a connection between age at marriage and control of birth and since this informant knew of my views on the subject, may have been said partly to please me.

I was told that the relative age of bride and groom do not matter as long as they are within seven years of each other in age and their astrological positions relative to each other are satisfactory. It does not matter if the man is a few years the younger. If the girl is too young, there is some disapproval, as in a recent case where a man had married a girl of 12 and made her pregnant a year later. Some of the villagers are aware of a recent Nepalese law which forbids the marriage of women under 14 and of men under 18 years of age. Such a law has undoubtedly had little effect on the Gurungs, who very seldom married under this age even before the law. The institution the law might affect is childhood betrothal. Very occasionally (only one case was reported to me for Thak in recent years) a boy and girl, often cross-cousins, would be betrothed between the ages of six and ten. Usually just a verbal agreement would be made, but if there is a ceremony it is said to be the same as the ordinary wedding ceremony. It is called kanyadhan (Nep., "a small girl given"). Such a betrothal cannot be broken without a divorce, and the partner who instigates such a rupture has to pay a fine as in a normal divorce. When either partner remarries another person there is not a full wedding ceremony. In the one reported case in Thak such a divorce had occurred because the girl refused to cohabit with her betrothed husband.

It has long been known that the hill peoples of Nepal tend to marry later than those dwelling to the south of them. The 1952-4 census showed that while half the girls and a little over a quarter of the boys aged 10-14 living in the Terai were married, only 22% of the girls and 7% of the boys in the hills area were so married.[20] It is suggested by some authorities that this late marriage has not always been the case, at least among the Gurungs. In a textbook on the Gurkhas, referring to the Gurungs in the 1920's, it is stated that marriage "usually takes place at about the age of fifteen".[21] One of the authors has recently

TABLE 6:2. Age at first marriage of Gurung women in Thak.

Age at marriage	Present age of women 15-19	20-4	25-9	30-4	35-9	40-4	45-9	50-9	60-9	total
11-12	1	1		1			1	1		5
13										0
14										0
15			1						1	2
16							1			1
17		1		2	2	1				6
18			2				2	1	1	6
19					1	1	1		2	5
20		1	2	1	1			1	1	7
21		2		1		1		1		5
22							1			1
23										0
24										0
25									1	1
26										0
27				1						1
28						1			1	2
29				1					1	2
										44

repeated that among the Gurkhas (including Gurungs), "Marriage usually takes place at about the age of sixteen for boys, fourteen for girls".[22] Since one of the older men in Thak stated that there had been no change in the age at which people had married during his lifetime it is necessary to look at this question in some detail.

The evidence for Mohoriya is analysed by Pignede in a table as follows (the table refers to women only).

TABLE 6:1 Age at first marriage (237 cases at Mohoriya)

Age group	Nos. of cases	%
13-14 years	13	6
15-18	114	48
19-22	92	39
23-26	10	4
27-30	3	1
31-34	2	1
35-38	3	1

Copied from Pignede, Les Gurungs, p.234.

In commenting on the table he states that in all the 13 cases where a woman was said to have been 13-14 at marriage, the woman was now aged 30 or over. Nowadays the marriage of very young girls is rare. He suggests this is because many of the soldiers who come back to the village have picked up the idea that marriages with young girls is wrong. In Thak, however, in two of the rare cases where a very young girl was married it was to a serviceman on leave; indeed, if they are serving in India, they are likely to see much earlier marriages than they are used to. It could as well be argued that such pressures as there are are in the opposite direction. For further evidence let us look at the situation in Thak.

for ~~diagram~~ table 6:2 see across.

The figures are based on the household census of Thak, and although there is likely to be a small margin of error, especially among the older women, there is unlikely to be very much distortion.[22B] Three quarters of the marriages (29/44) have occurred at between 17-21 years. The mode is 20, the mean average just over 19. Only 8/44 women married at under 17

years of age. This gives a different emphasis to that put on the Mohoriya figures by Pignède, though it seems likely that if his figures were analysed as in the above table the results would be very similar. Given the difference in the size of the total sample, there is a greater proportion of very early marriage in Thak (up to age 14) than in Mohoriya; yet this does not alter the general impression that Gurung women tend to marry from the age of 17 years onwards. Nor do the figures indicate any obvious change during the last thirty years since Morris wrote. Although the figures are too small for any statistical certainty, those now aged forty and over seem to have married at almost exactly the same ages as those now aged 15-40. Nor do the number of marriages of very young girls seem to have decreased. It is possible that the Gurungs marry at a later age than the Magars, and that the military authorities confused the two groups. Thus we are told of the Magars "It is customary for girls to be married before they have passed very far into their teens".[23]

We have no ready analysis for Mohoriya, but we may look at the age of first marriage for men in Thak.

TABLE 6:3. Age at first marriage of Gurung men in Thak.

Age at marriage	Present age of men 20-9	30-9	40-9	50-9	60-9	total
15				1		1
16				1		0
17				1		1
18	1	2				3
19	1	1	2			4
20		2				2
21	1	3	1	2		7
22			1			1
23		2	1	3	1	7
24			2			2
25		2		2		4
26		1	2			3
27						0
28		2	1			3
29			1			1
30		1	1		1	3
31			1			1
						43

We may see from the above table that only 1/43 Gurung men is recorded as having married under the age of 17. It is difficult to reconcile this with the previously quoted remarks by army officers that Gurung men marry at 15 or 16. The mode is divided between 21 and 23. Less than one quarter of the men marry at under the age of 20, and less than a quarter over the age of 26. Nor does the table suggest any significant changes during the last forty years; marriages for men throughout that period have normally taken place at the ages between 19 and 30.

A number of possible explanations of the discrepancy between the above figures and the remarks of Brook Northey and Morris are possible. As suggested above, the military authors may have been basing their opinion on other groups recruited to the Gurkhas. Or it is possible that informants told them the ideal age at marriage, rather than the actual, and that this ideal reflected an even earlier situation. It is also possible that Thak and Mohoriya are not typical, or that there was a sudden shift in about 1930. One other possibility is that the authors were misinformed about their recruit's age. At present there is a rule that recruits must be aged between 18 and 20, but many older men go to the recruiting depots, often aged up to 25. Presumably, when asked, they subtract a few years from their real age. If this occurred in the 1920's, then it would lead to an underestimate of the age at marriage. A man whose real age was 25, for example, might be registered in the army as 22. If asked when his marriage had occurred, he might say, truthfully, 7 years previously. The authorities would list him as 15 at marriage, whereas he was in fact 18.[23B] This is speculation, but what is more certain is that during the last thirty years many Gurungs have not married until they are much older than the norm for Nepal. The reasons for this pattern, and changes in the age at marriage, if they occurred, are extremely complex, but to them we must now turn.

Factors affecting the age at marriage.

The first and most crucial factor is the degree to which marriage is the point at which the transfer of wealth and authority between generations occurs. If marriage is the occasion when land is passed on, when the new couple gain independence and a separate house, becoming a distinct economic, ritual, jural and social unit, then we may expect marriage age to be high. If, however, the young couple remain within the parental household, still subject to the father's discipline and contributing to a joint estate, then there is no forced transfer of resources and marriage can occur at a very young age. There is a third intermediate situation. In this the young couple still set up a separate household as in our nuclear family system, but as in the joint household system, they do not require that the older generation hand over their inheritance as a lump sum at marriage. Migrant labour, such as that practiced by many Gurungs who go to the army, is an obvious example of such a middle way.

The Gurungs, in fact, exhibit a pattern which lies between two extremes. On the one hand, as examination of the household structure has shown, they do not live in joint households. Two married couples scarcely ever live together permanently in one house, though there is perhaps not as strong an antipathy to such an arrangement as, for example, in England at present. Thus marriage does alter the pattern, but not radically or straight away. A tabular analysis is given in an appendix to show to what degree marriage, inheritance of property and the death of parents is correlated in Thak.[24] It shows that only in 3/35 cases was the ansha (division of the property) made at the first marriage of a son. The normal pattern is to wait for a few years until all the sons are married and have children or more than one has returned home permanently from the army. The property is treated as a joint estate until then. Nor, as we have argued, is there an immediate change in social and ritual status, automatically, at marriage. Young married

people do not change their clothes, their groups of friends, or gain any new authority in financial, ritual, or other decisions. Since this is so, it is not surprising to find from the table just referred to that there is no correlation between death of parents and age at marriage. The young do not have to wait for their parents to retire or to die. Neither the reported dates of death of mother or of father are correlated with statements about when the ansha was made. As said before, the pattern is an intermediate one. While it is expected that a family should have accumulated enough capital to build a separate house for a son a few years after his marriage, and hence must wait until he is fairly old before marrying him, there is no real threat to the parents implied in marriage, and therefore it can occur when they are still far from senile.

Not only the timing of inheritance, but the way it is distributed between children is crucial in determining age at marriage. Where inheritance is impartible, we may expect considerable differences in age between inheriting and non-inheriting children. Among the Gurungs, however, where all sons inherit equally, with the youngest getting the house and looking after the aged parents as long as they live, we find little difference between first, second, third and other sons, in their age at marriage, nor between daughters. The first son does not marry later than the others; he is not forced to wait for his father to leave him the farm, as in many peasant communities.

Another variable determining age at marriage in all societies is the amount of capital believed to be needed at marriage - housing, land, agricultural equipment, livestock, and a small reserve for illness and children. Related to this is the amount of time it takes, given the technology and social institutions, to accumulate this necessary quantity. The age at marriage can thus be affected by any one of these.

If, for example, there is a shortage of housing space or materials, this can put up the age at marriage. As Malthus remarked, "One of the most salutary and least pernicious checks to the frequency of early marriages in this country (i.e. C18 England) is the difficulty of procuring a cottage".[25] Where the amount of capital needed is low, or where individuals expect to be able to earn considerable sums for the rest of their lives with little inherited capital, for example where rich land is freely available, the fishing is good, or industrial jobs plentiful, then marriage age is likely to be low. Again the Gurungs are in a middling position. All except the youngest brother will have to build a solid, fairly expensive house. It is expected that both men and women bring several thousand rupees worth of gold and other possessions to the marriage as a form of insurance for the future.[26] But against the fairly high costs of marriage, there has been, until recently, the widespread availability of rich resources of forest and land. The decline in such resources over the last thirty years has been temporarily compensated for by large-scale employment in the army. Outside agents, Britain and India, provided the capital to set young Gurung men to work. By village standards they could earn large sums, and finally ensure themselves a pension. Some of the money undoubtedly went to buy gold and housing which were the basis of their marriages.

The size of the unit which pays for each marriage will also determine the age at marriage. In general, the smaller the unit is, the later marriage is likely to be. In societies where marriages are arranged between two kinship groups, and corporately financed by them, then the young couple are, at marriage, drawing on the reserves of a much wider and wealthier group. They need not wait until they and their parents have accumulated a specified amount, but they can borrow in advance, a loan which will be repaid over the years as they finance other weddings of kin. The Gurungs appear to be nearer to a western pattern, largely

depending on the individual nuclear family rather than the large lineage to finance marriages. Although relatives contribute rice and a token amount of money at the wedding celebrations, this only partly covers the cost of the actual celebrations. The expense of dowry and brideprice and housing is almost entirely borne by the particular household.

Another important factor influencing, and influenced by, age at marriage, are the ways in which marriages are arranged. It seems to be generally true that where the choice is made by the young couple, attracted to each other by personality and physical appearance as well as wealth, this will preclude both a very young or very old age at marriage. The norm is likely to be in the range 18-23 for men, 17-22 for women. The arrangement of marriage by groups of kin makes it possible to marry off the partners at or near puberty. But arrangement by parents may hold up marriage and force it very late. What is crucial, is that the 'romantic love complex' effectively weakens the link between the economic structure and age at marriage. Whereas marriage is primarily determined by economic, political and social considerations in the 'ideal type' arranged marriage, now powerful private emotional factors intrude. Age at marriage takes on a momentum of its own, unrelated to the purely economic situation, and subject to many of the pressures of other fashions. Traditionally, the Gurungs appear to have maintained an ethic of romance and love among girls and boys who flirted together, alongside a fairly formal arranging of marriages by parents. In several cases we heard of, or witnessed, the bride and groom were only informed that they were to be married and told who their prospective spouse was to be a few hours before the wedding. It was generally agreed, however, that if, after the wedding, either partner maintained a steady objection to the other, the parents would finally give in to their pressure. As well as this negative veto, some young people, though probably a small proportion, elope to marry. After a while they

are usually accepted back into their family, though, as in one case we witnessed, the battle of wills may go on for many months.[27]

There are many other factors which would have to be considered in any more general study of age at marriage. The general standard of living, the fluctuations in the real income of various groups, both will often lead to fluctuations of age at marriage. Changes in technology and the availability of land, or changes in the point at which men may be expected to reach maximum earning power, all have a profound influence. Again, the sex ratio, especially in small communities, may have a great effect. If there is a shortage of men, for example, the age of women at marriage may soar. Then there are the equally important cultural factors. The attitude to the danger inherent in being an unmarried post-pubertal woman; the necessity to ensure a male heir to pray at one's funeral; the concepts of when a girl is "mature" and ready to be a wife, these are only three out of many fundamental attitudes which influence age at marriage. Lacking the detailed statistics over time with which to test these hypotheses on the Gurungs, it does not seem worth while taking up too much space on them here. It may be observed, however, that Gurung sexual and religious attitudes do not put pressure on them to marry children off at puberty. It is not necessary to have a son for the funeral ritual,[27B] and there is no "honour and shame" culture, either in its Hindu or Mediterranean version, to make unmarried post-pubertal girls a threat to their brothers or other kin. In conclusion it may be said that social attitudes, like social and economic structure, allow considerable flexibility and would lead us to expect a situation lying somewhere between that in traditional Hindu India and post-famine Ireland, representing neither the pre-puberty marriages of the former, nor men and women waiting until their late twenties or early thirties before they could marry.

Gurung age at marriage is high in comparison to many other Nepalese societies. Thus the mean average age of the mother at the birth of her first child in Thak over the last few years is 23, while for a sample throughout Nepal the average at first birth is between 18-20.[28] The difference is partly due to later marriage, partly to the greater average gap between marriage and first conception among the Gurungs. It means that an average of a little over one livebirth per marriage is lost among the Gurungs as compared to the Nepalese average. But the Gurungs situation is entirely different, for example, from that in pre-industrial England where the age at marriage was sometimes as high as 27 for women, which effectively reduced their fertility by 3-4 livebirths. It is thus not difficult to see how the Gurungs have a high completed fertility rate of 5-6 live births per married woman, although they marry at a mean average age of over 19, whereas the Lepchas of Sikkim, for example, who used to start intercourse before puberty and whose girls were all married by 14, usually produced no more than three or four children.[29] Indeed it could be argued that by waiting until girls are stronger and at their fertility peak (and by inadvertantly spacing their children because their husbands are away in the army) the Gurungs have achieved considerably higher fertility than many of those groups who so urgently stress child-bearing.

2. Permanent celibacy: the proportion of women never entering sexual unions.

Whereas in parts of pre-industrial Europe it was common for up to 20% of the adults never to marry, the normal pattern in Asia and Nepal is for almost 100% of those who reach the age of 35 to be married.[30] Thus the 1952-4 Census for Nepal showed that less than one % "go through life in Nepal without ever having been married".[31] Yet some of the Bhoteas, with whom the Gurungs have affinities, have a different pattern incorporating a large number of never-marrying women.[32]

This fact, and the suggestion that many of the pressures which make the Gurung age at marriage higher than that in Nepal as a whole may also be expected to be at work here, makes it important to see what results the statistics yield. Although the proportion never marrying is scarcely ever as important a factor as age at marriage in lowering fertility,[33] it could still have appreciable effects on population growth.

Pignède's evidence suggests that the Gurungs conform to the general Nepalese pattern. He found no cases of men or women aged over 40 who had never married. He reported, furthermore, that Gurungs think that an adult who never marries is an abnormal being. The villagers, he wrote, were astonished at the fact that he was not married, and so he concluded that "Marriage, alone, gives an adult his full status".[34] My brief census of Mohoriya confirms Pignède's statistics: there was only one woman in the whole village aged over 25 who had not married and she was a girl of 27 who was looking after her old widowed mother. There were also two men aged over 33 who were not married, both of them looking after an aged mother. Such exceptions do not modify Pignède's picture of almost total adult marriage.[34B]

The situation in Thak, however, appears to be quite different, both statistically and in attitudes. I never heard any expression of the idea that to remain unmarried is peculiar, or that unmarried people have anything less than full adult status. I asked several people whether not marrying is in any way peculiar, or whether the older unmarried people in the village are in any way odd, and they said not. Only one informant, from Siklis, said that in a quarrel one might use such a fact as a jibe. As already stated, marriage does not appear to be an important turning point, economically, ritually or socially. A person is not looked on as incomplete if he or she has no spouse or children. Unmarried girls in Thak are as confident and respected as married ones. One of the most respected and forceful women in the village is a woman of 49 who, because she is crippled, has never married. This tolerance is

undoubtedly linked to the presence in Thak of a particular group of young, never-to-be-married, women.

It seems likely that in the past, in Thak as in Mohoriya, almost all Gurungs married. The only three women aged over 40 who had not married were the cripple already mentioned and two sisters, one of them deaf and dumb, the other looking after her.[35] Almost all men get married. There are only three men aged over 30 who are not married, the two aged 30 and 32, both away in the army, will probably do so fairly soon. The only man unlikely to marry is a man of 34, who claims that the T.B., for which he was discharged from the army, prevents him from supporting a wife. It is also possible that he is influenced by the survival of his old mother whom he looks after. The situation of the young women in the village, however, is quite different. There are 36 Gurung women aged between 26-40 whose normal home is in Thak; of these, 10 are not married. It is possible that the two aged under 30 will get married, but it is unlikely that any of the other eight will do so. One striking characteristic of this group is that all but one belong to carjat families, indeed eight belong to a single clan, the konme. Thus of the 27 upper jat women aged 26-39 in the village, one third are not married and unlikely to be so. The only sorajat women is an adopted daughter, who had been adopted to look after a widowed woman. By now it will have become obvious that looking after a single widowed parent (usually the mother) is a frequent correlate of non-marriage. It was present in at least five of the cases where a girl had not married. Another common feature is that where there are a large number of daughters, not all of them may marry. Thus a wealthy woman who had had seven daughters and no sons had not married off her third daughter, who is now 32. In another case there are five daughters aged 35, 26, 24, 19 of whom only the eldest is married. Marriages of daughters are expensive and it may be better to reserve their labour for the family holding.

There does not appear to be resentment among the girls who are doomed to spinsterdom. Marriage, which drags a girl off to an unknown man and unknown set of kin is not necessarily attractive. There is no criticism of the girls or their parents in the village, indeed the girls who realize they will not marry seem to have formed a special friendship group. When I talked to one of them about marrying she said, possibly a little defensively, that she never wanted to marry and that four of her friends had decided not to marry also.

It is possible to suggest a number of reasons why this group of never-to-be-married girls has arisen. It could be partly connected to higher-than-normal male mortality in the last war, which is now having a delayed effect. Since I do not have the figures for neighbouring villages this cannot be tested. The fact that the incidence is largely within the konme clan may mean that they have increased disproportionately in relation to other clans with whom they marry. A shortage of lamme or plemme men in neighbouring villages could leave this village without brides. The sorajat, whose inter-clan regulations are, as we have seen, less restrictive, might avoid such instances. Whatever the cause, it is interesting to see that up to 30% female non-marriage can occur, even if very locally, in the midst of a country such as Nepal. I have no evidence that non-marriage leads to any particular frustration, sexual or otherwise.

3. Amount of reproductive period spent after or between unions.

a. When unions are broken by divorce, separation, or desertion.

In Nepal generally very few people were reported in the 1952-4 Census to be living apart from their spouses; some 0.4% of the males and 0.3% of the females.[36] This suggests that the loss of reproductive unions is small. The situation seems similar among the Gurungs. Although divorces are frequent, their type means that they have practically no effect on fertility. The total

number of persons who had been married more than once in Mohoriya was analysed in detail by Pignede. With reference to 220 women, he found 36 divorces; 29 first marriages were broken by divorce, 36 by the death of the husband. But though these figures seem low, in combination they mean that in almost half of all Gurung marriages, one of the partners has been married to someone else previously. In Thak, of 75 couples heading households, in 36 cases one or both of the partners had been previously married.

TABLE 6:4. Number of times married, Gurungs in Thak, as at 1969.

Marriage	Men	Women
1st	43	54
2nd	18	16
3rd	4	3
4th	1	-
not known	9	2
	75	75

The table shows that only a little over a quarter of the women had married more than once. Apart from the death of a spouse, which accounts for over half the re-marriages, there are two principal reasons for the break-up of a marriage, divorce for sterility and divorce for incompatibility. Adultery was never given as grounds for an actual divorce, though it is possible that with so many males away so much of the time it is not uncommon.[37]

The main cause for men divorcing their wives is the supposed sterility of the woman. The alternative to divorce, bringing in another woman as a second wife, is the more frequent solution. Such a type of divorce will have a minimal effect on fertility; in fact it may even add to over-all fertility by releasing fertile women from sterile men. The other major type of divorce is linked with the nature of Gurung marriage. During the first few years, before a child is born, marriages are often precarious. The girl frequently still spends most of her time in her own village and only visits her husband's home occasionally. If, as

often occurs, he has left for three years service in the army soon after the wedding, the tendency for the marriage to lapse is considerable. The girl still associates with her old friends, and is likely to have affairs with other men. Often the first visit to the groom's home during the wedding rites is enough to convince the girl that she does not like her prospective husband or in-laws. Sexual intercourse, I was told, seldom occurs on this first visit so that another visit is necessary before there is a possibility that the girl may conceive. But if she is adamant in her refusal to visit her in-laws again, it is almost impossible for her family to make her do so. A fine may be paid; a basic 80 rs. if the woman instigates the divorce, 40 rs. if it is the man. The sums may be much higher if those concerned are wealthy and one partner is loath to lose the other. Thus one man in Thak, who wished to divorce his daughter from the man with whom she had eloped, had to pay over 500 rs. in fines, which are distributed between the injured spouse's family and her or his village. I came across a considerable number of arranged marriages which have just faded away in this manner. It is even said that if both partners agree, as they often do, then no fine need be paid and there is no official rupture. They may just remarry, though usually without any ceremony.[38] It is likely that a considerable proportion of the women who are recorded as having married several times belong to this category, and that although army service has perhaps slightly exacerbated the tendency, there has always been a fairly high rate of dissolution of marriages during the first few years.[39] Risley, some eighty years ago, noted of the Gurungs that in their attitude to divorce there was "great license ... on repayment of the bride-price to the woman's father".[40] Although such divorces delay the establishing of permanent unions, they have only a very slight effect on fertility. Indeed the lost years of childbearing are probably more than recompensed by the flexibility which such an institution allows. The improved

happiness and adjustment may add to the chances of successful intercourse. Nor is there evidence of any stigma on women who have been divorced, or divorced others. There is no evidence that they find it more difficult than others to re-marry, or of long gaps between divorce and re-marriage.

In most societies with pre-industrial demographic characteristics, the break-up of marriage through the death of a spouse is statistically far more important than divorce and separation. Among the Gurungs a combination of low adult mortality and high divorce rates has brought the figures closer than they often are; thus, as we have noted for Mohoriya, 36 first marriages were ended by death, 29 by divorce. There is an added interest in studying the Gurung situation for, normally, the majority of marriages are broken by the death of women in labour whereas, as seen in an earlier chapter, such female mortality is low in Thak, whereas the level of male mortality has been raised by army service. The possible seriousness of widowhood as a cause of lowered fertility is suggested in the 1952-4 Nepal census, which reported that 41% of the women aged 45-64 in the Hills region were widows, and 60% in the Terai.[41]

At first sight the statistics from Thak would also seem to indicate that widowhood is a considerable phenomenon among Gurungs and will have a lowering effect on fertility. In the 100 census households there were 25 widows and four widowers; thus 25/117 of the women aged over 20 were widows without husbands. From this we might have concluded that women are left abandoned far more often than men and that the problem is quite serious. But further analysis alters the picture somewhat and shows considerable regional variation. Thus Pignède concluded that a higher proportion of men remained widowed than women, suggesting that it was more difficult for a man to re-marry than for a woman.[42] This is partly related to the temporary age-structure. As we have seen, there were many more old women than men in Thak, whereas the position was reversed in Mohoriya.

Widows and widowers are usually older persons who have lost their spouse towards the end of their childbearing period or after the end of it. If the spouse dies when they are still young they tend to remarry. This can be seen for Thak in the following table.

TABLE 6:5. Age at which women now widows in Thak (1969) lost their husbands.

Age at loss	number of cases
under 30	1
30-9	4
40-5	7
46+	9
unknown	4
	25

It will be seen that only 5/21 known cases did a woman lose her husband at the age of less than 40 and not re-marry. Only in these cases, which represent some 6% of all the Thak marriages, would there be any appreciable effect on fertility. At present, in the 100 households, there is no widowed woman aged under 56, and no widowed man under 66.

If we turn to those who were widowed young, two things strike the observer. The first is that, except in one case where a woman widowed at 27 who had not subsequently remarried, permanent widowhood always occurred after the mother had born a considerable number of children. Of one woman we do not have full details, but the other three had had a total of 13-15 livebirths, an average of up to 5 each, which almost puts them in line with normal, uninterrupted, fertility. Thus, even in the exceptional cases where a woman was widowed young, this has had little effect on fertility. Secondly, it is clear that there is less pressure to re-marry after a husband has been killed in war. The three war-widows in Thak are all women who have remained widows from an unusually young age; at 27, 37, 40. It thus seems highly likely that widows who receive an army pension because of their husband's death, have less incentive to remarry. The one informant I asked about

this admitted that the increased security such a pension gave would lessen the likelihood of another marriage. On re-marriage the pension is forfeited, he said; and since a person would normally report to the authorities if they re-married (for honesty's sake, and because gossip would probably reach official ears in any case) the inconvenience of another marriage might be accompanied by no financial gain.

In Thak the loss through widowhood has been of no great consequence to fertility levels. It has meant the loss of about 30 woman-years up to the age of 39, and 40 woman-years thereafter, a total which might have produced up to some 12 livebirths. As a proportion of the approximate total of 180-200 livebirths during the last forty years to women still living and aged over 40, this is only a small fraction.

One of the major reasons why fertility is scarcely affected by widowhood is the tolerant attitude to widow re-marriage. As noted above, this occurs in most cases where the woman is young; a year is considered a decent time for mourning before a new marriage is made. Two possibly interlinked factors determining the attitude to widow re-marriage are suggested by Davis and Blake. They suggest that re-marriage is usually most tolerated in societies "practicing a shifting cultivation, hunting, or pastoral pursuits" and where there is a "strong clan or lineage organization". In these societies, they argue, marriage is a contract between groups, and once a lineage has acquired, often at considerable expense, a new member, it will treat her as a permanent possession. If her husband dies she will be inherited by a kinsman of the husband (the well-known levirate). When the economy becomes more advanced and stable, they continue, and the household gains power at the expense of the lineage, then marriage of the widow to a close relative of the deceased husband is frowned on. It may even be felt that the widow should never remarry.[43] This model works fairly well for the Gurung who have, until recently at least, been mainly hunters and pastoralists with a fairly strongly developed clan and lineage system. There should also

be evidence of a changing attitude as the Gurungs settle down, their economy and social system changing rapidly. This also we find.

There is evidence that, like the Bhoteas whom they resemble in a number of ways,[44] the Gurungs once practiced fraternal widow-inheritance from elder to younger brothers. In 1891 it was stated by Risley that the widow "may live with a man, especially with her late husband's younger brother (but not the elder) as his concubine".[45] I only asked one informant about this, who stated that it does sometimes still occur, but there is no general rule that it ought to happen, and in most cases the widow marries elsewhere. Sometimes the woman may be added to a previous marriage to form a poligamous household. He thought it was not a good idea if the age-gap was too great, since the elder brother's wife often tended to be regarded as a maternal figure by the younger brother. If she marries out of the family she loses her husband's land, but will probably take the gold given to her by her husband. It seems likely that if this custom had been still common in Thak and Mohoriya either Pignède or I would have come across cases in the genealogies and censuses we took. The nearest to such a case in Thak was that of a widow who was living next door to her dead husband's younger brother. Her husband had been killed in war when she was 27 and she had never remarried. I have no evidence that she is officially married to, or has even cohabited with, her brother-in-law, though it is perhaps significant that his wife has gone off to live in Pokhara, which is tantamount to separation. Future fieldwork could well clear up the problem of whether there is now growing opposition to re-marriage with close kin. It could also confirm or destroy Risley's, and later Northey and Morris', observations which state that in such a re-marriage there is no ceremony.[46] What is certain is that both men and women who lose their spouse fairly early in life normally set up a new union, usually within a year or two, though not necessarily, or even usually, with another widowed person.[47]

FACTORS GOVERNING THE EXPOSURE TO INTERCOURSE WITHIN UNIONS.

4. Voluntary abstinence.

There are four principal types of voluntary abstinence, not dictated by a conscious desire to limit fertility, and as suggested by Davis and Blake: post-partum abstinence after the birth of a child, 'occasional' abstinence principally for ritual occasions, during the gestation period, and during menstruation. As these authors point out, only the first two can have a lowering effect on fertility; the latter will, if anything, raise fertility if adhered to. Undoubtedly the greatest potential influence on fertility consists of post-partum abstinence, which often lasts until weaning at the age of two or three years. Such prolonged abstinence is not a custom among the Gurungs. Although they do not go to the other extreme, as do the Lepchas who practice ritual copulation 3, 7 or 21 days after childbirth,[48] sexual relations commence fairly soon. I was told by several informants, including mothers, that intercourse normally commences some two or three months after childbirth. There is no ban on intercourse during breastfeeding. Since, as Davis and Blake point out and is well known, fertility is very low indeed during the first two months after birth, there can be little doubt that Gurung fertility is only very minimally affected by post-partum abstinence.

Nor is 'occasional abstinence' of any real significance. Even where, as in India, ritual taboos are frequent, only some 24 or so days are said to be lost in certain rural areas and the effect on fertility is negligible.[49] Among the Gurungs the loss is much less. Although one informant stated that couples are meant to abstain from intercourse if there is going to be a really important puja the following day, such abstention can only mean the loss of four or five days per couple, at the very most. The man who has to abstain most is the poju, who is not meant to have intercourse before certain of his domestic and village

rites. This would, in theory, mean abstention for up to two weeks a year, at the most. Yet even he had not had his reproductive powers much hampered; he had had eleven children and at least one illegitimately. Thus we may conclude that voluntary abstinence of these types have no real effect on fertility.

Pignède correctly reported that sexual relations among the Gurungs continue until the sixth or seventh month of gestation;[50] a number of Thak informants were agreed on this. I did not come across any beliefs that such continued intercourse was necessary for the growth of the foetus nor, on the other hand, that it was dangerous. There did not seem to be any special rules about intercourse during menstruation. The position seems to be, as Morris observes,[51] that although it is considered undesirable to have intercourse during the three or four menstrual days, in practice people sometimes do so without fearing any evil consequences. Such intercourse seems to be regarded as messy, but not polluting; an attitude very similar to that in England today. This fits in with the generally relaxed attitude towards menstruation. Although a woman should not cook during this period, she often does, in fact, do so. Although informants were aware of the belief that menstrual women are polluting, this is hardly reflected in everyday life. The nearest they come to such action is the custom whereby women wash their hair and their clothes (which have anyway often been soiled in the absence of any form of sanitary towel) after their menstruation has ended. The reasons why some societies have firm rules enjoining sexual abstinence on certain ritual occasions and during various periods of the female sexual cycle are too complex for analysis here. It is sufficient to say that the Gurungs seem to have few rules and these are interpreted in a relaxed way. Sexual intercourse does not seem to be highly charged, full of dangerous power which needs to be controlled and which may threaten men. As yet, Hindu attitudes on this subject do not seem to have made much impact.

5. Involuntary abstinence (from impotence, illness, unavoidable but temporary separations).

I heard of no cases of impotence in Thak, and there were no special rituals in the poju's armoury of weapons against evil to deal with this ailment. It seems unlikely that it has any significant effect on Gurung fertility. Nor does the medical survey, reported on in chapter ten below, suggest that much time is lost to married couples on account of illness. Serious illness of the kind that would inhibit sexual intercourse, especially leprosy and venereal disease is, as we shall see, very uncommon. I did not encounter any cases where husband and wife were even temporarily not cohabiting because of disease.

'Unavoidable but temporary separations' is obviously a category of great importance for the Gurungs with their pattern of migration to the army. The degree to which army service lowers fertility by reducing the period when a couple cohabit, or raises it by spacing births and hence improving maternal health, has already been discussed, with statistics, above.[52] A comparison of couples where the husband did army service, to those where the man stayed almost permanently in the village, as well as an examination of the fertility histories of various couples suggested that army recruitment has very little general effect in lowering Gurung fertility. Indeed, it can be argued that the improvements in maternal health and standards of living which it brings about help to explain why the Gurungs have one of the highest average fertility rates in Nepal.

The other major cause of temporary absence for males arises from the agricultural system of the Gurungs. Shepherds are needed to look after livestock. It is possible that when the Gurungs were predominantly pastoralists, herding huge flocks of cows and sheep high up on the Himalayan slopes, the men would be absent for up to half the year.[53] For the last twenty or thirty years, however, the flocks have dwindled and

so has male absence. In Thak, half a dozen men at the most would be engaged in looking after cows and buffaloes either in the rice fields after the harvest, or up in the forest while the crops are growing. Much of the herding is left to old men and women, widowers and others who are anyway infertile. There in unlikely to be more than a minimal effect on fertility.

It has already been observed, in connection with divorce, that it is common for there to be a considerable gap between marriage and first sexual intercourse, and between marriage and first conception. Pignède noted this phenomenon, suggesting that often a young couple were too shy to have intercourse regularly to begin with, so that when the husband went away to the army he left his wife childless. She then had to wait three years for another chance of impregnation.[54] Although there is evidence that women married to soldiers tend to spend two or three years before conceiving, it has already been argued that the total effect of army service is very slight. But even those whose marriage is not disturbed by army migration may not start procreation for some time because of the reluctance with which many newly-weds start intercourse. There seems nothing equivalent to the pressurized love-making characteristic of parts of pre-industrial Europe. The decision to cohabit after marriage depends among the Gurungs on a number of factors which may be illustrated by two cases from Thak. In one, a pair of cross-cousins had been married, at the age of 20 and 18 respectively, one year before. I was told that they had not commenced to sleep together and they continued to live in their own houses in the village. They did not feel physically attracted to each other and would, I was told, finally have to be pushed into cohabiting by their respective families in two or three years. There was no particular hurry as the boy did not intend to go to the army. Thus we can see that army service may, in fact, precipitate, rather than

delay, conception. In a contrasted case, a young man on leave from the army and aged over 25 married a girl slightly younger than himself from another village whom he had previously never seen. I was told that within two months of their wedding they would probably cohabit, since they found each other physically attractive. When teasingly asked by his friends if he had had intercourse, the boy would, with great embarrassment, deny this. He would be returning to Malaya shortly.

6. Coital frequency (excluding periods of abstinence).

It is unlikely that this variable will significantly alter fertility except where there is evidence of an extraordinarily high or low rate of intercourse.[55] Although my evidence for the Gurungs is, naturally, based on reports rather than observation, it does not indicate either extreme. Probably Morris slightly exaggerates when he states that intercourse "generally takes place once, or more rarely twice, every night".[56] The frequency depends on a number of factors and though informants agreed that such intercourse often occurs daily between young people during the first few years of their marriage, the average for all couples of fertile age, taking into consideration age and the inconveniences of communal sleeping, is unlikely to be higher than 9 or 10 times per month. One young informant put the average lower, stating that more than once a night very seldom occurred, while the average was about once a week. Usually the couple lie down separately and wait until everyone is supposedly asleep, in other words about half an hour, and then one of them goes to join the other. Pignède states that this is always the woman,[57] but my informants said it might be either partner. The woman usually sleeps fully dressed and just lifts her long skirt. Occasionally, if possible, the young couple sleep elsewhere, upstairs or on the verandah. When they sleep with other members of the family, and hence lie down in different parts of the room, no pre-arrangement to have intercourse is

made. Thus the sleeping arrangements and need for secrecy probably inhibit very frequent intercourse. But the high fertility of the Gurungs makes it plain that sexual relations are frequent enough to have little influence on general reproductive patterns.

CHAPTER SIX. NOTES

1. Nag, Factors Affecting Human Fertility in Non-industrial Societies; Benedict in Population Control, ed. Allison; M. Douglas, in B.J.S. 17, no. 3,1966 and Clyde Mitchell, 'Yao Fertility'. For general comments and criticisms see Macfarlane, New Society, 10 October 1968.
2. Freedman, 'Sociology of Human Fertility' in Current Sociology, x/xi, no.2, 1961-2; Geoffrey Hawthorn, Sociology of Human Fertility (1970).
3. One of the many examples which destroy the thesis is described in Daedulus, Spring 1968, p.532.
4. Riesman, Lonely Crowd, p.13.
5. Kingsley Davis and Judith Blake, 'Social Structure and Fertility: An Analytic Framework', Econ.Devt. & Cultural Change, 4,no.3(Apr.1956),pp.211-235.
6. The classic discussion of the western pattern is by John Hajnal in D. V. Glass and D. E. C. Eversley (eds), Population in History (1965)Ch.6. Also see Spengler in Daedulus, Spring 1968,p.433.
7. Gorer, Himalayan Village,p.315.
8. See ch.2,p.55 above.
9. Gurungs,p.216 alludes to intercourse in the fields. Morris, 'Thesis on Nepal', p.132 noted that there is no specific word for a 'bastard' in Nepali, though the word meaning "child of a co-wife" (jharkolo) is often used. The one Gurung I asked about this said that pregya was a Gurung term. Morris, 'Thesis on Nepal',p.127, thought that intercourse usually commenced at puberty among Gurungs, but this was on hearsay.
10. NO NOTE
11. Gorer, Himalayan Village,p.174
12. Ibid., p.236.
13. Gurungs,p.268
14. Ibid.,p.218.
15. See ch.6,p.10 below. Of the 48% aged 15-18, it seems certain that at least one third, or16%, were married at 18, which would make the ratio of those married at under 18 to those married at 18+ of the order of 40:60.

16. Pignède, Gurungs, p.218, makes the same point.
17. Gurungs, p.216.
18. This phase is described by Morris, Winter in Nepal, p.127.
19. For the Lepchas, see Gorer, Himalayan Village, ch.12; the Bhoteas are described in Peoples of Nepal Himalaya, iii, p.256.
20. 1952-4 Census, p.x. and Table 7.
21. Northey and Morris, The Gurkhas, p.194.
22. Morris, Winter in Nepal, p.122. In fact statistics in his own 'Thesis on Nepal', p.165 contradict Morris' own arguments. Only 5/54 of the men aged 29 or under said they had married at age 16 or under.

22B. When the census of Thak was taken, a number of older informants could not remember how old they were when they married. In these cases my translator tended to assume that marriage occurred two years before the birth of the first child. This may distort some of the information for older age-groups, but it seems likely that informants would have remembered if they had been married at a very early age.

23. Hitchcock, Magars, p.40.

23B. See also note 22 above, which suggests that these authorities may have mistaken the nature of the facts they gathered.

24. Appendix six.
25. Malthus, Essay on Population, ii, p.250.
26. There are figures for the cost of marriage on pp. 351-2 below.
27. Pignède, Gurungs, p.222ff discusses the arrangement of marriage.

27B. Though it is now said by a few informants that it is necessary to have a son to put fire in one's death in order to go to heaven; clearly this is an example of Hindu influence.

28. For a discussion of the statistics for Thak, see p. 110 above; for Nepal, see Worth, Nepal Health, p.19.
29. Gorer, Himalayan Village, p.435.
30. For Europe the evidence is summarised by Hajnal in Population in History, pp.101ff. On p.104 of the

same there is a summary of some of the evidence for Africa and Asia.

31. 1952-4 Census, p.x and Table 7.

32. Peoples of Nepal and Himalaya, iii, pp.259, 280.

33. Davis and Blake, 'Social Structure and Fertility', p.218 show that this factor never lowers fertility more than 25%, and in western Europe (e.g. Switzerland) has only one third as strong an effect on fertility as compared to the influence of age at marriage.

34. Gurungs, p.234.

35. I was told that the sisters had taken a vow of chastity to earn religious merit; I do not know at what age this was taken, nor to what extent they were making a virtue of necessity.

36. 1952-4 Census, p.x and table 7: there is likely to be considerable reporting of absence, however.

37. Pignède, Gurungs, p.265 argued that adultery is "not frequent" and I noted no anxiety or gossip about adultery. Morris,'Thesis on Nepal', p.150 thought adultery was frequent, however.

38. One informant, from Siklis, stated that there might be a ceremony at re-marriage, this would be up to the man. Risley (Tribes & Castes, p.304) noted that "Divorced women may marry again by the full ceremony".

39. Pignède, Gurungs, p.52 noted "several cases" and on p.265 he discusses the effect of the army on marital stability.

40. Risley, Tribes and Castes, p.304. Pignède, p.266, states that usually the woman takes back her goods, the man retains his, at divorce. Sometimes a little gold is given to the woman if she keeps the children.

41. 1952-4 Census, p.x.

42. Gurungs, p.50. But in 1969, in the census which I took, there were 23 widows and only 5 widowers and it seems unlikely that the proportions can have changed so very much.

43. Davis and Blake, 'Social Structure and Fertility', pp.227-8.
44. Peoples of Nepal Himalaya, iii,pp.266-7.
45. Risley, Tribes and Castes, p.305.
46. Idem., and Northey and Morris, The Gurkhas, p.198.
47. Among the Lepchas, however, it was fairly common for widows to marry widowers (Gorer, Himalayan Village, p.160).
48. Gorer, Himalayan Village, p.292.
49. Davis and Blake, 'Social Structure and Fertility', p.232.
50. Pignède, Gurungs, p.213.
51. Morris, Winter in Nepal, p.126.
52. See pp. 111-2 above.
53. See pp. 244-5 below.
54. Gurungs, p.52.
55. As Davis and Blake, 'Social Structure and Fertility', p.233 point out, available statistics on this subject are extremely unsatisfactory.
56. Morris, Winter in Nepal, p.126.
57. Gurungs, p.245.

CHAPTER SEVEN. SOCIAL STRUCTURE AND FERTILITY (2): CONCEPTION AND GESTATION VARIABLES.

A. Factors Affecting Exposure to Conception.

7. Fecundity or infecundity, as affected by involuntary causes.

We may distinguish five main involuntary causes affecting fecundity; health, diet, psychological state and working conditions of women, and length of breast-feeding. The general health of women, and particularly the prevalence of venereal disease and other genito-urinary infections may be important in lowering fecundity among some Himalayan groups. It may help to account for the fact that Gorer found that of 56 married women aged over 20, 18 were completely sterile.[1] But, as we shall argue below, there is little evidence that such disease is at all widespread among the Gurungs among whom we studied. It is likewise possible that fecundity is lowered in some societies by dietary deficiency.[2] The Gurungs eat better than most other Nepalese societies and this may possibly improve the health and fecundity of the women. In any case, it seems unlikely that fecundity is adversely affected, for high rates have been achieved in human groups with a far lower standard of diet. If it is true, as Davis and Blake suggest, that western fecundity may be lowered by "nervous tension" and "artificial modes of life" induced by industrial society, then this third variable would undoubtedly favour the Gurungs.[3] By most standards the Gurungs lead a very relaxed and "adjusted" life, with very little apparent stress and tension. If, as seems likely, psycho-somatic factors can effect the physiological process of conception, such factors are likely to be minimal where, as among the Gurungs, there is little worry about the ability to bear children or the danger and pain of childbirth.

Another variable suggested by Davis and Blake is the working conditions of women; it is possible that the hard physical labour often undertaken by women in pre-industrial or industrializing societies weakens or

strains them, and hence lowers their fecundity. It seems likely that the effects, if there are any, will be more powerful in causing high foetal mortality and difficult childbirth, rather than in lowering the rate of conception. As far as can be seen, foetal deaths and deaths at childbirth are rare among Gurung women. This suggests that although they virtually farm the difficult mountain slopes in the absence of their husbands, carrying very heavy loads of dung, wood and fodder, and doing all the bending work of weeding and transplanting, this has little effect on their health. Since it is difficult to conceive of their physical life being much more difficult, this is an interesting negative finding. It is possible, however, that there is a little truth in the observation of a mission doctor who works in a Magar village to the north-west of Pokhara. She noticed several cases of prolapse of the womb, which she ascribed to the practice of carrying very heavy loads on the back and the custom, shared by Gurungs, whereby women tie a tight cummerbund round the waist. She thought that tying this downwards would force down the uterus. It would be worth testing whether such damage is widespread. No indication of such harmful effects was noticed in any records of heavy maternal mortality or foetal deaths in Thak.

The final factor is the reduced fecundity induced by breast-feeding. It is known that lactation reduces the chance of conception by about 25% after the first few months, and it seems likely that this relative infecundity helps to widen the gap between conceptions in some societies.[4] Gurung breastfeeding customs would make it likely that such a factor would work to the full. The normal Gurung practice in Thak was to continue to breastfeed a child until the mother becomes pregnant again. When a new pregnancy is recognized the previous child is weaned, although it has for some time been having some solid food. Himalayan tribes seem to wean late; Gorer noted that Lepcha children sometimes continued to breastfeed up to the age of ten, and Morris also noted a belief that this occurred in Nepal up to the same age.[5] I never noticed cases of

Gurung infants being fed beyond the age of five, though one informant said they might be breast-fed up to seven or eight, and an old woman said she had fed her child thus until he was nine or ten. The normal length of time is about three years, which is also the average time before the birth of the next child. Only one mother reported that she had stopped breast-feeding at one year because her milk had dried up, and another stated that she had ended after two years for the same reason. I heard of no cases where the mother was entirely unable to breast-feed any of her children through failure to lactate. Like the Lepchas, the Gurungs appear to lactate easily and for a long time. Undoubtedly this slightly lowers their fecundity. If it reduced fecundity by the absolute maximum of 25%, which is very unlikely, it could be argued that such a custom might reduce fertility by about 2 conceptions per woman of completed fertility. It could well be argued, however, that its general effect is to raise fertility, even if it slightly lowers fecundity. By giving women a little rest between childbearing, and by decreasing the number of infant deaths caused by food infections, it may have the total effect of raising the number of surviving children per mother.

8. Use or non-use of contraception.

Up to 1967, knowledge and use of mechanical or chemical methods of contraception were virtually non-existent among the Gurungs. A number of pre-industrial societies attempt to prevent conception by inserting various articles into the vagina,[6] but the eight Gurungs I asked on this subject were agreed that they had used no type of contraceptive technique, and several were sure that no such methods were known in the village.[7] During the two years preceding our visit in 1969 Radio Nepal had begun to give an almost daily exhortation to practice birth control and there had been some description of the methods which were available. Another source of information are the retired soldiers who have spent many years in India or Malaya. Most of those I questioned said they had not encountered birth control propaganda or methods while abroad, but one

recently retired officer proudly showed me a small stock of condoms which he had brought back from Malaya. Both Indian and British army officers concerned with Gurkha rehabilitation claimed that returning soldiers are given a lecture on birth control methods, and stated that facilities for birth control are available in the army for those who want them. I was also told that a government team had visited the village the previous year to demonstrate birth control methods. The nearest contraceptive facilities are in Pokhara; the government hospital provides a month's supply of pills for half a rupee, and fifteen condoms for the same price. Vasectomies and loop insertions are free. What is clear, however, is that despite a considerable official barrage of information, absolutely nothing was being done in the village about actually using these techniques. Not a single person had visited the government hospital to obtain either more information or technology, nor had people, as far as I could ascertain, attempted to buy condoms from the bazaar where, at far higher prices, they are beginning to be sold. As will be seen shortly, this cannot be explained away by saying that the Gurungs want many children, or that they object, in principle, to any of the contraceptive devices.

Coitus interruptus and other non-mechanical methods of avoiding conception are more widespread in non-industrial societies than are mechanical methods. Yet these, also, appear to be unknown among the Gurungs. Several informants were convinced that coitus interruptus is unknown, and likewise any other similar methods. Nor did I encounter the deliberate and conscious extension of breast-feeding as a means to prevent contraception, which Morris states is a characteristic of some 'Nepalese'.[8] In fact, no deliberate attempt to limit population or births appear to have been traditional among the Gurungs. If we turn to the economic situation we can see some of the reasons why this should have been so.

It seems likely that there has been a considerable shift in the desire to have children, even during the last few years. Until approximately one generation ago,

the pressure of population on land could hardly have been felt amongst the Gurungs, except in long-established villages such as Siklis. Resources of forest and cultivable land must have seemed limitless, and local pressure could be relieved by moving off and clearing a new site for a village. The details of what happened in Thak during this stage will be examined later. Sufficient to say that the chronic land shortage which has characterized some Himalayan peoples from at least the beginning of this century was absent among the Gurungs.[9] Each generation did not see the family land divided into several parts. Each man had as much land as he could clear. Labour was valuable, and many children were no burden. Indeed, with the characteristic mortality patterns of such a society, there was no question of needing or wanting to limit the number of births. The population could be allowed to expand to fill the ample resources. We might expect the attitude to be similar to that among the Magars in the 1950's where, we are told, "Parents hope for as many children as possible".[10] Women, who bear the brunt of high fertility, were not able to limit conception even if they had wanted to.

It is impossible to date the realization that resources are limited, and that instead of contributing to the wealth and prestige of a family, many children are a burden. Certainly, however, such an attitude was present by the time we arrived in Thak, though it was undoubtedly fostered by the discussions we encouraged. It is doubtful whether this change had much to do with formal birth control propaganda, though it is possible that people now became aware of the important fact that it <u>is</u> possible to control the environment in this manner. Two economic phenomena may have helped to alter attitudes. The first is the recession of the forest; every year it takes markedly longer to fetch wood and fodder. The second is the shortage of good agricultural land. The price of such land has risen rapidly, and it is now widely observed that families which were once wealthy are now only moderately well off because inheritance has split a large estate between

several sons. Many Gurungs linked the poverty of the lower castes to their supposedly large numbers of children.

A general survey discovered that the number of surviving children desired throughout Nepal is between four and five.[11] This is a good deal higher than the actual average number which do survive at present (about three) and helps to confirm the hypothesis that successful family planning, based on individual decisions, could only have a very minor effect on population growth rates in a country such as Nepal.[12] It seems likely that the average number desired by Gurung women is lower than this. The most popular number in Thak was two surviving sons and two surviving daughters, almost as popular was two sons and one daughter. Several informants specifically stated that two of each were needed in case one of them died. Several informants, especially young men and women, said that one son and one daughter were enough. It seems likely that if they could ensure that one of each sex would survive, many parents would be prepared to stop at that. Those who wanted only one of each sex were especially articulate about the cost in clothing, food, and the effort of having many children. On the whole, therefore, it would seem that these Gurungs would be prepared to limit their families after having three or four children, though their experience of infant and child mortality would make them reject any birth control method which is irreversible until they have more than this number.

Another feature which, in practice, would raise the average number of children is the fact that people do not usually get an equal number of children of each sex. Although there does not seem to be a great necessity to have sons, for ritual or social reasons, it is clear that parents would, on the whole, like to have a son and heir in much the same way as this is true in England today. I therefore asked how many girls a mother would be prepared to have before she gave up the attempt to have a son. I was given totals

of between three and five daughters. As one woman pointed out, one could afford to have many daughters because they did not divide the family land, but went to another family although they needed gold. In theory, therefore, people would appear to be likely to consider contraception when they felt that three or four children, whatever their sex, would survive. With the present patterns of mortality, this is, in fact, precisely what occurs.

Yet there may be a considerable gap between what people say they will do, and what they actually do, especially in such a highly-charged area as sexual relations. When, we may ask, do people actually feel impelled to attempt birth control among the Gurungs ? During our stay in Thak, and on our visit to Mohoriya, we let it be known that we had pasi a'peeba mae (Gg., pasi = child; a'peeba = give (negative); mae = medicine), in other words that we had pills and condoms. Some sixteen people, eleven of them from Thak, asked us for some 'medicine'. In about two-thirds of the cases it was the woman who came to ask, probably reflecting their greater feelings on the topic. Half were Gurungs; the others included a Magar, Tamang, Brahmin, and three service castes. Since we were on both occasions centered on a predominantly Gurung village, this suggests that other ethnic groups in the area would also be ready to accept contraceptives, if they were locally and cheaply (we gave them out free) available. Some other facts about the recipients are set out in the following table.

for TABLE 7:1 see ~~across~~ below.

The mean age of the mothers in the table below is approximately 36. Thus they had already completed their most fecund years. Nevertheless, effective control of the last eight or nine years before the menopause would still probably prevent an average of up to two births per woman, or 32 children to these mothers. Obviously it would also have been of immense value to the health of the women concerned.

TABLE 7:1. Ages and number of living children of women who desired (or whose husbands desired) contraceptives: Thak and Mohoriya.

	Present age of mothers	Number of living children male	female	total
Thak	40	6	3	9
	38	2	1	3
	27	4	3	7
	32	3	2	5
	40	3	1	4
	35	2	3	5
	29	1	2	3
	40	5	4	9
	?	?	?	5
	35	3	?	3+
	36	7	1	8
Mohoriya	38	2	4	6
	38	5	1	6
	41	3	4	7
	32	1	4	5
	45	6	6	12
		53+	39+	92+

The woman, aged 27, for example, was a very poor leatherworker's wife. She suffered from very heavy menstrual bleeding and further childbearing may well mean her death. She already has seven living children. Such birth control would also have saved the life of a Tailor woman who died in labour at the age of 45, giving birth to her tenth child. The mean average number of children already born and still surviving to Thak mothers desiring contraception is over 5, and for Mohoriya is over 7. This indicates that even with entirely successful contraception, these families would still be large. Generation replacement only requires between two and three surviving children per couple. Only in four cases did women seek contraception when they had less than five surviving children. In the fifteen cases where we know the number of surviving sons, the mean average was approximately 3.5 per mother. It is worth noting, however, that in two cases women were prepared to consider contraception when they had only one surviving son.

The attitude to family planning among the Gurungs seems to be very favourable. Most informants are aware of the dangers of overcrowding and poverty, and they showed no particular objection to birth control on principle. Yet it seems likely that family planning will be ineffective in seriously reducing the birth rate for many years to come. We may wonder why this is. Firstly, and quite naturally, the recent years of medium mortality among infants and children make people reluctant to use the cheap, effective, but irreversible methods such as vasectomy. Likewise they are even less keen to have loop insertions. The official and impersonal aura of hospital, and possibly some rumours concerning lack of hygiene, would be enough to quench most villagers' desire to have such an operation. It seems likely that if a travelling team, which included a Gurung nurse and doctor, visited the villages, spending a few days getting to know the inhabitants, and consulting the village leaders as to who might be interested, they could do many such operations and possibly even loop insertions, in the security of the villager's own homes. It would certainly be worth experimenting with.

As it is, the initiative is left entirely to villagers, and scarcely anything is being achieved. When I visited it in 1969, the government hospital at Pokhara, the second largest town in Nepal and the regional and medical centre for several million Nepalese, was keeping approximately 35 people supplied with cond ms and pills, and doing approximately 1 loop insertion or vasectomy a week. At the very most, therefore, they would be preventing some 50-100 births p.a. With an average population increase of say, 2-3% p.a., the two million people dependent on Pokhara are adding to their numbers by between forty and sixty thousand p.a. The present effort in the Pokhara region would thus have to be increased by 1,000 fold before it kept population steady, even with present high mortality rates. There can be little doubt that when public health and medicine

really succeed in Nepal, any chance of stemming the flood on present lines will be completely destroyed. Already the installation of one new water pipe to half a dozen hill villages undoubtedly saves more infant lives p.a. than are prevented by the whole family planning campaign outside the Kathmandu valley.[14]

Yet even if touring teams, well equipped and trusted, visited every Nepalese village once a year, providing free facilities, could this deal with the situation ? If our experience in one Gurung village is anything to go by, it could not. We spent over a year in Thak, learnt Gurung, and spent many hours talking to people. We announced at the village meeting that we had pills and condoms which could be obtained free from us, and the head of the panchayat explained their purpose and encouraged people to use them. We gave him instructions and asked him to distribute some contraceptives, which he was happy to do. We also kept a supply for distribution. We talked to many people about the need for birth control, and undertook a questionnaire on the subject. Two coloured posters advocating birth control and written in Nepali were put up at strategic places. A few dozen small booklets were distributed. Here, then, was a village comparatively inundated by birth control propaganda, but not so flooded that there was a counter-reaction. Most of the influential members of the village, the Pradan Panch, local headmaster, poju, retired army officers, were in favour of the idea. What was the response ?

In our sample hundred households there were eighteen women who had four or more living children and were aged under 44 at the time of our census, and hence still able to reproduce. Of these, only three came to us to ask about contraception. Thus only 1/6 of those who have enough children to ensure that at least one survives took the decision to attempt contraception. Two of these three cases were those of mothers of 7 and 9 still-living children. Of mothers with 4-6 children, only one of 16 asked for contraceptives. Since most Gurung families fall in the range 4-6, it can be seen that less than 7% appear to be sufficiently

interested. This suggests that even where contraceptive devices are locally available, distributed by a trusted villager, free, in a setting where there is a widely discussed pressure on land and forest, only a very small percent even of those with over four children still living will avail themselves of such facilities. The only negative factor was that our supplies would only last a maximum of six months. For further condoms and pills, or for more permanent contraceptives, villagers would have to visit the government hospital. Since this was not stated in the propaganda, and could only be learnt when people came to ask for contraceptives, it seems unlikely that this had a very great negative effect.

The very small effect our distribution of contraceptives might have, even if those who asked for contraceptives used them successfully, can be seen from comparing the reproductive years left to all married women in our census with those for contraceptive seekers. Assuming reproduction ended in their 45th year, the four Thak women from the census population to whom we gave devices would, if they continued to use such devices for the rest of their years until the age of 45, cancel out some 26 reproductive years (years of lowered fecundity at the end of the reproductive cycle). The potential reproductive years left to the married women in the census was 434. Thus, even supposing 100% success, only approximately 1/17 woman years would be affected, and these the less fecund ones.

Yet we cannot assume that even those who asked for such contraceptives used them, or, if they used them, used them correctly. People did not seem to find it difficult to understand, theoretically, how to use condoms and pills, but there is some indication that they soon gave up their use, if they ever started at all. At least five of the pill supplies we distributed were timed to run out before we left the village, and I told those to whom they were given to come back for more when their supplies were running out, before we left the village. None did so, and it

seems unlikely that they preferred to make a special journey to Pokhara and to pay money, rather than to get them from us in the village, free. In one caseI know that a woman stopped taking them after a few days; she developed a bad sore throat and I was nervously asked whether the pills could have caused this. It is easy to see how any latent objection to using contraceptives could be buttressed by suggesting that they caused one of the many ailments which constantly occurred in the village. A few notorious cases of such a connection being made, and an early receptive attitude could turn into general hostility. This is rumoured to have occurred in Pokhara where gossip has spread that a number of women have suffered serious disorders after the insertion of loops: it is quite possible that there is a factual basis for such rumours in this case. The loop-insertion rate in Pokhara has fallen swiftly after the first few months.

Thus the total effect of our attempt to provide contraceptive facilities was probably negligible. It did show, however, that there is a considerable interest in conception, though such enthusiasm as there is cannot be tapped by the present method of providing cheap contraceptives in government dispensaries and hospitals.[15] Furthermore, it suggests that mobile teams, even if they attempt to gain the confidence of the people with whom they work, and provide free facilities, will not achieve very much. Only a combination of such teams with some form of penalty for those who continue to produce more than a set number of children, bonuses to those who abstain, and other inducements and sanctions can <u>begin</u> to tackle the problem. Something on the lines of the malaria eradication and smallpox vaccination campaigns, but much more organized, is needed. Unless this is done within a few years there can be no chance that even the modest aims of the Nepal Family Planning Federation, which "hopes to keep the country's growth rate to below 2% and to reduce it to 1% by 1985", will be achieved.

9. Fecundity or infecundity, as affected by voluntary causes (sterilization, subsincision, medical treatment etc.)

As yet, this variable has no appreciable effect on the Gurungs. Subsincision is unknown, and I heard of no Gurungs who had been sterilized. Although some facilities for male sterilization are available in Pokhara, as far as I know, female sterilizations are not yet carried out.

B. Factors Affecting Gestation and Successful Parturition.

10. Foetal mortality from involuntary causes.

In the absence of accurate records of miscarriages and stillbirths it is impossible to be certain, but it seems highly likely that the Gurungs do not suffer greatly from unintentional foetal mortality. The regular spacing of births at two and three-yearly intervals which was noted in the chapter on fertility, and the scarcity of reported miscarriages, already alluded to, point to this conclusion, as does the absence of the genito-urinary diseases which might cause such mortality.

11. Foetal mortality from voluntary causes.

It is well known that abortion is a more widespread method of controlling population than is contraception. Consequently a number of societies which have no contraceptive techniques do use abortion.[16] The Gurungs are in this category, for they have no native contraception methods, but do practice abortion and infanticide.[17] As with the Lepchas,[18] the actual techniques for inducing abortion appear to be somewhat half-hearted: tampering with the foetus by physical means does not appear to be practiced. I was told only that eating certain mixtures, sugar cane juice, a mixture of certain vegetables (garda ta) and honey might be successful. Other informants said that there were no effective abortifacients in the village, but that people sometimes purchase 'medicine' in the bazaar at Pokhara. The fact that two women in Thak came to us asking for medicine to rid them of an unwanted foetus (Gg. pasi (infant) waba (throw away)) indicates both

the desire for such abortifacients, and their absence in the village.

Pignede stated that Gurungs feel great repugnance towards abortion (and presumably infanticide).[19] I did not notice such a feeling among the several men and women with whom I discussed the subject. Their tone implied no particular criticism of the practice; it depended on the particular situation as to whether it was a justified measure. They all thought that the only occasion when such methods would be used would be when a child had been conceived outside the normal marital relationship. When a lower caste woman has conceived by a Gurung, or two people of the same clan have had a productive intercourse, then, unless the infant is destroyed before or after birth, there will be a great scandal and expense. Most Gurungs would probably admit that a person who tried an abortion in this situation would only be doing the sensible thing. There does not seem to be a feeling that life before birth is sacred, and that such abortion is tantamount to murder. Likewise, as in one case of which we heard, a woman who has been made pregnant while her husband is away in the army, may try to find some potion to cause an abortion. I asked my informant on this case whether women used such methods to get rid of unwanted legitimate babies. He said they did not do so because it was 'sinful' (pāp kaba : pāp (Nep.) = sin; kaba (Gg.) comes). The implication was that sinfulness is more than outweighed by social necessity in certain cases.

It is impossible to be certain as to how many children are killed in the womb or strangled at birth. One informant said that "many" were so dealt with, but I only heard of two cases. The clothing of women makes it possible for them to conceal pregnancies right up to birth. Thus they can, if necessary, go off to the forest alone and kill the newborn infant. But given the tolerant attitude prevailing in the past towards pre-marital sexual relations, it seems unlikely that many infants were destroyed because they were illegitimate. There is no evidence that children born in wedlock have ever been killed or allowed to die. It thus seems

likely that only an occasional infant, conceived in a highly forbidden union, is killed. This would not significantly alter the over-all fertility rates.

Conclusion; the over-all rating of Gurung fertility.

Over-all fertility among the Gurungs is moderately high, as we have seen. The way in which this is achieved, as compared to the model devised for pre-industrial societies by Davis and Blake, may be set out as follows.[20]

TABLE 7:2 Intermediate variables affecting fertility.

Usual Values in Pre-Industrial Societies.	Gurungs.
Usually high values:	
1. Age of entry into unions	medium
2. Permanent celibacy.	normally high
8. Contraception.	high
9. Sterilization, etc.	high
Usually low values.	
4. Voluntary abstinence.	medium to high
10. Foetal mortality-involuntary.	medium to high
High or low values	
3a. Time between unstable unions.	high
3b. Post-widowhood celibacy.	high
11. Foetal mortality - voluntary.	medium to high
Indeterminate	
5. Involuntary abstinence.	low
6. Frequency of coitus.	medium
7. Involuntary sterility.	high

Note: a 'high' value, means that this will tend to encourage high fertility, not that the incidence is high.

From the table it will be seen that the Gurungs deviate in many ways from the simple model of a pre-industrial society. In four out of the six predictions about a "usually high" or "usually low" value, they do not fit the prediction. Thus, as with many other features of their society such as literacy, mortality, and other rates, they need to be placed near the middle of the continuum which runs from technologically simple to technologically sophistical societies. Probably their manner of life is in many ways closer to that of pre-industrial Europe than it is to that of India, or even other parts of Nepal. Most interestingly, however, the study of Gurung society shows how a high reproduction

rate can be achieved alongside many factors which might be thought to inhibit this. Pensions to help deal with the problem of old age, a moderately high age at marriage, army service which takes most adult men away from the village for up to fifteen years, the absence of an ancestor cult and need to produce sons, all these might have made one predict that Gurung fertility would be low. Furthermore there is no special emphasis on fertility or virility in the society, and there is no great opposition to contraceptives and abortions in themselves. Despite all this, Gurung population has been growing fairly fast and fertility rates have been moderately high. This suggests that those planners who place their faith in such things as old-age insurance, or raising the age at marriage by law, as solutions to the population explosion will have to re-think their position. Likewise, those who blame high fertility on religious or cultural factors are oversimplifying the situation.

CHAPTER SEVEN. NOTES.

1. Gorer, Himalayan Village, p.174.
2. The somewhat inconclusive evidence is summarized in Nag, Factors Affecting Human Fertility, pp.115-6, 207.
3. Davis and Blake, p.234.
4. Nag, Factors Affecting Human Fertility, pp.78-9.
5. Gorer, Himalayan Village, p.294; Morris, Winter in Nepal, 75.
6. Norman E. Himes, Medical History of Contraception (London, 1936) contains a useful survey of contraceptive methods in many societies.
7. Gorer, Himalayan Village, p.173, stated that the Lepchas had "no known method of avoiding conception". And Morris, 'Thesis on Nepal', p.129 wrote that "There is, however, no doubt that any form of contraception is quite unknown, nor is coitus interruptus practiced in any form".
8. Morris, Winter in Nepal, p.75.
9. For example, the shortage among the Limbus, Caplan, Land and Social Change, p.6.
10. Hitchcock, Magars, p.49.
11. Worth, Nepal Health, p.32 and fig.9, p.33.
12. For the classic discussion of this problem, see Kingsley Davis, "Science, 158. no. 3802, 1967, pp. 730-9.
13. No note.
14. The Britain-Nepal Medical Trust hospital at Biratnagar in the Terai laid special emphasis on birth control among its prospective aims. In a letter of 24 December 1970 Dr. Cunningham informed me that "loops are very unpopular and we do about one insertion per fortnight as compared to approximately twelve new "Pill" patients per fortnight and ten vasectomies". The hospital had been in operation for less than two years and it will be interesting if it can keep up a rate which is far higher than that achieved by Pokhara hospital. We, also, found that people preferred reversible, non-clinical, methods, such as pills and condoms.

15. The likelihood of people being supplied from the hospital is rendered even less by a regulation which forbids the distribution of more than 3-months supply of pills or condoms at a time. This means that the majority of the population who live at least a day's walk or more from Pokhara will have to tramp long distances every three months (especially difficult during the monsoon months) in order to re-stock.
16. Nag, Human Fertility, pp. 136-7.
17. Although conceptually different, infanticide and abortion are similar in their effects, and are treated together here.
18. Gorer, Himalayan Village, p.173 described the only kind of Lepcha abortion as "bathing in hot sulphorous streams".
19. Gurungs, p.52.
20. Cf. Davis and Blake, p.214.

CHAPTER EIGHT. MORTALITY STATISTICS

Very little indeed is as yet known about patterns of mortality in Nepal, either for the population as a whole or sub-groups within it. This almost complete ignorance combined with the importance of the topic justifies, it is believed, the following account - despite its many defects. As with the fertility statistics, the following figures are rendered less significant by three main types of flaw. Firstly the hundred households chosen for detailed observation in Thak were not a random sample, based on proper sampling technique. Although we can often compare them to those for another community, Mohoriya, and this helps to make it less likely that findings will be entirely exceptional, we can by no means generalize safely from the following figures. Secondly, the area covered is too small for statistical significance. We are dealing with a total population of only c.500 persons, which is often broken down into half that number, or less, for certain purposes. Figures based on such small numbers cannot be tested for statistical significance, and are hardly more than impressionistic. Thirdly, the quality of the data available to the anthropologist is not satisfactory. No records were available except those gathered by myself; for example there is no vital registration of deaths except in the year I was present in the area. This makes it extremely difficult to compute even the simplest of figures such as the crude death rate. In fact, the following chapter may be seen more as an attempt to see how one can possibly arrive at a general impression concerning mortality patterns from inadequate data. The data is basically of four kinds. For the village of Mohoriya we have two censuses, made in 1958 and 1969. These may be compared to see who had died in the interval, and thus we may establish survival rates. Secondly there is the census of Thak in 1969. This includes retrospective questions about mortality which are the third source. I asked for the births and deaths of all infants and children of selected women[1] in the past, and also for the age and

date of death of parents of the head of each household and his wife. Also asked for was the date of death of the most recent near relative to have died, other than parents. Finally, I recorded all births, marriages and deaths during the year of 1969. My general impression is that the census data is pretty accurate and that not a large number of infant and child deaths were missed. A number of respondents were not able, however, to fill in the names of dates of their parent's death or that of a near relative. The chief defect of the information for Thak is obvious. While there is reasonable coverage for the year 1969, retrospective questions tend to concentrate on the young and the old; middle-aged people who died are likely to be missed.

Crude death rate.

The 1952-4 Census makers guessed at a C.D.R. in Nepal of some 30 (per thousand).[2] This very high figure has been supported by the medical survey of Nepal in 1965, which reported a figure of 27/1000, and a recent re-analysis of the 1952-4 and 1961 Censuses which suggests an even higher rate of 32.[3] This would make it one of the highest crude rates in the world.[4] We may wonder how the predominantly Gurung village of Thak compares with this figure. In 1969 there were 480 persons actually resident in the village at mid-year. During the whole year some 13 people died. This gives a rate of 27/1000, exactly in line with the Nepal average. But there are reasons for thinking that this is a good deal too high. To start with, we could properly add in all those temporarily away in the army and elsewhere; if they had died their death would have been considered a loss to the village. If we do this we have a rate of 24.6(25)/1000. Yet this is still likely to be far too high. The difficulty is that, as is well known, a rate based on one year, especially for such a small population, is subject to very large swings. The fact that of the 13 deaths in 1969, some 9 were of adults immediately suggests that, given what we know about the high infant and child mortality rates in such a society, it was a somewhat exceptional year. To

construct a more satisfactory rate requires several assumptions. If we take the period 1965-9, it will be assumed that since the population (including temporarily absent) in 1969 was 528, and since it was known to have been increasing by at least 1% p.a., then the mid-period population in 1967 may be assumed to be about 515 persons. The retrospective questions in the Census for this period gave the deaths of 36 persons. This probably represents most of the children to the age of 10 and adults over 50 who died. If we make the assumption that some four persons aged 10-50 also died, but were not recorded then we have an average C.D.R. of 15.5 over the five years. Given what we know about the Gurungs, their relatively high standard of living and uncrowded villages, it seems likely that such a C.D.R. is of the right order for recent years.

Infant and child mortality.

The Nepal Health survey showed that infant mortality ratios, based on various different types of evidence, varied between 130 and 208/1000. A national rate of about 150/1000 is therefore quite likely.[5] The figures for child mortality are even vaguer. The same health survey discovered a mean number of 6.0 live births to women now aged 50+ but the mean average of children still alive to such women was only 3.02, which suggests that only approximately 50% of live-born infants survive to adulthood.[6] This is a figure paralleled by Gorer's observation that 9/19 of the males born to women aged 50-69 at his visit had died.[7] For the Gurung village of Mohoriya, Pignède stated that of the 380 last infants born at Mohoriya, some 30% had died before reaching the age of 17.[8] This immediately suggests that Gurung rates may be lower than those for Nepal as a whole.

With only one year of registration for a population of just over 500, it is not worth even stating the infant death rate for Thak in 1969 since one or two added deaths will make such a huge difference to

TABLE 8:1 Proportion of children died to women aged 40+ in 1969

	Males			Females			Total		
	total born	now dead	%	born	dead	%	born	dead	%
Gurungs	91	35	38.5	80	22	27.5	171	57	33.3
Tailors and Blacksmiths	31	7	22.6	35	14	40	66	21	31.8
Total	122	42	34.4	115	36	31.3	237	78	32.9

the figures. We will therefore have to approach the problem in an indirect way. One such method, similar to that noted above, is to find the proportion of children stated to have been live-born in the census, and who have subsequently died. The detailed figures for Thak are as follows.

For TABLE 8:1 see across.

The general conclusion is that some 33% of the children of women now aged over 40 are dead. The over-all rate does not vary very much between Gurungs and untouchable castes, but while Gurung males have a much higher mortality in infancy and childhood than females (a normal characteristic since females are usually stronger), among Tailors and Blacksmiths female infant and child mortality is twice as high as that of males. This suggests some form of discrimination, presumably in feeding. The fact that the ratio of male to female births is 122/115 gives some confidence as to the accuracy of recall since this is exactly the ratio one would expect given normal births. The figure also fits with the 30% mortality by age 17 suggested by Pignède, but it contradicts his suggestion that there is a higher infant/child mortality among girls as a whole than among boys, a hypothesis which he based on arguments concerning the sex/age structure.[9]

The proportion of children who survive may be used to test a number of other hypotheses, crude index though it is. One of these is that there is, as Pignède suggested for the Gurungs, a higher child and infant mortality among poorer villagers than among the richer.[10] Evidence contradicting this hypothesis has already been provided by table 8:1. Gurungs are, on average, much wealthier than the service castes but, as shown in the table, 33.3% of their children had died and only 31.8% of the Tailors and Blacksmiths. Not too much weight can be placed on this since it may be affected by the different age-structure of the two groups and, possibly, by their relative interest in recalling births and deaths. But corroboration comes from other sources. Taking carjat and sorajat Gurungs separately, we find that (to women now aged 40+) 34.2% of the carjat children had already died and only 31.4% of the sorajat (the total of children born to each group were 120 and 51

respectively). Now the carjat are, on the whole, wealthier than the sorajat, yet they suffered higher infant/child mortality. One final figure can be given to bear out this conclusion. The population of Thak was stratified into five classes during fieldwork, on the basis of wealth.[11] In Class II, who are prosperous villagers, 10/27 or 37% of the children of Gurung women aged 40+ in 1969 had died; in class III, middling in wealth, some 31.3% (26/83) had died; in class IV, poor Gurungs, some 35.4% had died. The Tailors and Blacksmiths, we have seen, suffered 31.8% mortality. In other words, the richest Gurungs suffered the highest mortality, followed by the poor. Middling wealth Gurungs were the healthiest on this index. But the range is not very great. Why this should be so, if it really does reflect differences in mortality rather than differences in age-structure, it is at this stage impossible to say.

Another negative conclusion is that army service has no direct effect on infant/child mortality. Indirectly it may help by raising living standards throughout the village, but ther is no real difference between specific individuals depending on whether the father has been in the army or not. Women aged 40+ whose husbands had been in the army for ten or more years had lost 26/84 (31%) of their children while those whose husbands had not served, or served for only short periods, had lost 22/84 (32.3%) of theirs.[12]

One other way of measuring infant and child mortality is by comparing the two censuses of Moheriya. Thus we may find out what proportion of those listed in 1958 were still present in 1969. The families which emigrated are known and can be excluded. Girls aged six years or over in the earlier listing are also difficult since their absence in 1969 may well be due to marriage into another village rather than death. If we confine ourselves to those aged 0-4 years in the earlier listing, of 47 children only 6 had died, (12.7%); mortality was higher among boys than girls, 4/25 of the former, 2/22 of the latter. This suggests a fairly low rate of infant/child mortality by Nepalese standards. Of the 64 males aged from 0-16 in 1958, only 10, or 15.6%

TABLE 8:2. Age at death of all children to mothers aged 20+, Thak, 1969.

Age at death	Age of mother in 1969 (all women)									
	20-4	25-9	30-4	35-9	40-4	45-9	50-4	55-9	60-4	65-74
Birth		1		1		1*	1	1		
1-7days						5	1			
8-14 "							1			
15-30 "					3	3	1			
2/3mths					1					
4-6 "				2		1				
7-11 "		1			2	1	1	1	1	
1st year		1			4	3		3		2
2nd "				1	2	1	1	2		
3rd year					3	3		2	3	
4th "				1	1	1	1			
5th "					1	4		1	1	2
6th "										
7th "							1			
8th "										1
9th "					1	1			1	
10th "					1		1			
11th-13th						2	1			
14th-16th						1	1			
17th+						1(22)	1(25+)	1(29)	1(27)	6≠

notes: *also three stillbirths. ≠=aged 32,20,21,27,36,36 years.

had disappeared; it is possible that one or two of these had gone abroad and not been noted as being absent. If anything, mortality was a good deal higher among Gurungs; 9/47 Gurungs had disappeared by the second listing, and only 1/17 of the service caste males aged 1-16. This may have been distorted a little by the above mentioned migration to the army, but cannot be entirely explained by that phenomenon. Of the 15 babies said to be up to one year old in 1958, some 20%(3) had disappeared. The general impession is that, as in Thak, the mortality was not high by Nepalese standards.

Another way to look at infant and child mortality, based on the Thak census, is to tabulate the age at death of all children born to mothers now aged 20+. This is done in the following table.

For TABLE 8:2 see across.

One fact emerging from the table is that older informants, especially those aged over 60, appear to have forgotten deaths of children aged under six months; it cannot be likely that no infants under that age died to women now aged 60+. Therefore for accurate information we will have to confine ourselves to those aged up to 55 years of age. Another impression is that the worst periods are during the first week and years 1-3. Some twelve infants are recorded as dying in the first week and mortality continued at a relatively high level until the end of the third year. A striking feature, to be examined in more detail, is the contrast between the mothers now aged 20-34, who have lost hardly any infants, and those aged 40-54 who lost many.

Another interesting feature of the table is the infrequency of death within 24 hours of childbirth. Of the total 187 livebirths recorded for mothers now aged 20-54, only 3 are recorded as dying at birth; this low rate is confirmed by observation and villager's comments.[13] It seems to contrast with a small sample for the whole of Nepal, where 11/63 infant deaths had occurred on the first day after birth.[14] Another way to look at the Thak material from the census is to analyse the age-specific mortality of young children up to the age of ten. This is done, showing the results as deaths per 1,000 infant/child years lived, for Gurungs. The table is divided by age of mother (in 1969) so that we may see if there has been any change in recent years.

TABLE 8:3 Age-specific mortality of children at various ages, to Gurung women in Thak, 1969.

Women now aged.	Children during the first ..... 0-11 mths.	12-23 mths	Age 2	Age 3	Age 4	Age 5	Avge.1-5
20-39	71.4 (56)	41.7 (48)	22.2 (45)	- (40)	54.1 (37)	- (32)	39.8 (226)
40-54	93.2 (118)	47.2 (106)	30.0 (100)	41.2 (97)	11.4 (88)	47.0 (85)	47.1 (594)
All women (including above)	86.2	45.4	27.6	29.2	11.5	34.2	45.12

Notes: The top figures are rates per 1,000 child-years lived; the figures underneath, in brackets, are the number of completed child-years upon which the rates are based. Those who are at present aged 3, for example, are only counted as having completed the categories up to the end of age 2 and are not counted as 'at risk' in 'Age 3' since they may die before they leave the year. This means that the rates are a little too high since they are based on too few 'at risk' children in reality.

For TABLE 8:3 see across.

The first feature worth drawing attention to is the infant death rate in column one. For all women it is 86/1,000 livebirths. this is much lower than the probable 150/1000 for Nepal as a whole we noted earlier; for younger mothers the rate is 71/1000 which is even better. Mortality rates from the second year on are half those for the first year, but they remain moderately high until the 5th year. There is some evidence of a dip at age two in the mortality rate; probably, if thiscis correct, this would be a safe period when the child was still benefitting from parental milk, but strong enough to survive many infant infections. Another interesting feature is the contrast between younger and older women. We have already noted that infant mortality is a good deal lower among women aged under 39, and mortality is lower at all other ages except year 4. The average mortality of infants/children from age 1-5 is thus 39/1000 for younger mothers, 47/1000 for the older. Since, if anything, we would expect younger mothers to recall deaths of young infants better than older women, it is very doubtful whether this reflects a difference in memory. It suggests that there has been a considerable improvement in infant/child health sometime during the last 10-20 years. It is probable that this is related to the installation of a water-pipe in the village some ten or more years ago whose influence on the pattern of illness can be seen elsewhere. [15]

Adult mortality.

The assessment of adult mortality among the Gurungs is even more difficult than that of infant and child mortality since a census, however the questions are framed, is unlikely to give as complete a coverage of adult deaths as of young children. Three methods will be used in order to try to establish approximate mortality patterns, but it should be emphasized that the results must be very tentative until an adequate registration system is set up in Nepal.

One method is to compare the two censuses of Mohoriya, and to see what proportion of those in certain age categories in the earlier census had died by the time of the later one, eleven years later. If we omit the families which have moved out of the area in the

TABLE 8:4 Mortality in Mohoriya between 1958 and 1969.

	MALES (aged)				FEMALES (aged)			
	17-29	30-49	50-69	total	17-29	30-49	50-69	total
No. present in 1958.	41	41	29	111	39	44	25	108
No. missing in 1969.	8	5	7	20	6	9	6	21
Rate per 1000 p.a. (11yrs)	17.7	11.1	21.9	16.4	13.9	18.6	21.8	17.6

intervening area we are left with the following figures.

For TABLE 8:4 see across.

It is likely that some of those who have 'disappeared' have not, in fact, died. Several of the younger men and women had undoubtedly either married out or merely emigrated; this is likely to effect females aged 17-29 most of all. Unfortunately I did not have a copy of Pignede's original census with me in Mohoriya and so could not actually ask whether individuals had died in the meantime. Thus all the rates above are undoubtedly too high. Nevertheless there are some interesting features. Firstly, it will be seen that the total rates for the two sexes are almost equal, the slightly higher female rate probably being more than accounted for by marriages out of the village. Secondly, the rate for males and females aged 50-69 is very low by most standards, and is almost exactly equal for the two sexes. Where women do seem to have heavier mortality, probably, as we shall later see, because of deaths at the menopause, is in the age-group 30-49, which is the age of lowest mortality among men. Those aged over 70 in 1958 have not been included since all but one of the 10 persons (half of them aged 80 or over) had died eleven years later. This very heavy rate at old age fits in with the lower levels in middle age and is surprisingly like the modern western pattern. A comparison of Gurungs with lower castes (both included in the above tables) did not show any significant difference; if anything, the lower castes seemed to suffer less mortality in the age group 17-49 than the Gugungs; thus of 15 lower caste women, only one disappeared in the eleven years between the censuses (and she was aged 20 and may have married out), while 14/68 of the Gurung women were no longer present at the later date.

Another method sometimes employed by demographers when mortality data is lacking, is to analyse the number of marriages broken by the death of husband or wife.[16]

Unfortunately I was unable to ascertain in all cases whether a person had married again because the first spouse had died, or after divorce. Therefore I cannot provide concrete statistics on this problem. The general impression from the census, however, is that the majority

TABLE 8:5 Parental age at death in Thak.

Age at death	MALE Years ago (Gurungs) 0-9	10-19	20+	unknown	Service caste*	total	FEMALE Years ago (Gurung) 0-9	10-19	20+	unknown	Service caste	total
TO 40	-	-	3	-	1	4	-	-	3	1	1	5
40-49	-	4	8	-	4	16	1	7	11	-	4	23
50-59	1	4	9	2	-	16	1	3	4	3	1	12
60-69	4	5	5	4	5	23	1	3	3	2	4	13
70-79	5	4	8	-	1	18	4	2	2	-	2	10
80-89	5	1	-	-	1	7	4	-	1	1	-	6
totals	15	18	33	6	12	84	11	15	24	7	12	69

* all dates.

of people were still on their first marriage and that few marriages had been broken by the death of a spouse. When widowhood occurred, it was usually late in life. Thus no marriages of women aged under 55 in 1969 had been broken by the death of a husband.

In the census of Thak, informants were asked to state the age of both their parents at death, as well as those of their spouse, and how long ago the death had occurred. Since roughly three-quarters of the households had a man and wife as heads of household, this should have produced the age at death of some five to six hundred adults (given the fact that parents overlapped between different families in the village). Often, however, one of the partners was absent and the other one knew nothing about his or her absent partners parent. Sometimes an informant could not hazard a guess at his or her own parent's age at death. But I was able to ascertain the age at death of some 153 parents, and these may be seen analysed in the following table. There is no reason to think that the ages are biased in any particular way, except that there was 'heaping' at the deccenial points. Occasionally informants said that their parents were "about 60" etc. at death. Informants usually knew how many years ago the death occurred.

For TABLE 8:5 see across.

A number of interesting conlusions emerge from the table. Above all, it shows the great change that appears to have occurred in recent years. If we look at the Gurung males, then we see that during the last 0-9 years, only 1/15 deaths have been of men aged under 60, whereas among these who died 20+ years ago, 20/33 died aged under 60. Those who died during the 10-19 period are between these two extremes. Thus it appears that Gurung men are now living longer. If we compare Gurungs with service castes, although an equal proportion of each reached the age of 60, Gurungs then seem to survive into the 70's and 80's in a larger number of cases.

If we turn to females we will see the same features, if anything more pronounced.. During the last 0-9 years, 8/11 Gurung parents died at the age of 70 or over, while in the period 20+ years ago only 3/24 are reported to have died at 70 or over. In the period before 1960,

there was a very high mortality of women aged under 50. Some 21/39 of the women who died before 1960 were aged under 50, whereas in the last 0-9 years only 1/11 has been under 50. If the earlier pattern is associated with the female disorders related to the menopause, it is difficult to see why there should have been such a considerable change during the last few years. The fact that caste women tend to show a better survival than Gurung women is largely explained by the relative age of the two groups; most of the caste deaths about which we have information have occurred during the last fifteen years and this seems to have been the period when health has improved.

The table also tends to corroborate earlier suggestions that mortality of men and women during the earlier years of marriage is low. Of the 139 Gurung parents whose age at death we know, only seven were aged under 40. Only a very few Gurungs lost either parent when they were still young, a fact that distinguishes them from many other societies with higher mortality rates. The three male parents who died young were aged 30, 34, and about 36; the four females, only one of whom was said to have died in childbirth, were aged 20, 25, 28, 30. That only 4/57 mothers whose age at death we know should have died under the age of 40 does suggest that the maternal mortality rate is not high. At present the highest mortality rates for both men and women are over the age of 70; in the past the peak for women appears to have been 40-9 and for men 50-9.

Conclusions.

We may briefly restate the main findings, tentative as they must be. Firstly, there appears to have been a considerable decline in all mortality rates, except of the very old, during the last ten or fifteen years. Secondly, the pattern for two Gurung villages, Thak and Mohoriya, appears fairly similar. Thirdly, there appears to be no obvious differences between the experience of sub-groups, stratified either by wealth or caste.

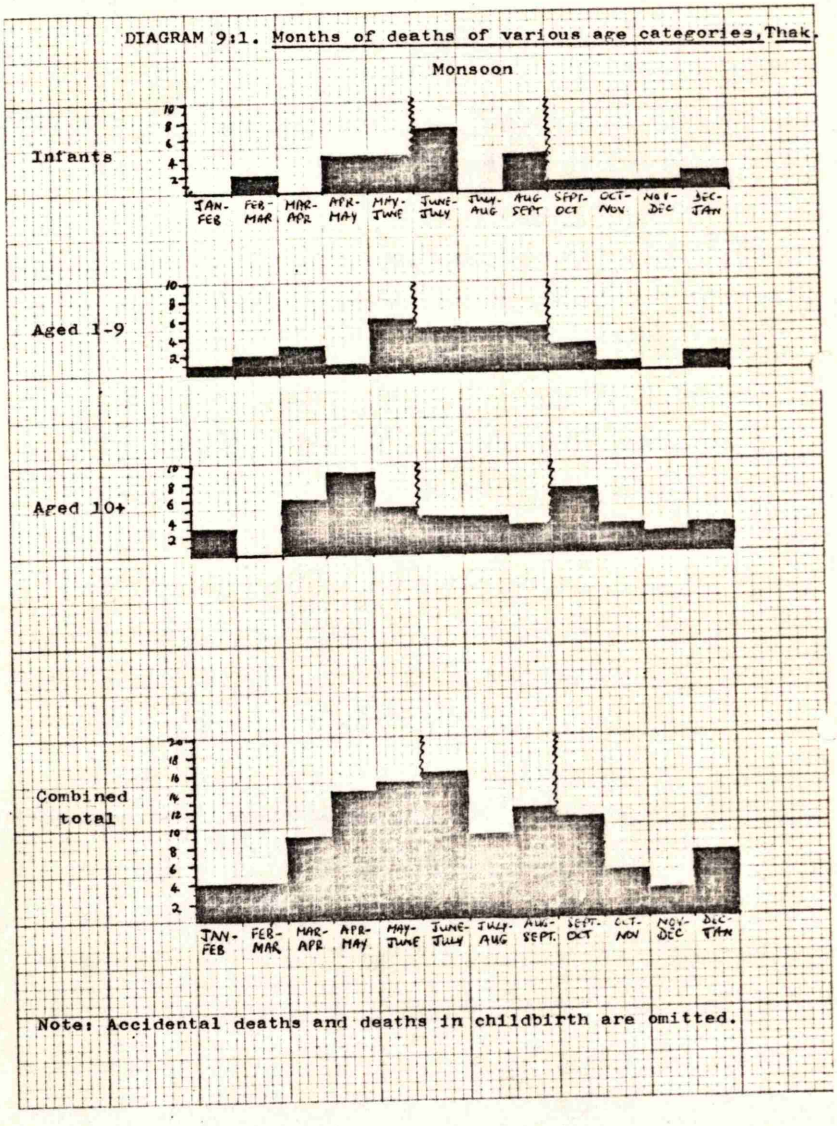
CHAPTER EIGHT. NOTES.

1. For a description of how the women were selected see p. 100 above.
2. 1952-4 Census, p.xvii.
3. Worth, Nepal Health, p.29; Krotki and Thakur, 'Population Size in Nepal', p.91.
4. E.g. India in 1969 had a rate of 18, Pakistan = 19. (figs. from Ehrlich, Population, p.331; Nepal = 21 (but over optimistic).)
5. Worth, Nepal Health, p.29. No figures for Nepal were given in the 1969 UN. data sheet. In the same year the rate for India was 139, for Pakistan = 142. A recent survey of the Sherpas suggested an infant mortality rate of 158/1,000 live births (Lang, 'Kunde Hospital', (p.4)).
6. Worth, Nepal Health, p.21.
7. Gorer, Himalayan Village, pp.435-6, re. the Lepchas of Sikkim.
8. Gurungs, p.54; presumably the 300% is a misprint for 30%. For the Sherpas, a loss of 25% by the age of twelve years is suggested (Lang, 'Kunde Hospital', p.4).
9. Gurungs, p.50. For a discussion of the atypical age-structure, see p. 87 above.
10. Gurungs, p.54.
11. For a discussion of this see Appdx 7.
12. It is not known whether the husbands of women who between them had 19 livebirths were away in the army or not; they have been omitted.
13. See pp.195-6.
14. Worth, Nepal Health, p.27, fig.2. th ugh the two ratios are not, of course, directly comparable.
15. See pp.202 below.
16. Koblenzer and Carrier, 'Rungus Dusun', p.272, for example, found that 6/13 of the married women aged over 45 had been widowed.

CHAPTER NINE. SOCIAL STRUCTURE AND ILLNESS(1): CAUSES OF DEATH.

Virtually nothing is known about the incidence of various diseases as causes of death in Nepal.[1A] The few health surveys of the country confine themselves to analysing present prevalence of illness, and the meagre statistics which can be culled from hospital records clearly give a very distorted picture of the pattern in rural areas. Yet huge vaccination and other campaigns are launched on the basis of very little knowledge of local conditions. Furthermore, the economic and social future of Nepal depends very much on what happens to the relationship between the fertility and mortality rates, and we cannot hope to understand the latter unless we have some idea of what the major causes of mortality in village society are. It is this combination of almost total ignorance and the extreme importance of the subject which justifies the following very tentative account of the situation in one Gurung village. The impressions and statistics on which the discussion are based are extremely unsatisfactory, but they may possibly give a first glimpse into a subject which needs much greater study. There are two major reasons why the account needs to be treated with caution. Firstly, the author is not a trained doctor, as will be apparent, and was not able, therefore, to pose the questions which would have elicited the maximum of information, or to analyse the results in a sophisticated way. Secondly, in the absence of any system of coroner's examinations and medical certificates, or even of simple vital registration of deaths, the only way to gather information is by retrospective questioning. This was carried out on the 100 sample households in Thak during the taking of the census. Informants were asked the cause of death of all infants and children stated to have died, and also the date and cause of death of parents, and one other near relative who had died recently. Naturally, answers came in the form of descriptions of symptoms; for example a person was said to have died of a "lump in the stomach" or "fever". This could describe a number of ailments and checking through with a doctor left many such cases unclassified. Furthermore, there is likely to be loss of memory. Finally, the figures are too small for any

DIAGRAM 9:1. Months of deaths of various age categories, Thak.



Note: Accidental deaths and deaths in childbirth are omitted.

TABLE 9:1 Stated causes/symptoms of death in Thak census, Gurungs and others, 1969.

Cause	Infancy	1-9 years	10-49	50+	total	%
Dysentery/enteritis	5	16	3	15	39	19.5
Tuberculosis	-	7	13	7	27	13.5
"Cancer" (lump)**	-	-	9	13	22	11
"Fever" (typhoid etc,)**	-	6	2	8	16	8
Swollen body (heart/kidney)	-	-	2	12	14	7
Pneumonia/bronchitis	7	5	-	1	13	6.5
Typhoid	-	11	6	5	12	6
Accidents (falls/burns)	2	3	5	2	12	6
Warfare	-	-	10	-	10	5
"Stomach painful"**	-	3	2	1	6	3
Childbirth (mothers)	-	-	4	-	4	2
Infant at childbirth	4	-	-	-	4	2
Ulcers/"body wounds"**	-	-	2	2	4	2
Malaria	-	-	4	-	4	2
Meningitis	-	-	1	-	2	1
Measles	1	2	-	-	2	1
Malnutrition - infant	-	-	-	-	2	1
Epilepsy/insanity	2	-	1	1	2	1
Quinsy/tonsular abscess	-	1	-	-	1	0.5
Leprosy	-	-	1	-	1	0.5
Lockjaw (tetanus)	-	-	1	-	1	0.5
Nephritis	-	-	1	-	1	0.5
Goitre	-	-	-	1	1	0.5
	21	44	67	68	200	100

** The possible diseases which these broad symptoms may refer to will be discussed in detail below. But since it is impossible to classify many deaths, the table does not give an accurate index of certain diseases - for example typhoid may appear under several of the headings above.

statistical significance to be attached to them. Yet they do show certain broad features of the situation, for example the low rate of mortality at childbirth, the absence of certain epidemic diseases and the importance of dysentery/gastro-enteritis and T.B. For this reason, and those stated above, it seems worth recording the findings. Nor are the categories much cruder than those now available for such countries as Ceylon, which include, for example "Convulsions of children under 5 years" as a cause of death. [1]

According to replies to the census, the major causes of death were as follows.

For TABLE 9:1 see across.

Although too much weight cannot be attached to the relative incidence of various causes it is clear that dysentery/gastro-enteritis, tuberculosis, and chest infections are high on the list. Deaths from fighting in foreign armies accounted for ten men, the second highest cause of mortality among those aged 10-49, but only 5% of all deaths. Maternal mortality only accounted for 2% of the total 200 cases. Perhaps even more interesting than the high figures are the omissions; though a few cases may be concealed under "fever" etc. there are no reported cases of cholera, smallpox[2], bubonic or pneumonic plague, and only two cases of measles. Over the last sixty years Thak seems to have avoided any serious epidemics. If we look at the separate age groups, we get some idea of the major cause of mortality at each stage. Pneumonia and dysentery/gastro-enteritis account for over half the infant deaths; accidents and complications at birth account for less than one third. In the years 1-9, gastro-enteritis/dysentery is the greatest killer. In the age group 10-49, one fifth were believed to be caused by T.B. and one sixth by warfare. Typhoid and malaria also reached their peak in this stage. The last period, when 16 people were merely described as dying of "old age" (not included in this table) again saw a predominance of "dysentery" and "lumps in the stomach".

It is a commonplace observation that mortality varies with the seasons. For example, Gorer suggested that many poorer Lepchas died of dysentery in June.[3] The incidence of those deaths where I was given the month when death occurred are best shown in a diagram.

For DIAGRAM 9:1 see across.

It will be seen that almost all infant deaths occur in the summer months, and the same is true of children and adults. But mortality is just as high before the onset of the monsoons in Asar as it is when the village is flooded and dank. Nor do the few weeks of cold weather, often bringing frost and snow to Thak and leaving the lightly-dressed villagers shivering, seem to raise the mortality; mid-January to mid-March are two of the least dangerous months.

The best way to take this discussion futher is to study each cause and /or symptom in turn and to see how it affects men and women, Gurungs and non-Gurungs, and various age groups, over time.

Dysentery, gastro-enteritis and associated disorders.

This group of disorders is known to be particularly dangerous in infancy, childhood and old age. It is associated with poor sanitation and hygiene. The universal Nepalese habit of defecating in fields near the village, or in stream beds or on pathways, so that water or flies transfer the amoeba or bacilli to the human mouth, is the main cause of these ailments. Often a patient may be infected for many years without being seriously ill, but there are many side-effects such as amoebic liver abscess which may also be fatal. Rates in Nepal generally are very high. A medical survey of central Nepal found that "amoebiasis", one branch of these disorders, was the most widespread of all diseases; out of 866 cases brought to the dispensary, 121 were of this kind. About 14% of the patients surveyed had "gross clinical amoebiasis". The highest rate was found in a hill village at 10,000 feet where a 40% rate prevailed. "Gastritis/enteritis" was listed separately, and occurred in 40/866 cases.[4]

There are certain reasons for expecting mortality and morbidity not to be particularly high from these causes during recent years in Thak. One factor is the Gurung belief that it is bad to leave cooked food to be eaten the following day; it is either carefully covered and stored, or thrown away. This helps to lower the chance of infection. Another factor is that whereas water used to be fetched from streams that were easily polluted, some 12 or so years ago a water-pipe was laid from a spring over 1½ miles away. Although it often

TABLE 9:2. Supposed deaths from dysentery/enteritis, Thak.

years	infancy		1-9 years		10-49		50+		total	
	M	F	M	F	M	F	M	F	M	F
1900-1949	-	1	3	4	-	1	4	1	7	7
1950-1959	-	1	2	3	-	1	4	2	6	7
1960-1969	-	3	3	1	-	1	2	2	5	7
	-	5	8	8	-	3	10	5	18	21

Note: the table includes 10 non-Gurungs.

breaks and is mended with an old cloth or earth, it is unlikely to be polluted in the same way as the old sources. This hypothesis is supported by the fact that the incidence of dysentery in the village is much higher during the monsoon months. During the monsoon we had numerous requests for dysentery medicine: many villagers used the streams that gushed near their houses, the water having run down the gulleys and fields which had served as latrines for the last nine months.

Unfortunately, the symptoms of those whose deaths have been included under the heading "dysentery/enteritis" are not detailed enough to enable us to be sure that all such cases were, in fact, the results of these disorders. Usually an informant spoke of death being accompanied by heavy diarrhoea (po (Gg)=stomach, cher (Nep.)diba (Gg)), or "blood in the faeces"(ragat masee (Nep.). Both may equally apply to some other diseases. Yet it is worth examing the distribution of the supposed deaths from this disease, as follows.

For TABLE 9:2 see across.

Why all infants and those aged 10-49 happen to be female I am unable to say. If anything, the proportion said to die of these symptoms is higher in the 1960's than the 1950's, but this may reflect a better memory of what is often a hardly sensational cause of death. Among the old people, chronic dysentery probably combines with several other ailments and brings about death through weakness. A higher proportion of the women than of the men were from lower caste families (8/21 females, 2/18 males), though again it is difficult to decide what this means.

Without extensive stool tests it is impossible to assess types and rates of dysentery in the village. In a brief medical survey of the village, undertaken with the aid of a mission doctor,[5] eleven persons admitted that they were currently suffering from bad diarrhoea; this constituted between 1/4 and 1/5 of those asked whether they were thus afflicted. There were an equal proportion of males and females. The main feature of the distribution was that all those suffering were aged under 16, and 9/11 of them were under ten years. It is likely that if the survey had been undertaken during the monsoons, instead of the comparatively healthy month of January, the proportion would have been much higher. Dysentery

is not a complaint for which people often go to hospital. An analysis of those who attended Pokhara hospital from Thak during the years 1961-9[6] shows that of over 100 patients, only one women came specifically complaining of diarrhoea, while five others complained of abdomenal pains(which could be dysentery or a number of other conditions). One reason for this absence of hospital visiting is clear; those who are most seriously affected are infants, young children and old people. They are not able to make the twelve mile journey to the hospital by themselves. Those who attended hospital were almost all aged between 20 and 50. Perhaps even more important is the fact that this type of illness is so widespread that it is accepted as inevitable, not worth spending time and money on. This is not merely due to shortage of cash or ignorance of medicines. A retired British Gurkha army officer, who had been to England and knew perfectly well that there are now medicines to treat various types of dysentery, and had the money to buy them, made no attempt to procure such medicines even after a week of bad diarrhoea day and night. When medicines was freely available at our house, however, people thronged to get it.

Since the factors causing this group of complaints are common to all Gurungs, it is not surprising to find that the rich are no more immune than the poor. But the lower caste Tailors and Blacksmiths are begrudged use of the piped water in the village and, when possible, use other trickles which may be more easily contaminated. We might therefore expect to find a higher proportion of dysentery/gastro-enteritis cases among them than among Gurungs. There is some evidence that this is so. While approximately 18% of Gurung deaths were said to have been caused by the above, 25% of those of untouchables were ascribed to this cause. In the health survey, 3/9 of the lower caste villagers examined had dysentery symptoms, and only 7/53 of the Gurungs. An improvement in village sanitation would thus benefit the lower castes, the young, and the old most of all- in other words the dependent elements in the village population.

Tuberculosis.

It has frequently been asserted that Gurkha soldiers have imported certain of the "civilized diseases" with them,[7] and tuberculosis is the most commonly cited of

these. Tests on Gurkha soldiers confirms that "primary infection" is "many times that prevailing in Nepal", nevertheless this needs to be set against the generally much higher state of health of ex-soldiers as compared to those who never leave the village.[8] Throughout Nepal, up to 4% of the chest x-rays on those aged over 14, showed the presence of probably active TB. In the medical survey of Central Nepal it was found to be the 8th most common ailment, with 37/866 patients suffering from it. Its distribution was general, though "it was somewhat less frequent at the higher altitudes"(i.e.above 4,000 ft.) Males and females suffered equally, and the average age of those affected was 28 for females, 30 for males.[9] One other figure we have is that approximately 2% of the potential recruits are turned down for the British army after an x-ray examination reveals suspected tuberculosis.[10] Because of the bad reputation of this disease, large-scale B.C.G. vaccination campaigns are now being started.

It is not certain when TB. was first introduced into Nepal. The first possible case from Thak dates from 1925, but it seems likely that there were cases elsewhere long before this. One difficulty in assessing its significance is the variety of symptoms, and the difficulty of describing cases. The 27 possible deaths from this cause are listed in appendix five, where other facts, such as presence of other sick members of the family, army contacts,age etc. are also shown. In 12 cases there is more than 50% likelihood that TB. was the cause of death, in 13 cases about a half and half chance, in two cases less than ½ chance. But some of those that have wrongly been listed as TB. would undoubtedly be replaced by other TB. cases placed under other headings such as "cancer", "fever" etc. The list shows that the only words used to describe this condition are dumgi (danko (Nep)=panting) in cases where the stomach has swollen and the sufferer panted heavily, and sukri (Nep.) where the body progressively wasted away. In the majority of cases there is no Gurung or Nepali term for the illness, which suggests that it has not been present for very long. In the case of adults, the duration of the illness before death was reported to be several years, in that of children, a number of months. It will be seen that in 11/27 of the cases another member of the same family was also believed

to have the disease; for example, two of the Blacksmiths supposed to have it were brothers, and a third was their cousin.

How the disease was first brought into the village, we do not know. Certainly some people, like the two men now living in Thak (houses 13A and 33) who were invalided out of the army because of TB., caught it while serving in India or Malaya. But the fact that almost half of the adult deaths (9/20) supposedly caused by this disease were those of women (a greater proportion of female than male deaths, since we know the supposed cause of death of twice as many adult males as females) suggests that army service is not of great direct significance here. The cases, uncertain as they are, may be broken down as follows.

TABLE 9:3 Supposed deaths from tuberculosis, Thak.

Period	M Age 1-9	F	M 10-49	F	M 50+	F	total
1900-49	-	2	1	-	1	2	6
1950-59	1	2	3	4	-	-	10
1960-9	-	1	4	1	2	-	8
date unknown	1	-	-	-	-	2	3
	2	5	8	5	3	4	27

The table above shows no particular marked growth or decline in cases over time, and the actual dates of supposed cases do not suggest any particularly hazardous years. It can be seen that almost half the cases occur in the age category 10-49; most of these were aged over 20. A successful B.C.G. campaign would therefore increase the life expectation of the economically most active part of the population.

The evidence of tuberculosis in Thak from other sources is even more fragmentary. The medical survey of the village did not include any special tests to locate TB., though advanced cases would probably have been noticed by the doctor. In only two cases, both children (aged 10 and 14), were the glands in the neck swollen, suggesting possible infection. Of the more than 100 Thak inhabitants who had visited the mission hospital in the last few years, four were found to have tubercular infection. They were aged 13,15,16 and 20. It is of interest that they were in the age range missing from the deaths as recorded in the census. Possibly this is the age when the infection is usually contracted, though

death follows some ten or fifteen years later. Two of those treated at the hospital had the same infected glands as those noted in the village survey. Three were boys and one, the eldest, a girl. The major impression from the above, is that while tuberculosis is not as yet enormously widespread in the hills, it is still one of the major causes of child and adult mortality.

"Cancer" or "lump in the stomach".

People often described the cause of death as a gola (Nep. round ball or lump) in the stomach. This was believed to be a disease which especially afflicted women, and was said to be caused by lifting heavy weights. It was also known as ganu (ghanu (Nep)=thick, dense)or dolda riva (dhollo (Nep) shrunken,flacid riva (Gg)bones) in women and pyoh (enlarged spleen) in men. Our assistant on the census who spoke some English insisted that this was "cancer", but this seems very unlikely except in a few cases. Some 11% of the deaths were said to be caused by this, yet the medical survey of Central Nepal only encountered 8/866 cases of cancer or under 1%.[11] It seems unlikely that the rate in Thak could have been over 2-3% of all deaths. Dr.Turner thought it possible that in some cases the hard object people felt in their stomach was their own backbone. A number of cases of people attending the hospital at Pokhara and complaining of gola had been diagnosed as suffering from malnutrition,leading to this sensation. The following analysis of the distribution of this symptom shows some interesting features.

TABLE 9:4 Supposed cases of "cancer" or "lump in the stomach".

period	Aged 10-49		50+		total	
	M	F	M	F	M	F
1900-49	2	2	5	2	7	4
1950-59	3	1	3	3	6	4
1960-9	-	1	-	-	-	1
	5	4	8	5	13	9

There has been a complete cessation of cases, except for one, since 1958. This might be linked with the building of the new water pipe in about 1958, or it could reflect improved diet since then. But it may merely mean that such cases have been described differently. As gola declined, the number of "swollen body" leading to death rose. One fact that is not illustrated by the table is that it is an ailment particularly affecting lower caste

men; 5/13 of the men dying of this supposed illness were Tailors of Blacksmiths, and only 1/9 of the women. The majority of those who die with such symptoms are over 50. Given the recent decline of deaths from such a cause, it is not surprising to find no complaints of this trouble in the village medical survey, nor any reference to such "cancer" or "lumps" (except for general abdomenal pains) among those who went from Thak to Pokhara hospital.

"Fever".

Again this symptom could indicate a number of complaints; typhoid, malaria, chest infection and so on. The words used were usually kuphat pordiba (kuphat (Nep.)= unfit, pordiba (Gg.) = to have/be) or jar kaba (jaro (Nep)= fever, kaba (Gg.) = to come); in other words the patient ran a high temperature before dying. In four of the 16 cases, the temperature was explicitly stated to last 15 days which would fit in well with a diagnosis of typhoid. In no cases was the fever stated to have lasted for over two months, or under a week; usually it varied between a week and a month. No other symptoms could be elicited, except that in one case a person did not eat and in another the person also suffered from a headache. For what it is worth, the distribution of cases is as follows.

TABLE 9:5 Supposed deaths from "fever".

Period	Age 1-9		10-49		50+		total	
	M	F	M	F	M	F	M	F
1900-49	-	1	-	1	1	1	1	3
1950-9	2	-	-	1	4	1	6	2
1960-9	1	-	-	-	1	-	2	-
Date unknown	1	1	-	-	-	-	1	1
Total	4	2	-	2	6	2	10	6

Half the cases are recorded in the period 1950-9, while very few have been noted since 1960. The symptoms are mainly found in those aged under six or over fifty. Only one of the 16 cases is that of a lower caste villager. Not surprisingly, very little evidence emerges from the medical survey concerning "fever". Only one person, a man of 25 suffering in all probability from influenza, complained of a temperature and headache. A girl of three was taken to hospital with "fever" and a woman of sixty had fever, watery eyes, and weakness generally when she attended hospital. One other man had a headache and fever.

Swollen body; heart and liver complaints.

It has frequently been suggested that there is a considerable amount of heart trouble in the hills of

Nepal as a result of carrying heavy loads up and down steep hills.[12] On the other hand the survey of Central Nepal found this to be only the 17th most common disease, with 17/866 cases; it was confined to "higher altitudes" and consisted principally of rheumatic fever. A number of people were said to have died with their body swollen (jiu (Nep)=body rhomba (Gg), swollen). This could, of course be the symptom of a number of ailments, particularly of the heart and liver. Normally the deceased was said to have been ill for a period of a year or more. In one case the eating of salt aggravated the disease. The distribution of cases is as follows.

TABLE 9:6 Deaths from a "swollen body".

Period	Age 10-49		50+		Total	
	M	F	M	F	M	F
1900-49	-	-	2	1	2	1
1950-9	1	-	-	1	1	1
1960-9	1	-	6	2	7	2
	2	-	8	4	10	4

The numbers are so small that subdivisions have very little meaning, yet we may note that this is predominantly a cause of mortality among those over 50, and that there seems to have been an increase in recent years. It is possible, as suggested above, that cases previously called "lump in the stomach" have recently been described as "swollen body". Half of the fourteen cases occurred in the hamlets down below the main village of Thak, a much higher proportion than their population would warrant. Although the villagers living down in these hamlets have more climbing to reach the main village, they have less far to carry heavy loads of rice, maize and wood. Why, living 500 feet lower, they should suffer more from this complaint I am unable to say. No one in the village health survey complained of or was seen to have a "heart condition". Among the 100+ patients going to Pokhara clinic, three men (aged 32,53,76) were diagnosed to have such a condition.

Chest infections; bronchitis, pneumonia etc.

It is very likely that some of the "fever" cases above were really respiratory diseases, especially pneumonia in the young and bronchitis in the old. A temperature is one of the symptoms of both these ailments. A study of Europeans, Malays, Sinhalese and Gurkhas in Malaya showed that the Gurkhas had the highest incidence of bronchitis,[13]

and it has been suggested that there is a fairly high incidence if pneumonia in Nepal as a whole.[14] In the medical survey of Central Nepal, bronchitis was the 14th most common ailment (21/866 cases) and was generally found at higher altitudes. Only one case of pneumonia was noted. It is not surprising to find so few pneumonia cases in the above survey for, as can be seen from the following table, its incidence is mainly restricted to those under five years of age, who would not have travelled to the clinic held by the survey doctor.

TABLE 9:7 Deaths accompanied by heart palpitations; possibly due to pneumonia.

Period	Age 0-11 months		1-5years		total	
	M	F	M	F	M	F
1910-49	-	-	-	2	-	2
1950-9	4	-	1	1	5	1
1960-9	-	2	-	-	-	2
unknown	-	1	-	1	-	2
	4	3	1	4	5	7

Note: one case of a man aged over 50 was diagnosed, before his death, as bronchitis. It is omitted in the table.

The above symptom is the most frequently cited in cases of infant deaths, and the second most common in child deaths. Yet there is no evidence, from the distribution of the actual dates when the above occurred, that there have been any pneumonia epidemics. The much lower rate during the last ten years, as opposed to the previous ten is difficult to explain. Given the relative number of male and female deaths about which we have details, the sex ratio above is approximately even. The description of the actual cases was nearly always that the heart of the victim had palpitated, the heartbeat had been uneven, and then stopped entirely. The widespread nature of this illness is indicated by the fact that in three cases it was simply called the "child's illness" (balak betha, Nep.). In one case it was stated that it is believed that a child with this ailment will either die within eight days, or recover. Indeed, in only one of the seven cases where we know the supposed length of the illness was the child ill for more than 10 days.

No cases of pneumonia were encountered in the hospital records or medical survey for Thak; which confirms that this is not a serious killer which would go undetected by those working at health clinics to which patients are brought. Probable bronchitis, however, was encountered in 4/51 of the people aged 10+ in the medical survey

of Thak; symptoms were bad coughing and large amounts of coloured sputum. Although in two cases it was chronic, it is difficult to say whether it was likely to be fatal. Only three people who attended Pokhara hospital from Thak had symptoms suggesting bronchitis; two were diagnosed as having bronchitis, the third died soon after being discharged. This man had a cough, a hoarse throat, had chest pains, and expectorated yellow sputum. Three other patients who travelled to hospital complained of bad coughs. There are now several drugs which could with pneumonia and other chest infections;if available in the village they could save many infant lives.

Typhoid.

Typhoid overlaps with pneumonia since one of the typical ways in which typhoid actually kills people is to weaken them, and then they develop pneumonia. It is therefore impossible to distinguish from the previous category, and there may also be typhoid cases concealed under the heading of "fever" above. The symptoms of those cases which seem likely to be typhoid are often a high temperature for one or two weeks, frequently called kuphat pordiba (illness (Nep.) undergoing (Gg)). Typhoid may also overlap with tetanus in a few cases. In three cases the disease was called the "eight-day sickness" (aath dina betta, Nep) which is the name given to tetanus in parts of Europe.[15] It is widely believed that if the person is going to die, he or she will do so before the 8th day. In typhoid it is the third week of the disease that is critical, but it is possible that in some cases the minor symptoms are not noticed by the Gurungs.

Typhoid and para-typhoid diseases arise from the same chain of events as dysentery/enteritis; the transmission of bacteria from faeces, through water, milk or food. In towns, where it often arises from polluted water supplies, there are often epidemics until the cause is discovered, but it may appear more spasmodically in villages where the sources of possible infection are more widespread. Typhoid cases were very rare in the findings of the survey of Central Nepal, only 2/866 cases, and both of these were from Pokhara. On the other hand tests throughout Nepal found that up to 46% of those aged five or over showed signs of infection with typhoid organisms,[16] the rate varying with the type of water supply. Plotting

all the cases of 'typhoid', 'fever'and 'pneumonia' separately and together onto a graph, over the years did not show any obvious epidemics. The highest number of cases in any one year was three (of the above combined). What does seem to be significant is that while there have been 11 deaths from typhoid/"fever" in the years 1950-9, all of them Gurungs, during the last ten years, 1960-9, there has been only one Gurung death from either of these causes. There have also been three lower caste deaths; which could be explained by their continued use of non-piped water, as suggested earlier. Although cases of typhoid still occur in Thak- the girl next door to us was taken to Pokhara with typhoid while we were in the village-it does not now seem to be the serious cause of mortality that it was in the 1950's. No cases were noticed in the village medical survey, and no cases from Thak are included among the patients attending the Pokhara clinic. The installation of the water pipe may have cut mortality quite considerably here.

Accidental deaths.

Accidental deaths are likely to be over-represented in the total of deaths(6%) since they are more likely to be vividly remembered. There are many hazards surrounding life and work in a Gurung village, but the recorded accidental deaths show that only certain of these are significant as far as mortality patterns are concerned. The chief danger of fire is not that people get burnt when a house is on fire, a danger that is decreasing anyway as the number of wood and thatch houses declines with the use of stone and slate, but rather the danger to infants and young children from the open fire in the centre of the living room. The Pokhara hospital, which has to deal with the terrible burns which result from such accidents, was especially aware of this problem. In terms of human life, however, such a cause of death is not common. Only 2/200 of the deaths in Thak was said to have been caused by an infant falling into the fire, and one other child died after its clothes caught fire. The only adult death connected with fire was that of an old woman who was said to have died of shock after her house caught fire. Only one burn was noted in the village medical survey, and during our fifteen months stay, only one child was brought to us with a moderately severe, but by no means dangerous, burn. There was a bad fire

in Thak in 1965 in which three houses were burnt down. Two men who were trying to retrieve possessions were burnt and taken to Pokhara hospital. One of them remained in hospital for 1½ months with severe burns; he might well have died if there had been no hospital. No other people from Thak had been to hospital with burns. It therefore seems doubtful whether fire is much more of a danger than in our society.

The other major type of accident is falling, which accounts for over a third of accidental deaths. Only one child, who fell off one of the high Gurung verandahs, died in this way. Two young people fell to their deaths down cliffs while collecting fodder during our time in the village, one of them concussing himself and drowning in the stream below. Two cases were reported from the past; an old man of 67 who had fallen down a cliff, and a younger man who had fallen from a tree. Considering the many precipitous parts of the village fields, this is really a testimony to the sure-footedness of the inhabitants. The other child death is somewhat mysterious; a little boy is said to have died after drinking a large quantity of the local millet beer(pa). The other two adult deaths were those of a young man who was crushed by a huge rock under which he was burrowing for roots, and of the richest man in the village who accidentally set off the gun in his own tiger trap. We were also told of a Brahman who was killed by a landslide, but he lived outside the area of our hundred sample families.

It appears that accidental deaths are not of great statistical significance. Yet they are obviously of great emotional importance since they are often dramatic, unexpected, destroying healthy people. They are of great ritual importance also; it is believed that a person who dies in such a way is likely to be captured by evil spirits and himself to become an evil moh or spirit, unless particularly intense ritual action is taken to prevent this. Nor are there reported deaths from a number of expected causes. Although cases were noted in other, nearby villages, no-one in Thak was struck by lightning, committed suicide, was killed as a suspected witch, was murdered, No one was reported to have been killed by snakes, leopards, wild boar, bears, or mad dogs, all of which had

been present in the past. Nor had anyone been drowned in monsoon-filled rivers, died from poisoning, died from cuts or thorns turned gangrenous, or been shot by accident while hunting or during the frequent rituals requiring gunfire (except the tiger-trap case mentioned above). Nor were any accidents of these types encountered in the village medical survey, though during our time in the village we were constantly being asked to treat minor cuts and bruises, and to take out thorns. Only one of the patients who went from Thak to Pokhara hospital suffered from one of the above accidents: she had a snake bite, but it was already healing after a month's interval before she attended the hospital clinic. It is difficult, therefore, to see how accidental deaths could be reduced in number.

Deaths from army service.

It has been stated that some 20,000 Gurkha troops were killed in the First World War, and another 24,000 in the Second.[17] Gurungs represented about one fifth of those fighting in regular regiments in the First World War; if they formed the same proportion in the Second, then some 9,000 would have lost their lives in the two wars (assuming they suffered casualties in the same proportions as other ethnic groups). Adding "peace time" deaths, this tribe is likely to have lost at least 10,000 adult males in warfare. When we realize that adult males at any one time cannot have numbered more than 50,000, it will be seen that this is a major loss. In Thak, 'warfare' has been given as the cause of death of some ten men; it is the second most frequently given cause of death for those aged 10-49, though it is possible that its dramatic nature may have led to a better recall of this type of cause than of other reasons for death.

Although deaths in the army still occur (one woman lost her brother while we were in Thak), there have been no other recorded deaths from this cause during the 15 years prior to 1969. Whereas three men are remembered as dying in the First War and between four and six in the Second,[18] unless there is another large-scale conventional war this type of mortality will be absent. All except one of the men were married; the exception was a young man of 21 living in Taprang, whose mother now lives in Thak and draws his pension. A number of the soldiers have several children, for they were mostly older men,

four aged 30-39, four aged 40-9. In three cases the wife is known not to have re-married and there is no known instance where an army widow has re-married; the reasons for this, connected to pension arrangements, have already been discussed.[19] One interesting feature of the distribution of deaths is that 8/10 of them were carjat Gurungs, which largely reflects the fact that, until recently, the village was predominantly peopled by this jat. To what extent mortality from warfare is compensated for by the improved health and living conditions resulting from army service, both of those serving, and of those in the village, it is difficult to say. But there seems little doubt that the Gurungs, on the whole, have a better mortality record than many neighbouring groups, and that this has largely been the result of their improved standard of living which is the result of army wages.

'Stomach painful'.

Six cases where the symptoms were merely described as pains in the stomach and a swollen stomach are beyond classification. Death occurred after several months in four of the cases, after three years and after a week in the other two. Tuberculosis of the abdomen, heart/liver diseases, chronic anaemia, each probably accounts for one or two cases. A chronic peptic ulcer was the only stomach complaint disclosed by the medical survey of Thak, apart from dysentry, but abdomen pains were reported by five people from Thak who went to Pokhara hospital. In all these five cases, however, the patients complained of other symptoms also; chest pains in three cases, diarrhoea in two others. In none was a diagnosis of TB. or other seriour disease made.

Mortality of infants and mothers connected to childbirth.

We have already noted that infant and maternal mortality rates in Thak are low in comparison to other parts of Nepal. Of the 86 female deaths whose cause we know, only four were deaths of mothers at childbirth. Even of the women aged 10-49 whose cause of death is known, less than one fifth died from this cause. Indeed, only one case from the central village of Thak was recorded - and that occurred during our stay in the village. The low rate, at least during the last twenty

years, is confirmed by the poju or magical practitioner. When a woman died in childbirth it was believed that her spirit was especially vulnerable to evil forces and might itself become an evil spirit. The magician therefore had to perform a rite known as the sigra moshi tiba when such a death occurred. The poju thus had a good reason for remembering cases of maternal mortality. He stated that no woman had died in childbirth in the village of Thak or nearby for at least the previous ten years. He remembered one case about fifteen years ago, but said that otherwise there had been no instances during the previous twenty years. He suggested that before twenty years ago such deaths had been more common. Other informants, for instance two aged over 55 each, could not think of any cases in the village or nearby over the last twenty or thirty years.

It is possible, as the poju himself suggested, that the presence of the hospital has lowered the rate somewhat. But this factor should not be stressed too much. There is no evidence that maternal mortality was ever high, and it is doubtful whether women have ever gone to hospital frequently with childbearing complications. The hospital records only refer to one Thak woman being admitted during the last ten years, in this case after a miscarriage. Villagers themselves could only think of one case in the village, and one case from a nearby hamlet. Probably the hospital gives increased confidence. The wealthier families, at least, knew that if there were birth complications, the woman could be carried over the extremely bumpy six-hour track to Pokhara.

What kind of complications cause death it is difficult to say. In both of the cases where a description was given the after-birth had not come away. In both cases the woman was aged 45, and in one of them she had already had eight children.

As for infant mortality near or at birth, this also appears low. We know that in two out of the four cases where the mother died at childbirth, the child

also died then or shortly afterwards. Yet the number of children recorded as dying at birth, as a proportion of all live-births is extremely small. If we confine ourselves to women aged 54 or less at the time of my census, they reported some 232 livebirths, of which only three died within a day of birth. Nor do many infants die in the weeks after birth from malnourishment. Only two cases were reported to have died because they received inadequate milk from their mother. In one case the mother was too ill to feed her baby properly; it died at four months. In the other case the woman's breasts were dry and the baby died at a month. If a woman is unable to give suck, it is believed that the infant should be fed on buffalo milk, or by another woman who has recently had a child. One other possible cause of death in infancy was given by women during a questionnaire on childrearing. They stated that a number of babies had died of suffocation because the mother had fallen asleep while feeding them; three cases were mentioned, though names were not given. No such cause was mentioned in the census.

Ulcers and "body wounds".

In four cases the cause of death was described as a festering, growing, wound. In two cases the old people had retired to India, and both had swollen legs. In one case a boy of ten had a sore on his face (poro taba,? poro(Nep.)= small hole, taba (Gg.) = have), and the whole of his face swelled up for one month. Finally, a woman of 45 had a growing sore on her buttocks, which killed her after fifteen months. This may have been cancerous. Ulcers, phlebitis, or a number of other ailments could account for the other cases. One peptic ulcer was discovered in the village medical survey, and one man went to hospital from Thak with an abscess under his armpit and a woman with the same on her breast.

Malaria.

Malaria is termed aulo betha (aulo (Nep)= marsh fever or malaria, betha (Nep) = illness) in Thak and its symptoms are generally recognised. In the lower

parts of Nepal it used to be one of the major killing diseases; thus it was the third most common complaint encountered by the survey of Central Nepal (60/866 cases). The general health survey of Nepal found no significant difference in incidence between mountainous and lowland regions of Nepal, but they admitted that many villages in the 'mountainous' regions were, in fact, in river valleys.[20] Thak is said by villagers and doctors to be too high (c.5,000 ft.) for malaria-carrying mosquitoes and all the four cases of malaria were those of men, three Gurungs and a Blacksmith, who had caught the disease while on a trip to the south of Pokhara. All four cases had occurred before 1950. Massive campaigns in collaboration with W.H.O. have been largely successful in controlling malaria in many parts of Nepal.

Other minor causes of death.

Two deaths of what seems to have been meningitis were reported; in both cases the sufferer's back was ben backwards like a bow. One was an infant aged seven months, the other a child aged sixteen. Both occurred over twelve years ago. No cases were noted in the medical survey, hospital records, or survey of Central Nepal. Nor were any cases of measles noted in either of these sources or in the survey of Central Nepal. But one young informant in Thak suggested that children's deaths had declined in recent years because there were no longer measles epidemics (to-misa? thopo (Nep) = spot - misa?), which had once, he said, killed many children. We would expect this disease to be easily recognizable from the characteristic spots; if it had occurred extensively in the past it seems likely that this would have been apparent in the census. In fact only two cases were noted: one was a girl of three who died in about 1942, another a girl of five in about 1956.

In the survey of Central Nepal there was one noted case of epilepsy, and the hospital records for Thak referred to one young man of twenty who went to the hospital suffering from giddy attacks which may have been epileptic. In response to the census, one

Blacksmith stated that her father had died of chāre rog (Nep) = epilepsy), in a neighbouring village some 22 years ago; this is the term for epilepsy, but the informant stated that only some three days before the death was his affliction known to other villagers, which does not really fit. It was also claimed that one Gurung man had died of "insanity" and drink in India; this could be related to the fact that his grandson was the only mentally defective boy in the village. Apart from one spastic boy, and a mongol boy, there was also one slightly mentally disturbed woman. She was aged 44, and had once been married with several children.

The other supposed causes of death, one case of each, are listed in the table: nephritis, tetanus, an over-grown goitre, and quinsy or nephritis. No-one with any of these ailments except goitre (which will be discussed in more detail below) went to Pokhara hospital.

Insignificant causes of mortality in Thak: the absence of Malthusian checks.

There are no traces of epidemics of any kinds in the Thak records. There were no smallpox scars in Thak, although it has been found that this disease is fairly prevalent (between 3-27% of those aged 10-29 examined had scars) in Nepal, and especially in the Western Mountains.[21] Nor were there any reported deaths from this cause, although there is a Gurung name for it (pro) which suggests that there has been some encounter with it in the past. I was told that some six or seven years previously, three or four people had died of this disease in the neighbouring village of Taprang, but no one in Thak had been affected. The likelihood of future epidemics is slightly lessened by government innoculation campaigns. I was told that the innoculators had visited Thak some fifteen years ago, and then not again until three years ago. They again visited the village while we were present. Partly due to insufficient warning being given, partly due to the absence of any exhortation, explanation, or inducements/sanctions, a large number of people were

missed on the visit during our presence. As pointed out concerning Nepal generally, the situation is alarming.[22]

There is no evidence of bubonic or other types of plague, of cholera, of influenza, of scarlet fever, mumps or polio epidemics. The situation is very different from that in the Terai where, up to recently anyway, it was reported that there were "frequent epidemics of cholera, plague and smallpox .... usually in the spring and early summer".[23] Although rabid dogs occasionally reach the village, the prompt slaughter of all the village dogs (as occurred in Thak some three or four years previous to our visit) helps to prevent the spreading of the disease, and no deaths from rabies are reported from Thak. A large number of other potential afflictions are also omitted from the list of diseases above, notable among them leprosy and syphilis.

The second Malthusian check, after plague, is famine. There are no recorded deaths from famine in the Thak records, though it is, of course, possible that some of the deaths from other listed causes were precipitated by malnutrition after harvest failure. Nor do we know whether famine was a serious cause of mortality among the Gurungs in the nineteenth century. It seems likely, however, that their diversified agriculture, part pastoral, part arable, as well as the abundant forest resources of plants and animals would have sustained them through difficult years. But as the Gurungs become more and more dependent on grain crops the threat of famine increases. If there is hail in July, the maize crop may be destroyed; if it hails in September-October, the rice harvest may be completely lost. The decline in livestock and forest resources makes this more and more of a threat. Such hail, furthermore, frequently occurs; probably one or other harvest is seriously damaged every five years or less. Thus in about 1964 the maize crop in Thak was destroyed, and some of the rice also. In 1968 most of the maize was lost, and the rest had to be used for seed for the following year. In 1969 five minutes of

hail in the autumn destroyed over a quarter of the rice harvest.

At present, even if both crops are completely destroyed, absolute starvation would probably not occur. The rich families have considerable reserves of grain from the previous year and other nearby villages usually provide a surplus which may be bought at Pokhara (the hail usually has a very localized distribution, just sweeping up one or two valleys). On the occasion when both maize and some of the rice failed some five years ago the richer families had no need to buy grain, though the middling to poor had to purchase it from Pokhara at nearly twice the normal price. Some of these less wealthy villagers had to sell off some of their capital possessions, land, gold, cooking vessels, or to borrow from richer villagers. But no-one died of hunger. Some 25 years ago, I was told, the rice and maize crops were both completely destroyed. One young man, just born at the time, said that a number of people died of hunger, but there is no evidence of this in the replies to the census and another older man stated that there were no deaths, for grain was obtainable from other villages. A more detailed analysis of the size of village reserves against disaster and the likelihood of a growing danger of famine as population presses on resources will be given later. At present, however, it seems unlikely that this check to population growth will operate for a few years. It is quite possible that it will begin to take effect, in combination with epidemic disease, well before the end of the century.

We have already seen how the third of Malthus' natural checks, warfare, has at present ceased to play any real part in controlling population. It seems unlikely that the Gurungs will ever again be involved in a large-scale conventional war. Even if they were, and casualties were on the same scale as previous World Wars, deaths would not curb population growth effectively - though it would temporarily limit fertility.

Conclusion.

Although, as repeatedly pointed out, the statistics

on cause of death are extremely flimsy, it seems likely that the two main impressions from this discussion are correct. The first is that water-borne faecal diseases - dysentery, gastro enteritis, typhoid - and tuberculosis are the two major causes of death in Thak. The second is that both causes are likely to decline rapidly in the next few years, and indeed have already commenced to do so. In the case of water-borne diseases, the installation of a water-pipe some twelve years ago has lowered mortality quite considerably. There are plans to extend and improve such piped water facilities, and similar piped water is spreading in other villages, for example Mohoriya, Pignede's village. Furthermore, it now seems likely that the government and/or private bodies will initiate serious B.C.G. campaigns in this area in the near future. This will have a similar effect to the malaria campaign in the Terai. A combination of these two public health measures will mean that the crude death rate could be cut in half among the Gurungs between 1960 and 1975. Without a comparable reduction in births this will have enormous effects on the whole economic, social and mental life of the Gurungs.

CHAPTER NINE. NOTES.

1. Cited in Myrdal, Asian Drama, ii, p.1416.

1A. The most detailed study of the incidence of disease in Nepal is contained in chapters 5-10 of Worth, Nepal Health, where a number of comparative statistics are to be found.

2. Though, as we shall see below, there had been cases of smallpox in a nearby village.

3. Gorer, Himalayan Village, pp. 52-3.

4. Taylor, Medical Survey of Kali Gandak, pp.428-31. All the rest of the references in this chapter to the 'medical survey of Central Nepal' come from this article.

5. This is described on p. 205 below.

6. Described on p. 205 below.

7. Taylor, Medical Survey of Kali Gandak, p.422.

8. John Aspin, 'Tuberculosis Among the Gurkhas', Tubercle, July 1947, vol.xxviii, no.7 and no.8.+

9. Taylor, Medical Survey of Kali Gandak, pp.430-1.

10. This figure was suggested to me, from memory, by the British recruiting officer, Col. Langland.‡

11. Taylor, Medical Survey of Kali Gandak, p.429.

12. Morris, Winter in Nepal, p.97.*

13. D. C. Morley, 'Gurkha Bronchitis', Jnl.Roy.Med. Corps, xcv(1950), pp.185-95; cited in H.B.Gurung, Ph.D. thesis on Pokhara valley, p.98.

14. Worth, Nepal Health, p.99.

15. For example in the Hebridean island of St. Kilda, Shrewsbury, Plague of the Philistines, p.109.

16. Worth, Nepal Health, p.99.

17. Nepal and the Gurkhas, H.M.S.O., 1965, p.36; Shreshta, Nepal Economy, p.35.

18. Four men were given as dying during the period 1938-47, which almost certainly means during the war. Two others, stated to be about 1950, may also have been during the war.

19. See p. 138 above.

20. Worth, Nepal Health, pp.87-88.

21. Worth, Nepal Health, pp.69-70.
22. Ibid., p.71.
23. Taylor, Medical Survey of Kali Gandak, p.427.

Addenda to above notes.

+ According to Morris 'Thesis on Nepal', pp.44-5, "The physical condition of nearly all Gurkhas improves most markedly during the first year after their enlistment".

‡ There is a list of types of illness for which recruits were rejected in 1932 in Morris 'Thesis on Nepal', p.46. Out of a total of 2,288 over ¼ (643) were finally rejected as unfit.

* Dr. Turner comments "This suggested explanation is clearly not true. The heart disease found here is often rheumatic in nature or from other causes, but not due to other causes". (private communication).

CHAPTER TEN. SOCIAL STRUCTURE AND ILLNESS (2): HEALTH AND DISEASE.

Some of the major causes of death and illness in a Gurung village were outlined in the previous chapter. We may now turn to the more prosaic afflictions which are a constant background to daily life, and to the various ways in which Gurungs try to combat disease. Apart from the humanitarian problem of preventing needless suffering, this background of sickness and pain is important in a number of ways. At the economic level it is often argued, especially by development planners who are trying to explain the failure of attempts to increase agricultural output, that sickness and malnutrition so weakens people that they are unable to carry out their tasks properly. Such an argument is also advanced to strengthen the argument for a health programme.[1] It is also often argued that a background of frequent physical pain and death will have very deep effects on attitudes in a society. It will strongly influence individual psychological development and, at a more general level, lead to a fatalistic attitude, to beliefs in witchcraft and evil spirits, and to a preoccupation with warding off evil.[3]

The amount and type of minor illness in Thak.

The following account of the main types of illness can only be impressionistic. It is based on two main sources. The first is records of those visiting Pokhara ("Shining") Hospital from Thak panchayat. Approximately 40 women visited the hospital between 1961-9, and 68 men in the years 1965-9.[4] In most cases a brief diagnosis was made. Secondly, during January 1970, Dr. Gerald Turner of the same hospital visited Thak and undertook a brief examination of some 64 villagers: 13 were children aged 1-9, 42 were adults aged 10-49; nine were aged over 50. No blood tests or other complicated tests were taken, just a brief examination of throat, eyes, heartbeat etc. was made. We also distributed medicines throughout our stay, and hence

had a stream of people at our door with various ailments. Those diseases, such as tuberculosis and dysentery, already discussed in the previous chapter will be omitted here.

The only blood disease for which evidence was found was anaemia. This condition was discovered in a third of those examined in the village. Half of those suffering had only slight anaemia, the other half 50% or more. It is well known that there are as many possible causes of this condition as there are types of anaemia. It may, for instance, be a vitamin deficiency, lack of iron, or heavy infestation by worms, which causes the trouble. Perhaps the most interesting feature of the distribution of cases in Thak is that there is no correlation with socio-economic level. The wealthier and slightly better fed were no less anaemic. In fact, if anything, the situation was the reverse of this, if we can judge from only 21 cases. If we limit ourselves to those aged less than 20, who were principally affected by anaemia, it appears that of 16 carjat Gurungs examined, some 50% suffered; of 15 sorajat Gurungs, only c.35% suffered, and of five Blacksmiths only 20% (i.e. one case) was found to be anaemic. Indeed, only one out of the total of nine Blacksmiths examined showed signs of anaemia, although their diet was far less satisfactory as regards protein and green vegetables than that of the Gurungs. It is also worth observing that in a couple of cases where a boy was boarded at Pokhara there were signs of considerable anaemia, which suggests that village diet is still much better than that in the bazaar town.[5]

If we turn to the more directly nutritional ailments, there is clearly a considerable amount of vitamin deficiency in the village.[6] Some of it is obviously seasonal, and this helps to explain why only two cases of Vitamin B deficiency, both women of the carjat, were encountered in the village medical survey. A further seven people, four men and three women, went

to hospital with symptoms which were diagnosed as vitamin B deficiency. The characteristic symptoms were a burning sensation all over, giddiness, and irritation in the eyes. No evidence of protein or calorie deficiency were noted in the hospital records or village surveys, and it seems likely that Thak fits in with the patterns of higher altitude Nepalese villages where a good balance of meat, milk, and other proteins has been observed.[7]

There are practically no dental facilities in Nepal. The 'Shining' hospital in Pokhara now performs extractions, and this is, in fact, its major service for villagers from Thak. Some fifteen people, nine men and six women complained of toothache when they went to the hospital clinic; some of them had pyrrhoea and one had osteomylitis. In the village survey, six people were found to have pyrrhoea or other teeth disorders, including an erupting wisdom tooth. Only one of these was a Blacksmith; often the Blacksmiths and Tailors had good teeth. A number of Gurungs cleaned their teeth with ashes from the fire each day, and a few (from the army) even had toothbrushes. We had a considerable number of requests for help when teeth ached. Normally the villagers have to bear such pain without much chance of relief. It is believed that the pain is often caused by a small worm gnawing at the roots of the teeth (sa pulung: Gurung, 'tooth worm'). A general survey of Nepal shows a very low rate of carious teeth, but cites work on Bhotia villages which describes "virtually universal presence of peridontal disease in persons over age 5".[8]

Of the 'Ear, Nose and Throat' ailments, little was noticed. One boy had been to hospital with ear-ache, another with a polyp in his nostril. One woman had enlarged tonsils according to the village census and another a sore in her nose. Finally one had waxed-up ears. Coughs and sore throats, often symptoms of other ailments, were common. No cases of postfebrile deafness, of which 14 cases were found in the Survey

of Central Nepal,[9] were discovered. The only deaf people were two women, a Tailor and a Gurung, both of them deaf and dumb from birth, and two others, a Gurung woman of 66 who had grown deaf during the last few years and a young Tailor of 24. A few old people were a little deaf, but certainly no more so than their equivalents in the West.

'Eye diseases' were the ninth most common complaint in the survey of Central Nepal, with 33/866 cases and another 18 cases of cataracts, and high rates are reported for Nepal generally (14-18% of those aged over 50 were blind).[10] Three cases of people from Thak going to hospital with sore eyes were found; these were probably cases of severe conjunctivitis. This malady was extremely common in the village and there was a constant stream of people with red and almost totally gummed-up eyes. The habit of cleaning the eyes with the corner of the nearest piece of cloth was understandable, but probably helped to spread infection. Such infection often ran in families, and was especially common among children and old people. There were no totally blind people in the census area, although two old people, both over 60, had cataracts and were almost blind. Three others, all aged over 60 and all female, also had growing cataracts - two of them in both eyes. Unless removed at the hospital, the sufferers would be blind in a few years.

The major endocrine ailment in the village was goitre. This has long been known to be a serious ailment in Nepal, though recent research has suggested that the correlation of goitre areas with those areas using Tibetan salt (which is deficient in iodine) is not perfect.[11] Class III goitres (those 'visible at some distance') are not common in Thak. Only one really pronounced goitre was discovered in the census area, and one or two class II ('visible') goitres were also seen. Only four people went to the hospital complaining of an enlarged goitre, all men. Dr. Turner's systematic search of villagers discovered that approximately one in three of those examined had a class I goitre ('palpable but not visible'[12]). Three-

quarters of the sufferers were female and there was a higher proportion than one might expect among lower caste villagers. The lack of iodine is undoubtedly varied even between nearby willages. A village on the other side of the river to Thak (Klamro) was notorious for bad goitres. It is also possible that when Tibet was closed at the beginning of the 1960's, and salt was then obtained from India, the situation improved. But in the past, as we have seen, only one death was ascribed to a goitre.

It is impossible to be sure about how common genito-urinary disease is, though we can be fairly sure that it does not, among the Gurungs, assume the epidemic proportions reported for the Lepchas.[13] Nevertheless it has been suggested that symptoms which may be related to gonorrhea were discovered in 6-13% of all males aged over 10 years in western mountain villages. This was a higher rate than in other parts of Nepal, and it is possible that syphilis (possibly about 1% rate) is also more frequent in the hills area.[14] The survey of Central Nepal found that Gonorrhea (43/866 cases) was the fourth most common complaint and syphilis (14/866) the nineteenth. The author concluded that "the infection rate is now high throughout the hill country". On the other hand, in the Terai, only 3/1834 cases were gonorrhea at Biratnagar hospital.[15]

Only one case of genito-urinary illness was noted in the village survey: this was a young man with mild urine infection. One possible case of spermathorea in a young man of twenty was the only case taken to hospital. I have no evidence on impotence or sterility except what may be gained indirectly from the census. No-one was noted as having gone to the hospital asking for treatment for sterility, and we only had one enquiry about this from a man who already had a five-year-old daughter and had been trying unsuccessfully to have another child for some two years. One would not expect there to be a large amount of sterility in Thak since there is no evidence that there is much veneral disease. Childlessness rates usually vary in the range of 3-8%

of all women,[16] but it is impossible to be sure of the rate for the Gurungs. It is believed that childlessness is always the fault of the woman and constitutes a reason for divorce, yet there were no women in Thak who had been rejected from their marriages in other villages on account of supposed sterility. There were, however, three women living in the village who had had no children, although their husbands had had children by other women. Thus of over one hundred married women in the Census, only three appear to be sterile, a rate of less than 3%. The male rate appears even lower. Only one case of a living man unable to propagate children (he had tried three wives) was discovered.

Without a detailed examination it is impossible to be sure whether Pignède is right in thinking that venereal disease is, in fact, uncommon among the Gurungs, his evidence being that it is infrequently encountered in medical inspections of Gurung troops.[17] Yet we found no evidence to contradict his view: only one possible case of venereal disease was taken to hospital and nothing was noted in the medical survey. It seems likely that we would have been asked for treatment if these diseases had been widespread.

If we had detailed and accurate information on other gynaecological and obstetrical matters, particularly miscarriage and stillbirth rates, we would be able to deduce more about the presence of venereal disease. The little we do know does not run counter to the argument that such disease is not widespread in Thak. The census questionnaire asked explicitly "How many conceptions (including children born dead) have you experienced ?" and also, as a cross-check, "how many of the above conceptions ended in the birth of a live child ?" In Gurung, a child is pasi, and to lose a child through a spontaneous abortion is pasi waba (which is the same wording as for a procured abortion; waba, to throw away, reject). Despite the attempt to get information, however, it is certain that the census is not complete. Only two Gurung women admitted to miscarriages, at five and two months, an impossibly low

rate. Cross-checking with other informants showed cases of omission. Judging from other societies, it is unlikely that Gurung rates will be below 3% of all conceptions. The rate among the lower castes was much higher; 4 miscarriages and a stillbirth out of a total of 81 conceptions - a rate of approximately 6%. It is impossible to be sure, but it seems likely that this does reflect a difference in incidence, rather than merely in attitude or memory.

As regards other feminine ailments connected with the procreative cycle, the Gurungs do not seem to be especial sufferers. We have already noted that complications at childbirth are rare. Most women seem to find it easy to breast-feed their children, though one woman during our stay in the village went to hospital because her breasts were sore. Menstrual troubles occur occasionally; two women complained at the hospital of delayed periods, though it is possible that one of them may have been pregnant. Three women came to us asking for medicine to help with menstruation. In one case it was a girl of twenty, unmarried and at college, who had great pain at her periods. In this case the menstrual bleeding was termed '<u>mahina waba</u>' (<u>mahina</u>, Nep.= month, <u>waba</u>, Gg,= throw away) though normally it was termed <u>korvé taba</u> (<u>korvé</u> ? <u>taba</u> (Gg) to have or be). In another case a woman in her mid-thirties, who already had five children, complained of extensive bleeding at her periods, leading to weakness. Finally, a Tailor woman, aged 27 and already the mother of seven, suffered very heavy and dangerous menstrual bleeding. The Gurungs take very little notice of changes in the female sexual cycle, laying no special emphasis on puberty, menstruation, or the menopause. There is, contrary to many societies, no centering of ritual and pollution of beliefs on these events. Possibly connected to this is the fact that women do not seem to suffer too much from ailments related to the sexual cycle; they are relaxed and casual about these changes.

Mortality statistics, however, do show that female mortality used to be high just after the menopause.[18] There is no Gurung word for the menopause and we saw little indication of problems at this stage except in one case, that of a woman of 45 who had returned from Malaya two years previously. She bled for over a week at each period and became very weak. She visited the local hospital. Another woman of 45, noted in the hospital records, was described as having stomach ache, back ache, fever, and abdomen pains; these may well have been menopausal symptoms.

There are many other debilitating and painful illnesses which afflict the villagers. The rapid change of temperature during the early few weeks of snow and ice, and frequent soakings in monsoon rain may help to explain the frequent chills and fevers from which they suffer. Tramping about in the mud for days on end during rice planting leads to swollen and cracked feet. Fungus infections, on the other hand, do not seem to be particularly common. No cases were taken to hospital from Thak, and only one case was noted in the village survey.[18B] Intestinal parasitic infections were probably very common, but it was not possible to carry out a systematic survey for worm infestation.[18C] A number of villagers came for medicine for roundworm and threadworm, and there may have been hookworm and tapeworm also, though no symptoms of these were discovered. Such intestinal infections were not often thought serious enough to take to hospital. Thus the medical survey of Central Nepal only noted eight cases and the general medical survey of Nepal did not think that ho kworm was a particularly serious complaint at present.[19] Nevertheless, a good deal of discomfort and loss of protein could be avoided by dispensing the cheap and simple drugs which can deal with threadworm and roundworm.

Musculoskeletal complaints are fairly frequent in Nepal: arthritis, for instance, was the eleventh most common complaint brought to the clinic operated during the survey of Central Nepal. One arthritic

patient and two others with possible rheumatic aches and pains went from Thak to the hospital, but it is likely that the majority of sufferers did not seek a remedy. In the village survey, almost one in ten of those aged ten and over had rheumatism or arthritis, mostly in the fingers and knees. The afflicted were aged from 24 years upwards, which shows that these are not just afflictions of the old. Two other people were also suffering from pain in the knees and backache. None of the above were lower caste, except for one boy with pain in the knees. Without special examination it is impossible to be sure, but as yet there is no evidence that the carrying of immensely heavy loads (up to 100 lb.) over extremely rough country has any damaging effects on the villager's musculoskeletal structure.[19B] During our stay we had very few cases of sprains, and none of broken bones. We noticed no cases of malformation of limbs due to earlier badly set fractures.

Only a very detailed survey would indicate the amount of disease in the nervous systems of villagers. Eight such cases were encountered by the survey of Central Nepal, and two people from Thak went to the hospital with such symptoms. One suffered from convulsive attacks, which may have been epileptic, the other from sciatica. Both were young men. In the village itself serious cases were rare: one boy of fifteen suffered from cerebral palsy and was a spastic, and we have noted that deaths from meningitis were not unknown. But otherwise, convulsive seizures, jerking movements, Parkinson's disease, and the many other varieties of nervous disease were not noticed. One curious exception, which will be discussed at greater length when we deal with religion, was the fact that certain young girls in the village were sent into a 'possessed' state by certain drum rhythms. In one case a girl became very violent in this state, and it was believed that she would have died if a special drummer from a nearby village had not been sent for.

This is not, in fact, a state merely confined to girls. At the frequent village dances members of the audience, including men of all ages, start shaking and have to be held down by their friends. Certain men and women are known to be subject to these attacks. This slight hint that below the apparently placid and contented surface of village life there is considerable disturbance is supported by the enormous demand for aspirins during our stay. People were constantly complaining of headaches and depression. Most of the poju's rites are designed to deal with situations of anxiety and uncertainty. My best informant, a young and extremely intelligent but somewhat frustrated man, was especially prone to headaches and went several times to the hospital to procure medicine. There was only one person with a noticeable stutter in the village. Otherwise neuropsychiatric disorders seemed rare. Villagers did not appear anxious and though they drank a considerable amount of the local millet beer, addiction was not obvious.

In the previous section on mortality we have already dealt with physical ailments (wounds, burns, bites etc.) and with the major respiratory diseases (bronchitis, pneumonia etc.). Skin diseases are also extremely common in the village, especially scabies. Perhaps because they only lead to pain and irritation rather than permanent damage, such ailments are not listed in the survey of Central Nepal, yet they are one of the major causes of obvious suffering in village life. The major types of skin disease are scabies and septic sores. The latter often turn into crusted eruptions when scratched and are particularly bad among children and during the monsoon season when leech bites often turn septic. The houses are infested with fleas and other insects which also bite and cause sores. Apart from toothache, such skin troubles were the major cause for

which people went from Thak to Pokhara hospital, which indicates how much suffering they cause. Nine men and three women complained of various sores according to the hospital records. Likewise they were a major complaint in the village survey. One sixth of those examined had obvious sores, varying from mild impetigo on the lip to septic sores all over the body. Gurungs and service castes were equally affected. Half of the cases could very simply be dealt with by the application of the extremely cheap remedy gentian violet.

No cases of bladder stone were discovered in any of the records, survey etc., and it is said to be a complaint which is not especially prevalent in Nepal.[20]

An idea of the general physical condition of a group of adults in the village will show the general state of minor illness within which people live out their lives. They were examined by chance, not because they complained of illness.

Female, age 35, Gurung.	Coughing, eyes burning, stomach pain, bronchitis, anaemic, small goitre.
Female, age 40, Gurung.	Coughing, mild bronchitis, no anaemia, rash/sore on side of face.
Female, age 44, Gurung.	Lower ribs very sore.
Female, age 82, Gurung.	Cracks on sides of mouth (vit.B.def.), early cataracts in both eyes, septic sores, pyrrhoea.
Male, age 35, Gurung.	Had TB. operation seven years ago, occasional pains in chest now, a cold.
Female, age 43, Blacksmith.	Breathless, difficulty in walking, chronic cough, sputum coloured, pains all over.
Female, age 13, Blacksmith.	Bad diarrhoea after eating.

Male, age 19, Blacksmith.	Blood and physique good, no goitre or dysentery. Occasional pain in legs since a child.
Male, age 7, Blacksmith.	Septic sores all over body (scabies).
Female, age 16, Blacksmith.	50% anaemia, dandruff, small goitre, occasional diarrhoea and abdominal pains, pain in knee.

These ten cases indicate that when they had time to think about such things, villagers almost always have some minor complaints. During the few months of intense agricultural work, however, they were able to work as normal and seemed to forget about their complaints. It is not surprising that when they go to hospital they take the opportunity to complain of more than one ailment.

Without a much more intensive study over a number of months by an experienced doctor, it is impossible to go any further in analysing the incidence of disease. As far as seasonal variations are concerned, the above analysis of mortality patterns, which showed that the six monsoon months were far more dangerous as regards health than the six cold weather months, is probably a fair indication of disease in general. If we are to single out any particular features, it is that the hot months just before the monsoon are particularly dangerous for old people, while the three months from mid-April to mid-July are particularly dangerous for infants. Thus, while we found that people spent more time complaining of, and talking about, illness during the slack agricultural period of the 'cold' weather, the statistics show that they were most subject to dangerous illness in the hot weather and monsoons.

It has been suggested above that there are a few signs that there is a different incidence of disease between Gurungs and lower castes: thus goitre seems more common among Blacksmiths, while anaemia seems

to get more common the higher up the socio-economic pyramid one looks. The general impression, however, is that, in the absence of great differentiation in diet, housing, and the access to medical treatment, the health expectations and horizons of pain of all villagers are fairly similar. The one exception, already noted, is the effect of the introduction of the water pipe, which is used predominantly by Gurungs. This lack of differentiation is an important index of the lack of real 'classes'. Compared to pre-industrial Europe, for example, where there was often a considerable difference in health expectations between various socio-economic strata,[21] the Gurung village in which we stayed was an extremely homogeneous unit. Everyone in the society would suffer from some minor ailments almost all the time.

The treatment of disease.

When a villager finds himself or his child ill he may choose between a wide range of possible remedies, or he may choose to do nothing. The principles of selection will be discussed below, for we must first classify the types of treatment available. Although the distinction is not a clear-cut one as far as villagers are concerned, we may make a broad division between the use of 'medicines' which are rubbed on, injected, or swallowed, and which are thought to work through their own virtue, and 'ritual action', particularly sacrifice, which works through the power it generates in the supernatural field.[22] Within the first category come western medical treatment and local herbal remedies, in the second are rituals performed either by the private individual or by special experts.

Rough estimates of the yearly recourse to different methods of treatment are as follows.

For TABLE 10:1 see ~~across~~ below.

TABLE 10:1 Types of medical treatment used by Thak 100 households, 1969.

Medicines	Approx.nos.occasions
Pokhara (mission) hospital	10-15
Pokhara (government) hospital	? 0-5
Village shop	? 5-15
Bazaar doctors/drugstores	? 10-80
Local herbal	? 50-200
(Our dispensary	400-600)
Ritual	
Poju (jhankri)	200-300
Private rituals	?100-150
Mantra (spells)	? 50+
Dhami (possession)	? 5-15

n.b. under 'ritual' only those rituals performed after a person became ill have been included; if the very many sacrifices, charms hung round the neck etc. to ward off future evil were included, the number would probably be doubled. '?' denotes an estimate based on guesswork.

Although much of the above table is based on somewhat flimsy guesswork, the general outlines seem sure enough. While a person from approximately one in ten of the village families might go to the local hospital, each family in the village would employ the local poju two or three times a year and do a private healing ritual at least once a year. It is very difficult to estimate to what extent the villagers used the many patent medicine stores and bazaar doctors in Pokhara. In all the seven household inventories where informants were asked whether they had spent money on medicine, the reply was 'yes'. Five of these seven had definitely bought this medicine in the bazaar. A number of people whose houses we visited on medical business brought out bottles and jars of patent medicine.

Western-type medical facilities were practically non-existent in central Nepal in 1950 when the medical survey of central Nepal was carried out. There was a small dispensary at Pokhara run by a 'compounder' of two years training. That was all. This dispensary only received a qualified doctor in 1960. Meanwhile the 'Shining' or Mission hospital commenced work in 1953, the 'Soldiers Board' hospital in 1958, and a mission-run Leprosorium in 1957.[23] Yet the expenditure on medicine per head of the population, and the doctor-patient ratio in Nepal are still among the very lowest in the world. It has been informally calculated that in 1968 the expenditure on medicine was about 10d. per person p.a. - whereas in the United Kingdom it was some £18 per person. To cure one case of TB costs at least Rs 172 over a two-year period - without food. This would absorb the medical allowance of 86 persons for two years. In Thak, for example, the situation was as follows. One of the small shops sold a little ointment (penicillin), otherwise ex-Gurkhas could walk for four hours to the north to the army-financed dispensary (for British pensioners only) at Siklis, or south to Pokhara, about the same distance over very rough country. There was also one man in the village, an ex-medical orderly who, on his own initiative, occasionally gave penicillin injections (for almost any ailment).

There were a few villages, perhaps one in each major valley, with a small dispensary. One example was Mohoriya, where an Indian-army sponsored medical post had been set up only a year after Pignède's visit.[23B] Later it was taken over by the Nepalese government. It has drugs for minor complaints; headache, stomach upsets, iodine, eye medicine, worms, cough medicine. Unfortunately I was unable to discover how much medicine was actually distributed, for the doctor in charge was away in Pokhara during our week in the village. He was said to spend much time away from the village. He was also said to receive 300 rs. per month, twice the sum paid to the headmaster of the Thak

primary school, and his assistant 75 rs. If this is true, some 4,500 rs. were paid annually in wages, whereas only some six or seven hundred rs. of medicine was freely provided. This was not enough to cater for local needs and forced the doctor, we were told, to charge large sums for injections, tooth extractions, etc. The fact that the doctor was a very young man of about 22 and not a Gurung (but a Tibetan, a people somewhat despised by Gurungs) did not ease matters. Judging from the cases we encountered in the village, the dispensary seemed to have had little impact on health. Many of the same type of criticism could be made of other health clinics in the country, for example the government clinik at Sikha, where most of the money went on salaries and expensive training, little on medicine. There seems little doubt that, if the aim is to provide the cheapest and most effective medicine, one of the villagers, perhaps with a week's training at the local hospital, would be happy to give out medicine for Rs. 50 per month. As we found during our temporary dispensary-running activities at Thak, such work is not a full-time business and does not require any great expertise. The medical needs of a group of villages can be dealt with in an hour a day. A short course on giving injections, diagnosis, and bandaging plus 100 rs. of medicine and 50 rs. fee per month would provide as good if not better service as that in Mohoriya for one third of the price.[230]

In Pignède's time people seldom went to hospital at Pokhara, mainly because of the distance and expense (both of medicine and accommodation). Considerably more use is made of Pokhara facilities by the Gurungs living in the Siklis valley, for Pokhara is nearer and is their natural market centre. They can combine a visit to fetch cigarettes, sugar and other commodities, with a visit to the hospitals. The Soldier's Board hospital to the south, now run by the government, always seemed deserted when we visited it, except for the medical staff. I was not able to find out how often Gurungs attended it, but there is no doubt that those

from Thak preferred the Mission hospital. The Mission hospital not only prescribes drugs, performs major surgery, and delivers babies, it also provides in-patient facilities. Medicines were not free and their price was added to by the customs duties which have recently been charged on medicines brought into Nepal. Yet the prices are much lower than those in the bazaar. The hospital is short of many pieces of equipment, for example the X-ray machine which would make it easier to diagnose TB. Its services, among the best outside Kathmandu, are being improved by the rebuilding and by extension of the leprosorium to which it is allied. We heard none of the usual criticisms of western-type hospitals that they are places where people always die, that the doctors and nurses are witches who eat the souls of patients, that such institutions are impersonal and frightening.[24] The only criticism we heard in the village was from one young Gurung whose wife went to the Mission hospital with painful breasts. He said that the hospital gave out poor medicine so that the patients would take longer to recover and hence have to spend more. After some argument he admitted that the doctors were not to blame, but thought that it was the orderlies. As with their own medicine and ritual, if the hospital failed to cure a person no blame was attached to it and no anger felt.

We have already mentioned the various public health campaigns; malaria eradication, smallpox vaccinations etc. The latter, though it caused considerable blistering and bad temper among infants, did not appear to arouse fear or opposition from villagers. Those who were given due notice tended to be vaccinated, probably out of a mixture of desire to comply with government orders and the vague feeling that it might be beneficial. The only other 'western' medical technology available, albeit somewhat diluted, is located in the bazaar medicine shops. The contents varied from very powerful modern western drugs to bottles of local herbal potion. How often villagers attended such shops and how effective their medicine was would make an interesting study, but such a survey could not be undertaken during our visit.

When Pignede was in Mohoriya in 1958, he observed that Gurung pharmacology was 'flourishing' and that local herbal remedies dominated the medical field. He described such remedies for headache, fever, stomach-ache, dysentery, dizziness, cuts and burns, coughs, lung troubles, skin and eye troubles.[25] It is probable that in Thak, likewise, such herbal remedies were once extensively used; but the availability of supposedly more powerful medicines in Pokhara and, possibly, the transition from the high pastures where herbs were more abundant, has meant that when we visited the village only a few very simple remedies were left. We were told that in the past shepherds and hunters used to bring many plants through the villages and these were bought by Gurungs. Now people no longer want them, or know how to prepare them for use, and so they are taken south to be sold in the Terai or India. Some plants from the high forests many hours from the village are still occasionally fetched by the villagers: for headaches and sore joints there is a root called potamsala which is smeared on the face and eaten. For fevers another root, which is beaten and strained before eating, is called teedo. For blisters and skin infection nermo-shi (shi, Gg., = wood) is used. The local forest, to which villagers go daily in certain seasons, is believed to contain very little of medical value. For sick eyes one may apply the juice of tsodru fruit, and we saw a girl chewing a rhododendron flower which she said was good for her throat. Another, orange, berry called bia was also said to be good for headache if crushed and rubbed on. Otherwise, use is made of plants and objects from house and garden. For broken bones a plant called hād jorne (Nep. literally 'bone joining') is applied with a splint tied round it. For headaches there was sadwa, also grown in the garden, and the burnt-out mantels (wick) of pressure lamps were also said to be good for headaches. Ashes from the fire, mixed with water, was widely held to be useful for a sore stomach, and we were told that a little millet beer was a good cure for dysentery. Millet paste was often rubbed on burns, and bissaro (saffron), obtainable at Pokhara, was put on cuts. Juice from a very ripe cucumber (lokhai) was said to be good for coughs, and a

vegetable called olbi was eaten to cure stomach pains. The above list hardly suggests a detailed and systematic pharmacopia. The confused state of affairs, in which each person has his own private remedy, is illustrated by questions I asked as to what were the supposed cures for dysentery. Five of the twelve informants to whom I put this question suggested something called kauou, though some described it as a plant, some as a small animal like a frog. One suggested a vegetable called lowtah (tah, Gg. = vegetable) pulped and drunk, another recommended sour buffalo milk and rice. Two suggested pulp made from the belkuti(?) fruit, and another two thought that millet beer, chicken meat and spices would help. The same twelve respondants, asked what the remedy for TB (dumgi) was, suggested in five cases that juice from a thorn tree (donshee) might help, if drunk; the other seven said they knew of no cure.

Though it is possible that we missed a good deal of this informal healing activity, there was little evidence of the use of herbal 'medicines', nor of much faith in this type of cure. It is likely that if a person was ill he tried some near-at-hand remedy first of all, for instance millet beer or ash water. Certainly in the case of a bad burn or cut he would rub on some saffron or millet porridge. Yet there seems to be little system about this; there is nothing like the subtle symbolic association between disease and cure which we find, for instance, in an African tribe.[26] The Gurungs appear to know little about the medicinal properties of the plants around them and to show little interest in the subject. This is clearly related to their lack of interest in the analysis of how diseases actually operate.

One other method of healing may be mentioned here. This is similar to the 'bleeding' and 'cupping' practised until recently in Europe. The technique is employed in cases of specific sprains, or pains in joints or in the back. Such pains are believed to be the result of, or associated with, "bad blood", and such blood should be drained off. It is a technique which many people are supposed to be able to use, though shortage of equipment probably means that most operations are performed by the family of the poju. In a particular case I witnessed, an old man had a sore back,

due, he thought, to carrying heavy loads. A few small scratches were made with a little knife (=chura (Nep) razor) and a little cup-like object was placed over the spot. This nara or cup was made partly of wood, partly of some malleable substance which made it possible for the operator to suck out the air and thereby create a vacuum. After some twenty minutes the suction cup was removed and a largish clot of blood was thus removed. The whole technique was called nara toba (Gg.); it was done without any special ritual.

We may now turn to ritual techniques to deal with disease. A full treatment of Gurung religious and magical beliefs and practises will have to await a later date. Here we will give only a brief sketch of the very complex situation that exists. When a person decides, or is told, that an illness is caused by some mystical force, there are two major courses of action open to him. If the source of the trouble is believed to be one of the village godlings,[27] then the sick person or his family may make a small offering to the offended deity. This is additional to the annual sacrifice made by most families in order to keep themselves free from the wrath of such godlings. These village gods are not aroused by moral offences, but by neglect on the part of their worshippers. If they are not given proper ritual treatment at the right time, or their small shrines (than (Nep.) are damaged, they may cause sickness. The three main deities to whom Thak villagers appealed were Bogmoti Debi, Buje Deorali (buje= grandmother/old woman), and Bhaiar. The former two, being female, are offered female chickens, the latter is offered a cock. Sometimes the nak (Nep; Gg.=lhu) or snake god who lives near each house has been offended and needs a propitiatory sacrifice. The main feature of the ritual is the offering of some blood and, often, the smoke from burning oil, to the offended spirit. This is termed bwok peeba(Gg?, 'share giving') and makes the spirit happy, so that he or she withdraws the illness.[28] Usually the rite is performed by the head of the household, though the actual killing of an animal is always done by a male. If a person recovers after such a re-establishment of relations with the godling, then this supports the original diagnosis. If he continues

ill, then the diagnosis must have been wrong and the sufferer turns to other possible supernatural agents. How often sacrifices were made to godlings I cannot say, but probably in any one year at least half the households in the village would make at least one such sacrifice.

The Gurungs believe that each person is inhabited by a number of 'souls' (Gg.plah); nine for men and seven for women. By far the most common cause of serious illness, particularly of long-term illness, is thought to be because one or more of these 'souls' have wandered off, or been captured by evil spirits or witches (a witch = boksi (Nep.)), or pum/pumshaw (Gg.male/female)). Another frequent cause of illness, not involving loss of plah, is a direct attack by some malignant force. In all such cases the ritual healing treatment is performed by a specialist, Lama, Brahmin, dhami, or, as in 90% of the cases in Thak, the poju. In some Gurung villages, especially where there is a resident Lama and no poju, the situation is not as monopolistic as Thak. But since we only witnessed the system in Thak in any detail, it will be the work of the poju that is described here. The variation from village to village may be seen by comparing Mohoriya and Thak. Pignède described how the lower castes did not employ lamas, poju, and klevri, the Gurung ritual experts.[29] I confirmed this during my visit to Mohoriya, though pojus did say powerful mantras (spells) for the service castes. But in Thak the poju frequently does rites in lower caste houses, in exactly the same manner as in Gurung ones. It does seem, however, that lower caste households in Thak also employ dhami, or people who become possessed with a spirit when a drum is beaten. In the one description of such a session that I was able to obtain, two people became possessed and acted like animals. They sniffed round those present to determine who the witch was. Other parts of the rite, for instance the making of small images, appear to have been very similar to those of the Gurung poju.

The poju can employ a wide range of diagnostic techniques when he is consulted about an illness. He will judge partly from the nature of the illness. Blindness, sleeplessness, a temperature, all are signs that evil spirits termed bhuts and prets have been at

work. If one talks to oneself, keeps alternating between sickness and health, then an ancestor is probably responsible. Scabs are usually caused by godlings (deowta), while cuts that do not heal are the work of witches. But since the same symptom may be caused by totally different agents, for example defective vision, temperature and loss of consciousness may be caused by godlings or evil masan, it is necessary to go beyond a naïve reliance on symptoms. Almost always the poju feels the pulse of the sick individual. By flexing the various fingers and seeing how they affect the pulse, he can sometimes tell which type of supernatural power is responsible for the illness, or whether it is merely a "natural" disease. In some cases this is supplemented by reading the hand, or in Thak the finger joints, of the patient. This examination of what are known as the parga helps to decide whether a person is in an inauspicious year, or whether his nativity clashes with that of any other members of the family, a situation which could well lead to the illness. Another method of divination is to draw a diagram with three wavy lines. The number of squiggles is random, and from counting them in a certain way a set of numbers emerges from which the poju may calculate the cause of illness. This is one of the many varieties of the mut (mut (Nep.)? = opinion or vote) moba technique. Another is to draw a diagram with twelve divisions and then to get the patient to place a grain of rice in one of these. Depending on which he chooses, the poju can diagnose his illness. The actual calculations and variety of divination systems are almost endless and allow for enormous flexibility.

To judge from the actual rituals performed, we may classify the types of cause of disease as follows. Firstly there is a category of 'natural' causation, for example when a person eats dirty or decaying food and then has a stomach ache. This is not within the province of the poju and he may recommend people to go to the local hospital for treatment. Secondly there are deowta or godlings, peeved at being neglected. Thirdly there are the spirits of ancestors, bhaio (Nep.= bayu, wind or spirit of the dead). Fourthly there are witches, male and female. Fifthly there are the snake gods, nak (or

lhu) and, possibly, the godlings that dwell in houses (lha). Sixthly there are various types of evil spirit - bhut, pret, moh, masan, each of which has its special characteristics. Seventhly there are forest and field spirits, the former being the more powerful, small human-shaped creatures called bânketa. Finally, there are the forces related to the year and date of birth and the present parga of the patient and his household.

Each of the above entails a specific set of rituals which may be used to counter its power. Thus symptoms are not classified by the part of the body they affect, or their intensity, but by the type of agent supposed to have caused them. I collected detailed information concerning 43 rituals, most of them to ward off sickness, and all used by the poju. Many of them last over an hour and are complex symbolic performances, probably dating back to the old bon religion of pre-Buddhist Tibet.[30] They will be described in detail in a later publication. The central principle of many of them is to attract down the evil spirit, or wandering soul of the sick person, feed it with blood and other foodstuffs, and thus to make it happy or drive it out. Often the rite is extremely dramatic and enacts the expulsion of evil and suffering. The rites are also graduated. If a simpler and less expensive one does not work, it may be worth trying a more elaborate one in which, for example, a goat is sacrificed instead of a chicken. One example of such a rite may help to give substance to this brief summary.

A rite which the poju at Thak performed more than half a dozen times during 1968 was the pih ngeh sheba. It is performed against all kinds of evil agents. It takes over ten hours and occurs at night, starting at about six in the evening. Throughout the rite the poju recites a series of pie or myths which accompany and give power to each ritual action. The rite takes place within the patient's house, until towards the end when the poju processes to a nearby hillock. The poju makes a number of kedu (little rice figures) which represent gods, and others of millet representing evil spirits. Pebbles, sand and water has been specially brought from the place by the river where bodies are burnt, and four metal loop-shaped tacks and an arrow are also collected

together. Likewise a variety of special pieces of wood and a goat (of any size). The poju starts the ritual in his ordinary clothes, but later dons a special belt and head-piece which are supposed to frighten away evil spirits. He sits on a rain shield (syakhu). Having put the kedu on a rice mat he sprinkles them with ash, and likewise sprinkles himself, the patient, and a patch of ground across the doorway. Then he starts to recite, accompanying himself at intervals on a drum. Meanwhile water has been heating on the fire. The light is then extinguished and, it is believed, the rih (evil spirit) enters. The sick person has been partially covered by a carrying basket and the poju then throws spoonfulls of very hot water and handfuls of the cremation dust at him. All the time the poju is reciting and, at intervals, blowing his horn. This goes on for up to an hour and the family and neighbours sit huddled in the dark. Then the sick person is stroked with a coin, which is believed to suck out the evil graha (luck/fortune) and the coin is immersed in a pan of boiling water. The poju next draws a triangle in the earth and puts the patient on his sitting mat in the centre of it. Now millet flour is thrown at the patient through a flame, so that it sparks and fizzes and he jumps about in mock (and sometimes real) pain. The kedu of the evil spirit is circled round the patient's neck nine or seven times (depending on sex) and is then stroked against the patient. Then the ash at the door is examined for footprints; if those of a chicken, centipede, human, buffalo or other animal appears it indicates what evil spirit was involved (the door, incidentally, is kept closed during the proceedings). And so the ritual goes on. We have only reached half way but a full description and analysis must await a later publication. Later a goat is sacrificed, the poju rushes into the house with the head of the goat in his teeth, a lighted arrow is shot off into the darkness. Each act is a symbol and many of the minor actions have been left out of this account. Clearly the audience do not have much idea about what all the actions mean, and do not understand the drone of words that accompanies them all. The main drama of the luring and forceful expulsion of evil is obvious to all, however.[31]

Most Gurungs appear to see little conflict between 'medicines' and healing rituals. Throughout their history they have been used to using the two alongside each other. Now that western doctors have replaced those medicines obtained from the high forests, the Gurungs do not find it difficult to continue to use 'medicines' alongside the rituals of the poju. The villager's chief interest is in the comparative efficacy and cost of various remedies: at present it could well be argued that western medicine has advantages as far as efficacy is concerned, but is more expensive and less interesting or socially satisfying than ritual. Numerous examples of the way in which people used the two systems alongside each other occurred during our stay; they paid no attention to the fact that the premises were totally different, but merely sought the most effective treatment. The importance of this is that it suggests that western medical technology does not necessarily discredit the older 'magical' practices. The two may blend well. Thus those who had seen western medicine in action in the army were easily absorbed back into the village and immediately sought magical healing. On many occasions people came to us for medicine, for example for coughs, when they had already undergone a small magical rite for the same affliction. If they recovered they might decide that either of the two remedies had been responsible. For instance, the old woman in the house next door to us had a severe skin rash and went off with a whole tube of our skin ointment which she vigorously applied. A few days later we learnt that she had recovered, after the poju had performed a special rite over her! Perhaps the outstanding example was the poju himself. While still daily carrying out magical rites, he was a great admirer of the 'Shining' hospital where he had been cured after being severely burnt. On one occasion all his family had Asian 'flu and he sacrificed a cock in front of the house to drive it away. A few days later we met the whole family just returning from the hospital where they had been for injections.

Yet it would be wrong to paint a completely harmonious picture. There are signs that some of the younger, more intelligent, people are aware of a clash between the two systems. Thus a boy at school in Pokhara

said that he would prefer to use western medicine for minor complaints, while other people, he thought, still preferred the poju. The headmaster of the local school, who had been for some time in Kathmandu, was also somewhat keener on western medicine and a little sceptical of the poju. But the fact that his father, who had neither been in the army nor away from the village, nor received any formal education, was more sceptical than any other villager about magical healing, suggests that education and army service are less important than personality and intelligence in causing scepticism. This is also illustrated in the case of the poju's son. He had received little education, unlike a number of young men in the village, and had not been able to get into the army. Yet he was by far the most articulate and sensitive informant on the question of the irreconcilability of the two systems. Probably the fact that he was at this time taking over his father's role as poju made him especially sensitive to the clash. When I asked him whether a general puja carried out for the benefit of the village sick was good or bad he replied that he had "two thoughts" ((Gg) ni (Nep.) bicār). "Science" - and he used the word which he had heard on the radio - told him that this was a bad custom, but as a Gurung he thought it was good. He then said that as a practising poju, when he was doing a sacrifice, he had the same two thoughts. He listened to the radio a good deal, and it seems clear that he had picked up some of the denunciation of 'superstitious healing' from that source.

Although I was unable to find out how much time is devoted on 'Radio Nepal' to denigrating 'old superstitions' it is clearly a belief among development planners and medical practitioners that alternative, traditional, systems must be swept out of the way. Thus there is usually at least one paper (at high-level medical conferences) attacking "quacks". The kind of image of the countryside held by high-level bureaucrats is well illustrated by the proposed plan of the Family Planning Association of Nepal in 1968.[32] It warns that "Family Planning movement is very new to the Nepalese Society. Superstition, illiteracy and ignorance stand in its way...The movement will be new and revolutionary to the rural folks who are more religious, superstitious and innocent". The attack reminds one of the battle between

clergy and licensed doctors on the one hand, and magical healers on the other, which was fought out in pre-industrial England.[33] And it probably arises partly out of the same motive - professional jealousy. Such 'superstitious ignorance' is also a useful excuse when development plans fail to work as expected. Apart from the above there seems little reason for such attacks. Nepal is so ill-equipped medically that there is plenty of work for everyone. Given the present inadequacies the ritual experts are probably doing far more good, judged in terms of human happiness and hope, than are the doctors. Nor, if Thak is representative, do they intentionally obstruct the work of other doctors.

One major difference between the situation in Nepal now and England in the seventeenth century, is that nowadays western-type doctors really do have access to a superior technique (judged solely by the criteria of physical results). In the seventeenth century the remedies prescribed by physicians were not obviously better than those suggested by 'quacks'. There is still much hocus pocus embedded in 'western' style medicine, and poor medical facilities plus the inability to change the basic causes of disease means that patients often become ill again when they return home. Yet it <u>can</u> be legitimately argued that if a patient is prepared to spend time and money attending a good doctor (if there is one available), he does have a higher chance of recovering from typhoid or TB than if he sacrifices cocks and says spells. Undoubtedly a number of villagers realize this, and hence they are keen to obtain western medicines. There is no doubt that if there was an effective dispensary, run by someone who was trusted, and providing cheap treatment, there would be no shortage of patients. But the present cost of medical treatment is still too high for all but an occasional visit by a middling-rich or affluent villager. I remember no case where a poor Gurung family went to the local hospital, and it is doubtful whether the lower castes from the village will ever go. It is impossible to persuade them that 50 rs. for medical treatment which may save a person from crippling disease, is money well spent. Whereas the <u>poju</u> was aware of the wealth of the family he was treating and his fees were

geared accordingly, western medicine is standardized in cost. Consequently there is a growing double standard of health. One of the major features of a class system is being created - money can buy better health.

A rough indication of the relative cost of hospital treatment as compared to treatment by the poju shows the following. In the household inventories which I obtained, three out of seven people said that they had spent between 5-10 rs. in the previous year on medicine, the other four had spent between 20-24 rs. As a proportion of their total budgets, these sums are very small. But none of the family members had been seriously ill. For a major illness, requiring a minor operation or a few days in hospital, up to 100 rs. would probably be required. When I asked how much it would cost for a lower caste man, obviously dying of some liver or heart disease, to be taken to Pokhara and given medicine, several people gave this figure. Likewise, when a man had a bad thorn in his hand he went to a nearby clinic and spent some sixteen days away from the village. Each injection cost him 2½ rs. and the actual extraction 7 rs. The whole visit cost about 100 rs. and he had to go again later since the arm was not properly cured. Such cash amounts are beyond the reach of the poorer villagers. Even villagers of middling wealth may have to sell off capital. Thus when I visited a man whose son was later diagnosed as having TB, I found him wrapping up his wife's golden ear-rings which would have to be sold to pay for the treatment. Probably over half the cost arises from the need to pay for food and lodging near the hospital, rather than the actual medical treatment. Some villagers have relatives with whom they may stay, but many have to hire accomodation, and food is notoriously expensive in town. The fact that the poju is at hand and can treat sick people in their own homes is probably one of his main attractions. A sick person is naturally loath to walk or be carried down a 2,000 foot rocky slope, and then over twelve miles of rough ground, to a place where he will be among strangers.

It seems hardly worth trudging off to Pokhara for small ailments - a cut, sprain, headache, bites, cough, sore chest. Thus, as he walks around the village, the poju is constantly being asked to do small

rites, blowing mantras to heal a sore, tying a charm round a fretful baby's neck, blowing down a tube onto a woman's swollen and painful gums. For such small cures he is given 1 rupee, plus either a meal or a mana of rice (husked). For the many rites which take a number of hours he will be given a meal and drink, millet or maize and a little rice worth about 3 rs., a piece of the sacrificial animal worth about the same, and 3-5 rs. Thus a major rite will cost a person between 10-15 rs. Probably a similar sum will be spent on feeding neighbours, but this is merely an exchange, for the giver will later be entertained free on a number of similar occasions. Since a person also has to pay for the initial divination, and may well go on to do other rites, it is likely that for a serious illness up to 30 rs. may be spent (in cash and kind). This obviously compares favourably with treatment in Pokhara. When an old man in the second richest family in the village was very ill, the poju did a big rite for him, and several smaller rites. The total cost was up to 30 rs. Later he was taken to the Shining Hospital where he and those accompanying him stayed for several days, at a total cost of up to 100 rs. After being discharged from the hospital, he died in the village. Neither treatment had been effective, but the former was cheaper, more dramatic and emotionally satisfying.

In the treatment by the poju, the cause of the disease was located in an evil supernatural power, and this may have given those concerned satisfaction since they now knew why he was ill. Then the bringer of disease was dramatically expelled and destroyed. This dramatization, combined with the near presence of family and neighbours (who are required in most rituals to be present and to participate, especially in blessing the invalid) would give comfort. Even if the physical aspects of the disease were not dealt with, and it is clear that only psycho-somatic illness could be effectively attacked by such methods, the ritual would help dispel the depression and anxiety which accompanies illness. At least other people could be seen to care, and something active was being done. The poju himself was an enthusiastic and dedicated practitioner and had an extremely gentle and reassuring 'bedside manner'.

During our departure from the village, when we were both in a highly wrought-up state, he performed a small ritual over us, blowing, blessing and putting a small jantra or charm round our necks. His manner was so calm and re-assuring that we were immediately soothed and refreshed: it was easy to see his likely effect on sick and worried people.

Naturally enough, in many cases both western and ritual healing methods fail to cure a person. Such failures do not, however, mean that people question the general efficacy of such methods. As anthropologists have shown,[34] there are many ways of explaining such failures within the current system of thought. In the case of ritual healing, the original diagnosis may have been at fault, so that the wrong rite was enacted. Or it may have been that the rite was marred by some technical error, either on the part of the ritual expert, assistant, audience or patient. The Gurungs do not, however, appear to have the idea that the mental and emotional state of the patient is important here; he need not feel penitent, and the rite will not be spoilt by hidden hostilities among the participants.[35] Even if it is the correct rite, perfectly performed, it may be too late, or the evil power against whom it is directed may be too powerful to dislodge.

The many difficulties, and the doubtful resolution of the conflict against sickness, are given dramatic expression in most of the poju's rites in an action which takes place near the end of them. He examines a particular item, often a part of the sacrificed animal such as the liver, to see whether the rite has been successful and the patient will recover. Often the omen is not entirely good or entirely bad, and a wide margin of error in prediction is allowed for. What seems strange to an observer is that the patient never seems angry when, immediately after an expensive rite, the poju pronounces that it has all been vain, the omens are bad. It seems to be felt that it was worth making the attempt and, probably, that omens are fa lible and may turn out to be wrong. The result of all these mechanisms explaining failures is that the ritual expert never appears to be blamed if a person does not recover; nor do people lose faith in his methods. Indeed, they are

likely to come back for more: failure reinforces the system just as much as success and merely requires that it be tightened up, rather than destroyed. We have already seen how, if one rite does not work, one should try another.

The same types of explanation are probably also given by villagers when western medicine is not successful. It may have been a wrong diagnosis, leading to the wrong medicine being used. The medicine may have been wrongly applied. The disease may already have become too ingrained, or be too powerful for any type of medicine. The doctor is not to blame, nor is the system of western medicine. When, finally, a person dies, there is no point in blaming anyone. A person's death is forshadowed in his moment of birth; the hour is written on his forehead, and no medicine or ritual can avert it. Gurungs often used the phrase kal kaba (kal (Nep.)= death, fate, kaba (Gg. to come)) to describe the reason for death occurring. There is no point in feeling guilt or anger.

It will be seen that the amount of success/failure in the two methods of healing is not necessarily the important factor in selecting between methods of treatment. Efficiency is hidden by the fact that people may select explanations of success and failure to support the system which they find preferable on other grounds. Thus, if western medicine fails in a particular case they can notice and stress this, or they may say that it is explained by one of the factors described above. If a person is cured they may select out a previous injection, or a previous ritual, as responsible for this, since almost all seriously ill people receive both types of treatment simultaneously. Thus choice between the two is largely a matter of faith; no-one understands how either actually operates, so that the 'scientific' truth or falsehood of the two systems cannot be compared. The factors which lead a person to use one or the other systems are the relative cost, the relative availability, the relative enjoyment, and the relative prestige of the practitioners. A villager will probably have heard that

certain treatments are especially well performed at the hospital - sore teeth extracted, bad burns healed, TB cured, for example - while the poju is known to be especially good in cases of shivering, listlessness, headache, and other symptoms which are believed to be caused by evil spirits or witches. Since the poju is himself consulted in almost all serious cases of illness, he, more than anyone else in the village, will have an idea of the types of disease which he can cure and those types which will need western medicines. Like the General Practitioners in the West, he refers certain types of case on to the hospital, suggesting the rite of the jabbing needle if his own rites do not help.

The Gurung reaction to the various discomforts and pains which formed the constant background to their lives was varied. They appeared to take as part of the natural order much illness against which westerners would try to fight, especially dysentery sores, bad coughs. This was obviously because there had been little opportunity to fight them in the past. When we supplied medicines for all these ailments, villagers were eager to procure them. Sudden accidents, burns, cuts, sprains, seemed to upset them disproportionately. Their normally gentle, calm, behaviour would be immediately transformed into alarm, excitement, anxiety. We saw this happen on several occasions. Children suffered accidents and there was then much hysterical fussing by the relatives. How far this was due to the fact that the sufferers were children it is difficult to say. The only parallel in daily life was the panic and fluster when large animals threatened to cause an accident by the water tap in the centre of the village. Certain other ailments, particularly the Asian 'flu which spread round the village during our stay, caused great depression among the sufferers. They would lie moaning gently to themselves, sometimes rocking slightly backwards and forwards. But the sore throat, headache, stiffness of joints and temperature which accompanied the disease may have also included physiological pressures inevitably leading to depression. Often sick people were as cheerful as healthier persons. Both adults and children were very stoical when we applied painful medicines or took off dressings, and babies seemed to cry less than those or comparable age in the West.

Another feature was that there seemed to be a tendency for illness to run in families. We would often have all the members of a family for medicine in one day. It is hard to say how much this was the genuine result of infection and contagion in a situation of extremely intimate living, and how far it was because one member of a family reported back about our medicines and the rest came out of curiosity. Certainly there was some hypochondria and attention-seeking in a number of cases.

One basic attitude to sickness was that it was a communal affair. The sick person should not be isolated, even if he had TB or what we would consider to be infectious or contagious disease. If anything, the patient should be surrounded even more closely, given group support during his or her temporary weakness. This feeling is shown most clearly in healing rituals, which can be seen as mainly a means of crowding together as many concerned neighbours and friends as possible into a small room with the sufferer. The Western concept of isolation is therefore alien to the Gurungs; illness is an attack on society, and like animals in a field when threatened, people must huddle closer together for protection and support. While the patient lies passively in the centre, his friends and relatives need to be actively struggling against the evil that has brought the disease, forming a ring round him. Disease is only partly controllable, success is by no means automatic, but it is worth trying all possible remedies, ritual and Western, in order to ensure relief; just as it is worth combining Hinduism, Buddhism, and local religious methods in order to tap as much spiritual power as possible, even though they may appear (to the outside observer) to be based on entirely contradictory premises.

The future medical prospects for the Gurungs depend entirely on the economic and social prospects for Nepal as a whole. If one believed that Nepal's wealth will increase that foreign aid will continue to pour in, that expenditure on health campaigns and medical services will grow, it could be argued that the availability of Western medicine will be increased and the incidence of disease will lessen. How long such benefits can continue in the face of increased crowding, worsening diet, growing pressure on natural resources, and a general lowering of

the standard of living consequent on continued very high population growth, it is impossible to say. If the economic situation deteriorates, and particularly foreign-aid-instigated health facilities decline, then the Gurungs will probably retreat to their own stand-by system of ritual healing and herbal cures which have served them for so many centuries.

CHAPTER TEN. NOTES.

1. E.g. Karan, Himalayan Kingdom, p.20.
2. NO NOTE.
3. Thus, for example, Turner in Africa, xxxiv, no.4, p.316, argues concerning witchcraft that "Constant exposure to ugly illness and sudden death, and the need to adapt to them swiftly, have surely contributed to the formation of these ugly and irrational beliefs".
4. I am most grateful to Dr. Gerald Turner for making these records available to me, and for help in deciphering them.
5. There is a general discussion of nutrition and anaemia in Worth, Nepal Health, pp.48-9.
6. See also Worth, Nepal Health, p.48.
7. Worth, Nepal Health, p.49. There is a further discussion of Gurung diet on pp. 332ff. below.
8. Worth, Nepal Health, p.97. Dr. Turner comments that "the incidence of tooth caries is 'fairly high'".
9. Taylor, Medical Survey of Kali Gandak, p.429.
10. Worth, Nepal Health, p.93.
11. Ibid., p.49ff.
12. The definitions, suggested by the W.H.O., are quoted in Worth, Nepal Health, p.52.
13. Gorer, Himalayan Village, pp.174-6.
14. Worth, Nepal Health, pp.59-60.
15. Taylor, Medical Survey of Kali Gandak, p.429. The Biratnagar figures came from a private communication from Dr. P. J. Cunningham.
16. See the table in Nag. Human Fertility, p.184; and the statistics and discussion in Clark, Population Growth, p.18ff. The rates may drop as low as 2%, or rise up to 20%.

17. Gurungs, p.246. Dr. Turner comments "VD is found more often in soldiers on leave, probably contracted while on the homeward journey, fresh with cash. It would not be revealed to the army authorities, unless the man was compelled to".
18. See p.178 above.
18B. Dr. Turner states that in the Pokhara valley generally "fungus infections are fairly common, of skin, groins, and feet."
18C. According to Dr. Turner, "worm infestations are exceedingly common. Few escape this, and our laboratory, which has been functioning for two years, now often picks up triple infestations, including hookworm which is widespread."
19. Worth, Nepal Health, p.73.
19B. Dr. Turner states that "this must cause backache, lumbago, at times sciatica. There is firm evidence of this in coolies in India."
20. Ibid., p.105.
21. For C18 France, e.g., see Goubert, Beauvais, p.76. Certainly in the C19 there were huge differences: in Leeds in 1844 a 'gentleman' could expect to live 44 years, a labourer 19 years (cited in Tawney, Equality, p.128).
22. The problem is, of course, much more complex than this. 'Medicines' may act through their own 'supernatural' power etc.
23. The dates are taken from Harka Gurung, Ph.D. thesis on Pokhara valley, p.96.
23B. Pignède, Gurungs, p.252 stated that an ex-soldier was pressing for such a dispensary during his visit.
23C. An attempt to carry this out, utilizing school teachers as health workers, is being made among the Sherpas (Lang, 'Kunde Hospital', p.4).
24. There is a summary of such fears in M.Mead, Cultural Change, pp.205-8.
25. Gurungs, pp.105-6.
26. V. W. Turner, Lunda Medicine, passim.
27. The term 'godling' is used by Hitchcock, Magars, Chap. 3 and seems more appropriate to these small deities than the grander term 'gods'.

28. My suggestion that godlings might be hungry caused great amusement among informants, though several admitted, after reflection, that it was often 'hunger' that drove the deowta to plague people.
29. Gurungs, p.58.
30. I hope to explore this problem further, and evidence for the relationship will be presented then.
31. Pignede, Gurungs, pp.322-340 described a number of rites, but he only gives a bare outline of some of the features. Shortage of time made it impossible for him to collect a full account.
32. A copy of this plan was seen at the I.P.P.F. library in London; the quote comes from p.2.
33. Keith Thomas, Religion and the Decline of Magic (1971)ch.9.
34. Ibid., pp.641-2 summarizes the work of Tylor, Frazer and Evans-Pritchard on this subject and attempts, in ch.22, to go beyond them to explain how such a system is broken down.
35. The importance of "good feelings" before a ritual will work has been noted by many anthropologists, e.g. Fortune, Manus Religion, ch.2; Evans-Pritchard, Nuer Religion, chs. 7,8.

III. APPENDIX. AGRICULTURE AND ECONOMICS.

(Because of the limitation on the number of words in a thesis it has been necessary to place the second half of this analysis in an appendix. Pagination is continuous and there are sub-appendices at the end.)

CHAPTER ELEVEN. LONG-TERM CHANGE IN THE GURUNG ECONOMY

There has been considerably more study of the economics of tribal groups in Nepal than of their demography. Thus we already have general accounts of the economy of Sherpa, Magar, Newar and Gurung groups,[1] and more detailed analyses of several aspects of land-ownership, marketing and household budgets in both east and west Nepal.[2] To supplement these there are government reports on agricultural conditions, and general surveys of land tenure and taxation in Nepal.[3] There are also several good descriptions of the general condition of the Nepalese economy.[4] The following analysis of Gurung economics will, it is hoped, supplement the above by giving a more statistical and detailed treatment of agricultural economics than is usually attempted by anthropologists. The following pages need to be read in conjunction with the work of Bernard Pignède on the same people. His very full account of the geographical and climatic features of the Gurung hills makes another such description redundant. He has sketched in the background to Gurung farming, a mountainous land where crops have to be grown on terraces, and where the monsoon rains of June to September are the central event of the agricultural year.[5] He has also made it unnecessary for us to give a full account of the material techniques of the Gurungs, for he has described in great detail methods of house construction, cooking, preparing food, weaving and basket-work, hunting.[6] In order to avoid repetition, we will only describe such techniques when our observations differed from or supplemented Pignède's, or where such a description is absolutely necessary in order to understand later analyses of the distribution of time and labour.

The same necessity to avoid repetition will restrict the general description of agriculture. Pignède has already outlined the broad types of land use, rotation of crops, types of crop, work methods, organization of labour, productivity of various crops, and techniques of animal husbandry.[7] Likewise he has made some analysis of family budgeting, of non-agricultural occupations, of rewards for labour, and of landholding.[8] From this list of topics, covered in over a hundred pages of his

book, it will be seen that he has given us the most detailed account of tribal economics for any particular Nepalese society.[9] Yet, though it is impossible not to be deeply impressed by the quality and quantity of his work, lack of anthropological training, particularly in the recent field of economic anthropology, meant that he never asked many of the questions to which we would like to have answers. Furthermore, his range was limited by his necessarily brief visit to the Gurungs. More than any other subject, economic investigation must be backed by statistical analysis. The collection of such data, particularly household budgets and land-ownership figures, takes a long time. Pignède only had a few months in which to learn the language and gain a general picture of social and religious organization as well as economics. It is not surprising, therefore, that much of his description should remain at the general, unquantified, level. He himself was well aware of this weakness.[10] Nevertheless his description is invaluable since it makes it possible to analyse in detail straight away. Used together, these two accounts should provide by far the most adequate analysis we yet have of any tribal economy in Nepal.

The only real evidence we have for the economic situation of the Gurungs up to the beginning of the nineteenth century comes from the myths recited by the poju. The pie´ are obviously extremely old, and although it is impossible to be sure whether the situation they describe occurred three or thirteen hundred years ago, it seems likely that they do reflect one early stage of Gurung economy. These myths, and scraps of information from other historical sources, suggest that for many centuries (up to three or four hundred years ago) the Gurungs consisted of small bands of wandering shepherds/hoe cultivators who circled the Himalayan foothills, moving from site to site every few generations. The pie´ give glimpses of this existence. They recount, often in great detail, the various villages and regions through which the tribesmen wandered. Hunting was clearly an important part of the existence. Large-scale hunts, in which hunting dogs and beaters were employed in the pursuit of deer, and a full-scale uniform (including special jackets, knives, kilts, bloodcarrying flasks) was worn.

Other pie describe herding (including the man going off to live by himself in the forest to herd animals) - usually of sheep, goats, chickens, and two long-haired animals (varieties of yac?) called Yo and Pri in Gurung. Horses are also mentioned, but never plough animals except in one rather exceptional pie. In this (Aba Krolu pie) the scene is said to be China, rice is referred to as a crop (though it is not mentioned elsewhere in the pie) and the plough is drawn by a tiger and a bear. This is the only occasion when ploughing is mentioned. Elsewhere the method of cultivation is always the same; vegetation is set alight and then the land is hoed and sown, usually with millet, maize, buckwheat or rye.

Until a more detailed examination is made of historical sources it is impossible to say when the Gurungs finally began to settle in permanent villages. Our first positive evidence comes at the beginning of the nineteenth century, for Francis Buchanan wrote a description of the Gurungs on the basis of information collected in 1802-3. He wrote thus:[11]

> "Near the Magars was settled a numerous tribe named Gurung, whose wealth chiefly consisted in sheep, but whose manners are, in most respects, nearly the same with those of the Magars, except that, in the course of their pastoral life, they frequent the Alpine regions in summer, and return to the vallies in winter. The men also employ themselves in weaving blankets; they are a tribe addicted to arms...The Gurungs cultivate with the hoe and are diligent traders and miners. They convey their goods on sheep, of which they have numerous flocks." The crops they cultivate with the hoe are 1. Barley 2. Uya (?) 3. Maniya or Eleusine Corocanus 4. Kangumi (Panicum Italicum) 5. Phapar (?)."

This description is substantially the same as that obtained by Brian Hidgson some thirty years later.[12] But he also provides added details of great interest.

> "They make their own clothes of wool, cotton and hemp, of the coarsest kind of Khâdi, Pânga, Bhângria & Pankhi - the two first of cotton, 3rd of hemp & 4th of wool of their own vast flocks of Burwal sheep...They are chiefly shepherds but also keep some Chouris or Yâks & of cows & Buffaloes. They dwell mostly in small villages wherein each Cot is quite separate & they are a deal abroad in the Coths or Sheep sheds. They cultivate the ground to a considerable extent growing chiefly Makai (maize) & Kodo (millet). Making Dhèro from both & that is their favourite food. They also eat Makai dressed rice-wise & also such of their sheep

as die, they do not habitually eat their sheep. They milk them & make Ghee of the milk & shear & make Pankhi & Kamals of the wool, & using them also for carriage over the snows bringing back rock salt of Tibet. They are the traders across the snows, taking hence cotton & rice, & wheat & Dalls & merchants' wares also either on the sheep or on their own backs. They dwell high in the Lekhs...They are also great Shikarees (i.e. hunters) and serve much as soldiers, having been renowned for hardihood since Prithi Narains time...their usual custom is to cook in Iron pan - now in these days they cook in Copper & Brass pots & in earthen pot...They are soldiers & traders as well as shepherds: less agricultural than Magars.. Their herds are often very large 1 or 2,000 sheep... Gurungs carry & sell salt of Tibet & are, in fact, great traders across the snows with the Bhoteas, all the local trade & mutual wants, of the immediate tribes on this & that side the Himal, being theirs & through them supplied."

These accounts have been quoted at length because they provide such a startling contrast with the situation as we observed it in Thak in 1969. Although there were vague memories of the old system, almost every feature had entirely changed, and there can be no doubt that with this economic transformation the whole social system must also have changed very considerably. Before examining the minutiae of change, it is worth briefly comparing the picture given by Hamilton and Hodgson to that we obtained in Thak.

In the early part of the nineteenth century the Gurungs were a mainly pastoral tribe, grazing huge herds of cows and sheep. The latter, especially, were the mainstay of the economy. But in Thak in 1969 no-one had any sheep, and there were only a very few households with cows. The methods of carrying goods on sheep-back, still employed by Bhotia traders in West Nepal,[13] is no longer known. Everything was carried on the human back. The importance of the sheep lingered on only in ritual, especially in the funeral (pae lava) when two sheep are needed to accompany the dead person's soul to the village of the dead. Now that sheep are gone it is not surprising that villagers do not weave blankets as the old Gurungs used to, nor make their own clothes out of "wool, cotton & hemp". Clothes are easily bought in the local bazaar, or fabrics brought from Malaya and India. Only the renga or traditional over-shirt of men is still made from bark-fibre in the village. It is not certain that villagers in Thak have ever been large-scale shepherds,

but certainly they once grazed large herds of cows and buffaloes. I was told that some thirty years ago, a medium-wealth household would have some fifteen or so buffaloes and twice as many cows. Only two households were remembered to have kept small flocks of sheep.

If the Gurungs were ever diligent 'miners', there is no trace of this now. Nor did I see or hear of any deserted mines near Thak or on my walks around Gurung territory.

Trading has also declined in importance among the Gurungs. The description of the way in which Gurungs acted as middlemen, carrying cotton, rice, wheat, lentils and salt across the Himalayas, finds no echo in the present situation in the villages near Thak. Pignède described a relic of this trade in Mohoriya, where the men used to go up the Kali Gandaki valley with grain which they exchanged for salt.[14] The same thing occurred in Thak, and there was a trade up over the pass above Siklis. The bartering of salt against grain ended with the Chinese invasion of Tibet. The journey from Thak, if the route to the west was taken, used to take 10-12 days there and back. If the goods were exchanged at about the level of Tukche, one measure of rice was exchanged for one of salt. After the closing of the Tibetan salt route people went for a few years to Butwal in the Terai, which took about the same length of time. During the last five or six years, however, Gurung villagers in Thak have bought salt at Pokhara. This direct barter of salt for grain may have been a relic of earlier trade, but by the time it reached its close it was very different from the system described by Hodgson in which the Gurungs acted as middlemen.

The crops and manner of cultivating them have also changed very considerably in the last hundred years. The agriculture of this part of Nepal has been roughly divided into two zones, the 'Hindu culture area' where rice, maize and millet are the staples, and the 'Tibetan' area where barley, wheat and buckwheat are the main crops.[15] The description of crops by Hamilton, as well as descriptions in the pie and other traditions suggest that about one hundred and fifty years ago the Gurungs lived predominantly in the 'Tibetan' area, in villages

at about 8,000 feet or above (such as Siklis and Ghandrung) Though they did not live too high to grow maize and millet (as Hodgson's account indicates), they were almost certainly too high for rice. Nor is there mention of potatoes, though the neighbouring murmi-lama (Tamang) people knew of potatoes at that time as we shall see shortly. It is impossible to say when the Gurungs moved low enough to grow wet rice. The land records of Thak show that they were growing it, almost certainly on terraces, in the second half of the nineteenth century. Therefore it seems likely that this critical change over to terraced wet rice cultivation had occurred by at least the beginning of the nineteenth century in some villages.

As the crops changed, so did the methods of cultivating them. Two major changes have occurred, though it is impossible to be certain to what extent they coincided. Firstly there has been a change over from hoe cultivation to hoe and plough in combination. Hamilton described the Gurungs as cultivating with the hoe, and neither he nor Hodgson mention the existence of the currently used plough animal, the ox. Ploughing is especially important for wet-rice cultivation, and has probably only fairly recently been applied to maize growing also. Therefore it seems likely to have come in when rice began to be grown extensively, towards the middle of the last century.

The second major change is from slash-and-burn, rotating, agriculture, to permanent fields. The pie, we have seen, described how forest was burnt down and the seed was planted in the hoed-up ashes. A relic of the system survived in Mohoriya on the very steep slopes where it was impossible to construct terraces. There the vegetation was burnt down and millet sown in the ashes.[16] An informant in Thak said that up to about ten years ago such cultivation was the main method of growing maize and millet in the village. Large fields which have now become the private property of particular families, used to belong to the village communally. Every nine or ten years a portion of them would be cultivated by cutting and burning the vegetation. Only in one particularly flat and low-down field (Uli) was the system as it is nowadays, in other words the field is manured

and millet is planted after the maize has been harvested in July-August. In the old system, I was told, the undergrowth was cleared and burnt in March-April, the millet planted the following month and harvested before the rice in August-September. Maize or millet grown thus was called Mokhai or nari "kode". Depending on its labour supply, a house could obtain as much maize and millet as it wanted.

The above description fits in with the normal description of shifting cultivation: "an economy of which the main characteristics are rotation of fields rather than crops; clearing by means of fire; absence of draught animals and of manuring; use of human labour only; employment of the dibble stick or hoe; short periods of soil occupancy alternating with long fallow periods".[17] The arrangement of such shifting cultivation among the peoples of the Himalayan region has often been described by observers who could see the system in action. Reading their accounts gives us a useful insight into what Gurung agriculture must have been like over twenty years ago, though we need to bear in mind that Gurungs were also gaining their living from livestock, trade, and the army.[18] There were probably also close resemblances between the situation among the Gurungs and that among the neighbouring murmi-lamas (Tamangs) whom Hodgson's informants described thus:

> "After two years we cultivate another field because the soil of it is wasted away. And in two years time that field becomes jungle and again after 2 years we cultivate the same field. (The field) which is close to our House we always cultivate. After two years we burn the jungle of the same field and dig it & the ashes becomes manure and as much jungle we can cut down we can cultivate it - on paying to the Durbar from 1 to 10 Rupees (Thek) whether we cultivate large or small ground in the jungle. We sow Mokae corn twice in a year (one sort small) and in that field any other corn cannot grow - except Mokae, but some times we sow kodae (millet) on it. The field on which potato grows no corn can(not) grow in it - the same potato seed remains for nine years. Corn &c is yearly sown...First we plough the field then throw the manure over it & sow the mokai & Kodoe, Thori, Phapur: these are sown only once in a year and suker kund is produced three times in a year... The field that produces strongly is not changed - & other fields are changed after 3 or 4 years...".[19]

It seems likely that the Gurungs, who were less dependent on their crops since they had other sources of income, did not cultivate as intensively as this. Thus their rotation appears less frequent and they probably did not "plough", as the above people were said to do.[20]

Two other sources of income among the Gurungs in the early nineteenth century are described above, hunting and fighting. We are told that they were great 'Shikarees' and this is confirmed by the poju's pie already cited. Pignède described their passionate love of hunting and also the hunting methods as they existed until recently.[21] From Thak informants I learnt how the forests used to abound in deer, wild pig (which Gurungs eat), jungle cock and other birds. The rivers were full of fish. These valuable sources of protein have almost dwindled away in Thak. The forest is no longer within easy reach of the village, and one has to travel many miles before reaching areas where most of the game has not been exterminated. One or two villagers were still keen huntsmen, but despite many expeditions only one small deer was shot during our fifteen months in the village. The hunting dogs of which the myths tell are no longer kept, and blunderbusses and shot-guns have replaced bows and arrows. Firearms are expensive to buy and to use; a cartridge cost some 6½ rs. in 1969. At this price it is hardly economical to shoot jungle fowl, since one can buy a chicken for this sum. Rivers and streams near Thak were also a dwindling asset; bombed, poisoned, trapped, the fish were very small and growing scarce.

Even in 1802 the Gurungs had a reputation as a "tribe addicted to arms" and had had such a reputation since the mid-eighteenth century. It is impossible to know what proportion of the population served as mercenaries at this date, but there seems little doubt that the inflow of cash from this source, if not the total number employed, increased with the expansion of recruitment into the British army in the second half of the nineteenth century. Such recruitment became, along with the cultivation of wet rice, the major foundation for the new Gurung economy.

The descriptions for the early nineteenth-century show a multifarious economy, in which animal husbandry, trading, mining, domestic industry (blankets chiefly),

arable farming, hunting, and mercenary service combined to provide a wide range of income. This does not fit in with Pignède's statement that "the Gurung village has been, for the last 60 years, an almost closed economic unit",[22] unless we take 'closed' merely to mean that the Gurungs were largely self-sufficient as far as clothing and food were concerned. Yet it is possible that despite their trading and army service they were still basically a subsistence, non-cash, economy, turning their profits from trade and war into goods before they reached the village. Thus the main trend in the last hundred years would seem to be away from a predominantly pastoral but many-sided economy, to one heavily dependent on two types of work, arable farming and the army. Even in the 1930's the Gurungs could be described as "chiefly a pastoral people",[23] but this would be incorrect now. Even since the Second World War there appear to have been very considerable changes, at least in the two villages I studied. The remnants of communal village land on which slash-and-burn cultivation was practised have disappeared; the salt trade with Tibet has been closed; clothes are no longer made in the village, but almost entirely bought in the bazaar.[24] Although we are told that even in the 1930's some villages had a small shop with kerosene, oil, umbrellas and other goods,[25] there can be no doubt that the retailing of consumer goods has expanded very rapidly. This narrowing of resources and intensification of arable farming means that the Gurungs have a more precarious economic base than in the past. If there are a series of bad harvests, or army recruitment is cut back, or population continues to grow at the present rate, they will then be dramatically exposed to economic hardship.

It seems likely that the changes described above are two-fold, and are more pronounced in some areas than others. Population pressure has had a double effect. On the one hand it has forced the Gurungs to establish new villages lower on the slopes of the Himalayas. The altitude of these settlements is such that new crops, particular wet rice, could be grown. But the summer grazing for the huge flocks of cows and sheep also became inaccessible. The villages of Thak and Mohoriya, along with the many others at the same level (c.5-7,000 ft.) are examples of these new settlements, founded with

increased frequency since the late eighteenth century. Pignède described the Modi valley thus; "During the second half of the 19th century, the majority of the land below 2400 m. was covered with wood. Great herds of 200 to 300 cows & many thousands of sheep lived there. Gurung economy was much more pastoral than nowadays."[26] The same is true of the Siklis valley near Thak. Thus we see that a portion of the Gurungs were moving out of the region of yaks, high Alpine grazing, wheat and buckwheat, down onto the lower ridges where they could exploit the river bottoms for irrigated rice.

The old pattern of trading and pastoralism continued much more in the higher villages from which the settlers had emigrated. Thus even in 1969 Siklis, a big Gurung village to the north of Thak, is much closer to the picture painted by Hodgson than are Mohoriya or Thak. Blankets are still woven, very large herds of sheep are still driven up into the mountains in early summer. The same is true of Ghandrung, to the north of Mohoriya; Pignède described the huge herds of sheep from Ghandrung, but in Mohoriya there were no sheep.[26B] If, therefore, the following study had been undertaken in one of the higher Gurung villages, it is likely that the contrast with the nineteenth century situation would not have been so dramatic.

Yet the contrast is not merely between high and low Gurung villages; even within individual villages there have been very marked changes. The case of Thak, to be examined in subsequent chapters, shows how in recent years population pressure has forced an intensification of agriculture and limited the fodder and grazing available for livestock. It seems likely that the same is true of all Gurung Territory, though we cannot be certain of this until further research has been undertaken on higher villages. It is well known that shifting agriculture, such as that once practised by the Gurungs, can only bear a certain, limited, density of population. As Colin Clark puts it, "As population increases, the shifting cultivator has to work on a rather shorter cycle of cutting and burning...repeated burning at fairly short intervals, with the consequent destruction

of humus, may have a very serious effect on the soil."[27] It is true that the Gurungs were buffered against the effects of increasing population for a number of years. Large expanses of woodland enabled them to pasture livestock which provided much of their protein and manure; they did not need to produce a cereal surplus and could even afford a slight deficit for they had a cash income from trade and army service. Furthermore, in lower villages, they were already combining slash-and-burn with wet rice cultivation, and in some higher areas possibly using the potato as a supplementary food. Hence such shifting cultivation could continue until very recently in Thak.

We may wonder how well the disappearance of shifting cultivation fits with theories developed by agricultural economists about the population density such an economy will support. Various estimates have been made as to the population density tolerable before the land deteriorates; these may vary from at least 39 per sq.km. for the Hanunoo down to 2 person per sq. km. in Northern Rhodesia.[28] The 1961 census gave a population density for the Western Hills of Nepal (the area where most Gurungs live) of 174.7 per sq. mile or 45.21 per sq.km. Even, therefore, including the large areas of uncultivable mountain peaks, the density is higher than has ever been reported as sustained by slash-and-burn agriculture. If we confine ourselves to the more limited area of Thak (wards 6-9) it would seem that roughly 700 people are dependent on four square miles of field and forest. This is a density almost identical to that for the Western Hills as a whole. Gurung population has been increasing in this area fairly rapidly over the last twenty years. It therefore would seem that villagers in Thak ceased to practise shifting cultivation in the years between 1945-1960, when population density was between 30 and 40 per sq.km. The change only occurred in the secondary crops. For over a century, as land records show, irrigated rice had been extensively grown in the lower fields.

The change in methods of cultivating secondary crops emphasizes the most important change now taking place throughout Gurung villages. This is the transition from an economy where land is plentiful and labour is

the limiting factor in production, to the reverse situation. In the earlier situation "absolute yield per hectare is less important to the farmer than yield per unit of labour".[29] Those who own good rice land have an advantage, but any family can obtain maize and millet as long as it has a supply of labour, and it can demand good returns for working on the rice lands of others. The egalitarian society of the Gurungs might well be seen as a product of this situation. In this earlier stage, the most precious capital asset is not land or machinery, but labour, and this is an asset which cannot easily be passed on from generation to generation. The steeply increasing price of land, the dividing up of communal maize fields, the growing surplus of labour except in peak periods of agricultural activity, all these are signs that the situation is changing. Although this is not a necessary result, it seems likely that there will be a growing differentiation in wealth between those who own the increasingly precious asset, land, and those whose labour becomes more and more redundant. This process will be accelerated by the introduction of agricultural machinery or new crops which necessitate heavy outlay on fertilizers or improved drainage.

At present, as we shall see, the agricultural technology remains extremely simple and time-consuming. The Gurungs have a pre-wheel culture in which the human back lifts and moves everything, and the human arm and leg does most of the grinding and pounding. They have a proverb whose meaning is that the human back is like an unseen buffalo or beast of burden (ronsa kora moigi prabha amro; lit. 'our back a buffalo walking unseen'). The only non-human power so far utilized is that of oxen in ploughing and residual threshing, and of water-mills for a minor part of the grinding. There even appears to have been a loss of power, for sheep are no longer used to carry goods, and horses, once fairly common, are now almost gone. In terms of the power available per person, from non-human sources within the community, the Gurungs are an extremely 'primitive' people. Yet the standard of living is much higher than in most other Nepalese or Asian communities. The way in which this is achieved will be analysed more fully in later chapters. The theme of these chapters will be the way in which population

pressure is turning a basically expansive economy, where resources of land, fodder, timber, grazing and wild life are abundant, into an economy where human beings are abundant and resources rapidly diminishing. The enormous effects of this change in altering the distribution of wealth in the community, in precipitating a change from a protein-full to a carbohydrate-based (meat to starch) diet, from a labour-deficient to a labour surplus community, will also be explored. The chronic unemployment, shortage of cash, poverty and malnutrition which will occur if population growth further presses on limited resources will also be considered.

That the change has already progressed far may be illustrated by one small instance. A Gurung in Thak told me that when he was a young man some thirty years ago, a poor house, including those of the lower castes, would have some four mokhai suli (or sections of maize) in front of the house. In 1969, when I went round counting the stacks, a four-section stack was only found in front of middling or rich Gurung houses: the lower castes seldom had as many as two. Though we must allow for wistful exaggeration, this informant said that his own father had had an annual harvest of some 70 muri of rice. He thought that his father had not been particularly rich. In 1969 there was only one family in the village that produced over 50 muri. This informant himself, his land deteriorated in quality and quantity (through partition) claimed to be harvesting some 22 muri. Likewise, we have seen, there has been a great reduction in the number of livestock per household. What this means in practice is that the time when resources were flexible, expanding with population, is now over. That this should happen to coincide with the introduction of health measures which, if effective, will raise the population growth rate from under 2% p.a. to anything up to 4% p.a. is disastrous. With a doubling of population every 20-30 years, the Gurung economy will have to be transformed out of recognition before the end of the century, merely to feed the new mouths. The possibility of doing this when the necessary capital is already absorbed by a growing burden of old and young seems slight.

In the first part of the following analysis an inventory of the resources available to the Gurungs in Thak in 1969 will be made. This will necessarily be a static cross-section, of both natural (land and forest) artificial (housing, communications) and human (labour and training) resources. The methods used in cultivation will also be analysed. In the second section a somewhat less static analysis (of domestic economics) will be undertaken. The way in which resources are distributed between different families and over the life-cycle will be considered. Finally we will return to the long-term balance between resources and population, and the consequences of population density on the distribution of wealth in the community.

CHAPTER ELEVEN. NOTES.

1. For example Hitchcock, Magars, ch.2 and see the articles in the bibliography; Nepali, Newars, chs.2,3; Haimendorf, Sherpas, ch.1; Pignède, Gurungs, chs.2-4.
2. Caplan, Land and Social Change; Sagant, 'Marchés en Pays Limbu'; Harka Gurung, 'Pokhara Valley'; McDougall, Village Economy; Peoples of Nepal Himalaya vol.iii; Wye College Report; Karan, 'Land Use Survey'.
3. Nepal Govt. Reports - ~~Census~~ Input-Output; Regmi, Land Tenure and Taxation in Nepal (3 vols.)
4. The best is Shreshta, Nepal Economy; a useful account of foreign aid is Mihaly, Foreign Aid and Politics.
5. See Pignède's description, with revealing photographs, in ch.1 of Les Gurungs.
6. Gurungs, ch.2.
7. Ibid., ch., 3-4
8. Ibid., ch.4.
9. Caplan's book Land and Social Change is more about local politics than economics; only ch.5 is devoted almost entirely to economics (land ownership) and therefore the book does not cover the same broad range of subjects as Pignède.
10. E.g. Gurungs, p.139 where the author admits his lack of material on family budgets.
11. Buchanan, Account of Nepal, pp.27,28,274.
12. Hodgson MS. vol.5, pp.10-11,44,77.
13. McDougall, Village Economy, p.48.
14. Gurungs, p.151
15. Peoples of Nepal Himalaya, iii, p.17.
16. Gurungs, p.113.

17. Pelzer, quoted in Clark, Subsistence Agriculture, p.35.
18. E.g. the description in Gorer, Himalayan Village, pp. 69-70, 92; and more generally, Clark, Subsistence Agriculture, ch.3.
19. Hodgson MSS, vol.5, pp.51,52,57,58.
20. Though it is impossible to be certain whether the "ploughing" was done with animals or hoes.
21. Gurungs, pp.104,149.
22. Gurungs, p.39.
23. Morris, Gurkhas, p.63. And as Dr. Allen pointed out to me, was probably out of date by the 1930's.
24. Pignede, Gurungs, p.142 indicates that the change had already largely occurred in the late 1950's.
25. Morris, 'Thesis on Central Nepal', p.90; since this was based on hearsay rather than observation, the 'westernization' of villages was probably exaggerated.
26. Pignede, Gurungs, p.32. 26B. Gurungs, pp.134-8
27. Clark, Subsistence Agriculture, p.38.
28. Clark, Subsistence Agriculture, pp.47-9, summarizes findings.
29. Clark, Subsistence Agriculture, pp.35-6.

CHAPTER TWELVE. LAND AND FOREST RESOURCES

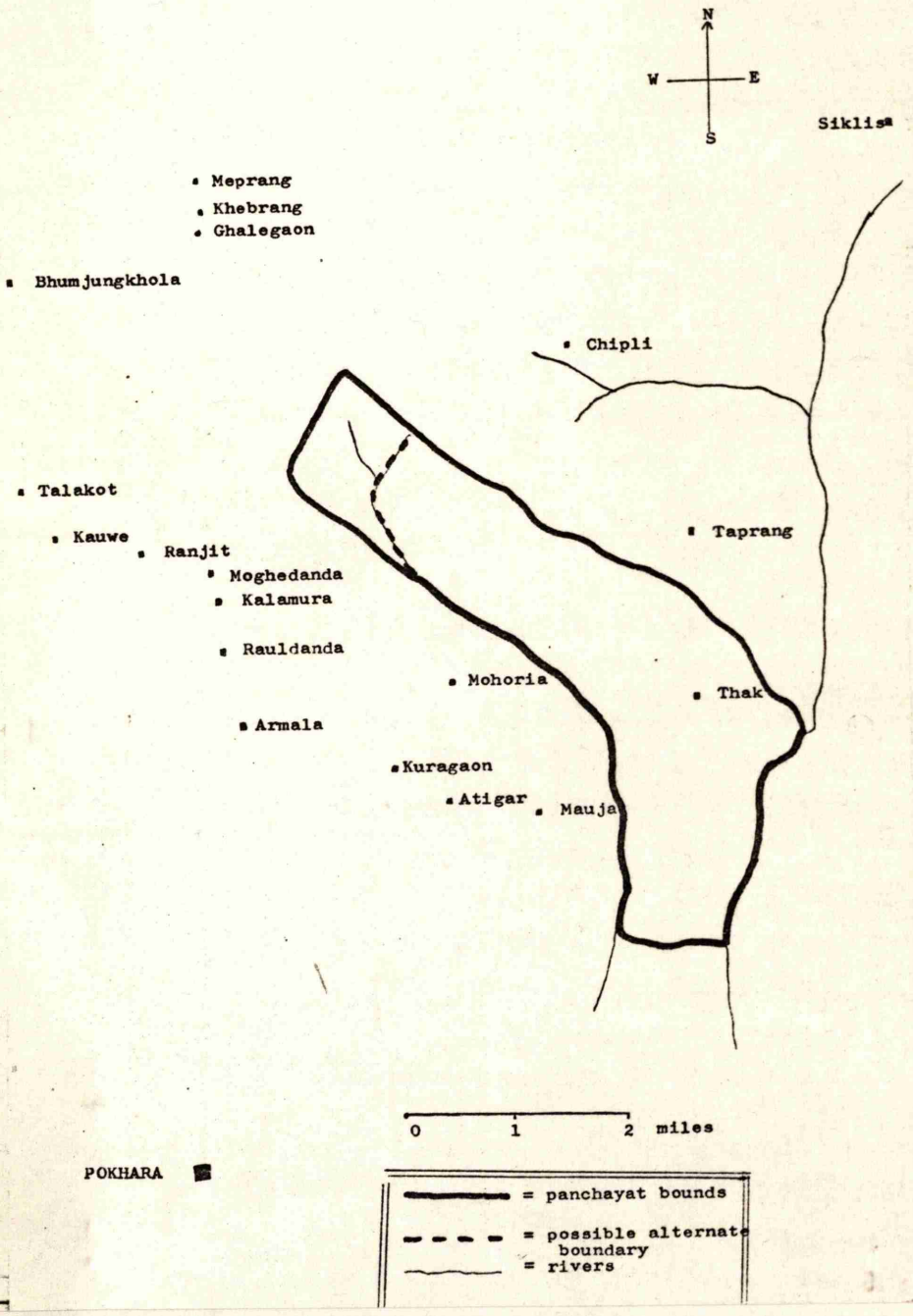
Introduction.

The hundred families in Thak which I studied intensively had only limited resources of land, labour, housing, clothing and other capital. An attempt to compile an inventory of such resources in 1969 and to show their distribution in various groups will of necessity be largely based on guesswork. No adequate inventory of forest or mineral resources for the area was undertaken, for example. Nor are the various types of land record satisfactory as indicators of land-ownership, as we shall see. I was only able to obtain detailed inventories of goods and land from a tenth of the hundred families, and extrapolating from these is subject to several types of error. Yet the attempt must be made, for no description of the Gurung economy will be adequate without such analysis, nor will it be possible to assess the effects of population growth, or the future possibility of economic improvement, without having some general cross-section of resources at present.

For present purposes we will disregard mineral resources in the panchayat. Although, as stated in the previous chapter, the Gurungs were said once to have been diligent miners, they are not so now, at least in the areas I visited. The only slight exception is in the quarrying of stone and slate used for housebuilding. Those villages where slate for roofing is scarce, for instance Siklis, are forced to spend considerable sums of money on buying and transporting corrugated-iron roofing sheets. Thak appears to be well supplied with such stone, though how long the supplies will last under the pressure of current extensive building, I am unable to say.

For convenience sake the natural resources within Thak panchayat may be divided into three categories; forest, grazing, and arable land. These are not, obviously, completely separate; the forest, for example, provides fodder for animals and therefore may be termed a grazing area also. Nor does this include every type of natural resource. Water, for example, both permanent supplies and monsoon rains, is not considered. But the classification does enable us to examine the changing

MAP 12:1. Thak Panchayat in relation to neighbouring villages.



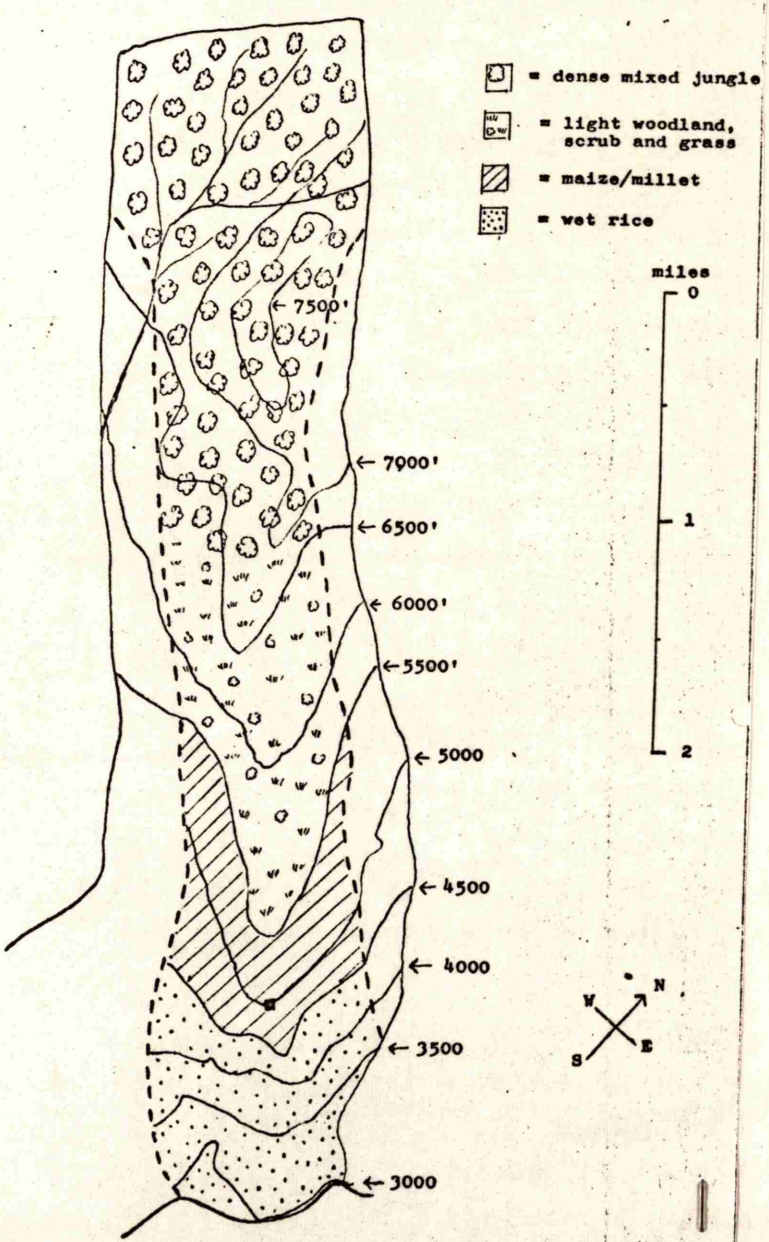
relationship between different types of land use and the way growing population alters the whole ecological basis of a society.

The area selected for detailed study lies within the panchayat of Thak. The boundaries of this panchayat and the way in which other villages border on it is shown in the accompanying map.
for map 12:1 see across.

I was unable to obtain access to anything more detailed than a 1" to the mile map of the Thak area. This does not show panchayat boundaries, so that the boundary on map 12:1 is a rough estimate. It is particularly difficult to estimate how far the dense forest on the high ridges to the north-west of the village belongs to Thak panchayat. The boundary drawn here has, if anything, given Thak an over-generous area of forest. The two villages to north and south of Thak pay annual sums for cutting rights in Thak panchayat forest, and some of the land is inaccessible cliff. It would take a villager some 2-2½ hours to walk to this NW. boundary from the township of Thak. Although, at present, the forests further north are also accessible for game and rare plants, it is unlikely that they will be considered to belong to Thak when the demand for wood makes other neighbouring villages press their claims. The forests are also too far to be useful as supplies of wood and fodder for the central village. It will be seen that Thak has [redacted] a very good share of the surviving jungle in the area. Informants often spoke with pride of the fact that Thak had a very good forest, and it was for this reason that Mauja Mohoriya and Taprang, already outstripping their woods, paid annually to cut in Thak panchayat. It seems likely that in twenty years or so, when every hillside is precious and new settlements have spread out from Moghedanda, Ranjit, Ghalegaon and elsewhere, the effective border of Thak Panchayat will be considered to be at the alternative line marked on the map. But the following calculations will be based on the optimistic assumption that this will not happen. It needs to be borne in mind, therefore, that all the following statistics may be much too high: if the border is really at the alternative line [redacted], this would subtract nearly a third of the forest resources for Thak, and nearly one sixth of the land

MAP 12:2. Land use in Thak; area of 100 sample households,1969.

(note: this map is oversimplified and only roughly to scale)



available to the hundred sample families.

The total area of land available in Thak panchayat as a whole is approximately 10 square miles or 6,400 acres.[1] Given the approximate total population of 1810 persons in 1969, this gives a density of 3.53 acres per person. Within the whole panchayat, a certain area was the basis for the economy of the sample hundred households. This area can only be roughly demarcated, as in map 12:2.

for map 12:2 see across

On the north of the panchayat a belt of land has to be allowed for the inhabitants of ward 9, who were not included in the sample households (ward 9 consisted of 29 households in 1968). To the south live the inhabitants of wards 1-5. Again these hundred households have probably been given an over-generous allocation of land: although constituting less than one third of the population (528/1810), the area on the map constitutes about 4/10 of the total panchayat, which means they have an average of 4.85 acres per head. It is certain that these hundred households, centred on the original village, did have a larger area of land per household than other wards, but it is necessary to bear in mind that we may again have erred on the generous side.

The population density in Thak, as compared to a few other societies, may be seen in the following table.

TABLE 12:1 Population density in Thak and other selected societies.

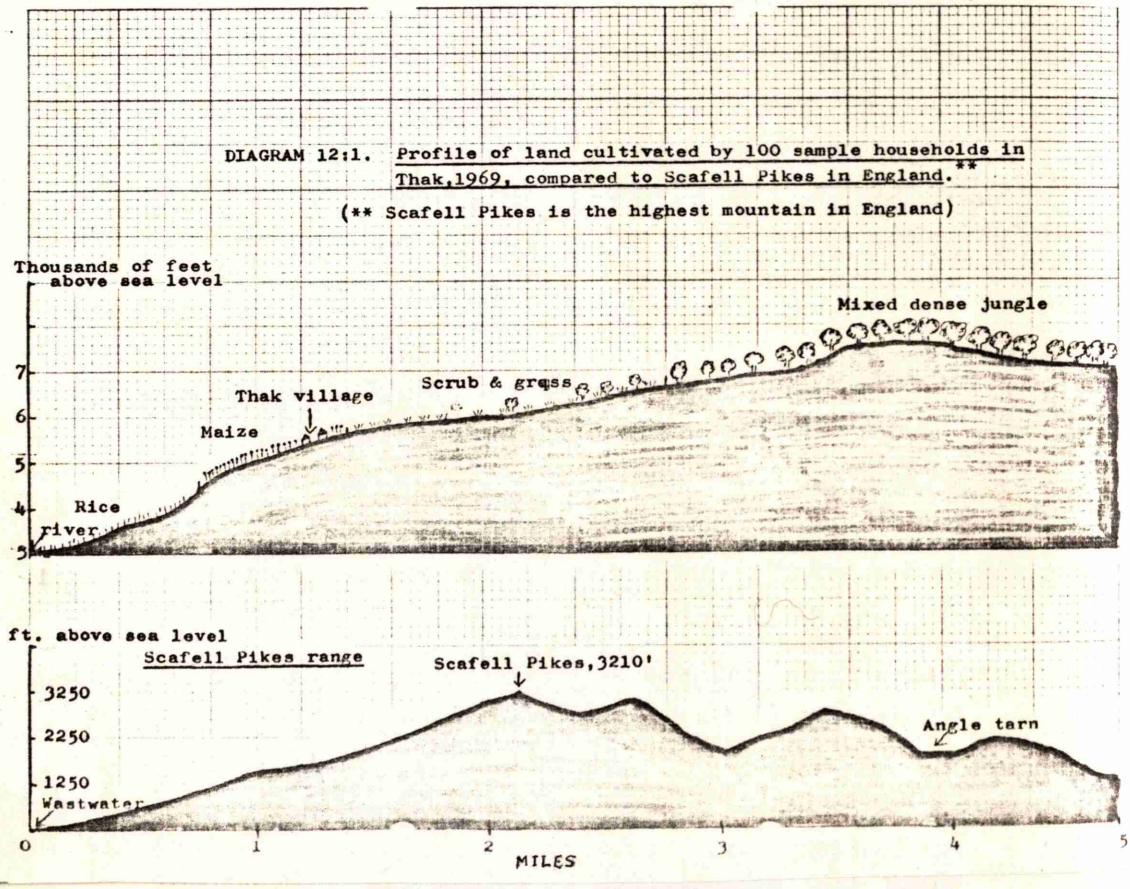
Place	Persons per sq. mile
Thak Panchayat	181
Thak 100 households	107
Nepal - Western Hills, 1961	174.7
Garos of Assam, 1951	77
Ndembu, Africa, 1952	6.13
England, seventeenth century	90

note: the sources for the above figures are in note.2.

It will be seen that the population density is in line with that for the Western Hills as a whole, but that such densities are high when compared to other third world societies, or to historical societies. Persons per sq. mile is not, however, a particularly sensitive index and will be refined later.

DIAGRAM 12:1. Profile of land cultivated by 100 sample households in Thak, 1969, compared to Scafell Pikes in England.**

(** Scafell Pikes is the highest mountain in England)



The strip of land cultivated by the hundred sample families, as shown in Map 12:2, extended from the Mahdi river at 3,000 ft. above sea level, to a ridge of 7,500ft, some 3½ miles (on the map) to the north-west. In fact, agriculture was practised on the side of a 4,500 ft. mountain. The gradient of parts of the panchayat is brought home more forcefully by another diagram, which compares the elevation in Thak to a slice of the Lake District mountains which include the highest mountain in England. The consequences of the gradient are many. For example, the variations in climate and hence crops between different levels was very considerable. There was a definite line beyond which wet rice was not grown. Although, of course, crops did not exactly follow contour lines, there was enough similarity to allow the areas to be divided as in map 12:2. When we come to actual ownership, it will be seen that many areas within each crop area cannot, in fact, be used for farming because they are too steep and rocky. Map 12:2, therefore, is an over-simplified diagram of crop regions, rather than crops actually planted.

(for diagram 12:1 see across)

The steepest gradient occurs between the river and the village; some 2,000 feet in a mile. It was on this slope that the majority of the cereal crops is grown. At about 5,500 feet is the border between grazing and arable, though a little barley and some root vegetables are grown above this altitude. Above 5,500 feet are scrubby bushes, patches of short-cropped poor-quality grass, and small trees: it is an area where forest has recently been cleared and now goats and buffaloes prevent anything of value from growing. The map gives the theoretical amount of land available for each crop, but the actual area cultivated is only approximately half the shaded areas because of difficult terrain. The totals available (in theory and practice) are set out in the following table.

TABLE 12:2 Area of land used for various purposes, Thak 1969

Use	Total acreage	'Cultivated' acreage	Avge. acres of cultivated land per person
Heavy forest	1200	800	1.5
Scrub & grazing	530	350	0.66
Thatching grass	30	30	0.06
Maize/millet	240	120	0.23
Wet rice	400	200	0.38
Total arable	640	320	0.61

('cultivated' = actually used or usable)

Of the theoretical total land area available to the 100 sample families, only just over 13% is at present being used for arable crops. Yet it is difficult to see how this area could be extended very greatly with the present types of crop and technology. As we will see later, maize and millet terraces are still being constructed on a small scale each year, and rice could still be grown in a few places. But the limits have almost been reached. Very roughly, therefore, the present division of the area into half heavy forest, one quarter grazing and thatch, and one quarter arable, is probably not only dictated by the present number of the people but by what the land can be used for.

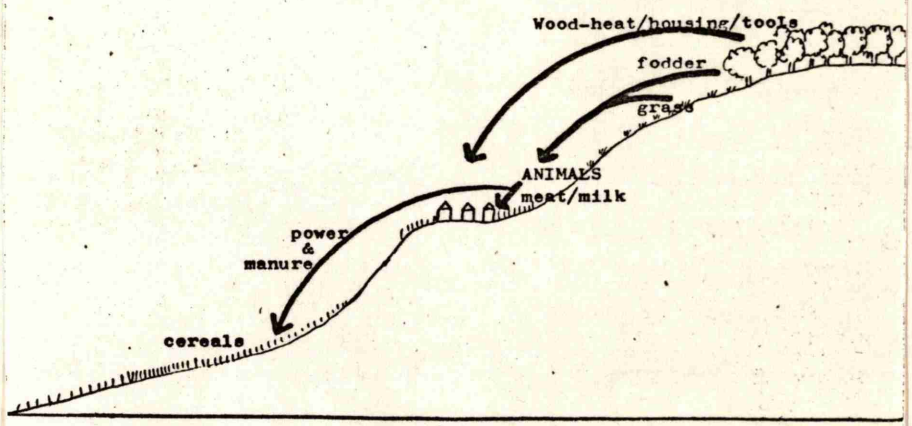
It has been suggested that the most accurate index of population density is the number of hectares of cultivated land/adult male engaged in agriculture.[3] Since the Gurungs depend more heavily than many societies on female agricultural labour, males being absent in the army, this would not be an entirely fair assessment for Gurung villages. The problem, for comparative purposes, can be avoided if we make the assumption, as made for Indonesia in the following table, that adult males constitute one quarter of the total population.

TABLE 12:3. Man/land ratios in various groups.
(Ha. agricultural land/Man engaged in Agriculture (assumed ¼ of total population))

Thak, 100 households, 1969	0.981
Western Hills of Nepal, 1961	0.364
West Java, c.1959	0.63
Poland, 1950 (include pasture)	6.0
Italy, 1950 (include pasture)	3.6

Note: the figures for W. Nepal are computed from the figure cited in McDougall, Village Economy, p.2, assuming that

DIAGRAM 12:2. Flow of resources through Thak.



¼ population = adult males. The figures for West Java and Poland/Italy are cited in Clark, Subsistence Agriculture, pp.139,143.

It will be seen that the Thak sample is relatively prosperous by the standards of the area. Even so the ha./man ratio is very low indeed: it is much closer to the very great density of Java or Japan (0.7 ha./man[4]) than the figures for European agriculture where it is reckoned that 3.6 ha. agricultural land/man in Italy, for example, leads to very considerable unemployment, and at least 5.5 ha. total land would be needed to keep men fully employed.[5] That such high density can be maintained without double cropping, artificial fertilizers, etc., is only possible because the village also has plenty of grazing, forest, and income from the army.

Forest and pasture.

Wood and fodder flows down from the high slopes above Thak, through the village where much of it is absorbed, down onto the cereal fields. This flow may be shown diagramatically.

for diagram 12:2 see across.

On its way it produces many of the necessities of Gurung life; heat, housing material, protein, energy with which to work the fields, and manure with which to produce cereals (calories). It is because this chain is so very vital that present concern over deforestation and erosion is justified. Although erosion is not, as yet, a major problem in Thak, and the situation is much better than that in many neighbouring Gurung villages, where the forest is already depleted, Thak makes a useful case study of the way in which forest and grazing resources are put under heavy pressure as population grows. It will also show the ways in which the various parts of Gurung agriculture are interconnected.

The Gurungs cook on wood fires and keep such fires burning almost permanently. Consequently they use huge quantities of firewood. In the past firewood was no problem, but continued prodigality in use does not suit an age of denuded mountains. Informants were asked how much wood they used per week, and the amount actually burnt was observed. A count was made of the number of bundles of wood stored up for the monsoon months when climate and work in the fields made cutting difficult.

Wood is also needed for the framework of houses and the villagers need considerable quantities of various bamboos for many types of tool such as baskets, ploughs, rakes and hoes. The approximate amount of wood consumed is as follows.

TABLE 12:4. Consumption of wood by 100 Thak households.

Type of wood	Bundles per house p.a.	Avge.size per bdle(cu. ft.)	Total p.a. (cu.ft.) 100 houses
Firewood	120	1.5	18000
Building/tools	2	1.5	300
Bamboo	2	1.5	300
	124		18600

The above totals are very rough since it is extremely difficult to assess the average size and weight of a bundle of wood. The average weight of a load of wood as carried by the Gurungs was about 30 kg. The bundle is about three feet in length and 1½ feet in diameter, consisting of logs or sticks tied together. The weight per cubic foot of 'Empire Timbers' (at 15% moisture content) is usually 35-55 lb. per cubic foot.[6] If we accept a median figure of some 45lb. per cubic foot, then a 30 kg. load would contain 1.5 cu. feet. On the above calculations each individual residing in the village in these hundred households would consume some 37 cu.ft. p.a., or 1.05 cu. metres. It is worth noting that despite the vital necessity of wood in the Gurung economy for building and burning, each individual only consumes roughly half the amount that an American, on average, uses.[6A] It is also worth noting that given the above rate of consumption, when the population increases by 2% in a group of some 500 individuals, an extra 370 cu.feet of wood is needed in the following year.

Guesswork is needed in order to estimate the total wood resources of these 100 households. It has already been suggested that they may have up to 800 acres of usable heavy forest at their disposal. In theory this should be more than enough to supply the households with wood. There are a number of estimates for the growth rates of wood in various climates; these vary from 1.1 to 58 cu. metres/hectare/year. Taking a median figure of 20, as does the compiler of the table,[7] we may calculate that these 800 acres should produce some 6475 cu.m. of wood p.a. This would be nearly fourteen times the amount

(467 cu.m) calculated above as needed by the Thak hundred households. Theoretically, therefore, there would seem to be no problem.

But this illustrates the danger of abstract calculations *in vacuo*. A superficial glance at the scrubby landscape round the village of Thak shows that the forest cover has been rolled back rapidly over the last few years. This occurred when the population was smaller than it is at present. The forest has no chance to grow again with herds of goats grazing through it, and small trees are constantly lopped down for fodder. Older men told of how some two generations ago wild pig and other wild animals used to wander through the village from the surrounding forest. They remember when there was heavy forest at *Proree* (a mile north of the village) and just above the village on 'burial hill' (*chogon* (Gg. = burial place), *dada* (Nep. = ridge)). Medium-sized trees are now only to be found an hour's walk away, and the heavy monsoon jungle with huge trees festooned with creepers that once covered the whole area is now 1½ hours walk away. It is this heavy jungle that is yearly depleted in order to provide the great piles of logs for the monsoon months. It is impossible to be sure how fast such good forest is being used up. But it seems likely that, with growing pressure from neighbouring villages, the remaining good forest within Thak *panchayat* could be used up within 10-20 years. It is therefore not just a matter of harvesting annual wood growth, but of destroying the inherited capital of thousands of years. Within thirty years there will be nothing but scrub and small trees within 8 miles of Thak, which will mean that to fetch wood it will take some 5 hours just to walk to the forest and back.

Although the Thak *panchayat*, like others in Nepal, are making some attempt to prevent people from cutting down younger trees and green wood, there is little real hope that they will be able to make even a marginal impact on the problem, to judge from the past experience of other Gurung villages such as Siklis, which are surrounded by a huge treeless wilderness. There is no re-planting in Thak, and no real effort at conservation. In fact, given the huge demand for wood and the limited supplies, there is no easy solution. The problem which already faces

bigger towns such as Pokhara, where the price of wood is very high, will soon afflict all Gurung villages. But one of the solutions for Pokhara, cooking on Kerosene stoves, is inhibited in the hills by extra transport costs. The present disastrous situation is ~~present~~ found, of course, through most of the foothills of the Himalayas.[8] Even the present population is devouring non-renewable resources: if, as seems likely, population doubles in the next thirty years there is likely to be acute shortage.

There are various reasons why the actual position is much worse than an abstract account of demand and resources would suggest. One is that cutting is not controlled; nearer parts of the forest are destroyed, while further-off growth is left untouched. It is also possible that 20 cu.m. per ha. p.a. is too optimistic an estimate for the type of wood in this area. Furthermore, as stated before, other villages pay to use Thak facilities. But perhaps one of the most important reasons is that the remaining forests are subject to another pressure - the need for animal fodder. Huge quantities of vegetation are consumed by village livestock, either roaming in the forest, or stalled in the village, and the cutting of large quantities of leaves off the trees undoubtedly inhibits growth.

Goats, cows and oxen are usually herded over the slopes above Thak and consume what they can find. Some buffaloes are also thus herded, but the best milking buffaloes are stalled in the village and are brought bundles of fodder. Cutting such fodder occupies much of the time of young adults and children. Each milking buffalo is brought one or two bundles of fodder each day, each bundle weighing up to 20 kg. The total demands for fodder of the livestock owned by the sample households is set out in the following table.

TABLE 12:5 Amount of fodder consumed by livestock, Thak, 1969

Type of animal	Approx.kg. fodder per animal per day	Nos.adult animals	Total consumed p.a. kg
Buffalo	12	167	731460
Oxen	8	135	394200
Cows	8	64	186880
Goats	4	247	360620
			1,673,160

The amount consumed per adult animal per day is probably a conservative estimate; it is not based on actual

measured consumption, but on comparisons with the amount of fodder consumed by livestock elsewhere in the world.[9] The way in which the total livestock owned by the hundred sample families was converted into adult beast equivalents is described below.[10] It will be seen that the 350 acres of poor scrubby grazing has to support a very large number of animals, some 613. Even though such animals are small by European standards, this leads to overgrazing and necessitates recourse to other sources of food. One of these is the stubble and stalks from cereal crops. After the rice harvest the livestock (except goats) are pastured on the fields. They are also fed maize stalks and rice straw. But even this is not enough, so that expeditions have to be made to the forest to cut leaves. Possibly up to a quarter of the fodder comes from trees; this would mean a demand of some 418290 kg. of vegetation p.a. or roughly some 523 kg. of fodder per acre if the load was distributed evenly. In fact, of course, parts of the forest are cut heavily, and other parts neglected.

If we average out the total demand for vegetation, each individual in the sample families consumes, by way of livestock, some 3346 kg. of fodder p.a. It is not difficult to see the enormous strains a doubling of the population would put on grass and trees if it was felt necessary to double livestock also. The only alternative is to either improve the quality of the grazing, which is possible, but difficult to envisage, or to lower the ratio of livestock/persons - which would mean a drastic cut in proteins and manure. The further destruction of forest will thus effect not only the supply of wood, but also of protein and calories (via. manure). Already the destruction has gone so far that two important food resources of the past, wild game and wild fruit and vegetables, have been almost liquidated. It is also arguable that forest destruction will lessen the supply of another precious resource, water.[11]

Arable land.

The fact that three-quarters of the total area upon which the sample households subsist is communally owned is important when we consider the distribution of capital in the community. The lower castes and poor Gurungs, with little arable land, still have free access, in theory, to the communal grazing and forest. In practice, however,

as we shall see, it is the richer Gurungs who have the majority of the livestock and who thus reap the most from the communal resources. Nevertheless, the existence of the 'commons', as in pre-industrial England, is still an effective protection from absolute destitution. But as in pre-industrial England, such common land is being diminished; the once common maize land is now partitioned among households, and it is not difficult to forsee a time when grazing, and possibly even the remnants of forest will be divided out - presumably among the wealthier families.

The total amount of land under the main cereal crops, worked out both from the map and from land records for individual households, is shown on the following table.

TABLE 12:6. Arable land used by 100 households, Thak 1969

Crop	Area on map (cultivated) acres	From land records acres	Persons (present) per acre	ha.
Rice	200	182	0.4	0.162
Other	120	105	0.24	0.097
Total	320	287	0.64	0.259

Note: it is assumed that there has been some under-registration of land in the land records, and therefore the map areas are used to calculate the person per acre/ha. Only those permanently in Thak are estimated in this sum.

Firstly, it will be seen that the area under various crops according to the two sources fits well, and suggests that the earlier guess that approximately half the available land is actually cultivated is a fairly accurate assessment. If we compare the above situation to other parts of Nepal, we find that the sample is favoured. It has been estimated that the arable land per capita for Nepal as a whole in 1962 was 0.47 acres;[12] for the Western Hills as a whole it was only 0.18 acres. Elsewhere it has been calculated that to provide a basic rice diet in India in the 1930's, or in Cambodia or Nepal in 1970, some 0.27 ha. of rice land per person is needed.[13] The Gurungs are well above this minimum, even without their subsidiary crops. Without intensifying agriculture, it is possible that population could increase by up to nearly 100% without people actually starving to death. But in practice it seems likely that starvation would begin before such a doubling was achieved since, for example, there are

frequent harvest failures because of hail. Present surpluses help to tide villagers over these as well as providing a little over for livestock and luxury. Other villages do not have such ample reserves; we shall see that the rice and maize harvest per head in Mohoriya were far smaller than those in Thak.

The cereal resources measured in terms of grain produced rather than acreage under various crops show the same slight surplus. On the basis of what householders stated they had harvested from individual fields, checked against the totals for their whole farm, it appears that, though yields for different quality fields vary considerably, we can assume an average yield of 1⅓ muri of husked rice per ropani, and 2 muri of husked maize/millet per ropani.[14] Converted to kg. and worked out for the whole area under cultivation, this is as follows.

TABLE 12:7 Total production of main cereal crops, Thak.

crop	Area under cultivation ropas.	acres	total prod'n muri (husked grain)	kg.	prod'n per head (resident) (kg.)
rice	1538	200	2050	140630	281.26
maize/miller	923	120	1846	119990	239.98
total	2461	320	3896	260620	521.24

On the above calculations there are over 500 kg. per capita in grains. But a number of comments need to be made. On the one hand the table understates the quantity available; a number of other crops are grown, some grains some root crops. These supplement the diet fairly considerably.[15] Secondly, the above is the average for all those resident, men, women, children, and infants. But if we were to work out the average per adult equivalent, it would be a good deal higher. Such a figure may be worked out roughly on the basis of later calculations of the number of consumption units (i.e. adult-equivalent consumers) in the sample households.[16] There are some 415 such adult-equivalent consumers, and if we exclude those away in the army in 1969 approximately 380. The total cereals divided between these units would allow 685 Kg. of cereal per adult.

On the other hand much of this cereal consists of millet and maize, both low in calories, and if we are measuring in rice or wheat equivalents this will have to be allowed for. Secondly, it is quite possible that the area under various crops has been overestimated: it has

been assumed that the land records under-record by about 10%. If this is not so, then the above totals would need to be adjusted accordingly. Finally, the above production is only achieved when both maize/millet and rice harvests are undamaged by hail. But in recent years either one or the other harvest has been seriously damaged once in every four or five years. In 1968, for example, the maize harvest was largely destroyed; in 1969 a few minutes of hail carried away over a quarter of the rice. We may therefore lower the above figures by some 10-20% to allow for harvest losses. Probably another 5% or so is lost to rodents while being stored.

It is difficult to balance up these various factors accurately, but we would probably be safe to put the grain equivalent/person/year at between four and five hundred kg., even allowing for harvest failure. This is well above minimum subsistence needs, if we accept Colin Clark's figures of 250-300 kg. person/year as roughly right.[17] If productivity and land use remained unchanged, the population could increase from between 50 and 100% before people were short of cereals, even if all livestock products dried up. In practice, however, it is likely that extreme malnutrition would occur before then, since people would be likely to be malnourished rather than give up certain "luxury" goods such as cigarettes.

Capital invested in land.

We have considered some of the natural resources in the village. It is also necessary to consider the amount of capital invested in land by these hundred households in order to estimate their total personal resources. The price of arable land in Thak was climbing rapidly in the 1960's, another indication of population pressure. In 1969 we can say that 1 muri of maize/millet or rice land was, on average, worth 1000 rs. This is necessarily a rough figure since the value of individual pieces varies enormously with their relative quality. The evidence upon which the assessment is made will be given below.[18] On this basis, the total amount of money at present locked up in the purchase price of cereal land (the forest and grazing is theoretically free) is as follows.

TABLE 12:8. Total of cash invested in arable land.

total land(rops) Rice/maize & millet land	total invested by 100 hseholds		avge per house		avge per person	
	rs.	£	rs.	£	rs.	£
2,461	2,461,000	102,541	24,610	1,025	4,660	194

Thus over £100,000 is invested in the few hundred acres of arable land, in fact some £320 per acre. Each individual in the sample families, on average, has £194 worth of land. This does not, of course, reflect the productivity of the land, but rather the desire of returned army soldiers to buy it with their wages. The inflated prices can be seen if we compare the situation in Thak to that in a South Indian village, Wangala. In 1955 an average of 3,636 Indian rs. per household was invested in arable land. Even if we estimate that one Indian rupee in 1955 was worth some four Nepalese rupees in 1969, Thak households have 24,000 or more rs. worth of arable land, on average, while Wangala households only have 14,544.[19] We may now turn to the other types of capital owned by Thak households.

CHAPTER TWELVE. NOTES.

1. It is assumed in these calculations that actual acreage is that on the map, plus an added ¼ to allow for the steep gradient. (Dr. Allen pointed out to me that merely to allow for the gradient one only needs to add 1/30th rather than ¼. Therefore, even allowing for the considerable irregularities on the surface this is a very generous estimate. Since I hope to prove that land resources are strained even at present, it seems best to start with an estimate on the optimistic side.)
2. The sources for this table are as follows: Nepal, Western Hills,1961 (McDougall, Village Economy,p.2 on the basis of the 1961 census); Garos (Burling, Rengsanggri,p.21); Ndembu (Turner, Schism & Continuity, p.17); England, seventeenth century (Daedulus,p.435).
3. Clark, Subsistence Agriculture,p.136.
4. Ibid., p.139.
5. Ibid., p.146.
6. Desch, Timber,p.114.

6A Clark, Population Growth,p.150.

7. Ibid.,p.151.
8. It is commented on, e.g., in McDougall, Village Economy, pp.3,37; Pignède, Gurungs,pp.28,152; Pant,

8(contd) Social Economy of the Himalayas, p.86

9. This consumption is equivalent to the consumption of dry matter per day of the following live weights of bullocks: buffalo = 10-12 cwt. bullock
oxen = 6 cwt. bullock
cows = 6 cwt. bullock
goats = 2-3 cwt. bullock or 30-40lb. sheep.
Source: Evans, Rations for Livestock, p.47, table 1 and p.74, table 8.

10. See pp. 271. [illegible].

11. See pp. 397-8 below.

12. Shreshta, Nepal Economy, p.51.

13. Clark, Subsistence Agriculture, p.88.

14. For the detailed calculations on which this is based see pp. 306-8 below.

15. The quantities are discussed on pp. 308 ff..

16. See pp. 359-62 for the statistics.

17. As described in Clark, Subsistence Agriculture, p.60.

18. See pp. 408-9 .

19. Epstein, Economic and Social Change, p.27 gives the amount of cultivated land; p.90 the value per acre; p.24 the number of households.

CHAPTER THIRTEEN. CAPITAL ASSETS, EXCLUDING FOREST AND LAND.

A. Within the panchayat.

Agricultural capital.

Excluding land, discussed in the previous chapter, agricultural capital principally consists of livestock, tools and equipment (including certain buildings) and seed/unconsumed crops. Intangible capital such as labour, as well as other factors of production such as transport and power resources, will be discussed later. The Gurungs still depend very heavily on livestock for milk, meat and manure. The distribution of animal ownership, based on figures collected during the taking of a household census, is shown in the following table.

TABLE 13:1 Total livestock owned by 100 households, Thak 1969

Animal	Total for 100 households	Total nos. of 'adult beasts'*	Avge no. of 'adult beasts' per house.
Buffaloes	223	167	1.67
Cows	166	135	1.35
Oxen	73	64	0.64
Goats	302	247	2.47
Chickens	c.800	350	3.50

* In order to work out the value of all animals it is useful to convert young animals into 'adult beast equivalents'. To do this the following assumptions have been made. The proportions of young animals are as follows among each type of livestock: buffaloes, 1/3; cows, 1/4; oxen, 1/6; goats, 1/4; chickens, 3/4. It is assumed that a young animal will be, on average, 1/4 the value of an adult. The above assumptions are based on impressionistic observations.

To convert the above into the total value of capital invested in livestock we need to know the selling price of the various animals in Thak, 1969.

TABLE 13:2. Various estimates of price of adult livestock Thak

Animal	Estimates of various informants Nansubar/Rudrab	the poju	hse.22	Prices paid by * gola for animals
Buffalo	5-600 rs.	550 rs	450 rs	260-335 rs
Ox	400 rs.	250-300 rs.	225 rs	-
Cow	200 rs.	-	200-250rs	-
Goat	50 rs.	-	50 rs.	35-50 rs.

Note: the prices listed under the 'poju' and the 'gola' (a communal work party which invests its wages in buying meat) are actual prices paid in 1969.

On the basis of the above it will be assumed that the average price of adult animals in 1969 was as indicated in the following table, which also shows the average

amount of capital per household, and the total amount in the 100 households.

TABLE 13:3. Total livestock values, Thak, 1969. (In rs.)

Animal	Adult animals	Value per adult	Total value	Value per hsehold (average)
Buffalo	167	400	66800	668
Oxen	135	250	33750	337.5
Cow	64	200	12800	128
Goat	247	50	12350	123.5
Chicken	350	8	2800	28

Thus, on average, each household had stock worth some 1285 rs., or just over £50. The per capita wealth invested in livestock is 296 rs., or just over £12. That this is a large investment by Nepalese standards may be seen if we compare the situation in Thak to that in the Far Western Hills and Terai, where the per capita totals were respectively 157 and 186 rs. Even allowing for up to 20% depreciation in the value of currency since these surveys were carried out in 1967/8, it will be seen that an average person in Thak has at least one third more wealth invested in livestock than his compatriots in the Far Western Hills.[1]

The above figures are misleading, however, for livestock is not evenly divided between households. Carjat Gurungs, for example, own 156/166 of the cows collectively held by all the households, though such Gurungs only constitute just over half the households. The figures for distribution of animals by different groups in the population are as follows. These figures are for all animals owned, not adult equivalents.

TABLE 13:4. Total livestock per household, various groups in Thak, 1969

Group	Buffaloes	Oxen	Cows	Goats	Chickens	Total no. households
Carjat Gurung	2.68	1.06	2.94	3.47	10.09	53
Sorajat "	1.88	0.46	0.21	3.91	7.04	24
Blacksmiths	1.16*	0.17*	-	0.5	1.33	12
Tailors	1.2*	-	-	0.5	6.33	6
Tamangs/Magars	3.4	0.8	1	3	8.4	5

note:* the majority of these are "adha" buffaloes, in other words they are really owned by Gurungs, but looked after and stabled by lower castes who give some of their produce to the Gurungs.

Inequality of ownership is especially shown in oxen and cows

Only 6/24 of the sorajat households, for example, have one or more oxen. This means that the others are dependent on hiring from their richer neighbours in order to plough. Only 17 of the 100 households have cows: all but four of these are carjat households. True ownership of larger livestock by lower castes, if we exclude the buffaloes looked after on a share-cropping basis, is practically nil.

Another way of looking at the total distribution of livestock is shown below; this shows that few households have absolutely no livestock.[2] We may wonder how the situation in Thak compares with that in other Gurung villages. A comparison of Thak in 1969 with Mohoriya when Pignede visited it in 1958 is as follows.

TABLE 13:5 Total livestock, Thak and Mohoriya.

(livestock per household; all ages)

Animal	Thak 1969	Mohoriya 1958[3]
Buffalo	2.23	1.05
Cow	1.66	2.27
Ox	0.73	0.68
Goat	3.02	1.47

Thus we may see that there were over twice as many buffaloes per household in Thak, and also more oxen and goats; but Mohoriya households had a larger average number of cows. On the whole, the Thak households had considerably more wealth invested in livestock. I was not able to take a complete livestock census at Mohoriya in 1969, but an intelligent informant gave me the following approximate figures for the number of animals he thought were owned by all the households (figs. in brackets = numbers in 1958): buffaloes-150(99); cows-150(213); oxen 54(64); goats 180 (138). The most significant change, if his guesses were right, was in the increase in buffaloes and also goats, and decrease in cows. Buffaloes are far more productive of meat and milk, but also consume more vegetation. Overall there had been little change, though if the figures are exactly right, then there had been an average increase of value of 70 rs. per household in the intervening years.

Another major category of agricultural capital is tools. The agricultural technology of the Gurungs is extremely 'simple', in the sense that much of the power

13:6 (cont'd)

Purpose	Tool	Gurung name	Number of such tools owned hse.17 (rich)	hse.40 (rich)	hse.3B (medium..)	hse.19	hse 57 (poor)	stated avge. value per tool (rupees)
Pastoral	Animal huts:-		?					
	movable		?1	-	-	-	-	?30
	permanent		1	1	1	1	½	?50
	Milk storage jars		?3	?1	?1	?1	-	?10
	Churns		1	?1	1	?1	-	?10
	Total value		110	70	70	70	25	
Transport & carriage	Straps	tobi	4	8	5	4	1	1
	Basket	Pih	4	2	4	4	2	2
		dowsa	1	2	1	1	-	3
	Total value		15	18	16	15	5	
Spinning & weaving	Wheel	rara	1	1	1	1	-	1
	Loom	kwedo sada	1	1	1	1	-	10
	Total value		11	11	11	11	-	
Wood & fodder	knife	ashi	4	8	7	8	2	3
	axe	ta	1	2	2	2	-	10
	Total value		22	34	41	44	6	
Metal & woodwork	hammer & nails		-	-	1	1	1	3
	blacksmith's tools		-	-	-	-	1	5
	Total value		-	-	3	3	8	
Over-all value			587	640	440	449	62	

Notes: ? denotes a guess where figures were not collected. Obviously the value of articles vary considerably depending on their age, quality etc. The figures in the last column, which represent roughly what it would cost to replace each tool in 1969, can only be an approximate guide. The first four families are Gurung, house 57 is a Blacksmith. Figures are based on inventories I took in the field.

13:6 (cont'd)

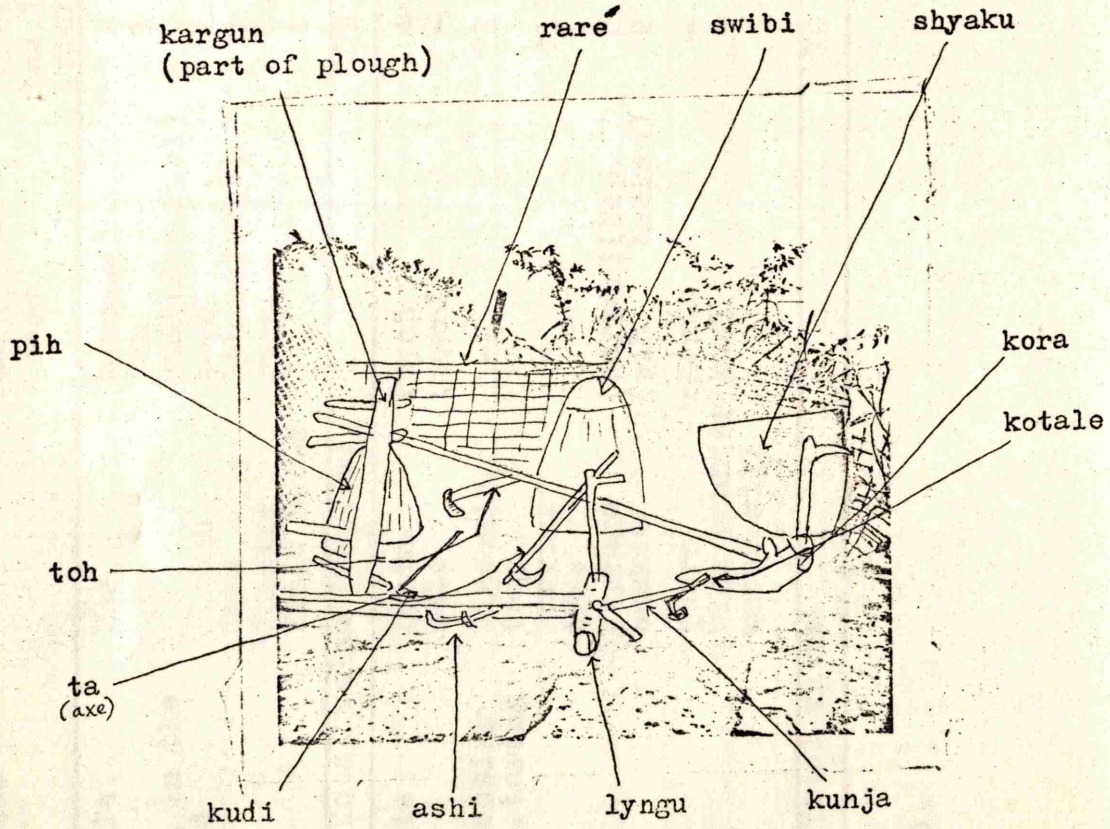
TABLE 13:6. Agricultural equipment owned by five households, Thak 1969.

Purpose	Tool	(Gurung) name	Number of such tools owned hse.17 (rich)	hse.40 (rich)	hse 3B (medium...)	hse.19 (medium...)	hse.57 (poor)	stated average value per tool (rupees)
Arable.	Hoe	kotale(Nep.Kodah)	5	7	4	5	1	6
		toh	1	2	2	2	-	6
Work in the		kudi(Nep.kuti)	0	0	2	2	-	?4
field	Plough	kora	1	3	1	1	-	18
	Rake	lyngu(lidko)	1	1	1	1	-	5
	Fencing	rare	60ft.	90ft.	100ft.	60ft.	50ft.	1(= 15')
	Field house		1	1	½	½	-	300
Total value (rupees)			359	419	216	227	9	
Arable	Drying mats	(pyoh	4	5	3	3	-	8
		(towni rara	-	-	1	2	1	3
processing	Winnowing tray	-	?1	?1	?1	?1	-	?2
and storing	Sieving tray	-	?1	?1	?1	?1	-	?2
	Storage basket	(barkari(Nep.	6	6	7	5	-	5
		(pih bhakan)	2	4	4	4	-	2
	quern	rhendo	-	1	1	2	1	6
	rice pounder	kuni	-	-	1	-	-	?6
	water Mill		- none	-	-	-	-	
Total value			70	88	86	79	60	

(P.T.O)

DIAGRAM 13:1. Some agricultural tools used by the Gurungs.





is provided by human labour and the tools are not elaborate This has enormous effects on a whole range of Gurung activities and institutions, from the distribution of wealth to attitudes towards the anvironment. Pignède has already given a detailed description of the major techniques and instruments of Gurung agriculture.[4] It is therefore only necessary to list the types of tools owned by various Gurung households. The list also includes agricultural buildings, which are of two kinds. There are the small, stone, two-storey field houses down in the rice fields, where men and oxen rest during rice planting and harvesting. Most Gurung families who own rice fields have one of these, or own one. Secondly, there are the animal sheds, bamboo or wooden constructions that are moved with the grazing animals, and the permanent cattle-sheds in the village. The latter are usually built next to the living house and shelter one or two buffaloes, oxen, and goats. As regards other tools, the only digging instruments are the metal-tipped plough and the various sized hoes. The major cereal processing tools are the kuni (or Kunyu (Nep.)= heap of grain, donva (Gg.) to beat) or rice pounder, which is operated by foot, the hand-mill or quern, and the water mills. There are only two of the last within reach of Thak central village, about 1½ miles from the village to the north. They are only used for a portion of the maize grinding. ~~All~~ Some tools, ~~including the spinning wheel and loom,~~ may be seen illustrated as across.

for diagram 13:1 see across.

The total capital invested in the tools used for various agricultural tasks may be seen in the following table.

for table 13:6 see across.

Perhaps the most important feature of the list are the omissions, especially of any wheels (except the circular quern) or of any tools utilizing animal power, except ploughs and rakes. The ratio of capital invested in tools to the total amount invested in agriculture is very low: thus house 17 has some £1.625 of arable land, which is worked with tools (excluding the rice house) worth only £2-46, and processed with tools worth £2-92. Transport of many tons of manure, fodder and cereals is undertaken with tools worth 63p (excluding animals). In every sphere, the consumption of labour is increased by the absence of tools. For instance, no families have saws, which would substantially decrease the time spent felling trees. Yet this extremely labour-intensive technology makes sense where there is no shortage of labour and work is not unpleasant. A small diesel engine to pound the grains, and to lift grain and manure up and down the steep mountain, would immediately reduce the amount of work in the area by over ⅓ - and do immense damage to the poorer sections of the community.

Another interesting feature is that the marginal demand for tools is not very elastic. Rich Gurung families have some £24-26 invested in tools and agricultural buildings, medium to poor households some £18. The difference is largely accounted for by buildings; the quantity of cultivating tools and equipment for storing/processing/carrying is almost identical in all the families. On the whole, the precipitous hillsides are cultivated with extremely light and simple tools; this gives great flexibility since they may be adapted to work on different crops at different altitudes. Most of the tools are multi-purpose ones with many uses. The storage system, in large baskets which are constantly eaten through by mice and rats, is not efficient and inhibits the accumulation of large surpluses for more than one or two years. But methods of storage do not seem to be an obstacle to accurate budgeting, as they are said to be in an African society.[5] Gurung women usually know fairly exactly how much grain they have left.

There are three other types of agricultural capital which need to be dealt with if we are trying to assess the resources of an average family; fertilizer, seed, and unconsumed crops either in the field or in store.

Expenditure on artificial fertilizer can, for the purposes of this thesis, be ignored; in Thak 1969 only a few rupees of Government-sponsored fertilizer was used. The value of the dung heaps produced by the stalled buffaloes is difficult to estimate and varies through the year. In order to allow for it, a small sum will be added onto the category of crops not yet consumed. It is impossible to estimate absolutely accurately the amount of capital locked away in seed for the following year, or in crops planted or in storage. Since the Gurungs do not suffer from a "hunger gap", it seems safe to assume that, on average, there is more than one year's supply of crops either almost ready for harvesting, or in the houses. The seed to crop ratio, averaging out the statements of several informants, were as follows: maize (1:40), millet (1:160), rice (1:70). If we add seed to standing and stored crops, and add in the value of lesser crops such as lentils and potatoes, it would seem reasonable to suggest that, on average, a household has approximately 1½ times the value of a single year's cereal harvest invested in seed and crops.

The approximate amount so invested in five households, compared to the investment in other agricultural equipment, is set out in the following table.

TABLE 13:7. Amount of capital invested in agriculture, five households, Thak. (rupees)

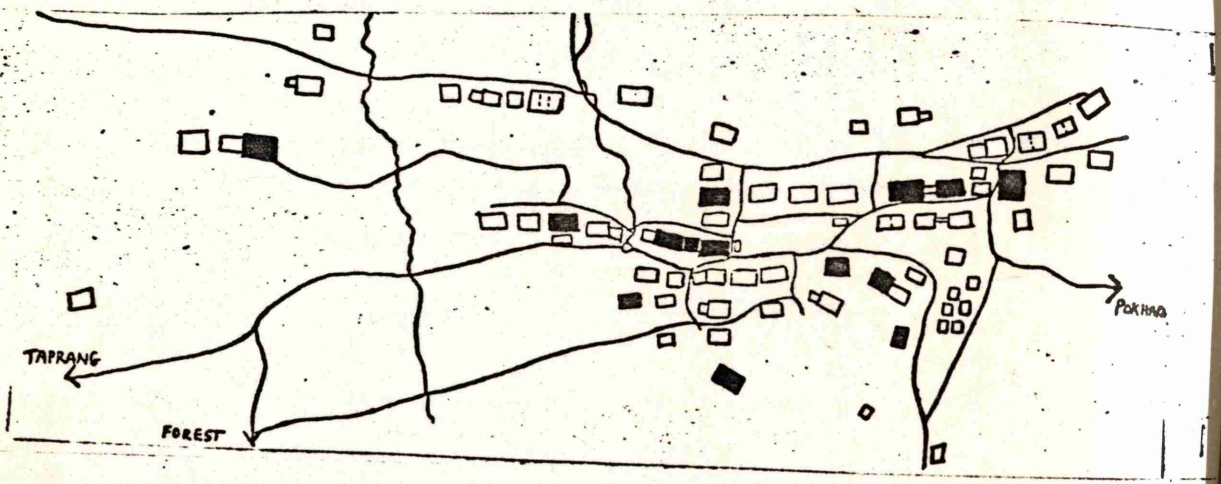
	hse 17	hse 40	hse 3B	hse 19	hse 57
Arable land	46,500	63,500	12,750	17,500	500
Livestock	3,140	1,132	1,447	1,095	300
Tools etc	587	640	440	449	62
Seed/crops/manure	18,150	13,800	4,525	5,550	150
Total	68,377	79,072	19,162	24,594	1,012
Total(£p)	£2,849-4	£3,294-7	£798-42	£1,024-75	£42-17

Note: the livestock under house 57, a Blacksmith household, consists mainly of a buffalo which they look after for a Gurung household. It has been assumed that they have ¼ share of the leased buffalo.

The table shows the relatively small amounts invested in tools and equipment, but the considerable amount of capital currently in used in crops, seed and manure. Poor families, such as the Blacksmith household 57, have less than £50 of agricultural capital. These figures are inflated by recent increases in the price of land. They are also distorted to a certain extent by the methods of calculating the value

MAP 13:1. Types of housing in main village of Thak.

slate roof, stone walls = ■
others = □



of land. Thus house 17, on the assumption that 1 ropani of land is worth 1,000 rs. has only 46,000 rs. of land, but crops and seed worth 18,150 - house 40 on the other hand has 63,500 of land on the same basis, but the crops and seed are only worth 13,800. This is explained by the difference in the quality of their land. That of house 17 is very productive rice land, that of house 40, on the whole, lies in much steeper and less fertile fields.

Non-productive capital within the village.

We may now turn to non-productive capital assets, that is to say housing and household goods. They are 'non-productive' in the sense that they do not produce agricultural goods or wealth generally. As far as housing is concerned, Pignède has, once again, provided us with an excellent description, complete with photographs and diagrams.[6] He divides Gurung houses into two types: single-storey, wood and earth, buildings with thatched roofs, and two-storey buildings made of stone with slate roofs. In Thak there were other variations of an intermediate type; the most common of these were wood/stone/mud in construction, with two storeys and a thatched roof. The distribution of the types of housing are shown in the accompanying map.

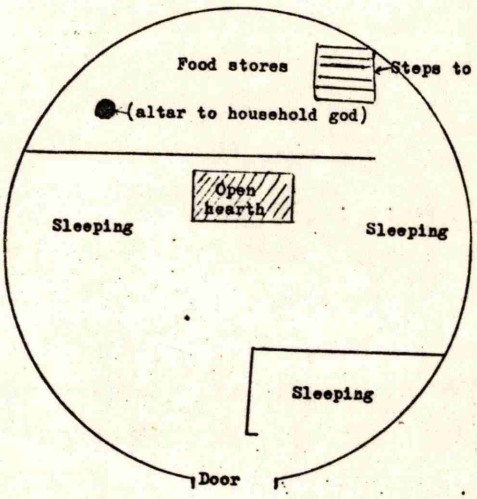
for map. 13:1 see across.

Pignède also points out that large rectangular houses of stone and slate are replacing the smaller mud and thatch kind; the bigger houses become the symbol of success abroad. But he is probably wrong in thinking that the traditional Gurung house is the rectangular small one which he describes. Informants in both Thak and Mohoriya told me that some sixty years ago all houses in both villages were round. They were one storey high, made of wood, mud and thatch. Such has been the change that not one of this type remains in Thak, though there were still two examples in Mohoriya in 1969. One description of the Gurungs states that "In Kaski & Lamjung, Gurungs live in small, round, oval or rectangular houses".[7] The present style must be a copy of something the Gurungs have seen, either while serving in the Far East, or, as was suggested to me, in Assam. Their construction also reflects an altering ratio between the price of wood, stone, thatch and slate as the forest disappears.

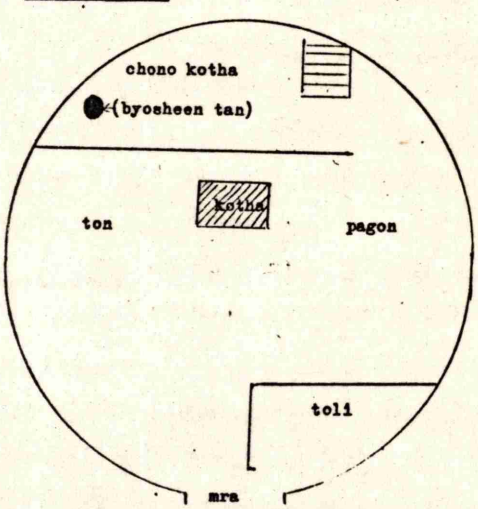
The general shape of these round houses deserves description since they have now almost disappeared among

DIAGRAM 13:2. Structure of a Gurung round-house.

A.Use of space



B.Gurung names.



note: these houses were made of wood,stone and mud; they had as many windows as present houses. A big one would be 32 elbow-lengths in circumference, a small one 17-19.The cost about 90-100 rs. to build.

the Gurungs I visited. One informant, who had lived in such a round house until he was about ten, described the lay-out as in the following diagram.

for diagram 13:2 - see across

Such houses are called shur di in Gurung (di= house) and gola di in Nepali (gola = round).

The increasing amount of capital invested in houses over the last two decades certainly indicates a period of prosperity in the region since the Second World War. It also reflects a certain tendency to conspicuous consumption. Instead of spending his saved capital on fertilizers or irrigation for his land, which would cost a few hundreds of rupees, a Gurung will spend up to 12,000 rs. on a new house. As with rice fields, the price of houses depends on so many factors that it is impossible to talk satisfactorily about an average house price. The major factors seem to be the material and the size. A slate roof always increases the price by several thousand rupees, but saves re-thatching every two or three years. A small new house of stone and slate cost some 6,000 rs. to build, whereas it could have cost up to 10,000 rs. if built much bigger. Finally, the position dictates the price. A house down in a hamlet outside Thak was sold for 6,000 during our stay; the same house, if situated in the village, would have cost 8 to 10,000. 'Position' means many factors; whether there is room for a spacious courtyard, distance from the water tap, whether the neighbourhood is inhabited by rich Gurungs or poor Untouchables. In assessing the prices of individual houses all these factors need to be taken into account. But the price will usually fall within the following range.

	as new(rupees)
Type A. 2 storey, stone and slate	6-12,000
Type B. 2 storey, stone and thatch	4-10,000
Type C. 1 storey, stone and thatch	400-2,000
Type D. 1 storey, mud/wood walls, thatch roof; or bamboo matting walls and roof	100-500

In the following calculations, the value of each house will be assessed on its general state of repair, age, etc. as well as the above criteria. It will be noted on map 13:1 above, that a number of houses have been divided in half, especially between brothers. Only one house in the village is rented - for a few rupees a year (hse.12B); the

TABLE 13.8 (contd)

Sari	sari		avge.30	6	1	2	4	-
Headcloth	kramu	75	8	6	9	6	6	1
Buttoned blouse	bundi		3	2	2	3	1	-
Skirt (Child's)	skirt(sic)		3	-	-	-	-	1
Blouse	sola	74(colo)	6	6	6	3	3	1
Frock(child's)	parack(pharack)		7	4	1	6	2	-
Cummerbund	pogi	75	12	3	2	2	2	1
Blouse	blousa		4	4	2	3	2	-
Velvet overskirt	tigissa	75(tiki)	6	3	3	2	3	1
Petticoat	petticoata		8	-	2	3	2	-
Hair-braid	dori		8	3	3	4	2	-
Overskirt	ngwi	74(ngue)	11	6	5	2	2	-
Sandals(men also)	chapal(Nep.)		8	3	5	6	3	-
Total value of women's clothes				551	382	380	378	50
Total value of all clothes: rupees				1245	1031	886	1020	99
£p				£51-88	£42-96	£36-92	£42-50	£4-13

Note: the values of various clothes are only very approximate. They are what I was told a new or almost new article would cost: thus the actual selling price of clothing would be much lower than the above. In the cases where an informant stated that a particular article was very much above or below average value, I allowed for this in the totals. Thus under vest/singlet, the sign @ denotes 3 article which were valued at 55 rs., because they included an expensive nylon singlet. Likewise under trousers/suit, one of the items marked ± was said to have cost 65 rs. In cases where I omitted to collect information ? denotes a guess.
Very few clothes are now made in the village; only those marked ** were still made in the village.

TABLE 13:8. Clothing of five households in Thak, 1969

Article	Gurung or Nep. name	Page on which Pig. describes	Value of one article (rupees)	Number owned by hse 17	hse 40	hse 38	hse 19	hse 57
MEN								
Hat/Cap	kule	75('Pule')	3	5	5	3	9	1
Vest/singlet	vesta		4	6	3*@	3	2	-
Shirt	chemise		9	15	7	8	13	1
Shirt**	bhoto(Nep.bhoto)	76	5	2	5	1	-	-
Jacket	jacket(sic)		40	2	4	1	2	-
Sweater	sweatera		24	6	2	2	4	½
Linen over-shirt**	renga	76(rhangi)	12	?3	4	2	2	1
White cloak**	phaki	77(paki)	25	?1	1	-	-	-
Trousers/suit....	same		20	-	-	3	3½	-
Shorts	habjage(Nep.habjaghe)		3	6	3	7	4	-*
Loincloth	kot		5	3	3	1	3	1
'Kilt' of linen	kass	76	8	7	4	4	4	2
Ordinary belt	peti(Nep.peti)		2	2	2	2	1	1
Ornamental belt	"		30	1	2	2	1	-
Socks	moza(Nep.moja)		4	1	1	4	2	-
Shoes(women also)	juta(Nep.jutta)		12	4	3	4	3	-
Woollen cloak	?	77(labru)	50	?1	?1	?1	?1	-
Total value of men's clothing (rs.)				694	649	506	642	49
WOMEN								
Rain shield (men also)**	shyaku(Nep) kun(Gg.)	77	4	6	7	5	5	1
Long skirt	lungi		9	5	2	1	3	-

rest are owner-occupied. The value of the houses in the five sample households will be shown later in an inventory of all their possessions.

Pignède described the main features of clothing in a Gurung village.[8] His description is still valid, although the balance has swung even further towards shop-bought, more westernized, clothes. The main type of clothing in Thak, and the numbers of garments of each type owned in the same five sample families, is shown in the following table.

for table 13:8 see across.

Those kinds of clothing described by Pignède are indicated with a page reference to his work. It will be seen that very few of the articles are now made in the village. The sheep's wool cloak, listed as the last item under men's clothing, is made higher up the valley in Siklis and neighbouring villages where sheep are kept. The cobblers in Thak no longer make shoes. Thus the acquisition of clothing requires a considerable expenditure of cash. It will be seen that Gurung households usually have somewhere between £35 and £50 (replacement value) of clothing, divided between about 5-8 persons. Men's clothes are considerably more expensive. The amount invested per average household is roughly equal to the price of two and a half adult buffaloes, or one ropani of rice land. It is twice the sum invested in all agricultural tools. Despite such a stock of clothes, however, many of the villagers, especially the children, the old, and the poor, are inadequately dressed. More than half still do not wear shoes, which leads to damage of feet and illness, and during the cold weeks of January some of the less fortunate are numb with cold. House 57, the Blacksmith household, had less than £1 of clothing per person. On festive occasions, however, those of moderate wealth and above look splendid in their bright saris and velvets, the men in tightly-fitting suits or spotless kass and jacket. On these occasions it becomes abundantly clear that clothes are an important symbol of status, especially the wide 'Gurkha' ornamental belt.

Uncharacteristically, Pignède does not describe household furniture and utensils in any detail, merely referring to a few of the items in passing. The

TABLE 13:9 (contd)

Article	local name	value of one item	Number of items in household 17	40	3B	19	57
Luxury items		(rupees)					
Gun & Cartridges	bundo	1000	-	-	-	1	-
Radio	radio(sic)	300	-	1	-	-	-
Thermos flask	garam bottle	15	1	1	1	-	-
Wrist-watch	gori	150	-	1	1	-	-
Umbrella	chata	8	3	2	2	1	-
Torch	bijili botti	7	2	3	1	3	-
Books	kidab	3	20	70	20	15	-
Hurricane lamp	laltina	6	1	1	1	1	-
Pictures/photos	photo(sic)	1	4	7	4	10	-
Pens/pencils	pultina/pencina	4	4	5	4	4	-
Scissors		3	-	-	1	-	-
	total value		139	277	270	1106	0
Total value of all goods:	rs.		2990	2804	1702	2861	237
	£p		£124-58	£116-83	£70-92	£119-21	£9-86

Note: @ = one of these was of silver, and was worth 50 rs. ‡ = these three were worth 65 rs. in all.

TABLE 13:9 (contd)

Article	Local name	value of one item	Number of items in household 17	40	3B	19	57
Carriage/storing							
Small grain baskets	dalo	4	11	15	10	11	-
medium	thago		5	4	6	3	1
Tin trunk	boxa	10	3	3	1	1	1
Wooden chest	modusa	20	7	14	4	6	1
Large water pot	gowri	30	2	1	-	-	-
Huge water pot	roja	300	-	1	1	1	-
bucket	baltina	10	7	4	8	5	-
Wooden storage flask	porru	40	4	5	3	4	-
Shoulder bag	jola	2					
	total value		1252	1060	576	492	60
Miscellaneous							
Wick lamp	boti	10	2	2	1	1	-
Lock	sanzo	2	5	7	3	3	-
Medicine	mae	1	-	-	1	1	-
Comb	kaia	1	10	2	3	4	1
Thread	ru	1	-	-	1	1	-
Needles	ta	1	1	1	1	-	-
Mirror	aina	2	1	1	1	2	1
Razor & blades	hspadaa di	5	1	1	1	1	1
	total value		48	44	29	30	8

TABLE 13:9. Household goods in five families, Thak, 1969.

Article	Local name	value of one item	Number of items in household 17	40	3B	19	57
		(rupees)					
Sleeping/sitting							
Cane stool **	mora	6	3	1	-	-	-
Bedstead **	karda	25	2	3	2	1	1
Mat, sleeping **	gundri	2	10	15	10	6	4
Mat, sitting **	tsowry	2	? 4	? 4	?3	?3	? 2
Wooden chair **	kurchi	10	-	1	-	-	-
Pillow	krephung	6	3	5	3	3	-
Blanket	rari/shirga	35	8	5	2	3	1
	total value		394	340	164	166	72
Cooking/eating							
Jug with spout	ankora	10	3	8	-	-	-
Small brass bowl	pela	8	16	20	15	9	3
Medium brass bowl	bahuna	9	8	12	1	4	1
Plates	toli	10	10	10	8	8	3
Spoon	timsa	1	3	1	1	2	-
Kitchen knife	jaiku	1	2	3	1	-	-
Ladle	dodu	1	3	3	3	3	1
Frying-pan	tarbgya	5	3	5	4	3	2
Kettle	kilti	5	-	2	1	1	-
Flat cooking pan	korde	10	-	-	-	1	-
Small-medium cauldron	Kassuri	15	3	3	3	7	1
Large cauldron	kaia	120	7	4	3	6	-
Firetongs	chimta	3	1	1	1	1	-
Cooking tripod	jongo	8	2	3	2	2	1
	total value		1157	1083	663	1067	97

following list of household goods accounts, it is believed, for over 90% of the items normally found in a Gurung house, though some important articles may well have been omitted. Only those items marked (**) are nowadays constructed in the village. A considerably larger proportion must have been made in Thak even ten years ago. Now almost everything is available, for cash, in the Pokhara market. The estimated value of possessions is, once again, the approximate cost of a new or almost new replacement. Some of the items, of course, are old and not worth half the sum actually listed in the table.

for Table 13:9 see across

The table shows how much of a gap there is between a wealthy household, with nearly £125 of household goods, a and a poor household, with less than £10. The major difference, however, lies in the amount of capital invested in bowls and water pots and storage flasks. The essential practical equipment does not vary much; all families sleep, sit, cook and eat with much the same equipment. It is obvious that with the absence of cash in the past, large pots and eating utensils were a useful way of storing wealth and displaying it. They were passed to sons or daughters at marriage or the division of the estate. As yet, luxury items have not replaced these traditional ways of displaying wealth. Thus household 17 had 1157 rs. in cooking and eating utensils, and only 139 rs. in 'luxury' goods. If, however, the younger son of the family, who is now in the army and the owner of a transistor radio, had been counted, the ratio would have been less extreme. Almost the first expenditure of young men in the army nowadays is on a watch, radio, and new clothes. Thus one boy returned to the village with a very high quality, 6-band, transistor radio; it had cost, including import duty, well over 2000 rupees: with that sum he could have bought 5 adult buffaloes, or put fertilizer ont. half the rice fields in the village and thus increased the whole villages rice production by up to 50%. Another extremely expensive item is a gun, which combines prestige with utility. There are only four or five working guns in the village, and the same number of radios.

Among the interesting facts in the list are the following: the almost complete absence of medical supplies; the simple sitting and sleeping arrangements; the considerable number of books (mainly for school). The importance of torches, another prestige object with great utility in the nightly socializing carried out through the dark, stony, village streets, is also obvious.

One other type of non-productive property needs analysis, that is gold and ornaments. Until recently currency was little used in central Nepal; even now the total amount of money in the Thak hundred households is probably not over 10,000 rs., or the value of one good house. Nor did any of the sample households have bank accounts. Therefore some medium for storing wealth is needed, especially the large sums that are saved by soldiers when serving abroad and from thence transmitted back to the village. As we have seen, a certain amount is stored in household utensils; a good deal more is invested in golden ornaments. Gold is bought in Malaya or Hong Kong and brought back for wives and daughters. It is fashioned into one of the many beautiful ornaments worn by women, and conspicuously displayed. It can be easily used in an emergency and it is the major constituent in a girl's marriage portion. When given as such a portion it remains the girl's property and is hence an insurance for her and her children. The amount of gold which should, in theory, be given at a daughter's wedding, according to Thak informants in 1969, was as follows:-

TABLE 13:10. Gold to be given as marriage portions.

Wealth of family	nos. of tolas **	value (rs.)
Very rich	20-30	4-6000
Medium rich	12-20	2400-4000
Medium	4-12	800-2400
Poor	2-4	400-800

Note: ** the value, of course, depends on the quality of the gold; thus first quality gold is worth c.250 rs. a tola, third quality gold only 150 rs. a tola.

The above table is the ideal amount. A survey of the amount of gold owned by various households, as well as instances of how much was actually given in a number of cases shows that, nowadays at least, a little less than the above is usually given. When I asked how much the eldest son of one of the richest men in the village would

give to the bride, I was told some 10-12 tolas. This would be added on to what the girl received from her own family.

On the basis of the table above, we would expect there to be some 2000-6000 rs. of gold per married woman in rich families, some 800-2000 in medium ones. This fits the actual inventories fairly well. The items owned by the five sample families are as follows; those ornaments which are described by Pignede are indicated, with page references.[9]

TABLE 13:11. Ornaments and jewelery in five households, Thak 1969

Article	local name	Pignede page	Approx. value of one item rs.	Number of items in household 17	40	3B	19	57
MEN								
Gold ring	anguti		300	1	1	1	-	-
Boy's earings	dalmar		250(pr)	-	1	-	-	-
WOMEN								
Gold ring	guname	78(ghanmai)	125	-	1	-	-	-
Nose ring	puli(phuli)		30	2	-	3	2	-
Ear ring	shirmundi		200	-	-	1	-	-
(Drop earings	ialim		200	-	-	-	-	-)
Ear ring	maduli		150	3	4	3	2	-
Small " "	dumri		100	2	4	2	1	-
Large loop " "	nagu	78(na-ku)	250(pr)	-	-	4	-	-
Ring-left hand	asurphi	78	250	2	-	2	-	-
Ear brooch	dodi	78(dhori)	250(pr)	2	-	2	-	-
Bracelet	ryan		c.315	-	4©	-	-	-
Gold bangles	mara tsura		1000+	1	2‡	2	-	-
Gold clip	kilip	79(khilip)	250	-	2	-	-	-
(Gold coin necklace	hamil	79(hamel)	2000+	-	-	-	-	-)
(Gold headband	mara tu		1000+	-	-	-	-	-)
	total value(rs)			2510	6625	4740	460	0
	total value (£p)			104-58	276-4	197-5	19-17	0

Notes: those items in brackets were found in the village of Thak, but not in the sample households. (pr) = pair. In many instances the value of an article fluctuated very widely, depending on the weight, craftsmanship etc. Thus 'the value of one item' can only be a very rough average. In the case of ©, all four bracelets together were worth some 1250 rs. In the case of ‡, the two gold bangles were worth some 2,590 rs. altogether.

As might be expected, the lower caste household, number 57, had no reserve of wealth in ornaments; gold is not a necessary part of lower caste weddings. Household 19, which is at present in a dire financial situation, mortgaging half its lands and heavily in debt, has obviously sold off much of its gold. It is possible that the other totals are underestimates. My informants were not very eager to talk about the amount of gold they had, and the

TABLE 13:12. Total capital in five households, Thak 1969 (rupees)

Type	house 17		house 40		house 3B		house 19		house 57		5 households	
Agricultural	total	p.c.	total	p.c.	total	p.c.	total	p.c.	total	p.c.	total	%
Land	46500		63500		12750		17500		500		140750	56.7
Livestock	3140		1132		1447		1095		300		7114	2.9
Tools etc	587		640		440		449		62		2178	0.9
Seed & crops	18150		13800		4525		5550		150		42175	17.0
total	68377	7597	79072	8786	19162	2737	24594	2733	1012	253	192217	77.4
Non-agricultural												
Housing	8000		10000		3000		4000		300		25300	10.2
Clothing	1245		1031		886		1020		99		4281	1.7
Household gds.	2990		2804		1702		2861		237		10594	4.3
Gold etc.	2510		6625		4740		460		0		14335	5.8
Cash	?500		?500		?300		?300		?50		1650	0.7
total	15245	1694	20960	2329	10628	1520	8641	960	686	217	56160	22.6
TOTAL	83622	9291	100032	11115	29790	4257	33235	3693	1698	424	248377	100

Note: p.c= per capital. There were 9 persons in houses 17,40, 19 (including the one male away in the army), 7 in house 3B and 4 in house 57.

omission of just one ornament could make a large difference when their value is so great. Even as it stands, however, it will be seen what a considerable proportion of Gurung capital is stored in gold. When cur ency was not available and land too plentiful to have a high market value, as in the past, this would have made good sense. Now there is a feeling among some more astute Gurungs that it would be better to invest such capital more productively in land or livestock. But the few individuals who feel this still conform to the strong social pressures around them. Also such investment would complicate the transmission of wealth, since it would increase the man's share at the expense of daughters who are now given gold. The importance of gold-giving at weddings in determining the age at marriage is obvious. Normally a family must raise several thousand rupees worth of gold before it can marry off a son or daughter. This would tend to delay marriage until after at least one trip to the army.

Relative and total investment in various capital goods.

It has frequently been pointed out by planners and others that the relative proportion of capital invested in productive and non-productive goods, as well as the total amount of capital available per producer, will have a very considerable influence on economic development and living standards. Such relative investment is also a useful preliminary index concerning priorities in the village. The following tables indicates, on the basis of the foregoing statistics the total amount invested in the five sample households.

for Table 13:12 see across.

It will be seen from the table that the proportion invested in non-agricultural goods is fairly low, varying between 1/3 and 1/5 of the total capital. As we would expect, the proportion grows higher as one moves towards poorer families. Nevertheless, as the tables shows, there is a considerable expenditure on housing. The demand for tools seems to reach a ceiling at about 650 rs. Thus richer families do not attempt to increase their efficiency and production by procuring more equipment. Unfortunately there are not, as yet, any comparative figures for other parts of Nepal against which the above may be compared. It seems likely, however, that the

amount of capital revealed here is higher than in most areas of the country. A per capita wealth of 3-12000 rupees. which would cover most Gurung families in Thak (£125-£500), is relatively high for an Asian society.

A detailed household inventory was only taken for seven village families, the five listed above and two others Before we try to work out the total capital available in the village, it is necessary to see how the sample families compare in wealth to other households. Figures for land-ownership, livestock and housing were collected for all the 100 households and since these constitute between 60 and 75% of the total wealth of the sample households, it seems reasonable to assume that this is also true in other households. The distribution of all the households in Thak on a wealth scale, on the basis of land, livestock and housing, is shown in the following table.

TABLE 13:13 Wealth distribution of 100 households.

Rs. worth of land, livestock & housing combined.	Household number in census
0-99	44A,50A.
100-199	11A,12A,27A
200-499	-
500-999	6A,57A,58,61,62
1000-1999	35,57,59
2000-2999	45
3000-3999	43
4000-4999	53
5000-9999	2,12B,33,44,46,60,64,65,74,80B,81
10000-14999	3A,63,70A,79,80,82
15000-19999	3B,4,7A,13D,18,21,31,80A,83A,85
20000-24999	16,19,27,29,39,77,78,83
25000-29999	1,7,20,4
30000-34999	5A,5B,13A,28,38,42,42A,48,50,51,76,84
35000-39999	23,24,36,37
40000-44999	9,10,13,25,55,56
45000-49999	22,32,72
50000-54999	-
55000-59999	17,75
60000-64999	11
65000-69999	70B
70000-74999	40,52,73A
75000-79999	15
80000-84999	49
85000-99999	-
100000+	6,14,71,73B

Notes: The above table is based on the assumption that one ¼ ropani of land is worth 1000 rs; only land actually owned (rather than rented) is counted. Livestock and housing values are based on the values discussed in the pages above. H-uses 66,86-9 are omitted, since figures for landownership were not available for them. Five sample households = underlined.

It will be seen that the five sample families are distributed fairly evenly over the various wealth grades, though no examples of the very wealthiest or very poorest were drawn. In fact, because of the assessment of 1 ropani of land being worth 1000 rs. the table above somewhat distorts the real position; thus household 17 is, in fact, widely held to be wealthier than household 14, though the latter is listed above as having one hundred thousand rupees of property. The fields of number 17, though less in extent, are much better than those of 14.

The above table only shows wealth excluding household goods and gold. As already stated, the ratio in the sample households between land etc. and total wealth, was approximately 60-75%. In later calculations it will be assumed that, on average, in order to ascertain total wealth on the basis of land/livestock/housing, 35% needs to be added.

B. Outside the Panchayat

So far we have only considered the capital resources within the panchayat. Since the Gurungs depend heavily on military service in the Indian and British armies, we also need to know the capital resources available per serviceman abroad. If all the inhabitants of the Western Hills were confined to their native area the standard of living there would drop very considerably. Thus the Gurungs may be seen, to a certain extent, as beneficiaries from the funds of British and Indian capitalists; their wealth comes indirectly and partly from British and Indian factories. Furthermore, it is necessary to see how much capital is available to the Gurungs within Nepal. Here we must consider not only the inherited amenities of the country, but also the very considerable inflow of foreign aid which has occurred during the last twenty years. Any investigation of such external capital resources poses very considerable problems for an anthropologist. Without a long investigation of the whole Indian, Nepalese, and British economies we can only obtain a very rough idea of the amount of capital - machinery, communications, personnel etc. - upon which such labour migrants as the Gurungs operate. Necessarily, therefore, much of the following brief analysis will consist of guesswork, but guesswork justified, it is believed, by the importance of the topic.

The flow of foreign capital into Nepal and into the Hills in particular began in earnest with the opening up of Gurkha recruitment in the later nineteenth century. Before then the State under the Ranas had re-invested very little of the taxes they draw from hill villages; they made no attempt to provide medical, educational, industrial or other facilities. There has been a considerable change during the last twenty years, largely as a result of the large inflow of foreign capital which makes it possible to invest money in the Hills. Up-to-date figures on the amount of aid donated by various countries are almost impossible to obtain. By 1962 it had been calculated that some $83.7 m. had been actually donated, of which $43.5 m., or a little over 50% came from the United States.[10] If we make the fairly conservative assumption (in the light of China's increased aid contribution) that up to 1969 the U.S. still represented some 50% of all the aid donated to Nepal, then we can arrive at a rough figure for the whole period 1952-1969. During that period the U.S. committed approx. $123.600,000 to Nepal, all but $5m. of it in grants. On the assumption that this is half of Nepal's foreign aid over the period, the total aid received would be $247m. or some 1,933,320,000 rs. From this it is possible to work out roughly the per capita income available. If we assume the population to have averaged some 10m. during this period (actually it was considerably lower than this; but it is best to err on the conservative side), then roughly 193 rs. per man, woman, and child has been given. In the Thak hundred households, for example, this would mean that some 101,904 rs. were received.[10 B]

We may wonder how much of this 101,904 rs. has actually reached the village. This is almost impossible to assess accurately, and the following account must be judged as the result of almost pure guesswork. Some of the items where outside capital has been invested in the panchayat are listed below.

for table 13:14 see next page.

TABLE 13:14. Approx. amounts invested in 100 households in Thak, 1950-1969

Form of investment	amount in 100 hsehlds (rupees)
Education	
a) Construction/maintenance of buildings.....	- **
b) Fees & equipment	10,000
Medicine	
a) Vaccination campaign	200
b) Family planning campaign	100
c) Hospital facilities at Pokhara	500
Bridges etc.	
a) Bridge on Thak/Taprang road	4000
b) Other bridges used by Thak	500
c) Airport	500
Communications	
a) Wireless given to Pradan	500
b) Radio Nepal broadcasting	500
c) Postal service	- @
Panchayat system	
a) Construction of (now unused) Panchayat house	1000
b) Payment of Jilapanchayat rep.	2000
Agricultural	
a) Experimental farms	500
b) Free seed and fertilizer	50
TOTAL	20350

Notes: ** The day school in Thak was built with a British Army grant; the night school out of village contributions, thus no government money was needed. @ The villagers employ their own postman to fetch mail; they built their own post office box and, of course, pay for the cost of postage through stamps.

All the above estimates are as generous as they could be made. Even so, only some 20,350 rs. have been spent on projects of any direct or indirect use to the village - though we might possibly add in another few thousand for the large roads now being built across Nepal, which might, one day, benefit the Gurungs. Even if we allow nearly 10,000 rs. for these roads, then there are still 70,000 rs. of foreign aid, to just 100 households, still unaccounted for.

The State does, of course, provide other services for the community; military protection, an administration, policing. These are traditional tasks, carried on from time immemorial out of land tax revenues and customs dues. In the five sample households, it was claimed that some 450 rs. was being paid in various forms of taxes p.a. From this must be deducted the large cost of collecting the tax (though it is lessened by the free services of the Pradan in the village). The above sum also includes

money contributed to a compulsory savings scheme, the bacat kos, which may also be deducted. It is also probably true that the five sample households are, on average, a little above the normal in wealth. Taking all these factors into consideration it seems reasonable to estimate roundly that some 50 rs. per household p.a. is paid in taxation (a ridiculously small sum of £2), or 5000 rs. Easily as large a sum is paid by Gurungs on the goods they import from abroad, and on the various commodities they buy in the market. Thus at least 10,000 rs. p.a. is going out of the village to the government to maintain the traditional services.

If we try to explain the discrepancy between what is given by foreign powers and what actually reaches a typical village we are taken into the dangerous arena where corruption, inefficiency, and Parkinson's Law mingle with the inflated wages of foreign 'advisers' to take a huge toll of incoming capital. In conclusion we may roughly calculate that capital injected into such a community from the outside over the last twenty years amounts to between 200 and 300 rupees per household, while capital taken out to finance governmental activities amounts to between 500 and 1000 rupees per household. There can be little doubt that despite the huge inflow of foreign aid, Gurung villages export more capital in the shape of taxes and customs than they import via improved services.

As an alternative to writing a long analysis which examines British and Indian capital resources, an indirect, though rough, method of calculating resources available to Gurungs when they go outside Nepal will be adopted. Firstly we will try to calculate the returns for labour invested in various types of activity, inside and outside Nepal; secondly, we will multiply this by the number of persons who are active in these various fields. Returns for labour are not, of course, an accurate index of the amount of capital available. They also reflect expectations, demand and supply etc. Furthermore, calculations of this nature are, in fact, much more complex than represented below and simplification leads to distortion. If a fit male aged 20 in 1970 was contemplating the returns on investing his labour in various activities, the broad outline of the situation may be summarized in note form (all totals are given in nepalese rupees).

1. If he was poor, with hardly any land, and laboured for others in the village (e.g. as a blacksmith/ploughman/ building houses), His average income per day employed would be about 6 rs. (3½ rs. + two meals). Average number of days employed p.a. about 270; therefore his total earnings some 1620 rs.
2. If he had sufficient rice/maize land to absorb his labour (for example a middling to wealthy Gurung upwards). His average income from labouring on his land per day employed would be about 10 rs. The average number of days employed would be about 250. Thus total earnings of some 2500 rs.
3. As headmaster of the local primary school he would get 1800 rs. p.a.; as second or third schoolmaster some 1080. In either case he would supplement this by agricultural or other work.
4. As a civilian or soldier in India he might expect to earn as follows: housing, food, clothing, provided - worth approx. 5rs. per day or 1825 per year; wages for one year, 2200 rs; pension rights worth 720 rs; a total of 4,745 p.a.
5. As a soldier in the British army, serving 15 years and rising to a middling rank, he might expect to earn as follows: housing, food, clothes worth 1825 p.a.; wages at some 4,400 p.a.; pension rights worth 720 rs. The total earnings would be 6,945 p.a.

In the calculations leading to the total in options 4 and 5 it is assumed that the average recruit might expect to spend 10 years as a rifleman, and 5 years as a corporal and retire on a corporal's pension. In fact, of course, he might remain a rifleman all his time, or rise to a much better paid rank than corporal. It is also assumed that he would live for 15 years after retiring and thus enjoy a pension for that time. The fact that ex-servicemen or their wives usually survive for a longer period than this makes the above calculations a conservative minimum.

Yet, even though they are conservative estimates, it will be seen that for the same amount of labour a man can earn almost twice as much in India as on his own fields, and in the British army he may earn three times as much or more. Since the demand for food and clothing is soon satisfied, much of this extra amount may be saved. Thus for the purposes of argument we may assume that the capital

per person employed in India is twice that per person (male) in the village, and in the British army it is three times as much.

Total capital of 100 households.

Up to now we have been calculating on the basis of household units. But this leads to distortion since household size and composition differs, and therefore it is necessary to allow for age and sex differences. In recognition of a like problem, anthropologists have used the device of artificially constructed 'consumption units'. But since we are at present investigating production and resources for labour, it is necessary to use a different construct, the 'production unit', whereby persons of various ages and both sexes are given different weighting depending on the type of labour they can perform. The methodology behind these two constructs will be discussed in later chapters.[11] Basically it is a matter of taking a healthy male adult aged 20-45 as one unit, and representing other persons as proportions of one unit.

One further problem of a complex type also faces us if we desire to know the total capital resources available to an adult male in our 100 sample families; this is the problem of communal resources. We have fairly adequate figures for the amount of private capital in the village, as indicated by the inventories, but it has been constantly stressed that the Gurungs depend heavily on supplies of forest and rough grazing. Without communal rights their whole economy would be immensely different and impoverished. Yet how are we to calculate the value of such communally owned capital? Some basis for an estimate has been provided by the previous discussion of the amount of wood and fodder consumed per household and per capita in the 100 households. The problem is to decide how much capital resources this represents. Even to decide its monetary value is difficult; are we to assess it in terms of labour/time expenditure, or at what it would cost in Pokhara? A rough, highly questionable, guess will have to be made. It will be suggested that such communal resources are worth half that of the arable land owned by a household. The milk, meat, wild vegetables, fruit, manure, firewood, building wood, bamboos, thatching, which flow from the communally owned lands would seem to be worth at least this, although in terms of cash within the village they

are not priced as high, or not priced at all. The ownership of such resources is in theory communal and equal: in fact, of course, those with large households and many animals, who also tend to be the richer households, make far greater use of such communal assets. This fact justifies us in varying the amount of such capital according to the arable land ownership of families. The per production unit capital available to the 5 sample households is as follows.

TABLE 13:15. Capital per production unit in five households (rupees)

Hsehold no.	capital private**	communal	total	no.of prod'n units	avge. per prod'n unit
40	100032	31750	131782	4.6	28648.3
17	83622	23250	106872	4.4	24289.1
3B	29800	6375	36175	4.2	8613.1
19	33235	8750	41985	4.6	9127.2
57	1698	1250	1948	2.0	974

Notes: ** private capital includes all goods, as well as arable land. The production units are assessed on a scale which is explained later.

Thus we see that a rich family is calculated to utilize some 20-25 thousand rupees worth of grazing and forest, a medium to poor family between 5 and 10 thousand. The average amount of capital per production unit varies from roughly 1000 to 28000 rs. But in fact, it is likely that the extremes would not be quite as great as this since household 57 would undoubtedly use more than 250 rs. of communal resources.

From my personal observation, there appears to be a surplus of labour in households 3B and 19, whereas households 40 and 17 have to hire a little labour. It would therefore seem that to keep an adult male (one production unit) productively busy would require some 12000 rs. or so of capital. If this estimate is correct, then the relative amount needed to produce the yields experienced outside the village would be as follows: employment in the village, 10-15000 rs. per production unit; employment in Indian 20-30000 rs. per production unit; employment in the British army, 30-45000 rs. Of course this does not necessarily mean that the British army has this specified amount of capital per recruit. It merely means that if we express external capital in terms of the returns on capital in the village, this is the amount we arrive at.

One final problem remains: how many Gurungs in our sample area drew on these external sources of capital in India and the British army? Excluding for the moment pensioners, whose pensions have already been allowed for, those working abroad in 1969 (including those temporarily on leave) were as follows: Indian civilian - 8, India military - 27; British army - 8; total 43 persons. From this, on the basis of previous calculations, we may assess that those in India, at 25,000 rs. capital per adult, utilized some 875000 rs. of capital; those in the British army, at 40000 per adult, utilized some 320000 rs. worth, or a total of 1195000 rs. This indicates the very large external resources of capital utilized. Its relative importance as opposed to other types of capital may be seen in one final table.

TABLE 13:16. Total capital reserves for 100 sample households, 1969.

Type	Total	Avge. per household	Avge per prod'n unit (294.4)**
Internal-private	4,500,000	45000	15285
" -communal	1,230,500	12305	4180
External-army etc.	1,195,000	11950	4059
	6,925,500	69255	23524

Notes: the number of production units in the 100 households (294.4) is worked out later. The value of communal land has been assessed as half that of arable land. The private wealth has been based on the wealth of the 5 sample households, though a little has been deducted to allow for the fact that the sample was probably a little over the average in wealth.

It may thus be seen that army capital and communal resources are of about equal value on the above reckoning. On average, each household has some 69250 rs. of capital (£2,885-42) and each production unit (adult male equivalent) some 23524(£980). This is a large amount of capital for an Asian society.

In the forgoing discussion we have only dealt with the physical necessities of production - land, livestock, seed etc. But "human capital" or labour also needs detailed consideration. The resources of labour, and organization of the labour force in Thak will be the subject of the next chapter.

NOTES. CHAPTER THIRTEEN.

1. McDougall, Village Economy, p.100.
2. See pp. 276, table 13.7 below.
3. Figures are taken from Gurungs, p.134.
4. Gurungs, pp.94-105.
5. Richards, Land & Labour, pp.87-90.
6. Gurungs, p.80ff.
7. Bista, People of Nepal, p.77. Morris, Winter in Nepal, p.108, also states that Nepalese houses are often round or oval. See also Peoples of Nepal Himalaya, iii, p.30
8. Gurungs, p.74ff.
9. He also describes other kinds (Gurungs, pp.77-9) which were not observed in Thak.
10. Mihaly, Foreign Aid & Politics, appdx.2.

10B It is obvious that the procedure of dividing total foreign aid by total population is extremely over-simple, and can be misleading. Indeed this whole account of foreign aid is at a far more speculative level than most of this thesis. Only the importance of the topic in a total analysis of village economics justifies its inclusion. To fail to attempt some estimate of outside investment would lead to a greater distortion than even this necessarily superficial analysis.

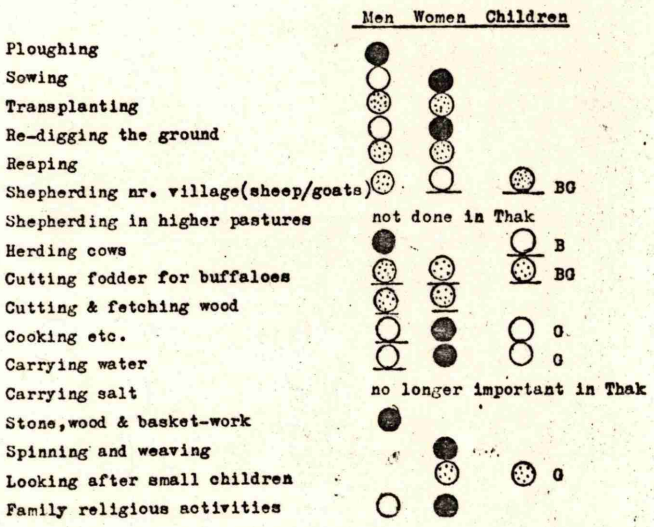
11. See pp. 294, 337 below.

CHAPTER FOURTEEN. Labour in the Gurung Economy.

The other major form of capital in any society is labour. Given the simple tools and difficult terrain of the Gurungs, this is especially important in their economy. Since the problem of underemployment is now widely viewed as one of the major consequences of population growth in Asia, it is essential that a detailed analysis of this topic should be made. The discussion may conveniently be divided into two interrelated parts; the quantity of labour available in man-hours, and the quality of such labour.

It has been found useful in the study of household budgeting to employ a standard unit of measurement, the 'consumption unit'. In time and labour analyses we need an equivalent concept, the 'production unit'. This construct does not appear to have been utilized by anthropologists up to the present, though most writers in the field do make tacit assumptions about how much work various people do. The problem is to be able to turn the labour of persons of differing ages and both sexes into proportions of one 'production unit'. To work out, for example, how much the labour of children of various ages is worth. Thus it has been suggested for a south Indian village that the labour of boys aged 10-15 is worth half that of an adult male, and that "in terms of wages paid and also roughly in terms of work performed one male labour day equals 2 female labour days".[1] Among other assumptions that have been made, not entirely in accordance with the above figures, are that the average proportion of the family available for agricultural work in parts of New Guinea is some 60% of the total household size, and that women's labour is worth 70% that of men's in Yugoslavia.[2] The difficulty of assessing relative productivity is that it depends on so many different features of the particular society: for instance, if herding is the main occupation, children may be 100% as efficient as adult men, whereas if portering is the way a living is made, they may be only 40% as productive or even less. Likewise the traditional ideas about the division of labour between ages and sexes will influence the totals enormously. Where women are prohibited from doing fieldwork, or where children are supposed to start work only after completing secondary education, neither group may have much productive value. Then there is the problem of

DIAGRAM 14:1 Division of labour in the family.



KEY

Actitity usually performed by this category of person

Activity equally divided between the two

Activity secondarily undertaken by this category

Pignède's estimate, where my informants differed

B = boys G = girls

(The above is based on Pignède, Les Gurunga, fig.25, p.258)

comparing different types of work: is the man who works for five hours at ploughing contributing more than the woman who does domestic work for 12 hours? Wages are not an adequate index; they may bear no relation to actual productivity, of expenditure of effort. Bearing in mind all these problems, we may turn our attention to the Gurungs.

There is very little division of labour among the Gurungs: most work is done in groups containing both men and women. There are very few tasks which may not be done by either sex. Pignède has provided a useful diagram which shows the division of labour, such as it is. This is shown below. In Thak, however, even his picture of a very flexible situation is somewhat too rigid, as may be seen by the modifications I have made to his figure. Even supposedly female activities such as cooking, or carrying water, may be done by men, though only in a minority of cases. The only male activities never undertaken by women in Thak were ploughing and basket-work, while men did everything performed by women except weaving and spinning. In practise, agricultural work is almost exactly shared. An analysis of the amount of agricultural labour said to be required for various crops will show that as many women-hours as men-hours are needed. Thak is in many ways similar to a 'commuter' community in the West; with 43 adult males away from the village from 100 households, it is not surprising that the remaining women, both married and unmarried, should have to perform most agricultural tasks. The division of labour in the family, based on Pignède's diagram, is as follows.[3]

for diagram 14:1. see across.

Observation of the actual amount of work done by women when collecting wood, planting, or weeding, suggests that although their physical capacity is slightly less than that of men, in most tasks they do just as much work as men. Their labour is thought to be interchangeable with that of men in communal work parties, and for jobs such as carrying stones for housebuilding, or weeding, they are paid the same amount as adult men. Although it would be possible to assume, along with Caplan,[4] that an adult male and an adult female have an equivalent work value, a conservative estimate will be adopted whereby women are rated as 0.8 of a 'production unit' (i.e. adult male equivalent).

for table 14:1. see next page.

Pignede stated that children started to help with adult tasks from the age of seven or eight.[5] For the next four or five years, however, their work value is slight. They can help with a little carrying, relieve adults of such tasks as animal-herding or monkey-scaring. But nowadays many of them do little to help the household until they leave primary school at twelve or thirteen. Thus a young girl of twelve, whose household I observed closely for six months, only did a little work - minding the baby and occasionally herding a buffalo. From about twelve or thirteen, however, children start to collect water, wood, fodder, and to carry dung to the fields. Girls begin to help with agricultural work in earnest, sowing and weeding, at fifteen or sixteen. They appear to be fully productive at the age of about 18. Boys do not start to plough until they are 16 or 17, and cannot carry full adult loads, unless they are early developers, until aged 19 or 20.

Both men and women among the Gurungs go on working until they die or are incapacitated by illness. Even the wealthiest in the village do not retire. Old women in their seventies could still be seen carrying heavy loads of wood and water, and people in their eighties went on with basket-making and weaving. Full productivity for both men and women probably begins to decline in the mid forties, although both sexes continue to do heavy field-work, including ploughing for men, until at least sixty years of age. The amount of work done after the age of 45 depends, among other things, on the wealth of the family and the available amount of labour elsewhere. Thus one informant told me that a rich man aged over 50 would slacken down to some 40% of his full effort, whereas a poverty-stricken man would work as hard as ever for a while.

I asked two informants to rate people on a five-point scale as to their value as workers, for both sexes and at various ages. They rated adult women as equal to adult men, which seems reasonable, but in view of the almost universal tendency of agricultural economists to rate female labour lower than that of males, we will stick to our conservative estimate. Their estimates were very similar, though not identical. Taking a man aged 30 as 1.00, their combined estimate was as follows (where they disagreed a median figure was adopted).

for table 14:1. see next page.

TABLE 14:1. Work capacity at various ages, males and females.

Age (years)	Male	Age (years)	Female
0-8	0	0-6	0
9-13	0.2	7-12	0.2
14-16	0.6	13-15	0.4
17-19	0.8	16-17	0.6
20-45	1.0	18-45	0.8
46-60	0.8	46-55	0.6
61-70	0.6	56-70	0.6
**70+	0.2	70+	0.2

Note: ** for age 70+ I relied on my own estimate.

Later we will apply these multipliers to all the sample households, but first we may compare the results of using the above figures to those arrived at by multipliers employed by others.

TABLE 14:2. Various estimates of work capacity, arrived at by using various methods. (no. production units)

Hse no.	Total persons	My estimate	Colin Clark[1]	S-Epstein[©]
40	9	4.6	5.4	4.7
17	9	4.4	5.4	3.7
3B	7	4.2	4.2	3.4
19	9	4.6	5.4	4.5
57	4	2.0	2.4	1.75

Notes: [1] = on the basis of Clark's reported figures (Subsistence Agriculture, p.46), that available labour is 60% of the total persons. © = S-Epstein (Economic & Social Change, pp.78,49), on her assumption that a woman = half a man, and a male child of 10-15 also = half a man.

The Clark method gives too much labour to those with a large number of young children; in general, it would seem to be slightly too high a rating. Epstein's calculation, based on a low assessment of female labour, which is of particular importance among the Gurungs, underestimates the labour fund in this society.

The Gurung working day naturally varies according to the task to be done. Its length also varies depending on whether one includes the walk to and from work, often taking up to two hours a day, as part of the labour. Pignède has given an account of the working day of a communal work group in the rice fields. He rightly stresses how hard and well the Gurungs work, the task being lightened by singing, joking and conversation.[6] He suggests that workers usually set off at 7.30 a.m., have a break at 3 p.m. and, presumably, return to the village by 7 p.m. This is a long day's work, with three hours walking, eight hours working, and an hour or so of rest. Sometimes the Gurungs in Thak worked even harder than this. For instance

when harvesting rice, they would sleep in the fields, start work in the dark at about 4 a.m. and then, after breakfast, carry huge sacks of rice up the 2,000 ft. climb to the village, repeating the journey up to three times. The Gurungs like to work in bursts; they will work very hard for three days and then do nothing for a week, rather than spreading the work out. During the two or three weeks of transplanting rice and the couple of weeks of rice harvest, they work extremely hard. The account above, however, gives a very distorted impression of the situation in the other weeks of the year. Even when they are fairly busy, for instance when cutting wood or bringing in the maize, the pace is relaxed. Although most people get up extremely early, the main work of the day does not begin until about 9.30 a.m., at which time, after the first main meal of the day, the workers leave for field or forest. There is a fair amount of resting on the way and at the job, and work ends at about 5 p.m. Thus the actual amount of work done is, at the very most, 6 hours.

To illustrate the pattern of work in more detail, I asked my most accurate informant at the end of three separate days what he had done that day. Unfortunately I did not personally observe his actions on the particular days in question, but his descriptions fitted in well with what I had seen him doing on nearby days. All the accounts were taken during June-July; these are the two busiest agricultural months in the year, for they cover the transplanting of rice and the harvesting of maize. The informant was a young man of 21, perhaps a little more indolent than some, but a member of a wealthy household (40) where there was much land to be worked. This is how he described his activities; the times are approximate, though he did have a watch.

Day 1. Ploughing the fields for transplanting rice.

5.30 a.m. Get up; urinate; go to nearby (5 mins.) tailor's house to tell him that his services as a ploughman would be needed that day; drink tea; go to 'Blacksmith village' (2 mins) to mend a hoe, but no Blacksmiths there, so return home; visit village 'shop' for soap, but no one there.

8.30 a.m. Breakfast; go to fetch ox from hse.15, told that there was not enough water in the fields; eat a snack of potatoes and drink milk; urinate; wash

hands and face; fetch another ox; get together a plough and other equipment; take oxen and equipment down to field (20 mins); urinate; hitch up oxen.

10.30 a.m. Plough one terrace; go to a nearby house for a drink of water; defecate in a nearby field; plough seven more terraces.

5.30 p.m. Unyoke oxen; rest for one hour, letting oxen graze, looking at view and singing; return to house; wash all over and drink water at water tap; eat supper; wash hands; milk buffalo.

8.00 p.m. Visit anthropologist's house.

It will be seen from the above account that it took some five hours before work actually commenced in the field, and that the ploughing lasted seven hours, with various interruptions. But the 'labour' involved in ploughing also included alerting another ploughman, getting together the oxen and taking them to the fields, grazing them, returning them. There was also the attempt to mend a hoe and the milking of the buffalo. Thus an eight-hour working day seems a minimum estimate, a ten-hour day is the maximum.

Day 2. Preparing fields for transplanting of rice.
(the informant slept in a shed in the fields)

5.30 a.m. Get up; smoke cigarette, drink tea, urinate; go to stream, start to make water channel to field; talk to a woman about seeds.

8.00 a.m. Cook some breakfast; wash; eat breakfast; smoke and rest for 15 mins; work on fields (making six water channels and preparing eleven rice terraces).

4.30 p.m. Eat a snack; weed for half an hour; walk up to village, resting for half an hour on the way.

7.30 p.m. Eat supper.

Thus the informant had worked for at least eight or nine hours, and had then walked up to his house.

Day 3. Fetching maize up to the village.
(The maize was in a field some 500 ft. below the village; it took about 15 mins. down and 30 up.)

8.00 a.m. Get up - late because tired and it was raining; drink tea and smoke; wash and urinate; breakfast.

9.30 a.m. Set off down to maize field; defecate on path down to work; bring up a load of maize; drink some skimmed milk and vomit; go down to field again, stopping at a house on the way to have hair cut; bring back another load of maize; go down to fields again; shelter during a rain storm.

c.6.00 p.m. Returns to house and supper.

Carrying large baskets up the steep slope is very tiring work and rests are certainly needed. Nevertheless, the informant was not pushing himself. He could have done the three journeys in three hours if he had been in a hurry to go off somewhere else. Thus the pace of work is adjusted to the amount that needs to be done. Often it will take someone a whole day to fetch a load of grass for the buffalo; on other occasions the same person will do the same job before breakfast and then set off to Pokhara. Parkinson's Law - that work expands to fill the time available for its completion - is of fundamental importance in understanding Gurung economics. All this suggests that the marginal returns on further labour input are low: the economy can only absorb a limited amount of labour. The same task may take one hour, or four times that time.

The quality of the workers, if under pressure, is extremely high. Both Gurungs and other villagers, though physically small, are extremely strong, and they can walk great distances with huge loads. They work particularly well in teams, and most of the village work is done by groups. The women, especially, are often very hard workers, grinding and pounding the grains deep into the night, scarcely ever idle. The men are fonder of gambling, drinking, visiting Pokhara, or just sitting around talking, but they will work hard when there is work to do.

In assessing the quantity of labour or 'production units' available in the village, the calculations will be made in man-days. It will be assumed that the average amount of hours actually worked per day is six. This is based partly on the above accounts, where approximately seven, eight, and three hours work were done during the busiest months of the year; partly on general observation and by accompanying working parties on various jobs; and partly on one informant's statement that a normal working day for a communal work party was 10-6 in summer and 10-5

in winter, with 1-1½ hours rest during that time. This 6-hour day is in line with assumptions about Gambia, and half an hour shorter than estimates for Africa as a whole.[7] Since our aim is to show that even with very considerable labour migration there is still considerable underemployment it is wise to take the lowest possible estimate of hours of work thought to constitute a full day's work.[7B] The number of days that can be worked per year could be taken to be anywhere in the range 260-300. Various studies have assumed the following number of work-days per year: south India - 300;[8] India - 300, Bulgaria - 290, South India - 260, Hungary - 300, Italy - 275.[9] Although 300 would seem a reasonable estimate of what, in theory, the Gurungs could work, since they do not have holy days when they may not work (though certain jobs may not be done for one day each month at full moon, when a person dies etc.), again we will err on the conservative side and assume that 280 days per year constitutes full employment. This gives each individual 85 days for illness and rest.

We may now turn to the available labour in various strata of the village. The following persons will be omitted from the calculations because their disabilities made them incapable of anything but the very lightest work; those in the second half of the table had their productive power, on average, halved by various other causes.

TABLE 14:3, Those with reduced work capacity in Thak.

house no.	sex	age	disability
totally incapacitated			
6A	F	44	mentally ill
9	M	15	spastic
14	M	60	almost blind
33A	M	89	bedridden-dysentery
58	M	15	mongol child
70B	M	56	crippled
75	F	49	very lame
half incapacitated			
13A	M	34	had TB once
33	M	42	had TB once
37	M	8	mentally retarded
45	F	24	deaf & dumb
85	F	69	deaf & dumb
88	F	68	partly blind

On the basis of the rates in table 14:1, there was a loss of 4.6 production units through 'total disabilities' and 1.6. units from 'half disabilities'. This was approximately 1/50 of the total productive force of the hundred households.

If we stratify the production units by age, sex and caste, taking all 528 persons theoretically living in the Thak sample, and assessing their labour at the above rates, the productive capacity is as follows.

TABLE 14:4. Distribution of production units in Thak, by age and caste.

MALE (no. of production units)				FEMALE			
age	Gurungs	Tailors/Bl.	Magars/ Tamangs	age	Gurungs	Tailors/ Bl.	Mags
0-8	0	0	0	0-6	0	0	0
9-13	3.8	1.0	-	7-12	5.8	1.8	0.8
14-16	7.2	3.0	-	13-15	3.2	2.4	1.2
17-19	5.6	4.0	-	16-17	3.6	1.2	-
20-45	74	16	4	18-45	61.6	15.2	4.8
46-60	21.6	4.8	2.4	46-55	15.2	4.8	-
61-70	3.0	0	0;6	56-70	15.0	1.2	2.4
70+	1.2	0.2	-	70+	1.6	0	0.2
total	116.4	29	7		106.0	26.6	9.4

Thus the males and females aged 0-16, in all, provided only 31.2 production units, or 9.4% of the total of 294.4 units. Old men, also, provided little labour after the age of 61, but older women constitute quite an important fund of labour. Males, as a whole, only provide 10 more units than females as a whole. If we multiply the above total by the previously assumed 280 man-days per year (as full employment), then there are 82,432 man-day-units to be employed in the hundred households - either in the village or in the army. Assuming a 6-hour day, there are 494,592 man-hour-units to be so employed. The 528 persons provide some 294.4 production units; in other words the productive assets of the village represent 55.76% of the total number of persons, which is a little less than the 60% suggested by Colin Clark, as discussed above. Our task in the following chapter will be to see what proportion of this labour may be absorbed in the village.

In a later chapter a table of production units per household, as compared to consumption units, will be given in order to see which households are likely to have budgetary deficits. From that table it will be seen that the largest number of production units in a single household is 8.4 (in a Tailor joint household), while the smallest is 0 (in a house where only a mentally defective woman lives, begging off other villagers). The distribution by number of production units of the various households is as follows.

TABLE 14:5. Distribution of total production units; 100 households.

Group	0-0.9	1-1.9	2-2.9	3-3.9	4-4.9	5-5.9	6+
Gurungs-carjat	4	12	18	6	7	2	4
-sorajat	2	4	10	4	3	0	1
	6	16	28	10	10	2	5
Blacksmiths/ Tailor	0	4	5	6	1	1	1
Tamangs/Magars	0	0	0	1	3	1	0
Total(& %)	6	20	33	17	14	4	6

Thus, it will be seen that normally the number of production units per household is in the range 2-3.9; exactly 50% of the sample households lay in this range with almost equal numbers above and below. Only 1/10 households have five or more production units. The above totals represent the potential numbers; in fact the production units available in the village are far fewer. Boys and girls who are away at school in Pokhara, and especially those away in the army, reduce the actual labour force for work in the fields. The number at work in the village (including school-children attending school there) is as follows.

TABLE 14:6. Distribution of production units of those working in the village.

Group	0-0.9	1-1.9	2-2.9	3-3.9	4-4.9	5-5.9	6+
Gurungs-carjat	9	18	13	4	9	1	-
-sorajat	5	6	6	5	1	-	-
	14	24	19	9	10	1	-
Blacksmith/ Tailor	-	4	5	6	2	-	1
Tamang/Magar	1	-	-	2	1	1	-
Total(& %)	15	28	24	17	13	2	1

The situation among non-Gurungs is the same, but the pattern among Gurungs has changed very considerably; army recruitment means that there are now usually only 1-2.9 production units per household working within the village - almost 50% of the Gurung households fall within this range. Only three households now have 5 or more production units. It will be noticed that the army exodus emphasizes the larger average labour potential of non-Gurung households.

The demands for labour per landholding, and the way such demands match the actual resources of labour, can only be ascertained after a detailed analysis of the labour utilized for various agricultural tasks. The next chapter will deal with this input-output data.

CHAPTER FOURTEEN. NOTES.

1. Epstein, Economic & Social Change, pp.78,49
2. Clark, Subsistence Agriculture, pp.46,144.
3. Gurungs, p.259.
4. Caplan, Land and Social Change, p.108, where he speaks only of adults, not differentiating males and females.
5. Gurungs, p.259. Hitchcock, Magars, pp.51-2, says that children among the Magars start work at about eight, and when they are twelve they "can do almost all adult tasks & can be genuine assets to the households". Kawakita estimated, Peoples of Nepal Himalaya, iii, p.315, that boys of 8-15 were worth half a man.
6. Gurungs, p.129.
7. Clark, Subsistence, pp.91,95; Epstein, Economic and Social Change, p.78, assumes an 8 hour working day.

7B. In this way the work available in the village will be estimated to spread over the maximum possible number of work-days.

8. Epstein, Economic and Social Change, pp.78,225
9. Clark, Subsistence Agriculture, pp.143-5.

CHAPTER FIFTEEN. The application of capital; input-output data.

We now have some idea of the stocks of land, labour and other capital in a Gurung village. Given the simple technology and difficult terrain, how is this capital applied? The importance of the problems in this area have been recognized by various writers on Nepal. Thus there has been a Ministry of Economic Planning report on the subject, which provides interesting comparative data.[1] It has, furthermore, been argued generally of Nepal that "the man-land ratio which has already grown high, is getting worse, with the result that the accumulation of idle man-power on land is mounting with the passage of time".[2] A whole study has been devoted to the way in which labour surpluses in the Hills area of Nepal lead to labour migration to the Terai or India.[3] More generally, many studies of pre-industrial societies have shown that there is a huge problem of growing under and un-employment; for example a study of India some twenty years ago calculated that, varying from district to district, only 53-81% of the labour was actually employed, despite the labour-intensive and antiquated technology.[4] The situation among the Gurungs is of particular interest for two reasons. Firstly, it is clear that the very large-scale labour migration to the army must be linked to the labour situation in the village. Secondly, at first sight the Gurungs appear to be an exception to the above generalizations, for the predominant impression from reading Pignède's authoritative work is that there is, if anything, a labour shortage. Thus, for example, he writes that "Agricultural work in a Gurung village is very arduous...adult labour is insufficient because of the lack of men", Even during the slack season, he believed, men and women were busy.[5] Another authority on the region also writes, "Life in a Gurkha village is harsh and unrewarding: a matter of unremitting toil".[6]

In the first part of this chapter we will examine each of the activities within the village, in order to see how much labour and other capital it absorbs. In the second half the total amount of labour required in the village will be compared to that available and we will investigate whether there are certain groups, or certain

TABLE 15:1 (contd)

Details of particular field:-	Informant one	Informant two
yield per ropani	1.14 muri	?
name of field	uli	uli
quality	good	good
total area	3.5 ropani	4 ropani
total production	4 muri	?
distance from house	25 mins.	1 min.
labour per muri yield (man days)	21.84	?

Table 15:1 (contd)

MAIZE Activity	(where differs from rice) Gurung term	Informant one	Informant two
Store	Mokhai suli jonva	1.43	1.75
Take off cob	Mokhai peeba	0.29	0.75
Grind - at mill	garta bwoba (ghatta (Nep)=mill)	0.57	0.5
- in house	pro proba	3	1.5
Winnow	shee lava	0.14	0.5
Total labour per ropani.....		19.01 + 1.71	18 + 2.5
Details of particular field:-			
yield per ropani (in muri)		1.75	2
name of field		uli	uli
quality		good	good
total area		3½ ropani	4 ropani
total production		6 muri	8 muri
distance from house		25 mins.	1 min.
labour per muri yield (man days)		11.08	9.0
MILLET			
Prepare ground	kore taba	3.43 M/F	1.25 M/F
Sow seed	nari plu pluva	0.57 M/F	0.5 F
Plough		0.57 M + 1.14	0.5 M + 1.0
Transplant(life)	nari pluh shwiva	1.71 M/F	1.25 M/F
Re-plant	nari riva	6.29 M/F	5 F/M
Weed		2.0 F	3.0 F/M
Cut off heads	Nari toba)	3.43 M/F	2.5 F
Carry to house	nari di kwoba)		
Thrash	nari donva/neeva	4.71 M/F	2.5 M/F
Grind - mill		0.25 M	0.5 M
- at house		2.0 F	1.5 F
Total labour per ropani....		24.96 + 1.14	18.5 + 1.0

(P.T.O)

TABLE 15:1 (contd)

RICE Activity	Gurung term	Informant one	Informant two
Beat/thrash Bring to house Store	mla neeva di bwoba di nor jonva	0.89 M/F+0.56	1.73 M/F + 0.55
Dry	mla sonva	0.33 F	0.45 F
De-husk	kuni donva	2.5 F	2.5 F
Winnow	shee lava		
Total labour per ropani		15.58 + 2.78	16.22 + 2.73
details of particular field:-			
yield per ropani (in muri)		2	1.82
name of field		patle	kamgon
quality(according to land records)		medium	good
total area(" " ")		9 ropani	11 ropani
total production		18-20 muri	20 muri
distance from house		15 mins.	25 mins.
labour per muri yield		c.7.5	c.8.5

Activity	Gurung term (where differs from rice)	Informant one	Informant two
Maize			
Manure		4.29	2
Plough		0.29	
Rake		0.29 + 1.14	0.75 + 1.5
Re-plough			
Edge & clean	Kotale tsaba	3	2
Sow		0.57 + 0.57	0.5 + 1.0
1st weeding	mokhai taba	1.14	2
2nd weeding	" "	1.71	4
Harvest & to house		2	1.25
Cut off stalks	mokhai dung waba	0.29	0.5

(P.T.O)

TABLE 15:1. Physical input-output of main cereal crops.

(Labour per ropani, in man-days (1ropani = 0.051 ha. or 0.13 acres))
(M= male, F=Female, M/F = either), underlined figures = oxen)
(N.B: yields are always in unhusked grain)

Preparation of seed-beds

RICE Activity	Gurung term		Informant one	Informant two
Manure	mal jonva		0.11 M/F	0.18 M/F
Plough	khla kyova		0.11 M + 0.22	0.09 M/F + 0.18
Clean//weed	nor tsaba		0.44	0.18 M/F
Break up lumps	jilidiba		0.33	0.45 F
Plough again	khla kyova			
Rake	lyngu jonva		0.11 M + 0.22	0.09 M + 0.18
Plough	khla kyova			
Water channels	kulu lava			
Flatten earth	sa ngyoba			
Sow	pluh jonva	(Kuta(Nep.)= channel)	0.67 M/F	0.55 M/F
Scatter earth	pluh uba			
Manure	mal jonva		-	-
Plough (1st)	khla kyova		0.44 M + 0.89	0.45 M + 0.91
Weeding/Clean	nor tsaba		2.22 M/F	1.64 M/F
Plough (2nd)	khla kyova		0.44 M + 0.89	0.45 M + 0.91
Rake	lyngu jonva			
Transplant	pluh riva		2.78 F/M	1.82 F
Repair terraces	al déva(ali(Nep)=terrace)			0.91 M
Put more water on	kyu jonva		0.22 M	0.73 M
Weed	mla shwiba		2.22 M/F	1.82 M/F
Weed('sungri')	sungri shwiba		0.22 M/F	0.27 M/F
Cut	mla kréva		1.11 M/F	1.27 M/F
Collect/Pile	kuni jonva		0.44 M/F	0.64 M/F

(P.T.O)

periods, where there are particular shortages, or surpluses.

Cereal grain production.

It is naturally extremely difficult to calculate the amount of labour and other capital input required to produce a given quantity of grain, or to till a given area of land. To talk of the 'average' amount we need to ignore many crucial variations - the size of the field, the quality of the soil, the distance from the village, the availability of water. Nevertheless we need estimates so badly that over-simplifications will have to be made. The basis for the following calculations are as follows. I asked two informants to describe to me in detail the various processes involved in growing and harvesting rice, maize, millet, and other crops. I then asked them to think of a particular field they owned and to tell me how many men/women/oxen were employed for how many hours/days in order to complete the processes they had described. Some of the totals were checked with other informants, and others could be checked by observation. Both methods suggested that their descriptions were reasonably accurate. The two informant's estimates for each of the three main crops may be seen in table 15:1.

for Table 15:1 see across.

Most of the processes listed in the above table are described in some detail by Pignède.[7] They include all the operations from the manuring of the fields up to cooking. It will be seen that the two informants estimates are close to each other, except in the case of millet, where the first informant calculated a considerably longer time is necessary for thrashing and grinding grain. The two most labour-consuming activities are weeding and grinding: between 1/4 and 1/3 of the total labour needed for rice, for example, is used on these two processes. From the details of the above table we can extract the labour needed per area of land, and compare this to the findings of a governmental report on the subject.

TABLE 15:2. Labour needed per unit of land: Thak and Nepal compared.

Crop	Median man-days per rop; two Thak infts.	Thak median in man-days per ha.	Nepal findings,** per ha. small	large
Rice	15.9	311.76	553	115
Maize	18.5	362.75	2883	188
Millet	21.73	426.08	6387	637

note: figures are taken from 'Physical Input-Output Characteristics of Cereal Grain Production', p.46. The 'small' were holdings up to 0.5 ha., the 'large' were 1.0-2.0 ha. Both were in the "Hills" region. Gurung holdings tend to approximate in size to the former rather than the latter.

In the case of rice and maize the Thak estimates come somewhere in the middle between small and large holdings, but in the case of millet the estimate is lower than that for even large fields. This may be explained by the fact that millet is usually grown by the Gurungs on the fields where they also grow maize: therefore the preparation and manuring of the land, which is counted under the labour needed for maize cultivation, also serves for millet. But it should be noted that the Nepal totals do not include the time-consuming process of grinding. This makes the Gurung achievment on their small holdings even more impressive.

The amount of animal labour per area of land under the three main crops is as follows.

TABLE 15:3. Animal power needed per unit of land: Thak and Nepal compared.

Crop	Median ox-days per rop: two Thak informants	Thak median in ox-days per ha.	bullock-days per ha. Nepal small	large
Rice	2.73	53.53	67	27
Maize	2.0	39.22	191	15
Millet	1.07	20.98	-	-

Note: source for Nepalese figures, 'Input-Output Data', table 31.

Again it will be seen that the totals for this area are intermediate on the Nepalese scale. The degree of 'under-employment' of oxen will be considered later.

Finally we roughly calculate the amount of grain produced per man-day of labour in the fields.

TABLE 15:4. Yield of husked grain per man-day of labour: two Thak informants.

Crop	Median estimate of two informants. man-days per muri	kg. per working day
Rice	8	8.6
Maize	10	6.3
Millet	21.8	3.1

The above table includes all the processes up to the moment of cooking. The number of working days needed to produce rice for various households will be analyzed below.

Other crops.

The Gurungs, of course, spend much time on other activities apart from cereal grain production. It is extremely difficult to calculate the amount of time spent on these other occupations, on animal husbandry, water and wood fetching, building, growing vegetables and other subsidiary crops. One author guessed that in a South Indian village "the average farmer does not spend more than 30 labour days per year on his various subsidiary economic activities".[8] This is likely to be too low an estimate in Thak where livestock are important and a considerable amount of time is spent on carrying wood and fodder. The following estimates are bound to be very rough. It is difficult, for example, for anyone to calculate how long they spend on feeding chickens, or fetching water. The problem is further complicated by the fact that, as previously observed, people fit the pace of the work to the amount of time they have in which to do it. Also it is extremely difficult to demarcate work/leisure in such a society, thus a somewhat arbitrary distinction has to be made between necessary and unnecessary labour. A certain amount of the spinning and weaving and basket-work still performed is not necessary economically; but it has useful social functions and occupies the time between more important agricultural work. In this study, which is primarily concerned with the amount of absolutely essential work, such activities will be considered as peripheral. The following account will described the various agricultural processes in some detail since Pignède devoted less attention to minor crops than he did to the cultivation of rice, maize, and millet.

The Gurungs in Thak plant a number of crops in among the rice, or on the embankments of the rice terraces. The principle of these are called masa and masyan, varieties

of lentils. The main processes in their cultivation and the time taken according to the same two informants who gave information about the main cereals is as follows.

TABLE 15:5. Cultivation of masa/masyan (planted & harvested together)

Activity	Gurung term	Inft. 1 (labour to produce 1 muri of crop)	Inft. 2.
Sow	masa riva	(10F)	(10F)
Weed	nor shwiba	(10F)	(10F)
Cut	masa toba	8F	8F
Beat	paré donva	4F	8 M/F
Grind		4F	4 F
	Total	16F	20 M/F

note: figures in brackets need not be counted separately here since the labour expended on these processes has already been counted under rice cultivation - for masa/masyan are weeded at the same time as the rice etc.

Likewise planted in among other crops, usually among the maize, but also among rice, is kwoia or soya beans. Like masa this is of great importance nutritionally, and almost every family which has land harvest one or two muri of the two crops combined. The cultivation of kwoia takes the following time.

TABLE 15:6. Cultivation of kwoia.

Activity	Inft. 1	Inft. 2 (man-days per muri)
Plant	4	3
Weed	(counted in under main cereal)	
Cut/brought to house	4	4
Beaten	8	8
Total	16	15

In among the millet is planted a crop called toro (a type of grain). Only about half the Gurung families in Thak grew this crop, where they did grow it, however, large quantities were planted, often equalling the amount of millet. The cultivation is as follows.

TABLE 15:7. Cultivation of toro. (man-days per muri of produce).

Activity	Inft. 1	Inft.2
Manure	1.3 M/F	1.66 M/F
Plough	0.3 M	0.3 M
Weed/clean ground	1.66 M/F	1.66 M/F
Re-plough	0.66 M	1.66 M
Plant & gently rake		
Weed	1.66 F	1.66 F
Weed & thin	1.66 F	1.66 F
Cut	1 M/F	1.66 F
Bring to house & de-stalk	0.66 F	
Thresh with feet	1 M/F	1.66 F
Grind	2.5 F	2.66 F
total	12.4	14.58

On steep slopes or in high clearings in the forest are grown alu (potatoes) and toyo (yams). Potatoes have been grown by the Gurungs for many years, and in some villages they are an extremely important crop. In Thak, however, less than half the households grew them, and they are still only grown in small quantities. They are regarded as a vegetable, to be eaten as a relish with rice, rather than as a staple. The same is true of yams of which both leaves and roots are eaten. The cultivation of the two crops requires approximately the same time, so that we may look at toyo cultivation as representative of them both.

TABLE 15:8. Cultivation of toyo. (man-days per muri)

Activity	Inft. 1	Inft. 2
Clear undergrowth/hoe burn undergrowth	1.6.	1.3
Plant	0.4	1
Weed	0.8	1
Prune, pluck lower leaves, cut off other leaves.....	0.6	2.25
Dig up, bring to house	1.2	2
Put in baskets/break up	0.2	
Total labour	4.8	7.55

It will be seen that there is a considerable divergence between the two estimates, but whichever one we take this crop is far less labour-intensive than any of those we have hitherto studied.

In a small, fenced-off, vegetable garden near the house most families grow a selection of vegetables, including golbẽda (Nep. tomatoes), shibi (sibi (Nep.) (kidney beans), teme (sweet potatoes), khorsāni (Nep.) (chilli), pasagi (like spinach) and a number of others.

The gardens are cultivated by both men and women, though predominantly by the latter. The work is done in spare hours, especially in the evening, and is neglected when the busy agricultural season is in progress. Informants stated that they would do an hour or two a week for about half the year, which would accumulate to about ten man-days a year. Another four or five man-days were devoted per adult to digging up, fetching and finding wild vegetables in the forest. Children shared in the latter activity, and collected wild fruit.

Animal husbandry.

The majority of livestock are herded by young children up to the age of twelve, or by old men and women over 65. For instance, a group of four or five young children went out day after day with between sixty and one hundred goats, and an old man and his wife lived down in the fields pasturing fifteen or twenty cows and buffaloes. Often, however, there appears to be so little work to do that adult men will go off to the forest to herd only four or five buffaloes; this almost always happens when the adults concerned have no land. Given the low productive capacity of children and the fact that large numbers of animals may be herded by one person, animal husbandry need absorb little labour. If we work on the assumption that one child of twelve could herd 40 goats of all ages, it would appear that, ideally, one goat consumes 1/200 of an adult man-day per day. In practice, however, probably twice as much child labour as this is employed, so that an estimate of 3.65 man-days per goat per year is in order. If we then add in the other tasks connected with livestock keeping - repairing sheds, looking after the newly-born, milking, putting them away at night, it would seem reasonable to suggest that approximately twice this time is invested in each animal, or some 7 man-days per year. If we assume that an old man of 65 plus a young boy of ten can look after eight buffaloes, then each buffalo consumes approximately 0.1 man-days of labour per day, or 36.5 p.a. Oxen and cows need approximately a third of the attention of cows, and thus may be assessed at some 12 man-days p.a. each. Collecting fodder for stalled animals is the most time-consuming of all livestock tasks. Most households usually keep one female buffalo and a calf stalled in the

village, to provide milk and manure. This buffalo and calf seem to consume as much as a girl of about fourteen can cut and bring in a day, as much as would take an adult half a normal working day to cut and fetch. Thus such stalled animals may be rated at 0.5 man-days per day, or 182.5 p.a. The enormous investment of labour in such stalled buffaloes is brought out if we remember that this amount of labour could till over 11 ropanis of rice land, which would feed a normal-sized family.

Firewood.

There are two major methods of collecting firewood. During the months from November until June, people go up to the forest day by day and cut small branches and trees, seldom more than six inches in diameter. This is done by people of almost any age and either sex. During the monsoon, however, the forest abounds with leeches and the wood is wet, also there is more work to be done in the fields. So people lay in a huge store of wood, often between forty and seventy bundles. This is cut by teams of men, who axe down huge trees. They then split up the wood with the axes, leave it to dry for a month or two; then with the assistance of women, they carry it down in teams. We earlier estimated that an average household would use some 120 bundles of wood p.a. An adult man or woman could cut and fetch two such bundles a day, if pressed, though it is normal to spend almost the whole day fetching one such bundle. In theory, therefore, such wood-fetching requires some sixty adult man-days p.a. Fetching bamboos and wood for other domestic purposes, such as making tools or house repairs, consumes another couple of days a year.

House building and path repairs.

One or two new houses are being built every year in Thak. A medium sized house, such as house 13D which was built during our stay in the village, would require between 700 and 1000 man-days of labour, according to two informants. Pignede gave details for the building of a big stone and slate house, where a total of 1170 man-days was required.[9] Thus an average of some 1000 man-days per new house seems reasonable. If we assume an average of 1.5 new houses p.a. in the hundred sample households, then it is easy to see what a very large amount of labour is absorbed by building. This is

especially important since it occurs during the idle winter months. Both men and women carry stone, but the building itself is done by men, particularly by members of the lower castes. It is easy to see how such building is a mechanism whereby the wealth that flows in with Gurung servicemen is spread out among the poorer members of the society.

Those houses with thatched roofs, which comprise a little over half those in the village, need to be re-thatched. There are two kinds of thatching grass; the superior kind (poi-ki, ki = thatch) lasts some six or seven years, the normal kind (solame-ki) has to be changed alternate years. The majority of the houses appear to be thatched with the better quality thatch, so that the average period before re-thatching in the village may be taken as four years. To re-thatch an average sized house requires approximately 12 man-days of labour. A big house needs up to 18, a small one as little as 5. On average, we may say, each thatched house needs some 3 man-days of attention a year, and the animal byres next to them another day per household.

The steep rocky paths also need to be kept in repair and constant landslides have to be remedied. Each household is asked to contribute approximately two labour days (adult) per year for this purpose. In practice there is much shirking of this work, and it is unlikely that more than 100 man-days pla. are spent on the upkeep of communal paths.

Market and politics.

Certain commodities such as kerosene, sugar, cigarettes, iron, etc. have to be fetched from Pokhara. The journey to the market and back with a medium load, a matter of 25 miles and a total up and down climb of 5,000 ft., can be done fairly easily in a day by a Gurung. But people often extend their visit, combining leisure with business. On average, a Gurung family needs three or four loads of commodities a year. The need to collect pensions, to visit the hospital, to register land sales or obtain licences, necessitate further visits. Probably some six man-days per household per year is a reasonable estimate for such necessary activities.

If we except the Pradan Panch, who is often busy, and also the heads of each ward, then there is not a great deal of local government work to be done. Three

members of the Panchayat were from the hundred households; they meet once or twice a month for a few hours. Most of the men and some of the women attend the bi-annual village meeting. One of the lower caste men acts as town cryer and messenger and goes round the village shouting out announcements. Each ward has two meetings a year, each lasting a few hours. The Pradan Panch has to visit Pokhara fairly frequently, and works hard at various jobs such as collecting land tax. He spends up to 50 man-days a year on his job. The three wards heads in our sample probably devote about 5 days a year to government business. Other household heads probably devote two full days a year, at the most, to local government.

Domestic work.

It is naturally impossible, without a most detailed time-and-motion study, to undertake a proper analysis of the amount of time devoted to such tasks as cleaning, cooking, fetching water, minding children. My observations were purely impressionistic. Nor is it easy to speak of averages. For example, all the water in the village has to be fetched from a central pipe, but the time this takes depends very much on its flow. The pipe is often blocked or broken and there is an enormous queue, so that fetching one gowri (large water pot), which would normally take five minutes, can take over an hour. A medium to small household uses approximately two gowris per day, a large household 3-4. If the family's oxen are drinking at the house, the quantities may have to be doubled. Informants thought that, on average, it would take half an hour to fetch and fill a gowri. If we assume an average need for 3 gowris per household per day, and take into consideration that about one third of the water is fetched by children aged ten upwards, an average family would consume 340 man-hours p.a. just fetching water; on a 6-hour day, this would be over 56 man-days p.a. With this amount of labour it would be possible to work over 3 ropanis of rice land.

I was told that it took four hours to cook the morning meal, and three hours for the evening one. This includes all the preparations; grinding the grain, fetching water and so on. From observation of the very careful way in which foodstuffs are prepared, it would seem reasonable to argue that in fact some 1½ hours is

actually spent on cooking and clearing away. This would include the time spent on producing cheese and other milk by-products, but not millet beer. The latter is brewed every few weeks and needs several hours boiling and straining. Another hour a day is spent by women sweeping away dirt, re-plastering the floor (which is done every day with dung and earth) and in general tidying. Excluding child care, which is divided between mothers and the baby's siblings, it would therefore seem that, theoretically, a woman could do all the housework in about half a working day or four hours. She would thus have half the day free in which to fetch wood or fodder, to work in nearby fields, unless she had a young infant to look after. In practice, if there is urgent field-work to be done, women often work a full day in the fields, leaving a child of ten years or older to prepare the evening meal. But in the slack periods of the year, housework and gossip and a little weaving fill up the whole day. About three times a month people spend half a day washing clothes and hair at the village tap.

Crafts.

The main articles made out of bamboo are carrying baskets, rain-shields, drying mats, fencing, and storage containers. The number of articles made per year, and the average length of time spent by two families on each article are as follows:-

TABLE 15:9. Bamboo-work in two Gurung households.

Article	Number made p.a.		Man-days to make one	
	inft.1	inft.2	inft.1	inft.2
Carrying basket	10-12	12	1	0.5
Rain shield	c.14	c.15	2	1
Drying mat	-	4-5	-	2
Fencing(section of)	15	10	0.25	0.25
Storage basket	4	3-4	2	1
Large sitting mat	c.2	c.2	c.1	c.1
Small " "	c.1	c.1	c.1	c.1

Over half the basket-work in inft.1's household was done by an old man of 85; if we take this into consideration, household 1 spent some 32 man-days p.a. on basket-work, household 2 spent some 38 p.a. The latter household was a poor one, where the man definitely made a few extra items, such as rain-shields, for sale. It must be emphasized that such work is used to fill in idle moments, and is almost a form of leisure activity.

It is possible to argue that not all of the basket-work is vitally necessary. This is even more true of the

spinning and weaving. Up to some twenty years ago the Gurungs probably spun and wove most of their everyday clothes; now they may be obtained much more cheaply in Pokhara bazaar. Yet women, especially older ones, continue to spin and weave and this absorbs many hours, though the financial return is very small. The only garment made in Thak nowadays is the renga (man's over-shirt). The processes involved in turning the fibre from a certain tree into a garment which can be sold for a little over 50p. are as follows.

TABLE 15:10. Making a renga.

Process	Gurung term	Man-days per item
Fetching 'nangi' or fibre	nangi shwiva	0.5
Twist and dry	Nangi sauva	0.5
Wash/boil/clean	nangi kruva	0.5
Beat		0.5
Tease out	nangi kéva	2
Spin	nangi pee rava	3
Weave (17 inches per day)		12
Sow into shape		1
	20 adult female days, or 16 man-days	

Thus the returns per day of labour are less than 1 rs. The spinning wheels are taken out after the harvest is ended and much of the work is done round the fire in the evenings. There seems little doubt that if there was a heightened demand for the labour of middle-aged and elderly women, much of the remaining spinning and weaving would disappear.

Lower caste activities.

As with other village crafts, especially weaving, much of the former work of the village Blacksmiths, Tailors and Cobblers is no longer necessary because of the growing market for cheap tools and clothes at Pokhara. In practice, such lower class groups have become landless agricultural labourers working for their Gurung patrons. Each Blacksmith family has between ten and twenty households for which he mends and makes a few agricultural tools; almost all cooking utensils come from Pokhara nowadays. Probably one day per household is the maximum of work a Blacksmith can expect: his yearly fee, partly irrespective of work done, is between three and ten pothi (Nep. = pāthi) of rice. Thus there is probably something like 90 man-days of work to be shared out between the six practising Blacksmith households. The Tailors have even

less caste work to do, they just sew and make a few children's clothes. One of the Gurung households has a sewing machine and others do a little stitching, which further reduces the work available to them. Probably less than 25 man-days of work p.a. is available to all six Tailor households combined. The Cobblers who live just outside the borders of our hundred sample households have no caste work to do at all. One of them has become the best village carpenter, however, and carves doors, makes furniture and similar jobs. He has become comparatively affluent by this means. In conclusion, it is certain that all the caste occupations left in the village provide less work than is needed to fetch fodder for one stalled buffalo.

Clearing new lands and making terraces.

One type of work which, until fairly recently, absorbed a good deal of labour, was clearing new land. For example, a man who had made a rice field measuring approximately 2 ropani, said that it took three men some twelve days to make the terraces. Thus one ropani took some 18 man-days. During the last few years the land available for making into rice terraces has run out. Now there are only a few steep, stony, slopes near to the village where meagre maize fields can still be made. During our two winters in Thak, the time when new land is normally cleared, less than three ropanis of land was opened up by the sample households. On the border of the panchayat to the north, woods were being felled and slopes being terraced by Brahmins, Chetris and some Gurungs; they were outside our sample area, however. Thus, during our stay, less than 25 man-days of labour p.a. were being used to clear land. If we assume that the total of 2461 ropanis of rice and of maize/millet land owned by the sample households have been opened up over the last two hundred years, this would have required approximately some 44298 man-days of labour, or 221.49 p.a. over the two hundred years if the labour had been spread out. House-building could thus be seen as an alternative to clearing new land.

LABOUR SUPPLY AND LABOUR DEMAND.

The following analysis of the amount of labour theoretically needed to mobilize the Gurung economy is based on observation of the hundred sample families already described. It is bound to err in a number of ways, however,

DIAGRAM 15:1. Relative number of man-days spent on various tasks, hundred households.

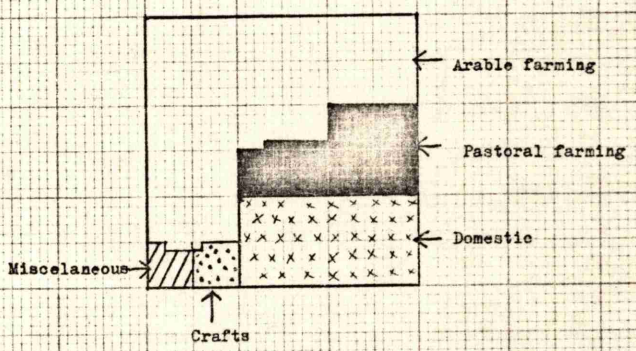


TABLE 15:11. (contd)

Task	Man-days per task	Number of tasks p.a. in 100 fams.	Number of man-days p.a.
Miscellaneous			
House-building, per house	1000	1.5	1500
Visits to Pokhara market etc.	6	80 hses.	480
Path repairs, per household	1	100 hses.	100
Village government, all activities	-		150
total			2230
General total.....			88473

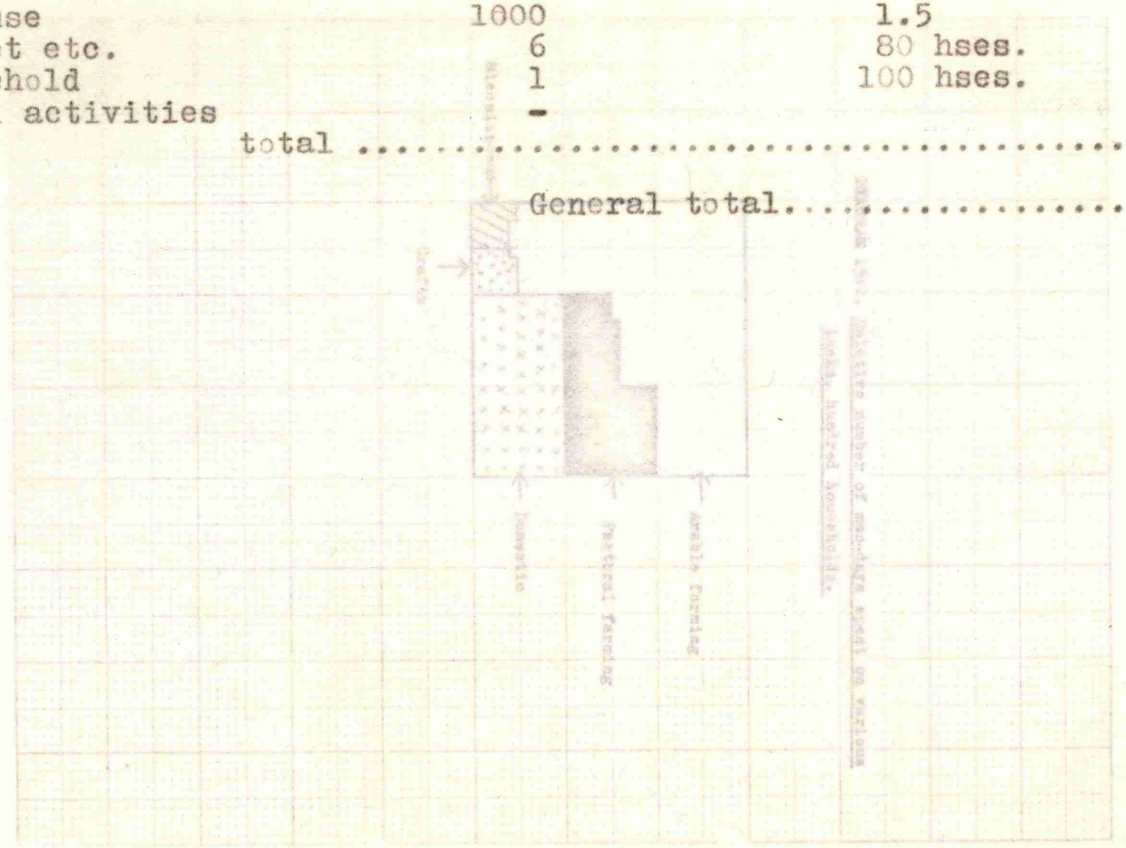


TABLE 15:11. Total man-days spent on various tasks, hundred households.

Task	Man-days per task	Number of tasks p.a. in 100 fams	Number of man-days p.a.
Arable farming			
Growing/processing rice (per rop.)	15.9	1538 rops.	24454
" " maize/millet (per rop.)	20	923 rops.	18460
Masa/masyan per muri produce	18	c.70 muri	1260
Kwoia " " "	15.5	c.70 muri	1085
Toro " " "	13.5	c.180 muri	2430
Toyo " " "	6.5	c.20 muri	130
Alu " " "	6.5.	c.20 muri	130
Gardens & Wild vegetables	15	c.50 persons	750
Clearing/terracing 1 rop. of land	18	1.5 p.a.	27
total			48726
Pastoral farming			
Feeding/tending one adult buffalo	36.5	134	4891
" " " " " (stalled)	182.5	c.33	6022
" " " " ox/cow	12	200	2400
" " " " goat	7	247	1729
total			15042
Domestic			
Cutting/fetching 1 bdle firewood	0.5	12000	6000
Fetching water	0.2	20000	4000
Cooking/cleaning	0.5	20000	10000
total			20000
Crafts etc			
Bamboo work, per household active	35	50	1750
Weaving/Spinning, per renga	20	30	600
Blacksmith's work, per household	1	100	100
Tailor's work, per household	0.25	100	25
total			2475

(P.T.O)

for a number of reasons. To begin with it is often impossible to be sure how long a job ought to take, or would take if there were other pressing demands on labour. Furthermore, many of the totals are based on an extrapolation from the half dozen families where detailed figures on hours spent on gathering firewood, visits to the village tap etc. have been collected. They may not be representative. Finally, as we shall see, much of the 'labour' is fitted in during periods of rest, or two types of work may be done simultaneously.

The units of labour in theory required to perform certain tasks, and the number of such tasks per year, are set out in the following table. The table excludes army service.

for Table 15:11 see across.

Although, of course, precise totals are impossible, there are some interesting relative proportions shown by this table. These are illustrated more clearly by way of a diagram, as across.

for diagram 15:1 see across.

Over half the total effort goes into arable farming and gardening, and nearly another quarter into domestic work. Pastoral activities absorb relatively little labour, nor do village crafts. A very large amount of labour is devoted to fetching wood and water - far more than is devoted to all the subsidiary crops.

Yet we need to be cautious about these totals, for if we check them against the total labour available in the village the two do not seem to fit, at least not absolutely. Some 88,473 man-days are needed, according to the above table; yet, if we subtract men while they are away in the army, then there were only 260 adult-equivalent labourers in the village. They would have had to work 340 days a year (at 6-hours a day) or some 255 days a year if they worked an 8-hour day. From my observation in the field it seems clear to me that adults and children are not nearly as busy as this. There are various ways of reconciling the facts.

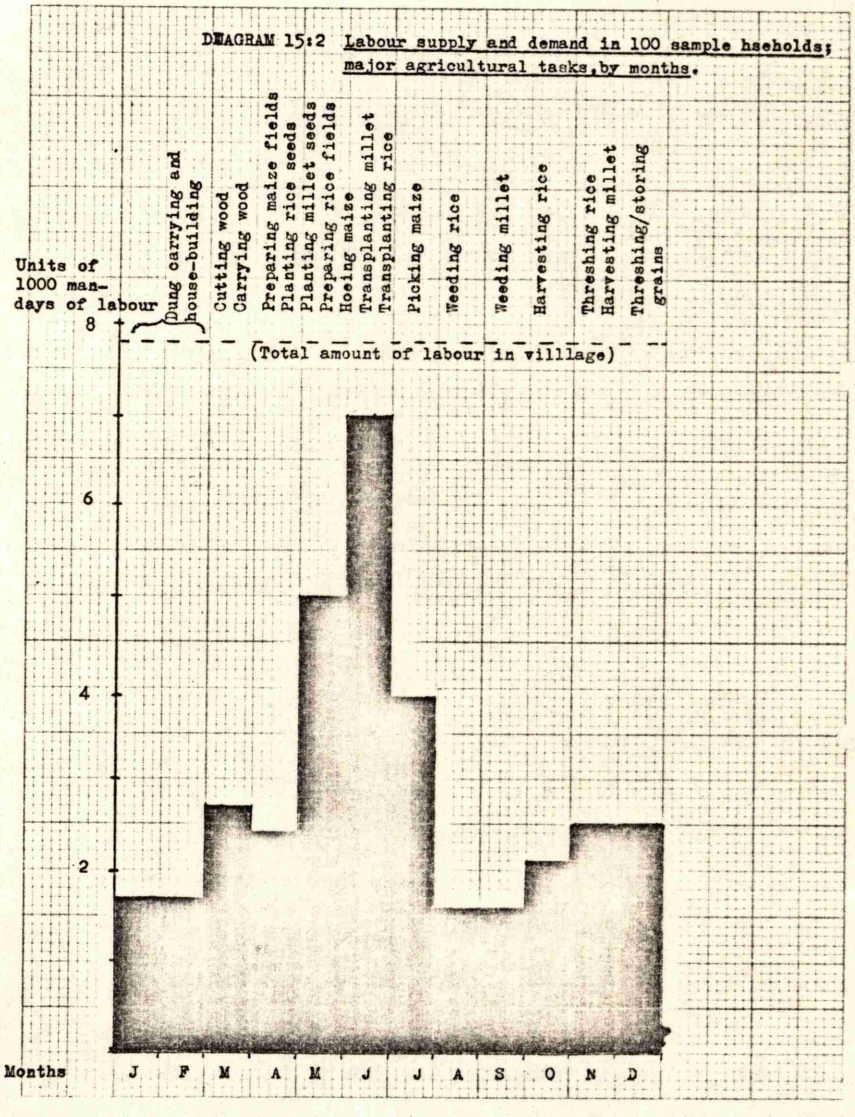
Firstly, we have reckoned the total man-days of labour available on the basis that women only represent 0.8 of a man. For many jobs, however, they are easily equal to a man. This would put up the total of labour available.

Secondly, people often work into the evenings and in leisure moments at lighter jobs. Thus an average woman's day, which consists of doing the cooking and housework, fetching a load of fodder, fetching the water, and doing a little weaving and spinning constitutes, on the above methods of reckoning, 1.25 work days. Often jobs are combined. Thus, those who herd the animals often bring back a load of wood or fodder when they return to the village. Drying grains, which is largely a matter of keeping animals away from the area, can be combined with other domestic work. Many jobs can be fitted into the evening after work - tending the garden, fetching water, grinding grains. A six, or even an eight-hour, work day is too short when it is considered that people rise at about five or six o'clock, and do not sleep until 11 p.m., and have little else to do except work or talk. Thus, much of the non field or livestock work listed in the second half of table 15:11 can be fitted around the essential farming tasks. It is therefore important to determine how much time is necessarily spent on staple crops and animals. In the former case the demands on labour are likely to be seasonal, and it is here, if anywhere, that labour shortages or surpluses will be felt.

It has been suggested in the above table that some 48,726 man-days are required to cultivate the arable crops in the village. This includes the time spent on drying, storing and grinding the cereals. The 260 adult-equivalents would have to work for some 140 days per head to actually grow and harvest these crops, and a further 46 days in order to process them. These figures fit fairly well the findings of a South Indian village, where it was calculated that men would have to work 180 days a year, women 80 days, to cultivate the four major crops.[10] In Thak, if people worked continuously in the fields, the work could be done in just over four months at six hours a day. In actual fact, the agricultural seasons begins with the preparation of the maize fields in early April, and ends towards the end of November, when all the rice has been brought up to the house. Thus people are occupied a little over half the time during the busiest eight months.

Studies have been made by various agricultural economists of the relative degrees of employment per month in various societies.[11] Such an analysis for the Thak sample households can only produce a rough approximation

DIAGRAM 15:2 Labour supply and demand in 100 sample hseholds; major agricultural tasks, by months.



to the situation. The outlines may be seen in the following diagram.

for diagram 15:2 see across.

The diagram only shows specific tasks which occur periodically; other daily jobs, such as grinding grain, fetching water, domestic work, or cutting fodder for the animals are not shown. The diagram also needs to be smoothed out somewhat; for example the first part of September is fairly busy, but there is almost nothing to do in the second half of the month. Nevertheless general impressions are worth noting. In four months, less than a quarter of the potential labour force is employed; only in two months is more than half of it needed. Only in June is almost everyone busy. Thus, even with a large migration of adult males to the army, there is, for nine months, considerable underemployment.

We may wonder how the above strikes members of the culture. I asked one informant to tell me which months were busy, and which were times of leisure. He thought that Dec/Jan to Jan/Feb, March/April, and Sept/Oct. to the end of October were leisure times. This fits the diagram exactly, though the way in which he described the situation made people sound much busier than they are in reality.

In order to examine the situation in more detail, we may turn again to our sample five households. The following table shows the amount of labour-units they had available, and the amount they needed during the busiest agricultural seasons in order to till their holdings.

TABLE 15:12. Demand and supply of labour in five sample households.

Hsehold number & units of labour available, May-July*		Units of labour needed for:- Rice & Maize/millet	Domestic	Surpl. Defic.
hse 3B	315	210	45	+60
hse 19	345	360	45	-60
hse 17	330	570	45	-285
hse 40	345	600	45	-300
hse 150	150	20	30	+100

* This is on the assumption that each individual would only be able to work 25 days a month, needing five or six days rest.

This shows that richer families have considerable labour deficits during these three months, while middling Gurung families almost balance their supplies of labour against their demands. The Blacksmith household had two thirds

of its labour resources free to work on other's land. From the above table it can be confirmed that the amount of land needed to keep an average-sized household busy during the three monsoon months is about 20 ropanis (2.6 acres) of mixed rice and maize/millet land. Yet the unequal distribution of land in the panchayat is to some extent evened out by the demands for labour; the lower castes, especially, benefit from the seasonality of demands. Without the labour shortages of the richer families, they would not be able to earn a share in the harvest.

The families which have a labour surplus or deficit during the three summer months of maximum activity are listed in appendix two. The results, which are necessarily somewhat artificial, may be summarised as follows.

TABLE 15:12B. Surpluses and deficit of labour, May-July.

	At present (no. households)	If all absent men returned to village
Surplus	29	32
Balanced	9	10
Deficit	55	51
Unknown	7	7
	100	100

It will be seen that there are, at present, theoretically some 29 households with a definite labour surplus, even in the busiest three months. These include all the Blacksmith and Tailor households and a few Gurung ones. The Tailors, for example, may be calculated to have about 14440 surplus man-days of labour to offer to other households in the village during these three months. If those now away in the army were forced to return to the village for some reason the situation would not, at first sight, change greatly. There would then be 51 instead of 55 deficit households; not a great difference. But many of the households which still had a shortage would now only need small quantities of hired labour, instead of considerable amounts as at present. It seems likely that when the population has increased by 50%, which it will do in the next 20 years or less, the majority of the households will have labour surpluses.

The actual work pattern of three households.

The previous general description needs to be supplemented by a more detailed analysis of what people actually did work at. I asked two young informants to report each

day what each member of their household had done that day. Unfortunately, one of the informants left for the army after three months, so I chose another informant to report on another household for the rest of our stay in the village. Thus the periods for which I have work reports are as follows:-

house 12A: 5th April - 6th July.
House 17: 6th April - 8th November.
house 3B: 8th July - 31st January.

Household 12A consisted of almost the poorest Gurung family in the sample; the house was rented and the father had recently come to this, his wife's natal, village. He had no maize or rice land of his own. But he had been able to obtain the lease of rice land producing some 26 muri of (unhusked) grain (from 20 ropanis of land) and 6 muri of millet (approx. 3 ropanis). He had to give half the produce on each type of land to the owner. He also grew a considerable amount of toyo, and some potatoes, masa and kwoia. His only livestock consisted of two goats and a few hens. He had five surviving children at home, three of them aged 14 or over. The family had 3.8 production units. Thus, at 280 man-days per production unit, he had 1064 man-days of labour available. The approximate amount of labour needed to run the holding was thus:-

	man-days
26 muri of rice, at 12 man-days per muri =	312
6 muri of millet, at 22 man-days per muri =	132
other crops.....	c.50
livestock	c.16
firewood	c.50
water-fetching and housekeeping	c.240
total	800

In fact, as we have earlier argued, if there had been an urgent need for labour, many of the above tasks could have been made shorter. The work could easily have been compressed into some 600-man-days - thus leaving some 464 free man-days. In order to find out what actually happens from month to month, we may study the reported activity of each member of the household.

TABLE 15:13. Work undertaken in hsehold 12A, 5th April-3rd July.*

Person-age		Field labour	Secondary work½	Days spent on various activities. Pokhara	Rest	Ritual	Sick	Unknown
Father	55	45	15	5	2	1	0	9
Mother	49	42	22	4	1	2	1	5
Son	18	44	14	0	11	4	1	3
Da.	16	29	24	0	3	12$	0	9
Da	14	3	58	0	2	1	0	13
Son	9	0	26	0	44@	0	0	7
Da.	7	0	0	0	77	0	0	0
Total		160	159	9	140	20	2	46

Notes: I was away from the village 14-26th May, and did not record activities then. ½ = secondary work includes domestic work, herding animals etc. $ = this girl was one of the two who performed the ritual gar sheba dance. @ = approximately half this time was spent at school.

The category 'secondary work' helps to explain how, despite labour surpluses, this family managed to remain fairly busy. Often the herding of animals, wood-fetching etc. only took a couple of hours and the person concerned would spend the rest of the day in leisure. In the above table, however, this would be shown as an active day. The way this worked is well demonstrated by the family. They only had two goats, yet a boy of nine and a girl of fourteen spent respectively 26 and 58 days herding goats, and, occasionally, other people's buffaloes. Otherwise, neither did hardly anything productive, while the little girl of 7 did no work. Thus the children aged 14 or under, who would be assessed as a total 0.8 of a production unit, contributed very little to the household labour supply, even in the three busiest months.

Father, mother and first son each worked an almost equal amount in the fields - each of them working about 60% of the available days at such work. Yet even in the busiest month of the agricultural year, June, the four eldest members of the family, who between them could have done at least 110 days in the fields, only did spend 74 days on such work. None of them spent more than 20 days in that month on field-work. Even in that busiest of all months the head of the household could afford to go away to Pokhara for four days, partly on business admittedly. He spent another four days sitting making rain-shields - a job which could easily have been done at another time.

In April , also a busy month, the eldest daughter spent eight days dancing in the garda sheba or ceremonial dance. In view of this, it is not surprising that the eldest son asked if we would employ him, and that he was finally sent off by his family to seek a job in the Indian army. He set off on July 4th, even though July is one of the busiest agricultural months.

After the above informant had left I started to record details of household 3B. In this household there was also a labour surplus, and again the eldest son left for the army after three months. Fortunately my informant was a younger son. The period studied includes the time of weeding and harvesting. The days spent on various activities by each member of the family is shown in the following table.

TABLE 15:14. Work undertaken in hsehold 3B, July 9th 1969 - Jan.7 1970.

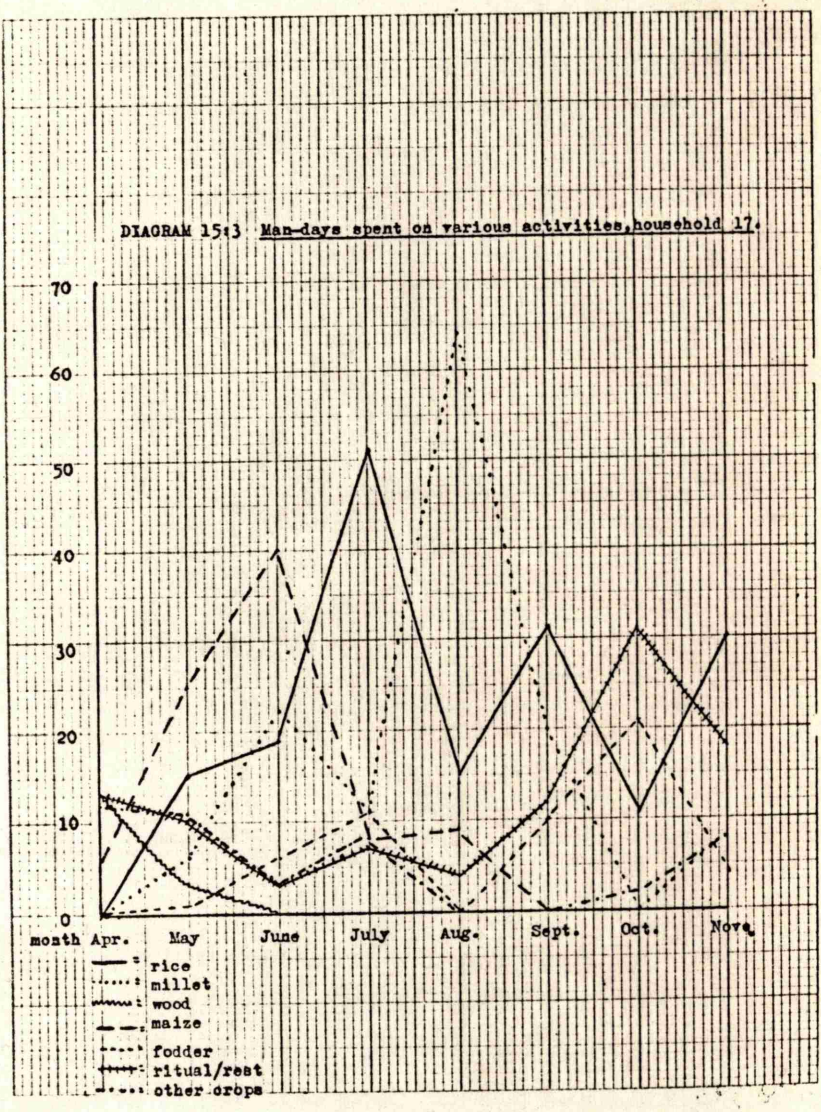
Days spent on various activities.

Persons	Age	field Labour	Secondary work	Pokhara	Rest	Ritual	Sick	un-known
Father	59	65	57	17	25	9	5	6
Mother	42	66	92	2	13	7	0	4
(Son	21	34	45(38**)	2	7	0	1	3)
Da.	18	102	69	0	6	4	0	3
Son	15	97	123(26**)	10	12	4	16	4
(Da.	12	....only a little baby-minding and buffalo herding),						
total		364	386	31	63	24	22	20

Notes: ** = the figures in brackets are the number of days spent on schoolmastering, classified as a 'secondary' activity. The eldest son was only present for half the total period of 184 days, since he left to go to the army.

Out of a total of 910 days in which the activities are known, only 364 were spent on work in the fields. The household in question had only a medium to small sized holding of 8 ropanis of maize/millet land and 6 ropanis of rice. This could be expected to provide them with some 232 days of work in all the year. But they also found an outlet for their labour in neighbouring households, for instance house 3A where the brother of the above household head was away in the army. It will be seen from the above table that the father and mother, the latter a good deal younger than the former, shared field work fairly equally, but the main burden fell on their unmarried younger daughter who spent a considerable amount of time going out to work for other, richer, families in joint working parties. The father spent 17 days in Pokhara, and rested for 25 days. His

DIAGRAM 15:3 Man-days spent on various activities, household 17.



daughter never went to Pokhara and only rested for 6 days. Sickness was of minor importance in reducing labour. The only one at all seriously impeded was the younger son, and his ailments were comparatively mild and would have been forgotten if there had been important work to do. Much of the 'secondary work' consisted of feeding the family buffalo and fetching wood. As in the village as a whole, work in this family varied very considerably from month to month. Thus, during the last 24 days of July when rice seedlings are transplanted, the family did 65 days of labour in the fields, while during the last 24 days of December they did none. The type and amount of work done in each month is best illustrated in the case of the third sample household.

As noted earlier, household 17 is one of the richest in the village and has a considerable labour shortage. It overcomes this by hiring the labour of poorer Gurungs and service caste families. The amount and type of work done in each month in this family are shown diagramatically as follows.

for diagram 15:3 see across.

The diagram shows that the peak of maize work, as actually carried out, occurred in June, rice in July, and millet in August - though the diagram may be a little unrepresentative since the monsoon rains were late in 1969. The diagram is also biased by the death of the grandfather in October, which added to the ritual necessary in that month. The greatest amount of field-work in any one month occurred in August, with 88 days. In October only 13 days of field-work were noted.

It has been a central theme of this analysis that the exodus of adult males to the army, rather than provoking a labour shortage, helps to ease an already considerable problem of under-employment. This is well illustrated by the activities of soldiers on leave, for instance the young soldier in this household. Although soldiers on leave are specifically ordered to take a rest and not to work too hard, it seems likely that if there was an urgent need for their labour, they would work. They have a stake in the farms at home, and would be likely to wish to make them prosper. But observation of the several army men who were on leave during our stay in Thak showed that they did practically no work during their months in the village, preferring to spend the time sleeping, lazing in the sun,

or wandering to neighbouring villages. The household above provides a good example. As we have noted, it had a large area of land and a very considerable shortage of labour. In 1969, during the busiest period of the year (April to August) a young man fr m the British army returned on leave. He was at the peak of his strength at 22, and would soon be inheriting half the estate along with his brother. He was prepared to work if there was a real need; thus, when rice was being transplanted he went down to the fields with the rest of the family and worked for 21 days. But this was practically all the work he did. His activities in each month are summarized in the following table.

TABLE 15:15. Activities of younger son of hsehold 17, Apr. 6-23 August.

	April	May	June	July	Aug.	total
Leisure	24	22	20	16	21	103
Field-work	0	5	9	15	2	31
Secondary	0	3	0	0	0	3
Not known	1	1	1	0	0	3

Thus in April he did not spend a single day in productive work, and very little in May or August. Of the 137 days for which there are records, he only spent 31 working in the fields. The rest, excluding three days making baskets, he spent listening to his transistor, gambling, going to other villages. That the second largest landowners in Thak could afford to waste 103 man-days of adult male labour in the busiest months of the year is a revealing fact. It is also revealing that this young Gurung was happy to sit and do nothing for day after day while his family worked hard round him. His status as a returned service-man, and his grandfather's favouritism were a sufficient protection against work demands.

It is impossible to predict how fast unemployment will grow in the future. On the one hand continued population growth, and the cutting back of the British Gurkhas, could mean a doubling of the man/work-available ratio in the next thirty years. On the other, it is possible that cultivation may be intensified somewhat. Wheat is beginning to be grown in winter in some of the Thak fields, and more potatoes could be grown. Above all, the wider use of fertilizers and improved-yield seeds could have a significant effect. If we make the most generous estimates possible, then the use of fertilizers and better seeds might treble present crop yields. This would add a consid-

erable amount of labour. For instance, it is possible to calculate that instead of an average 16 man-days per ropani of land being needed to grow and process grains, up to 28 man-days might be needed. This optimistic estimate would allow for up to 60% population growth before unemployment grew, assuming that all other resources such as livestock and the forest could also expand. In fact, even with outstanding success in introducing new hybrid grains, it seems likely that all gains in that field will be swallowed up in 15 years population growth. If more intensive farming is not rapidly introduced, the present barely-concealed underemployment will turn into very visible and damaging unemployment within the next ten to twenty years.

CHAPTER 15. NOTES.

1. Nepal Govt., Physical Input-Output in Agriculture, passim.
2. Shreshta, Nepal Economy, p.63; the whole chapter is devoted to this problem.
3. McDougall, Village Economy, passim and esp. pp.64ff.
4. Clark, Subsistence Agriculture, p.143.
5. Gurungs, p.126; though Pignède does recognise that poorer families do not have enough land to work (p.125).
6. Morris, Winter in Nepal, p.135.
7. Gurungs, ~~p.84~~ ch.3.
8. Epstein, Economic and Social Change, p.78.
9. Gurungs, p.84.
10. Epstein, Economic and Social Change, p.78.
11. A useful summary of figures is given in Clark, Subsistence Agriculture, pp.146-156; Wye College Report, 'Crop Production Report' gives comparative figures for another part of Nepal.

CHAPTER SIXTEEN. SOURCES OF INCOME.

The Gurung economy has two major, over-lapping, spheres. One consists of the basic foodstuffs which are produced within the village, and distributed without the use of cash. The other is a cash sector in which the men migrate to work, mainly in the army, and their pay and pensions are used to buy gold, clothing, and certain luxuries and necessities such as salt, cooking oil, cigarettes and sugar. The degree to which the village we studied was dependent on the inflow of foreign capital, and the ways in which such capital was distributed will be among the topics considered in this chapter. The following analysis will also make it possible to compare the domestic economy of the Gurungs with that of other Himalayan groups. Twenty years or more ago it would have been very difficult to compare these two levels since cash was hardly used within the village and it would thus have been almost impossible to calculate the value of commodities in the subsistence sector. Nowadays certain foodstuffs, especially meat, rice and oil, are frequently purchased and assessments are easier. But there are still large areas where broad guesswork is needed, for instance in assessing family income from communally owned resources such as the forest. It should also be noted that the following account is a static analysis; it does not deal with the considerable fluctuations from year to year caused by good and bad harvests. Nor does it analyze the way in which household economies vary over the life cycle, domestic income increasing and decreasing with variations in the age and sex structure of the household.

The main types of income are illustrated if we look in detail at three households, rich, medium and poor. The total annual income from various sources at the time of our visit in these households was as follows:

TABLE 16:1. The income of three households, 1969 (rs.p.a.)

Source of income	household number 17	3B	57
Army - pay and keep	5425	-	-
pension	-	420	-
Schoolmaster	-	1080	-
Labour - building/agricult.	-	200	1110
- crafts	30	20	-
- caste work	-	-	550
Farming - meat/milk/eggs	3000	1326	520
- grains/vegetables	10300	3850	150
Forest products	700	565	260
Total	19455	7461	2590
Total of production units....	5.4	4.2	2.0

Some explanation of the way in which the totals were calculated is necessary. The first category, army service, is fairly obvious. Only one man in the three households was in the army. His pay and keep was worth more than twice the total income of household 57, though he was only a young man of 22 in the lowest ranks of the British army. The schoolmaster's wages as 3rd master in the village primary school (90 rs. per month) are a little less than the Blacksmith gets from working as a labourer and ploughman. Household 3B earns a little from hiring out labour, but in the case of the Blacksmith household it is this occupation, and the hereditary caste payments, that constitute the major sources of income. I asked the head of household 57 to outline what work he did in a year and the rewards he received for such work; the results are as follows.

TABLE 16:2. Sources of income in a Blacksmith household.

Nature of work	days employed p.a.	cash equivt. of reward p.a.	medium of payment
Work party, agricultural	c.15	105	food/cash(½)
Work party, housebuilding	c.30	210	" "
Wife, casual work	c.5	15	food
Ploughman (for hse.32)	c.75	780	food/rice
Blacksmith's work	c.30	550	rice
Total	c.155	1660	

It will be seen that the returns for working as a ploughman are about 10 rs. per day - which is about the same as that for a man working on his own land on other jobs. The rewards for Blacksmith's work are far higher, almost double in fact. It should be stressed that the above are only very approximate totals, and the number of days worked is especially uncertain. But if the returns on various types of labour are correct, the explanation appears fairly simple. Until a few years ago each Blacksmith and Tailor did a considerable amount of work for his client family and a fixed amount of grain, varying between 3-10 pāthi (worth 20-70 rs. now) was paid for this, mostly after the harvest. This traditional amount is still paid, all those I asked saying that it is normal to give about 5 pāthi of rice to the family Tailor and the same amount to the Blacksmith. But the amount of work done, especially by Tailors, has decreased rapidly with the increased purchase of ready-made clothes and hardware at Pokhara. How long the Gurungs will be prepared to pay the old rates it is difficult to say. Probably as long as they have adequate

supplies of grain for themselves, plus a small surplus for the service castes. Thus, when cereal shortages begin to occur, the service castes will soon lose up to ¼ of their total income.

The calculation of the next category of items is more complicated since very little, if any, of such sources are turned into cash. Where necessary the calculation has been made on the basis of what the person would have had to pay to obtain such goods within the village. Thus, for example, we were informed that the right price for a bundle of firewood was about 3 rs., though in Pokhara it might cost up to double that sum. It is particularly difficult to calculate the value of foodstuffs obtained from communal land - fruit, wild vegetables, fish, wild animals. It is possible that this has been somewhat undervalued. The very considerable importance of forest land as a source of fodder is not included under 'forest products' since income from such fodder, when processed through buffaloes, is included in the value of milk/meat and the grains which are so heavily dependent on manure.

A number of points in table 16:1 are worth stressing. The ratio of income from arable as opposed to pastoral farming in the two Gurung families is 3:1. This probably reflects fairly accurately the degree to which the Gurung economy has become a settled cereal-producing one, having evolved from a predominantly nomadic and herding pattern. It will be seen that the difference between the earning power of a rich Gurung and that of a medium-poor Gurung is considerable, while that between the poorer Gurung and Blacksmith family is not so great. The actual gap is not as great as suggested in the table since household 17 has far greater expenses, especially that of hired labour. Finally, it should be noted that no allowance has been made in the calculations above for labour hired out by a household when an equal amount of labour from other households has had to be used on other occasions, in other words the exchange of labour common to Gurung society.

Now that we have some idea of the range of incomes of specific households we may turn to the income of the hundred households collectively. Although the calculations again require a considerable amount of guess-work, I believe that the over-all proportions are of the right order.

TABLE 16:3. Total income of 100 households, Thak 1969

Nature of resource **		rs. p.a.
Army: pay and keep,	9 Br.army, 34 Ind.army	189,960
pension	28 pensioners,	11,760
Schoolmasters	3 secondary teachers	3,960
@Agricultural:	meat/milk/eggs	111,000
	grains/vegetables	371,840
Forest:	wood & food	50,000
		738,520

Notes: ** = When looking at single households, as in table 16:1, it was relevant to assess wage labour within the village, paid for by other villagers. But now that we are dealing with total sources of income for the 100 households, only sales of labour/craft products to persons outside the village need to be included. Such sales do not amount to more than a couple of hundred rs.p.a. and, since they are balanced by similar purchases of such commodities by Thak villagers in nearby areas, they have been omitted here.
@ The totals here were worked out on the basis of actual crops grown; they agree fairly well with the sample households in table 16:1.

It should be noted that the pay to soldiers and civilians abroad, included under 'army' in the above table, includes their food and clothing, estimated to be worth 5rs. per person per day. Such migrant labourers also spend some of their pay while abroad. Thus the above table does not represent the actual amount of money which flows into the village, but rather, total income.

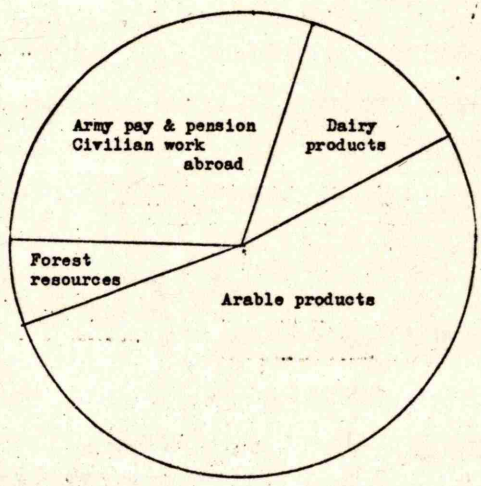
Those now in army service, or working as civilians in India and Nepal, are as follows.

TABLE 16:4. Those working abroad in 100 households, 1969.

Rank	Number in...Indian	British....army
Rifleman	18	5
Corporal-lance	2	1
-full	3	1
Sargeant	1	2
Sgt.Major	1	0
Major	1	-
Civilian (watchman/police)	7	-
" - Nepal	1	

Thus we see that there are currently nine persons in the British army, 26 in the Indian, and eight civilians. In keep and pay the British soldiers probably receive in the region of 59,400 rs. p.a.,; those in India, both army or civilians with para-military jobs, some 130,560 rs. Thus, of a total 294 production units in the village, the 43 units away from the village earn approximately 1/4 of the total income of the 100 households. This indicates how important migrant labour is.

DIAGRAM 16:1. Relative income from various major sources in 100 sample households.



Over one quarter of the sample households were receiving an army pension in 1969. The grades of pension are indicated in the following table.

TABLE 16:5. Pensions in 100 sample households.

Rank	Number of pensioners - British	Indian
Rifleman	4	10
Corporal - lance	2	
- full	1	
Sargeant	4	1
Major	-	1
Lt.	2	3

The actual pensions received by members of each rank may vary considerably, depending on injuries, service record and other factors. Thus one retired Lt. from the British army claimed to be getting only 25 rs. per month, while another, newly retired, was receiving six times that amount. Throughout the sample, the average (mean) pension is approximately 35 rs. per month.

The income from dairy and cereal products as stated in table 16:3 is again based on guesswork. In the case of meat/milk, the amount per household was estimated by comparing the three sample households to the figures for total livestock ownership in the village and multiplying by the relevant amount. In the case of grains and vegetables the calculation was made by working out the total production of grains in an average year, and then multiplying this by the cost of such grains if bought in the village in 1969. It will again be seen that dairy products are in the ratio of under 1:3 when compared to cereals. The proportion coming from the various major sources is most easily visualized by the help of a diagram, as follows.

for diagram 16:1, see across.

It will be seen that almost exactly half comes from cereals, and the other half from labour services abroad and pastoral/forest produce. The diagram does not, however, do full justice to the crucial importance in the Gurung economy of the cash flowing from migrant labour. This can only be estimated when we have some idea of the proportion of a serviceman's wages which reaches the village.

Servicemen were not always willing to disclose how much money they brought back when returning on leave, but it is nevertheless possible to make fairly accurate estimates of how much is saved and brought home. The amount will of course vary with rank and accumulative

energies of the individual concerned. Colonel Langland, who has worked for many years as a recruiting officer with the Gurkhas, thought that a rifleman from Malaya would take home about 3,000 rs. after three years service. Men of higher rank would take around 5,000 rs. Informants in the village, and the actual sums brought home by two young riflemen during our stay, fitted with this estimate. About two-thirds of the amount brought back is usually in cash, the rest is in gold, clothes, radios, watches, with gold as the predominant item. It seems probable that higher rank officers tend to accumulate cash and to bring it back at the end of their service career. Thus an outstandingly ambitious Gurung who reached the rank of lieutenant in the British army was said to have brought back 50,000 rs. and 20 tolas of gold (worth about 200 rs. per tola). He also had to employ 24 porters to carry his other possessions up to the village; these possessions included chairs, hurricane lamps, a gramaphone, shotgun, and a large sewing machine. In the Indian army, or as a civilian, more modest sums may be expected; thus one man who had served as a rifleman in the Indian army and who hoped to be re-recruited said that 3-400 rs. in money, and 4-5 tolas of low-quality gold (at about 130 rs. per tola) plus a radio and some clothing for the women was normal. A recently returned corporal from the Indian army brought in between two and three thousand rupees in money and gold during our stay. If we include clothing and utilitarian goods, but exclude non-essential goods such as radios and watches, it would seem reasonable to adopt the following calculation of the amount of income flowing into the village from abroad.

TABLE 16:6. Flow of cash and utility goods from migrant labourers.

	Avge.saved per rifleman*	No.of riflemen	Avge.saved per officer	Nos. officers	Total saved p.a.
British army	3000	5	5000	4	11666
Indian army	1000	18	2000	8	11333
Indian/ Civilian	1000	8			2666
					25665

* = the totals of rs., except in the last column, are for three-year periods, the normal length of absence on one term of duty.

It will be seen that some 25,000 rs. or a little over is calculated to flow back into the village p.a., or a mean average of 250 rs. per household. If we subtract the

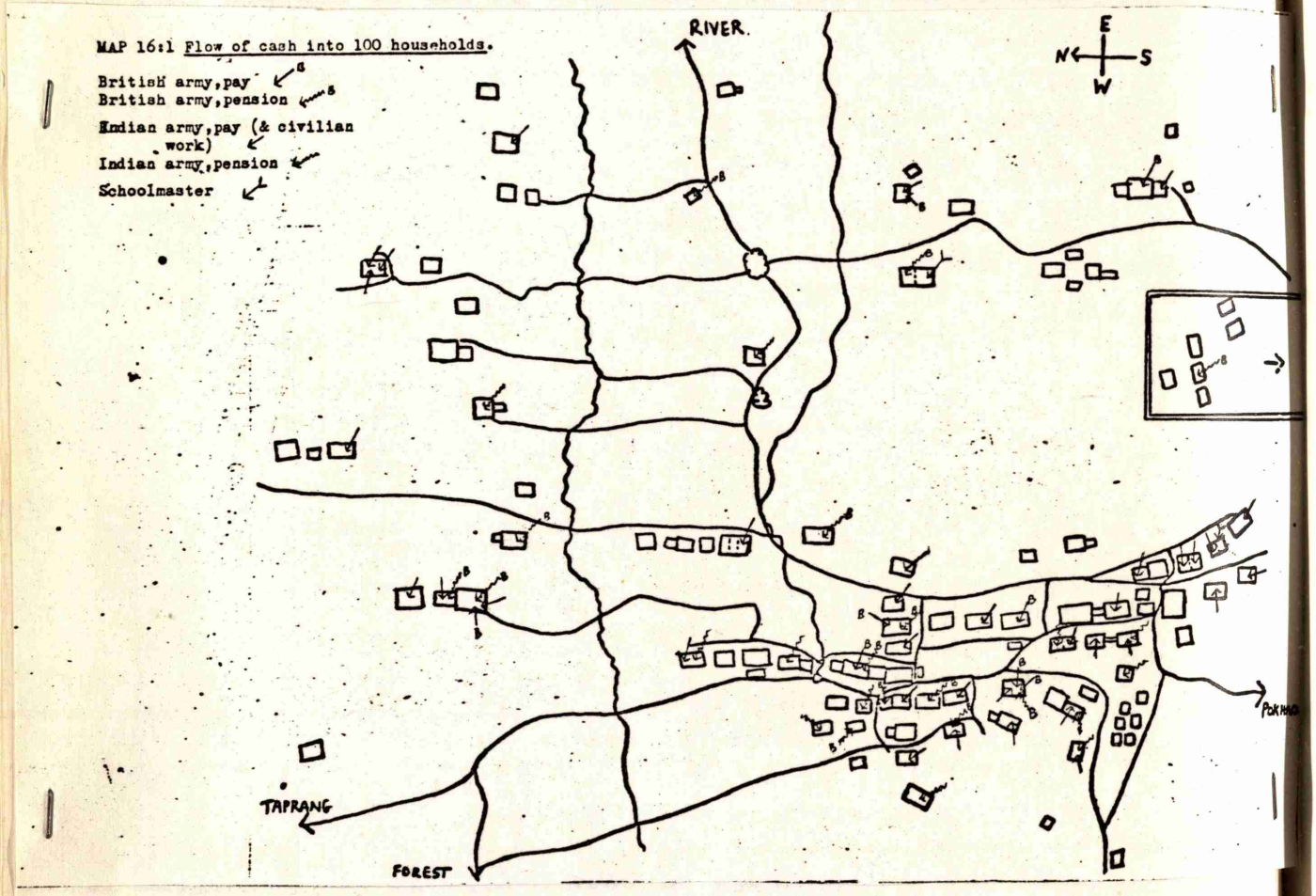
estimated cost of food and clothing for those abroad (some 78,000 rs. p.a.), then we are left with the fact that of their total pay of 111,485 p.a., those abroad save and bring back a little under a quarter. If we include the often expensive luxury items and the huge import duties paid on these, it would seem reasonable to estimate that soldiers abroad are saving approximately one third of their pay each month, or investing such pay in goods that will be taken home. This appears a low rate of saving if we compare it to the situation described for the Limbu of east Nepal, of whom it has been written that "it can be assumed that about 60% of a soldier's pay eventually reaches the Indreni settlements".[1] The Limbu are often trying to buy back mortgaged land and are thus possibly more desperate to save. As will be shown, the cash sent back from the army is used primarily to buy land from other Gurungs, and to purchase goods at Pokhara. It could be argued that the village only needs a certain inflow of cash, and that men in the army are not expected to save more than that.

Finally we need to calculate the total cash income of the hundred sample households, however rough such a calculation must be.

TABLE 16:7. Total cash income of 100 sample households.

Source	total p.a. from
From army wages	25,665
From pensions	11,760
Schoolmasters	3,960
Sale of craft products	200
Sale of agricultural products	4,500
	46,085

Thus the mean average of cash available per household is 460 rs. p.a., the bulk of which comes from army service. Practically no basketware or woven objects are sold outside the village nowadays; unlike Siklis, thick sheep's-wool blankets are not manufactured. A few carrying baskets and woven men's garments are sold and 200 rs. per year is an outside estimate of what is earned from 'cottage industries'. Nor is there much sale of surplus agricultural crops. I was told that a large amount of cereals were sold from the neighbouring, richer, village of Taprang (predominantly populated by Brahmins) and that even within Thak the Brahmins were able to live far more economically and to sell their surpluses. But in the sample hundred households


MAP 16:1 Flow of cash into 100 households.
British army, pay
British army, pension
Indian army, pay (& civilian work)
Indian army, pension
Schoolmaster
RIVER.
E
N
S
W
TAPRANG
FOREST

there was little surplus for sale. I was informed that in a good year perhaps 30-35 muri of rice, and about 10 muri of other grains, would be sold. During the year we lived in the village there were shortages due to hail the previous year and only some four or five muri of rice and the same quantity of kwoia had been sold to Pokhara. For the purpose of the above table, taking into consideration the frequency of poor harvests, I have reckoned that some 25 muri of rice and ten muri of other grains are sold annually. This would produce the sum indicated in the table. It will be seen that less than 10% of the total cash income comes from the sale of village products. For the cash to buy many of the necessities of life, therefore, these families are over 80% dependent on cash coming from outside Nepal. Nor are improvements forseeable. There is now little land left for expansion and all attempts at intensifying agriculture will meet very great problems.

Elsewhere we analyse the distribution of land ownership,[2] but to gain a total picture of relative incomes we need also to know which households receive cash from outside the village. Families with little land may still be prosperous if they have a son in the army. Bearing in mind that returns from service in the British army are considerably greater than other types of service, we may now look pictorially at the points at which cash flows into the village.

for map 16:1 see across.

It will be seen from the map that a majority (54/100) of the households have some source of extra-village income. A considerable number have several external sources. But only one lower caste household, a Tailor with a son in civilian work in India, has such an external income. Of the 77 Gurung households, some 50 have money flowing in from outside. One thing that emerges strikingly from the map is that it is the medium-poor Gurung households, particularly those living in the areas demarcated off, who have most access to army funds. These are predominantly sorajat households with insufficient lands on which to live in the village. The flow of cash from outside helps to balance them against the wealthier households which have had less incentive to send their sons away from the village. This predominance of sorajats in army service is shown both in the higher proportion (23/24) which have external

income (as opposed to 44/53 carjat households), and also in the marked preference shown by the sorajat for the better paid but more demanding life of the British army. The figures are as follows:

TABLE 16:8. Jat recruitment into the British/Indian army.

Jat	No.receiving pay in British	Indian	Receiving pension British	Indian
Carjat	4	22	6	12
Sorajat	4	9	8	2

Thus the sorajat actually predominate as recipients of pay and pensions from the British army, while heavily outnumbered by the numerically superior carjat in the Indian army. The effects of this were recognized in the village; the upwardly mobile families, buying up land and building houses, or storing away wealth, were said to be households 15,24,32. All belonged to the same lineage of the kebje and all had close ties with the British army.

The wealth that flows in through the 54 households with outside connections is distributed along various channels throughout the community, benefiting Tailors and Blacksmiths as well as the recipient Gurung households. This process will be analysed after considering expenditure.

CHAPTER 16. NOTES.

1. Caplan, Land and Social Change, p.117.
2. See pp. 376ff. below.

CHAPTER SEVENTEEN. CONSUMPTION AND EXPENDITURE.

A. Theoretical framework; the 'consumption unit'.

The need to construct 'consumption units' which enable one to take into account age and sex variations when comparing household budgets has been suggested by T. Scarlett Epstein.[1] Dr. Epstein points out that Bailey considered "all persons of fifteen years and over as full consumers, those from ten to fourteen as half-consumers, those from two to nine as quarter-consumers". He ignored children under two years of age. Bailey's estimate is said to fit the situation in East Nepal, among the Limbus.[2] Dr. Epstein herself "accepted Lusk's coefficient" as follows:

Household members	Cons'n unit
Males above 14 years	1.00
Females above 14 years	0.83
Males and Females of 10 years but below 14 years	0.83
Males and Females of 6 years but below 10 years	0.70
Males and Females of 1 year but below 6 years	0.50
Males and Females of below 1 year	Nil

One other study may be cited, that undertaken in Egypt and reported on by Clark, where children under 13 were reckoned as 0.6 units; males 13-50 as 1.0 and then, over 50, as 0.8; females aged 13-50 as 0.7, then as 0.3.[3] Clearly the situation will vary from society to society and it will be worth seeing how the above scales fit with the Gurung situation.

Two methods of analyzing the situation among the Gurungs were attempted. The first was to ask two informants to estimate in detail how much food both males and females of various ages would consume per day. Put onto a ten-point scale their answers were as follows.

TABLE 17:1. Estimated consumption of food per day.

Age	Male		Female	
	Inft.A	Inft. B	Inft.A	Inft.B
3 months	none	none	SAME AS	SAME
6 months	1	none	MALES	AS
9 months	1¼	1¼	UNTIL	MALES
1 year	1½	2	AGE 65,	UNTIL
15 months	-	2⅝	WHEN	AGE 15
2 years	2½	4	THEY	
3 years	3	4	BEGIN	
4 years	3½	4	TO	
5 years	4	4	CONSUME	
6 years	-	4	A LITTLE	
8 years	4½	5⅜	LESS	
11 years	5	5⅝		
13 years	5	6		
15 years	5⅞	6⅝		

(Table 17:1 continued)

Age	Male		Female	
	Inft.A	Inft.B	Inft.A	Inft.B
17 years	7½	7⅝		6
20 years	10	8		6⅝
25 years	10	10		7
30 years	10	10		7
40 years	10	10		7
50 years	10	9⅜		7
60 years	10	9⅝		6⅝
65 years	8	8		6
70 years	6	7⅝		6
80 years	6	6⅝		5⅜

It will be seen that men and women are believed by both informants to consume equally until the age of fifteen, and then one informant states that women never reach a higher rate than 75% of male consumption. The peak period for men is between 20-60 according to informant A, and between 25-50 according to informant B. We may check the above observations against the actual food consumption as noted when I undertook a dietary survey of two Gurung households. During this the quantities eaten by various members of the household during a week were noted. The results are shown in the following table. The middle-aged father in family 2 is given the value '10'.

TABLE 17:2. Relative quantity actually consumed; two Gurung households, a week in 1969.

Age(years)	Male		Female	
	1	2	1	2
1½				2
4			2	
5				4
11	5			
12		[illegible]	4½	
13		6		
16	6			
18			9	
19				8½
21	10			
22		10		
26				8½
35				7½
36		10		
42			9	
59	10			
66		10		

These figures lend support to the estimates in table 17:1, for they are often identical. They confirm that women consume a little less than men when adult, and that full consumption begins for both sexes in the early 20's. We may compare the above estimates to those mentioned earlier by applying the various scales to our three sample households

TABLE 17:5. Diet in 3 Thak households.

sex/age	DAY 1 August: Rice	Toro	Meat	Veg.	Milk	Etc.	DAY 2 August: Rice	Toro	Meat	Veg.	Milk	Etc.	DAY 3 August: Rice	Maize	Meat	Veg.	Milk	Etc.	DAY 4 November: Rice	Toro	Meat	Veg.	Milk	Etc.
hse 17																								
M.66	5	1	2½	–	1		6	2	2	–	–		6	1	–	2	–							
M.36	–	6	2	–	1		–	6	2	–	–		–	6	–	2	–							
F.35	–	5	1½	–	1		–	4	2	–	–		–	4	–	2	–							
F.26	–	5	1½	–	1		–	4	1½	–	–		–	4	–	2	–							
M.22	6	–	2	–	1		6	–	2	–	–		6	–	–	2	–							
F.19	–	4	1½	–	1		–	6	2	–	–		–	6	–	2	–							
M.13	–	4½	1	–	1		–	4	1	–	1p.		–	4	–	1	1p							
M.11	–	4	1	–	1		–	4	1	–	–		–	4	–	1	–							
M.10*	–	4	1	–	1		–	4	1	–	–		–	4	–	1	–							
F.5	–	2½	½	–	1		–	2	1	–	–		2	1	–	1	–							
F.1¼	–	½	–	–	1		1	–	–	–	–		2	–	–	–	–							
Total	2⅔ m	6 m	2½ lb	–	5 pts	oil– 2 tble s.	3½ m	6⅓ m	2½ lb	–	1 p.	a litt–le oil	3⅓ m	5⅓ m	–	3 m	ml p.	oil & sugar						
hse 3B																								
M.59	2½	2	–	1	½		2½		–	2	2		3½	4½	3	3	2		Away in Pokhara					
F.42	1	2	–	¾	¾		2		–	3	2		2	4	3	3	1		1	4	6			
M.21	1½	1½	–	1	¾	a.m.	2		–	3	3		3	3	3	3	2		2	4	8			
F.18	1	2	–	¾	¾	only	2		–	3	2		2	4	4	4	1		1	4	6			
M.15	1	2	–	¾	¾	(pela)	1			2	2		2	2	2	2	1		1	2	6			
F.12	1	1	–	¾	½		½		–	1	1		2	1	2	2	1		1	1	4			
F.4	½	(breast/fd)			½		½		–	2	1		2	–	1	1	1		1	–	2			
Total	3⅓ m	4 m	–	6½ m	5 pts	oil	1⅔ m	6⅔ m		3 m	5 pts	oil	8⅓ m	4 m	1 lb	1½ lb	2½ pt	oil	3⅔ m	3⅔ m	¼ lb	2⅔ m	5 pts	
hse 57		Mze						Mze						Mze										
M.39	–	20	–	2 cucumbs	1m.millet	2m.skim–med milk	–	20						20										
F.35	–	20	–				–	20						20										
F.11	–	10	–				–	10	1 buffalo leg		1 pt. skimmed	1 pt. of millet gruel		10 tiny morsels	1 small cucumb.	2 pelas skimmed	2 pelas ground millet		–	Ground maize	–	Little raddish & soya beans	A little	
M.6	–	10	–				–	10						10										

Key: units of measurement as follows; rice/maize or 'toro' = the "pot" or flat serving ladle, vegetables/mean the "dodu" (Nep. dāru) or ordinary ladle, likewise milk. m = mana(approx 1 pt.). p = pela or small bowl. tble s.= table spoon. Mze = number of maize cobs. * this was a lower caste servant boy who worked for hse 17.

Making the assumption that total consumption is in proportion to consumption of food the estimates are as follows.

TABLE 17:3. Consumption units in three households.

Type of scale	household number 17	3B	57
Bailey	6.25	5.75	2.75
Egyptian study	7.6	5.4	2.9
Epstein/Lusk	7.15	5.99	3.36
Table 17:1	5.75	5.00	2.65
Table 17:2	6.25	5.05	2.65

Thus all the earlier cited scales seem too high for the Gurung context, but Bailey's scale is only just too high and, on the whole, seems to be a pretty accurate index. It therefore seems reasonable to adopt the Bailey scale and it will be used in the ensuing calculations about consumption units. On the basis of Bailey's equation the number of consumption units in the hundred sample households is as follows.

TABLE 17:4. Consumption units, by age-groups, in 100 hseholds.

Bailey's multiplier	Age group	total persons	Gurungs cons'n units	Non-Ggs persons	Non-Ggs units	Total persons	Total units
0.0	0-23 mth	18	0	4	0	22	0
0.25	2-9 yrs	54	13.5	25	6.25	79	19.75
0.5	10-14 yrs	42	21	21	10.5	63	31.5
1.0	15+	272	272	92	92	364	364
		386	306.5	142	108.75	528	415.25

notes: all de jure members of the 100 households, including those temporarily away, are counted; but those temporarily present are not counted in the above table.

Some idea of the dependency ratio of young children will be obtained if we compare those aged under 15 to those over that age. The ratio is of the order of 1:7 (51.25/364) if we judge it in terms of consumption units. We may now turn to what is actually consumed.

B. Diet and nutrition.

Food has a high symbolic value among the Gurungs and is much used in social and ritual activities. I spent a few days in three separate households watching the amount consumed. It would have been difficult to prolong the observation since those observed felt embarrassed and threatened by the procedure. The total amount consumed is set out in the accompanying table.

for table 17:5 - see across.

The various items on this table may be analysed individually

Cereals

During the days of study the three households consumed the following quantities of grain: the 6.25 consumption units in house 17 ate 8⅔, 9⅔, 8⅔ manas of husked grains in the three days of study; the 5.75 consumption units in house 3B ate 7⅔, 8⅓, and 7⅓ respectively; household 57 ate the same quantity in proportion to its 2.75 consumption units, but all in maize. Thus approximately 1⅓ manas of husked grain are consumed per consumption unit per day. This total agrees with Pignède's findings.[4] He noted that people stated that a man working hard is assumed to eat two manas of cereal a day, but that, in fact, people seldom eat this much. The same assumption is made in Thak where, when land is being divided out between children, the ageing parents are allowed 9 muri of unhusked grain per day. But observation of actual consumption shows that this is too high; some 550 manas of grain per consumption unit p.a. is more accurate. When I checked this with some informants they worked out in detail that the ideal of 9 muri per adult per year was far too high, and thought that 5-6 muri of unhusked grain per year was about average. If we allow a fairly generous estimate of 3 muri of husked grain per consumption unit per year, half of it in rice and half in millet or maize, this works out at approximately 195 kg. of grain p.a. This is supplemented by cereals taken in the form of millet beer, which is drunk in fairly large quantities. An approximate total of 210 kg. of grain per consumption unit p.a. would seem reasonable.

The proportion of this total which is in the form of rice, and the proportion in other grains varies from family to family. Richer families eat more rice, but even they are forced onto other grains at certain times, as may be seen in the table above where household 17, one of the wealthiest in the village, was consuming more toro than rice during August. Poor households, such as Blacksmith household 57, consume only maize for much of the year. To judge from the total amount of rice and other grains grown in the village, it would seem a fair estimate that in a medium-wealth household the diet is more or less equally divided between rice and other cereals. In wealthier households the ratio of rice to other cereals may be as high as 8:2, while in the poorest it may sink as low as 2:8. These poorer villagers have to depend for their rice on grain

given in payment for services. Such payment is distributed in November after the rice harvest.

On the basis of the above discussion we may say that an adult male in an average Gurung family would consume approximately 105 kg. of rice, and 105 kg. of other grains (husked) p.a., or approximately 200 kg. of wheat equivalent p.a.[5] A poor family would have less than 160 kg. in wheat equivalent per adult consumption unit, while a very rich household might have up to 240 kg. per unit. We may make one comparison with the situation elsewhere, an average-wealth adult among the Gurungs consumes approximately 20 oz. of wheat equivalent per day, whereas the Bemba of Africa, when originally studied by Audrey Richards, consumed less than 12 oz. of wheat equivalent per day. The Bemba were on the brink of starvation; the Gurungs, at present, live well above the danger line. On the assumption that 'wheat equivalent' is the same nutritional value as wholemeal flour, the above medium-wealth adult male among the Gurungs would eat cereal with the following nutritional value per day.[6]

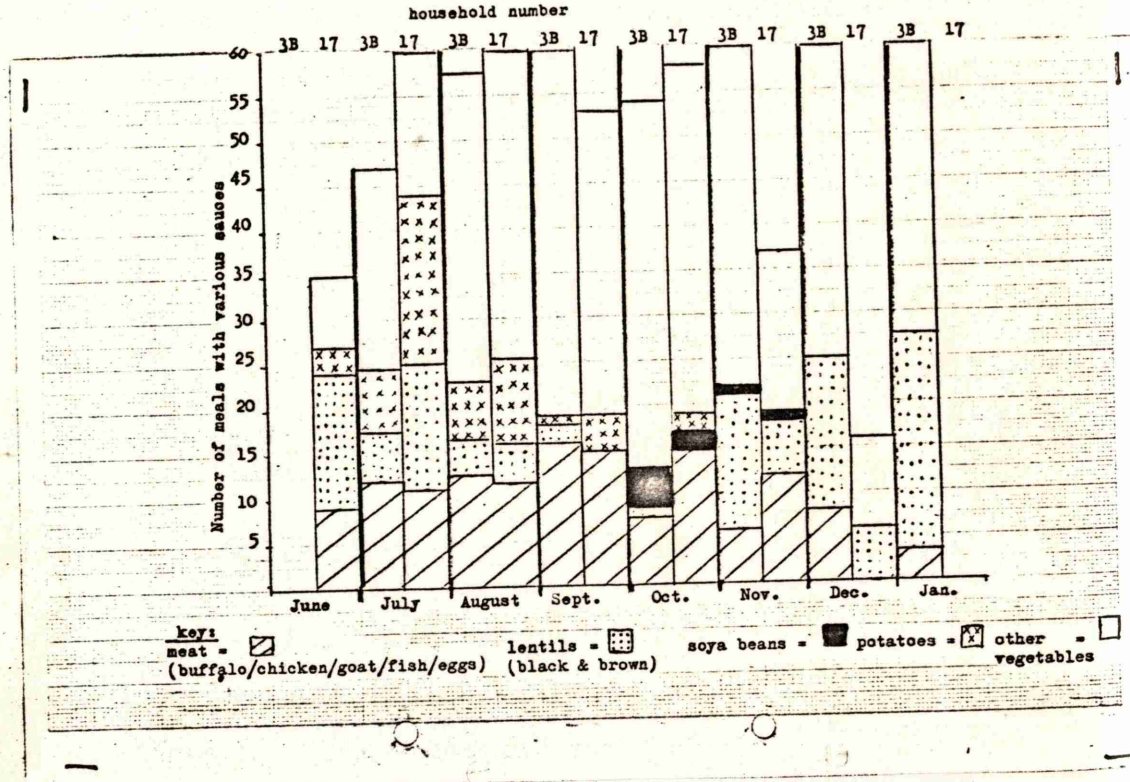
Calories: 1820 Protein: 66 grams(g) Fat: 10g
Carbohydrate: 390 g. Calcium: 200 mg. Thiamine: 2.8 mg.
Riboflavin: 0.6 mg. no vitamins A,C,D.
Rich and poor households would vary from this up to 25% higher or lower.

Meat.

Villagers eat mainly buffalo meat, which is supplemented on about one in four occasions by chicken, goat, fish or eggs (which will here be counted as 'meat' because of their high protein value). Up to recently this diet was supplemented by a considerable amount of wild game - deer, pig, jungle cock - and by mutton. Nowadays wild game has grown scarce and sheep are no longer kept. There is considerable reason to believe that the amount of meat eaten per person is decreasing fairly rapidly year by year, and the same is true of milk. As with many societies, the Gurungs are being driven by the pressure of population from a protein-rich animal diet, to a carbohydrate-filled diet of cereals. At present they are at an intermediate stage of transition, and are still in a better position than many of the neighbouring peoples to the south.

Meat is used for the relish to go with the rice or

DIAGRAM 17:1. Diet in two Gurung households, June-Jan 1969/1970.



other cereal that is the real 'meal'. As a relish, it is interchangeable with vegetables. The Gurungs divide food up into three categories, kãe (mainly rice, but also 'maize rice' when maize is ground up to resemble cooked rice), pengo (ground millet), and ta (vegetables, but also sye ta, literally 'meat vegetables'). There is no rule that meat and vegetables should not be mixed or eaten at the same meal, and when entertaining visitors or feasting, both are prepared. But usually one or the other is eaten. Since this 'sauce', whether of meat or vegetables, provides much of the protein, and almost all the vitamins, in Gurung diet, it is essential to know how much is eaten and the way in which the distribution varies over the year.

To judge from the diet outlined in table 17:1, the normal amount of meat consumed by average Gurung households or above is about 1 or 1¼ lb. of meat between 5.75 or 6.25 consumption units per day. This works out at about 3 oz. per consumption unit per meal; thus a boy of twelve would only get about 1½ oz. of meat per meal. This includes skin and bone which are all chopped into the meal. If vegetables are being served as the relish, it would appear that some 3 manas (or approx. 3 pints) of vegetables are used per day. Again this provides roughly 3 oz. per consumption unit per meal. We now need to find out how frequently meat is eaten, and what types of vegetables are consumed.

I asked two informants each evening for seven months what their families had eaten for "sauce", and occasionally checked their reports by observation. No doubt there were lapses of memory, but not enough to alter the general impression which may be studied from diagram 17:1.

for diagram 17:1 - see across.

The two Gurung households are shown for each month. If we look at the meat consumption at the bottom of the diagram, it will be seen that only once does it (just) rise above 25% of the total meals per month. Normally it is in the range 8-12 meals per month. To judge from these seven months (which include the period of most intense work and hence maximum protein intake), household 3B averaged just over 10 meat meals per month, or about 12 per month if we allow for days when I failed to record the meal. Assuming, as evidence from January seems to suggest, that the rate in the other five months is lower, then an average of 10 meat meals per month throughout the year would seem

reasonable. This would provide some 360 oz. of meat per consumption unit p.a., or 1 oz. per day (including skin and bone). Making the generous estimate that the meat was of the quality of stewing steak (beef), this would provide the following nutritional factors.

Calories: 62 Protein: 4.8g Fat: 4.5g Calcium: 3 mg. Iron: 1.1 mg. Thiamine: 0.02 Riboflavin: 0.06 and no carbohydrate or vitamins.

In household 17 there was a slightly higher meat consumption, as one might expect with the second richest household in the village, and a household that owned a sizeable herd of buffaloes. In the six months from June to November, they had 73 recorded meat meals. The average per day per consumption unit would thus probably be about 1.25 oz. The figures for house 3B represent a middling Gurung household. A very poor household, such as the Blacksmith one studied earlier only obtains meat occasionally; even when it does obtain meat, it tends to be the skin and bones from a carcase. Nor would such a household eat many eggs, chickens, fish or other high-protein foods. Their consumption of meat is probably in line with that of the Bemba of Africa, who averaged 0.25 oz. per day.[7]

Vegetables.

The diagram above also shows the consumption of various types of vegetable and pulse. The most important single item are lentils. They are grown in among the rice and, like soya beans, are extremely nutritious. They are consumed throughout the year. Over the six months July-December, household 3B had the following number of relishes of various vegetables: lentils (44½); potatoes (14½) soya beans (5½); other vegetable (21). It is likely that the ratio of lentils to other vegetables is higher in the six unrecorded months. The period under examination included the monsoon season when most of the green vegetables such as beans, cucumber and tomato grow. Beans and spinach are especially nutritious, but the cucumbers and radishes which comprise at least half the 'other vegetables' category have little nutritive value.

On the assumption that the half year recorded above is roughly equal to the half of the year not recorded, a generous assumption as we have seen, then the following rough estimate of the intake of one consumption unit, or

TABLE 17:6. Average nutritive value of 'relishes' per consumption unit.

Foodstuff	Amt.(oz)	Calories	Protein (g)	Fat (g)	Carbohydr. (g)	Calcium(mg)	Iron (mg)	Vitamins A,C,D (iu.mg)	Thiamine (mg)	Riboflavin (mg)
Lentils) Soya beans)	1	84	6.8	0	15.1	11	2.2	0	0.14	0.07
Potatoes) Other veg.)	4	40	1.9	0	8.6	47	0.9	A=610c C=33 D=0	0.08	0.05
Meat	1	62	4.8	4.5	0	3	1.1	0	0.02	0.06
Total	6	186	13.5	4.5	23.7	61	4.2	as above	0.24	0.18

Note: conversions are based on the figures in Manual of Nutrition Appendix A. meat, as before, is reckoned to be equivalent to stewing steak, and 'other veg' as equivalent to a compound of cabbage, lettuce, potato and turnip.

adult man, per day, from all the relishes eaten with cereals is as follows.

for table 17:6 - see across.

Especially worthy of note is the fact that lentils/soya beans provide more protein in the diet than does meat. The above table is based on only one household, and we may wonder how representative this was. If we compare household 17 to household 3B we get the following figures:

TABLE 17:7. Consumption of 'vegetables', two households.

Vegetable	hsehold 17 (June-Nov.)	hsehold 3B (July-Dec.)
lentils/soya	43	50
potato/other veg.	185	225
not known	60	20

Thus the proportion of lentils to other vegetables is fairly similar.

Milk.

The final major form of foodstuff is milk and its bi-products, especially oil. It is impossible to obtain exact figures of milk consumption per family, since this depends entirely on fluctuations in the state of the family buffalo. Thus we may see from table 17:1 that house 3B had milk every day, while house 57 had a little milk each day and house 17 only had milk on one of the three observation days. Since all villagers are very fond of milk and will drink it when they can obtain it, the problem is one of supply.

Although goats and cows give a little milk, over 90% of the milk consumed in the sample households came from buffaloes. The following analysis will, therefore, be confined to buffaloes. It is reckoned that, when in milk, an average female buffalo will give roughly six pints of milk a day. Since they produce milk for approximately half of each year only (on average some nine months after calving another nine months being needed to produce another calf), we can assume a rough average of 3 pints of milk per day per adult female buffalo. The periodicity of the supply is minimized by inter-family borrowing. When a family's buffalo is in calf, the household goes to neighbours for kola or skimmed milk; it then returns the favour when neighbours are in need. Milk is consumed in a variety of ways; it is drunk when boiled up; made into a kind of

cottage cheese, or a type of yoghurt (dahi (Nep.)), or made into cooking oil (chugu). Earlier we saw that the hundred households had 223 buffaloes. If we allow for young and male buffaloes, there are still approximately a maximum of 150 adult females. This means that on average each of the 100 households should receive 4½ pints of milk products per day, or approximately a pint per consumption unit per day. Naturally enough, some people with larger herds, and particularly those living out in the forest or fields minding the buffaloes, drink far more milk. Others, especially lower caste households without a buffalo, consume far less. But a middling Gurung family probably consumes at about the above rate. A child of 13 would, unless especially favoured, expect to receive less than half a pint a day.

Other foodstuffs.

In the summer there are considerable supplies of wild fruit, mostly berries, in the woods above the village. These are predominantly eaten by children. Occasionally the fruit diet is supplemented by oranges, bananas and fruit bought from other parts of the panchayat or from Pokhara. But though fruit would grow well in the village, little attempt is made to cultivate it. As yet it is not a large item in local diet, though it provides some additional and vital vitamins, especially for children. For the purposes of later calculation it will be guessed, on the basis of observation, that an adult male would consume about half a pound of fresh fruit a month, or ¼ oz. per day. It is probable that, with the destruction of the forest, less fresh fruit is available each year. The only other product of any importance is honey (kudu), which is produced either in hives in the houses, or sought in woods and cliffs. Nowadays it is increasingly replaced as a sweetener by sugar from Pokhara market. Probably no more than 5 pints of honey are consumed (mean average) per household p.a., while roughly 20 lb. of sugar is the average per middling household p.a. It may therefore be roughly estimated that an adult would consume about 6lb. of sugar-equivalent p.a., or about ¼ oz. per day. This is a generous estimate. Sweets, biscuits, herbs and other special treats from Pokhara, as well as the essential salt, have no significant nutritional influence (except as a possible source of iodine in the case of salt).

TABLE 17:8. The diet of a middling-wealth adult Gurung (per day).

Foodstuff	Quantity (oz)	Cals.	Protein (g)	Fat (g)	Carb's. (g)	Calcium (mg)	Iron (mg)	Vit.A. (iu)	Thiam. (mg)	Ribofl. (mg)	Vits. C (mg)	Vits. D (iu)
Cereals	20	1820	66	10	390	200	22	-	2.8	0.6	-	-
Lentils/soya	1	84	6.8	-	15.1	11	2.2	-	0.14	0.07	-	-
Meat	1	62	4.8	4.5	-	3	1.1	-	0.02	0.06	-	-
Vegetables	4	40	1.9	-	8.6	47	0.9	610c.	0.08	0.05	33	-
Milk	10	190	9.0	11	14	340	-	400c.	0.1	0.4	6	4
Fruit*	½	2.5	0.05	-	0.6	3	0.02	5c.	0.01	0.0025	3.5	-
Sugar/honey	¼	28	-	-	9.5	-	-	-	-	-	-	-
	36.5	2226.5	88.5	25.5	437.8	604	26.2	1015c.	3.15	1.183	42.5	4

Note: - * fruit is assumed to be at the nutritional level of oranges.

* For table 17:8 see across

On the basis of the above description we may make a very rough analysis of the nutritional value of the diet of an adult male Gurung in a family of middling wealth in 1969. To estimate that for a woman, child or old person, or to calculate that for the very poor or very rich it would be necessary to multiply the following totals by the fractions already suggested.* It has been estimated that for S.E. Asia, a sedentary adult male aged 20-29 needs some 1829 calories per day, with an extra 155 extra calories for each hour of labour. The above diet would sustain an adult Gurung for less than three hours work per day.[8] Figures published for other S.E. Asian countries in the early 1960's, collected by F.A.O., are as follows (cals. per day): Pakistan (2030), India (2050), Burma (2150), Thailand (2185).[9] Thus the Gurungs appear to be relatively a little better off nutritionally than neighbouring societies, largely because of their large consumption of milk.

As for protein requirements per day, there is considerable argument about the amount of protein needed per day to prevent malnutrition; estimates vary from 35 to 68 grams per day as a minimum.[10] But there can be little doubt that 88 grams a day is well above the safety level; this is again largely due to milk, and also soya beans/lentils. The above level is much higher than that of many societies that hover on the brink of starvation; for example the Zande in the 1940's had an average protein intake that fluctuated between 33 and 60 grams/day over the year. It would seem that there are sufficient quantities of calcium (again milk is vital here), but vitamin B deficiency diseases have been noted earlier in the medical survey.

The results of the above table may be compared to the levels recommended by the Ministry of Agriculture and Fisheries for a moderately active British woman.[11]

TABLE 17:9 Recommended diet for British woman, and diet of adult male in Thak.

	Cals.	Protein (g)	Fat (g)	Calcium (mg)	Iron (mg)	Vit.A (iu)	Thiam. (mg)	Ribofl. (mg)
British woman	2500	70	?	800	12	5000	1.0	1.5
Thak, adult male	2226	88.6	25.5	604	26.2	1015	3.15	1.182

No comparable figures for fat and vitamin C are given for the British woman, but in both cases it appears that the Thak level is a good deal lower than that likely to be

recommended. It should also be remembered that the diet of many of the poorer households in Thak would be considerably worse than that taken as a sample above.

The only published figures I have been able to find for other Nepalese villages are those based on a 24-hour recall dietary survey undertaken by the Dooley foundation. They found a wide range of diets, with from 1923 to 3554 calories per day, and from 45.4 to 98.0 grams of protein per day. Especially deficient in most areas were vegetables, fruit, meat and eggs. If we compare the Thak findings to the table of the situation in a number of villages,[12] we find that it is about average for the western mountain region, but that "the higher altitude, western mountain villages seem consistently better off with regard to both calories and proteins than does any other region".[13] None of the villages surveyed by Worth had a consumption of vegetables, fruit, meat and eggs above the WHO long-term target, and only 11% had the required level for fats and oils.[14]

By western standards many of the Gurungs are malnourished. Thus Morris wrote of the situation before the 2nd World War, "I was able to observe many thousands of Gurkhas of all sorts, and most of them were under-nourished"[15]

But if we compare the diet level to that elsewhere in India or Nepal, we are soon aware that there is far less protein or calorie deficiency than in most of Asia. Undoubtedly the considerable supply of milk and lentils make a great difference. Nor is there a "hunger gap" before the main harvest as in many agricultural societies. A combination of planning, good storage facilities, a mixed economy which combines several main cereal crops (so that if one is destroyed people may fall back on the other), plus the still abundant grazing and forest which enables pastoral farming, all these factors help to stabilize the diet. Income from the army adds the possibility of small luxuries. Although there were many recorded harvest failures in the past, I was only informed of one serious famine in living memory. Informants disagreed as to whether there had been any starvation deaths from this, but starvation was certainly not given as a cause of death in my census.

Attitudes to food.

As in most societies, food plays a vital part in

religious symbolism and in all social relationships. Stages in a person's life are marked out by the types of food consumed, and gifts of blood and rice are central to almost all attempts to communicate with the spirit world. The normal greeting on the villages paths is "Have you eaten?" (kãe tsae wa). Yet, if we compare the Gurungs to a really food-obsessed society such as the Bemba of Africa,[16] we realize that food plays a less important part in Gurung conversation than it might. When I tried to carry out a food questionnaire, asking people which foodstuffs they preferred, and which they thought the most nutritious, they showed no interest in the topic and almost immediately changed the subject. There was no consensus on which foods were most tasty, though egg omelettes, rice-milk and potatoes were generally favoured. Nor was there unanimity about which foods were strength-giving. One informant suggested that maize was more nutritious than rice; another thought that millet and lentils were most nutritious, followed by meat, then rice, maize, milk. When a mother is recovering from childbirth and needs strength, she is fed with oil made from purified milk, and chicken meat. This suggests that assessment of food values is fairly accurate. Some attempt is made to teach a few basic nutritional ideas in the English-reading lessons at school: but the text, which recommends lots of green vegetables, eggs and meat, speaks of an ideal world so far from village reality that it makes no impression. Many of the men have eaten strange foods in the army and this may help to make the Gurungs flexible in their attitudes. Nor are they hidebound by caste ideas; in the past they used to eat domestic pig, and will still do so in the army, though not in the village. Otherwise they will eat practically anything at any time of the year. The only prohibition appears to be in the case of the magician or poju, whose family may not eat buffalo meat. As for drink, they are very fond of home-brewed millet beer, but there are few habitual drunkards.

C. Consumption and expenditure.

Some of the items consumed by the Gurungs have already been described at some length and do not need to be re-analysed here: the amount of wood and fodder from the forest, the amount of food grown in the village. But there are a number of other items, particularly those for which cash

TABLE 17:10. Annual household expenditure(in Nepalese rs.) in 5 village households.

House no.	Informant's estimate of total expenditure	kerosene	salt	metal	sugar	flour	chile	mixed herbs	biscuits	condensed milk	tea	cartridges	oranges & lemons	potatoes	sweets	hair oil	other fruit (bananas etc.)	onions	soap	letters & writing material	cigarettes	matches	kitchen utensils	batteries & torch	clothes & shoes	medicine	books	carriage from market	oil	honey	domestic rituals	taxation
17	600	35	40	45	112	-	60	36	30	36	30	-	20	30	20	10	40	30	45	75	300	12	100	30	600	40	25	20	200	60	70	180
40	-	52	30	35	32	10	40	36	10	20	20	-	10	25	5	30	12	6	15	30	100	15	120	45	250	50	5	10	150	60	10	135
3B	600	35	26	20	40	-	40	39	10	-	20	45	30	17	20	-	10	5	36	10	162	10	60	18	300	5	10	15	150	5	60	66
12A	6-800	35	20	15	8	-	45	24	6	20	10	10	10	20	12	12	25	6	30	20	162	16	125	33	300	10	8	-	75	25	200	50
57	-	2	10	-	2	-	-	3	½	-	-	-	1	-	-	3	1	1	2	-	1	-	-	-	-	-	-	-	6	-	30	15

Quantity bought for a certain sum

quantity	1 tin	1p.	1d.	1d.	1d.	1p.	1m.	~~tin~~	tin				1d.		btle					bdl							load	tin	1m.			
rupees	35	2	5	8	10	5	3		4				2½		3					14							5	50	6			

key: d = dharni = c. 6 lb.
p = pathi = c. 8 pints
m = mana = c. 1 pint
btle = bottle, bdl = bundle

note Drink (millet beer) and cereals are also bought and sold to a certain extent within the village. These have been omitted in the above totals. In the case of millet beer, most households sell about as much as they buy, and thus there is no cash drain. In the case of cereals it was impossible to learn how much each family was forced to buy: all the households in the ~~list~~ table below 3B bought cereals; households 17,40 sold them - but the quantities were not great. Meat purchases are also difficult to calculate and have been omitted, but here again there would be a drain from poorer families (e.g. house 12A is reckoned to spend some 200 rs. a year on meat).
Household 40 is that of the village magician or poju, hence lack of expenses under'domestic rituals'.
Under 'informant's estimate of total expenditure', the total for hsehold 17 did not include clothes, that for 3B and 12A was said to include clothes.

needs to be spent, which merit attention.

Consumables purchased with cash.

I asked nine informants what items they purchased with cash and how much they spent on each of these in a year, and also the quantities of each item consumed. Clearly it would have been more satisfactory to have checked each time that a person went to Pokhara and asked them what they bought, and likewise after each purchase in the village. For various reasons this was not practicable. The following amounts are therefore only rough totals; probably in some items, such as various foodstuffs, the quantity has been understated, while in others, such as clothes, prestige may dictate an inflation of the sums. Thus household 12A, a poor and practically landless family, appears to have exaggerated throughout, for instance in its estimates of expenditure on cooking utensils and domestic rituals. This exaggeration is also shown in the fact that the totals reached from adding up individual items is much higher than the amount which informants gave as a grand total when asked to estimate their whole year's expenses.

Another difficulty is that certain items only occur once every few years; for instance this is the case with very expensive large cooking utensils. Consequently they have to be averaged out over the years in the following table. Nevertheless, it would seem that our lack of information would justify the following examination, however rough.

for table 17:10 - see across.

A number of comments may be made on table 17:10. Firstly, there is the huge gap between the expenditure of the Gurung households and the one lower caste family (no.57). The Blacksmith family only bought tiny quantities of various foodstuffs and no clothes. Over half of its total expenditure was on ritual and taxation, whereas these are relatively unimportant items for Gurungs. It is necessary for such poor households to beg from the Gurungs such small luxuries as tea and spices.

The most expensive items in Gurung budgets were, in order of expense, clothes, cigarettes, oil, taxation, kitchen utensils. Of the other foodstuffs, sugar and salt were the most costly. Medicine and 'domestic rituals' (hiring a priest) were not of importance, except

in household 12A, which appears to be a mistake. The father in this household was himself a part-time practising ritual expert (poju) and the son may have confused income with expenditure. It will be seen that there is enough cash for a certain number of luxuries; sweets, biscuits, hair oil, and, of course cigarettes.

It is of interest to compare the above totals with figures for other parts of the Nepal hills region. This is done for selected items below:

TABLE 17:11. Annual expenditure on certain items (Nep.rs.).

Item	Thak,1969 hse.17	hse.3B	W.Nepal 1967-8 Doti	Sallyan	E.Nepal 1964-5 hse.A	hse.B
Clothes	600	250	438	320	60	160
Salt	40	26	15	11	10	16
Metal	45	20	10	10	10	12
Gur or sugar	112	40	35	37	?	?
Kerosene	35	35	24	28	20	52
Soap	45	36	31	26	3	4
Total	877	407	553	432	103+	244

Notes: Figures for W. Nepal come from McDougall, Village Economy, p.40; those for E. Nepal from Caplan, Land and Social Change, p.80

Although we have to take into account a considerable depreciation in the value of the rupee since 1964-5, there can be no doubt that the Gurungs spend more on the above goods than do the Limbus of E. Nepal. On the other hand, it would seem that they spend about the same amount as an average Sallyan household, and less than an average Doti one.

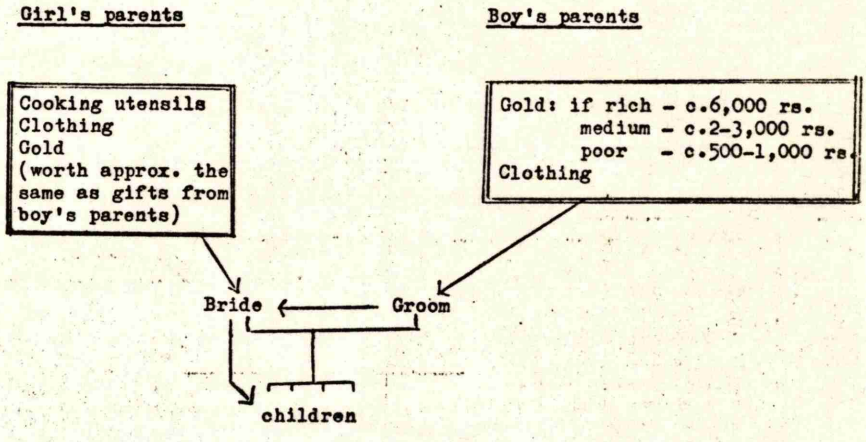
The average expenditure on household and village ceremonies appears to be similar for the Gurungs and those living in Sallyan district, about 50 rs. per household p.a. That for Doti district is above double this amount.[17]

There are a number of other expenses which are much harder to calculate. One of these is the running cost of the farm - seed, depreciation of capital equipment, hired labour etc. These agricultural items do not normally require cash, except where wealthier families hire labour. It is unlikely that such hired labour requires more than 50 rs. p.a. per family, on average; the total for Sallyan district is about 66 rs. p.a.[18] Likewise, most of the payments to Tailors or Blacksmiths are still made in grains.

Extraordinary expenditure: marriages, funerals, houses.

Most household have three or four children whose

DIAGRAM 17:2. Flow of wealth at marriage.



marriages must be paid for. This requires considerable expenditure in cash or gold, expenditure which varies with the wealth of the parents. The actual wedding ceremony in a Gurung village is held at the groom's house, and will cost about 300 rs. for an average wealth family. The money is spent on feasting and presents. Probably a little less than one quarter of this will be retrieved from presents of money given by kin. Thus an average of 250 rs. per son, and about half that for each daughter is necessary. In the latter case the new groom and his friends go to spend a few days at the bride's village just after the wedding ceremony and have to be entertained.

It is also customary for the bride to be given gold and other goods, both by her own parents and her future husband. This gold, clothes, cooking utensils, and occasionally livestock, are her own property. She may retain them if her husband dies or there is a divorce. In fact it is a form of insurance for her children and herself. The situation can be seen diagramatically as follows.

for diagram 17:2 - see across

Thus the wealth does not flow from one group to the other, but from parents to the next generation. In other words it is a form of inheritance. For example, mother's gold acquired at marriage is often handed over to daughters at this point. In a number of cases I recorded, nothing was given by the husband and his family, and it was stated by some informants that in the case of cross-cousin marriage it was not necessary to give gold. But actual instances suggest that gold may be given in such marriages; it depends on the wealth and inclination of those marrying. It is important to be aware that marriage payments are an inheritance mechanism, for it means that we must not count the full cost of such payments under "expenditure". Since they are a transmission of wealth within the family it is only the actual expenditure on hospitality at the wedding ceremony that needs to be counted here.

From a comparison with other Nepalese hill peoples, the Gurungs appear to spend a good deal less than others on the actual wedding festivities. It is for them a far less elaborate rite than that associated with death, an emphasis that contrasts with the situation in the other districts listed below.

TABLE 17:12. Cost of marriage ceremony in various places.

Place	Son	Daughter (rs.)
Gurung - average,1969	250	125
Doti - 1967/8	1189	652
Sallyan - 1967/8	811	573
Limbu - 1964/5	c.600	?

Note: Doti and Sallyan figures are from McDougall, Village Economy, pp.52-3. Those for the Limbu are from Caplan, Land and Social Change, p.88 (the much higher sums on p.90 appear to include bridewealth payments and are therefore not comparable).

For the purposes of analysis, it will be assumed that an average Gurung family has to marry one son and two daughters (or two sons) every twenty-five years. This would mean an average annual expenditure of 20 rs.

Mortuary rites.

The most important of all Gurung ceremonies is the pae or ritual for guiding the wandering soul of the dead person to the land of the dead. This should be performed between three and forty-nine days after the death, but it is often put off for a number of years so that enough money can be raised to perform it. The poorer Gurung families cannot afford to undertake individual pae, and join with others in celebrating a joint one. Sometimes, as in one probably exceptional instance mentioned to me, as many as 26 households may join together to honour their ancestors. Non-Gurungs celebrate different rites; in the case of the Blacksmiths and Tailors the Hindu rite of the kyrie, which is much less costly than the pae, is used. Even the Gurungs are divided. Up to a few years ago, at least in the Sīdis valley, all Gurung lineages except the lamme practised the pae. Nowadays there is a growing fashion for other jat lineages to join the lamme in substituting the chemphar. This is a rite of Tibetan origin, in which no animals are slain and a lama officiates. Thus it replaces the specifically Gurung pae in which buffaloes and sheep are sacrificed and the poju and klevri officiate. As yet, however, only one or two families in Thak have turned to the chemphar, a much cheaper rite which costs approximately half the amount spent on a pae. I was told by several informants that the pae of a rich person would cost about 3,000 rs., that of a medium-wealth person 2,000,and that of a moderately poor person 1,000. Pignède was told that funerals cost 300-1500 rs. Given the doubling in prices in the ten years

intervening, his figures for Mohoriya agree with those for Thak.[19]

Most of the expense lies in providing food and drink for the numerous guests, though kinsmen of the deceased are expected to contribute some rice and money. In the past they were expected to bring two pāthi of unhusked rice, and ½ rs; nowadays they give one pāthi and one rupee. At the most, such contributions might cut the total cost by about one fifth. Such pae are celebrated for both males and females aged over about fourteen. They are separate from the actual burial or cremation, which occurs shortly after death and which is a much smaller ritual. Cremation is reckoned to be far more expensive, and was usually undertaken by carjat households. The expenses of hospitality at such a cremation or funeral are probably about one tenth of those for a pae.

The comparative cost of mortuary rites in various tribal groups is as follows.

TABLE 17:13. Cost of mortuary rites; Gurungs and others.

Group	Cost(rs)
Gurung, 1969*	1800
Limbu, 1964/5	250
Doti,1967/8	105
Sallyan, 1967/8	141

Note:* = for a Gurung household of average wealth: the cost of the actual burial/cremation c.200 rs, that of the pae (after deducting presents from kin) 1600 rs. Source for Limbu, Caplan, Land and Social Change, p.83. Source for Doti/Sallyan districts, McDougall, Village Economy, p.53.

This table shows how very high the expenditure among the Gurungs is. Omitting the very small amount spent at birth (in purchasing an astrological prediction) we may add the cost of all rites de passage. If we do this, we find that the Gurungs spend a little less than the inhabitants of Doti district, but considerably more than the Limbu, on average. Although the expenditure on funerals, mainly consisting of meat and rice, usually comes back to a family over a lifetime through the free hospitality they receive at other pae, it has been decided to count the cost of such pae in the total of family expenses. It will be also be assessed in cash, though a wealthier family would be able to provide at least some of the rice and livestock from its own estate. If we assume that

each household has to perform one set of mortuary rites every ten years, then the average annual expenditure would be 180 rs.

Housing.

If a person has more than one son a separate house will finally have to be built for the elder son at or after his marriage. The original house will require repairing and periodic rebuilding, and frequent re-thatching if it has not a slate roof. Such building may be paid for in cash, as seems usually to be the case in Thak, or by providing labour to a joint house-building group as Pignède describes. In either case, the cost of a reasonable stone and slate house, of the type built by a family of average wealth in Thak in 1969, would be about 6000 rs. Since, on average, some two new houses are being built each year in our hundred households, this means that roughly 12000 rs, or 120 rs. per household is being spent in this way. If we add the cost of labour for re-thatching and repairs to houses, the sum would be on average at least 130 rs. p.a. per household. Of course, poorer households would not spend such a sum; house-building is a way in which cash flows from richer to poorer families, especially to Blacksmith and Tailor groups who provide labour. Also, those who have no sons or only one, have to spend less.

Other items of expenditure.

We have, so far, only considered expenditure in the village or at Pokhara. The money spent by soldiers and their wives when serving in India or Nepal has not been considered, except where the goods, for instance gold and clothing, are brought into the village. Other goods, transistor radios, watches, guns, thermos flasks and the other items listed in the inventories in chapter 13, were also brought in, usually after the payment of considerable customs duties. In the five inventories analysed above, the average value of such goods, including those bought in local markets, was about 350 rs. If we include customs duties, and gun and radio licences, there is a probable annual expenditure of some 500 rs. per household over a period of some 10 years, or 50 rs. per household p.a. Again there will be very considerable fluctuations per family and per year.

Finally, the servicing of debts requires cash. Although this may be an important item in the finances of

of a particular family, we have seen that the majority of Gurung households are not in debt, and when they are it is usually for small sums to other members of the village. In a discussion of the flow of wealth within a village such debts would obviously have to be considered. But here, where our major purpose is to work out an average cash expenditure, we will for simplicity's sake omit this item, just as we omitted debt repayments in the discussion of household income in the previous chapter.

Total expenditure and consumption.

Most analyses of Nepalese domestic budgeting have been confined to cash expenditure. The discussion of the Gurungs above enables us to look at both total consumption, and the proportion of this which requires cash. The results may be tabulated as follows:

TABLE 17:14. Average annual consumption and cash expenditure of a middling Gurung household, 1969

Item	Total consumed (value in rs.)	Total cash expenditure (rs.)
Food	3025	250
Clothes	300	300
Housing	130	130
Fuel - wood	360	-
- kerosene	35	35
Consumer goods	455	455
Taxes (& savings)	75	75
Medicine	15	15
Domestic/village ritual	75	25
Rites of passage	205	205
Agric.(seeds etc.)	150	-
Caste services (incl. hired labour)	150	10
Total	4975	1500

Notes: The hiring of Gurung labour, usually on an exchange basis, is not included; nor, as stated above, are the servicing of debts or the cost of goods consumed abroad.

It will be seen that less than one third of the consumption requires cash. Of the 1500 rupees of cash spent, almost exactly half is spent outside the village, in Pokhara or abroad.

It should be stressed that the above table is not an actual budget, nor is it a mean average of all family budgets. It is, rather, a composite budget estimated for a Gurung family of five consumption units and from a middling economic level. Thus the consumption per consumption unit is just under 1,000 rs. p.a. in total, and some 300 rs. if cash only is counted. The relative

DIAGRAM 17:3. Relative proportions of total annual consumption by an "average" adult Gurung.

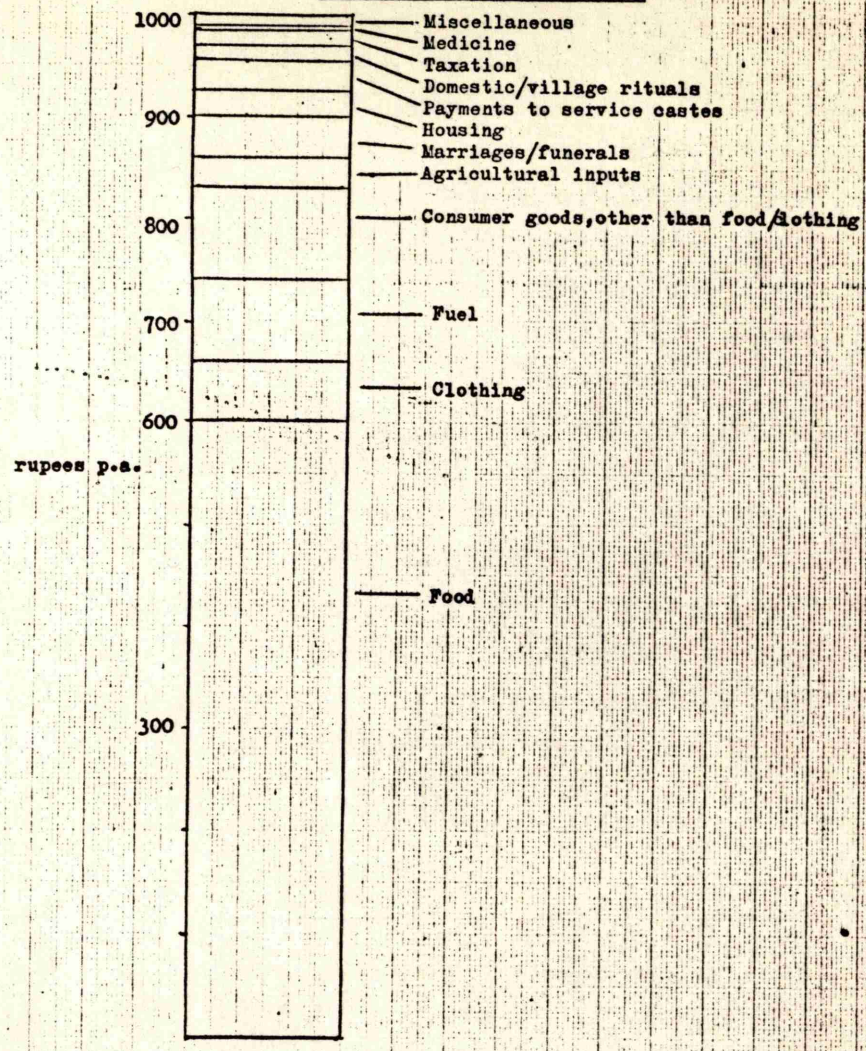
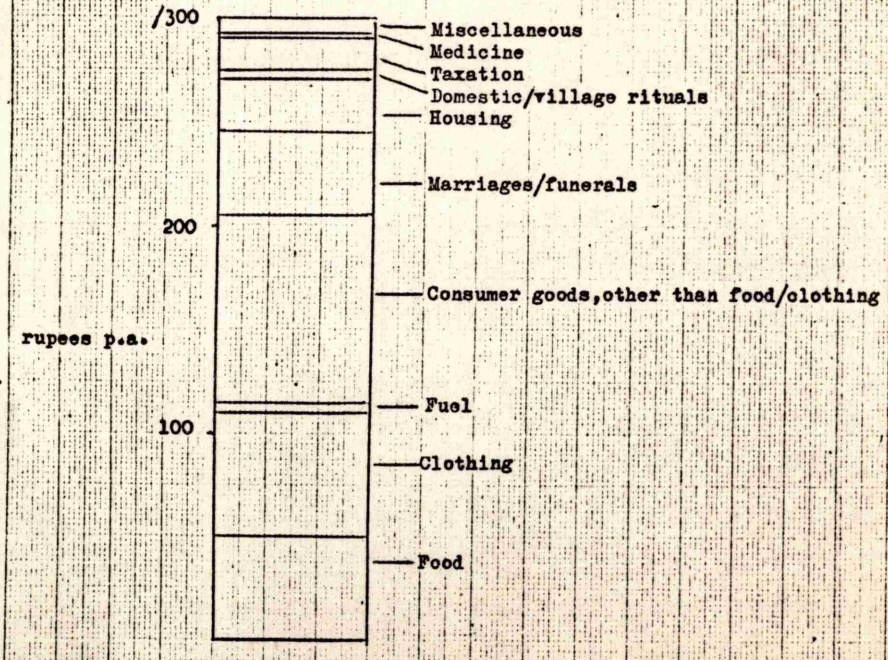


DIAGRAM 17:4. Relative cash expenditure p.a. by an "average" adult Gurung.



proportion spent on various items may be seen more clearly from a diagram.

for diagram 17:3 - see across.

Thus we may see that food constitutes approximately 3/5 of the total consumption needs, fuel roughly one quarter, clothing about 1/6, and other consumer goods about 1/10.

The proportion spent on non-food items would suggest that the Gurungs are well above the subsistence level. We may contrast them, for example, with the overseas Chinese in Sarawak who spend some 82% of their income on food.[20] On the other hand the 60% they spend on food is a little higher than the 54% spent on food in Thailand, 1930-1.[21] It has been suggested for East Africa that "Food consumption tends to stabilize when it has reached a level of about £28/person/year"[22] while in Thak, in this middle-range hypothetical household, it has reached a level of about £25/person/year. It is likely that the importance of fuel as an item is likely to increase as wood supplies dwindle. It is easy to envisage a situation where a growing proportion of the family budget, including cash now used for other consumer goods, will have to be paid out to obtain fuel, as kerosene replaces wood.

The actual cash expenditure on various items for this "typical" Gurung household may also be illustrated in a diagram.

for diagram 17:4 - see across.

Food constitutes about one sixth, clothing one fifth, and other consumer goods between one third and one quarter, of the total monetary expenditure. The cash needed for periodic weddings and funerals is also important.

The total cash expenditure for various groups in Nepal may again be compared to that for the Gurungs, as follows:

TABLE 17:15. Cash expenditure in various groups.

Group, date	Rs.
Gurung, average, 1969*	1295
Limbu, 1964/5, household A.	314
" household B.	634
Doti district, 1967/8	1123
Sallyan district, 1967/8	986

Note: * = this figure does not include expenditure on marriages/funerals since this is omitted in the calculations for other groups also. The Limbu figures are from Caplan, Land and Social Change (p.80; those for Doti and Sallyan from McDougall, Village Economy, p.44.

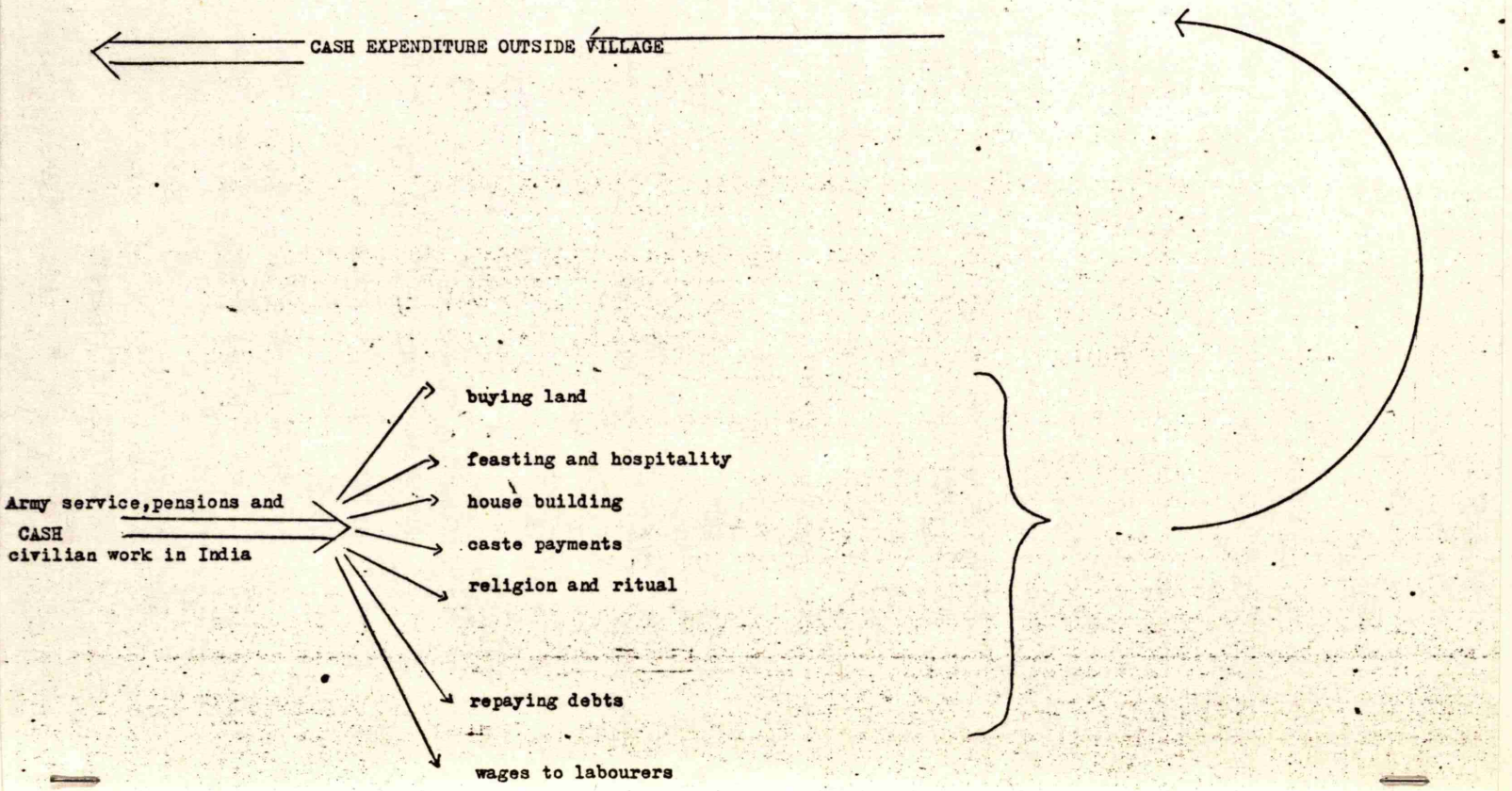
Even allowing for depreciation of currency, cash expenditure is considerably higher among the Gurungs than the Limbus, though it is less than that in Doti district, and about the same as that in Sallyan. There is thus, as in W. Nepal, a great need for cash in order to purchase various goods. As indicated earlier, none of this is generated by the local economy. All of it must flow from the south, principally in the form of army wages and pensions.

It is now time to turn to an analysis of the way in which income and expenditure, production and consumption, are balanced. By doing this we will hope to see to what extent there are possibilities for capital accumulation. We will also discuss what proportion of the families have a budgetary deficiency, and also the way in which wealth is distributed through the society.

NOTES. CHAPTER SEVENTEEN

1. Epstein(ed.), Craft of Social Anthropology,p.160.
2. Caplan, Land and Social Change,p.77.
3. Clark, Subsistence Agriculture,p.172.
4. Gurungs,p.140.
5. The conversion is made on the basis of the table in Clark, Subsistence,p.222.
6. Conversion based on Manual of Nutrition, p.68.
7. Richards, Land and Labour,p.40.
8. Clark, Subsistence Agriculture,p.15, table.
9. Reported in ibid.,p.19.
10. Some of the figures summarized in ibid., ch.1. and p.54.
11. Manual of Nutrition, p.40.
12. Worth, Nepal Health,table 5,pp.44-5.
13. Ibid., pp.42-3.
14. Ibid., table 10,p.52.
15. Morris, Winter in Nepal, p.96.
16. Richards, Land and Labour, ch.3
17. McDougall, Village Economy,p.43.
18. Ibid., p.44.
19. Pignede, Gurungs, p.140.
20. Clark, Subsistence Agriculture,p.164.
21. Ibid., p.168.
22. Ibid., p.169.

DIAGRAM 18:1. The flow of cash in a Gurung village.



CHAPTER EIGHTEEN. SURPLUSES, DEFICITS AND THE ACCUMULATION OF CAPITAL.

At the village level.

It seems very doubtful that there is a tendency towards capital accumulation in the village as a whole at present. In table 16:7 we saw that the total cash inflow from all sources, excluding capital projects financed by the government, is 46,000 rs. p.a. With development projects and all other sources somehow overlooked, this cannot reach 50,000 rs. p.a. Meanwhile a 'typical' household was seen (table 17:14) to spend some 1500 rs. p.a. in cash, about half of this outside the village. Even if we entirely omit the twenty poorest households in our hundred, mostly lower caste, which may be assumed to spend very little indeed outside the village, this still leaves us with a total cash expenditure of 66,160 rs. p.a. Sales of village forest-cutting rights, and of village lands to outsiders are probably short-term attempts to meet this deficit. But in view of a sizeable shortage, all attempts at long-term capital accumulation in the village appear doomed.

We have only spoken of cash spent outside the village in this context since we are considering the budgetary situation of the whole village as if it were a separate island. The buying of land, expenditure on ritual, food and other objects within the village merely circulates cash within the unit. The situation may be demonstrated most easily in a diagram.

for diagram 18:1 - see across.

We can see how the inflowing cash is re-allocated. The most obvious instance of this process is the payment of lower caste families.

After the last war a very considerable amount of wealth poured into the village in the form of pensions and wages. An improved diet and a burst of house building swallowed this money up. At the period of our visit it is likely that the situation was changing rapidly. The war boom had spent itself and mounting population, plus declining recruitment into the British army, was beginning to have serious effects. The earlier wealth had been partly used to open up the remaining, poor quality, virgin land, but none of it had been used to improve communications or agricultural productivity. Without any scope for investing in better tools, most of it was spent

or stored in housing and gold. The merchants of Pokhara, and the Gurungs who enjoyed a temporary rise in living standards, were the main beneficiaries. Now the chances of saving decline day by day.

One attempt to improve the situation is the government-sponsored 'bacat kos' or compulsory savings scheme. This is described in some detail by McDougall.[1] He points out that many farmers regard it as another type of government tax. Originally savings were collected in kind, at the rate of 6 manas of grain per ropani, or approximately 1/80th of the yield on average land in Thak. In future it is to be collected in cash, at 1 rs. per ropani of land- approximately 1% of the crop produce of all land (if we include unused and unusable land). Fairly frequently the scheme is suspended because of partial harvest failure and there is, of course, evasion.[1B] Therefore 0.5% of the crop value of land would be a more realistic estimate. Since, as we have seen for our sample village, arable land provides only half the annual income, there is an annual saving of, at most, 0.25% of total income p.a. This, of course, is a very small amount indeed, especially with population growth rates of 1-2% p.a. It is generally recognized, however, that the main function of the scheme is to teach, by example, the importance of saving. It is also hoped that a fund will be accumulated so that people may borrow at reasonable rates. I heard of only one case where a person had actually borrowed from this fund.

At the household level.

The wealth that flows in from abroad reaches certain households first - those with pensions or men in the army. It is largely these families that exhibit a surplus in their annual budget. Yet the question of household budgeting is more complicated than this; proper answers require a very detailed, daily, recording of consumption and expenditure in each of the hundred households. This I was unable to undertake, and the best that can be done is to compare the number of production units in each household to the number of consumption units. For example, household 57, a Blacksmith family, has 1.4 production units, but 2 consumption units, and hence is classed as a deficit household. The basis for calculating production and consumption units has been outlined in the two

previous chapters, but one added refinement is necessary. In previous discussions it has been assumed that an adult female is one consumption unit, but produces only 0.8 of this amount in the local economy. The level of production in the village is not high enough to finance consumption at normal rates. The gap is made up by foreign wages and pensions. Therefore it is necessary to weight those working abroad according to their increased productive power. On the basis of earlier discussions of relative income from various employments the following multipliers are used:

man labouring in the village = 1.0 production units.
man in India (civilian/army) = 3.0 " "
man in British army = 4.0 " "

Thus, for example, if all the members of household 17 worked in the village, it would be rated as 5.4 production units: but the fact that one of the sons is in the British army raises the level to 8.4. There is thus a small surplus over the 7.25 consumption units in this household. The rating for all households, showing the number of units and whether there is a total surplus or deficit, is given as appendix two below.

It will be seen from the appendix that there is only one household (no.16) where there is a man in the army, yet the family still has a deficit. Otherwise, when we discover that there are 65 deficit households and 35 surplus ones, it is not surprising to find that there are 64 households with no man abroad wage-earning. Now this is not the same as saying that all the deficit households are the poorer households, while surplus ones are the rich. The present wealth distribution in the village is the result of many factors over the last hundred years, particularly the number of sons at each generation and the amount of previous military service. But it does seem that those who now have a surplus are gaining on their neighbours. Thus household 15, one of three sons of a sorajat Gurung, did not start life well placed, nor did the fact that he had five sons appear to offer him much chance of advancement, since his small landholding would have to be minutely subdivided. Three of his sons are now in the army, however, so that, allowing for their increased productivity, he has a household with 13.2 production units, and only 7.5 consumption units. He is

thus able to accumulate property at a rapid rate. Household 6, on the other hand, is a deficit household, but the richest in the village. There are seven daughters and no-one in the army. Yet it seems probable that this widow's lands are large enough, and the demand for land to rent at 50% of crop value so high, that she is able to turn an apparent deficit into a surplus. It seems likely that at least fifteen of the other supposedly 'deficit' households have enough land to do this.[2] From this it would appear that there are, in fact, exactly 50% of the household who have a surplus in their annual budgets, and the other half a deficit. In almost all cases the gap is under two units either way, but there are a few cases where the gap is wider.

The following households may be regarded as potentially conspicuous savers or spenders, having a surplus or deficit of over two units:

	Gurungs	Tailors
Households with 2.1 +(surplus) -	15,18,20,49,84	
Households with 2.1 -(deficit) -	3B,40,56(Magar)	43

Some comments may be made about these families. Household 15 we have already discussed above. House 49 had just been rebuilt on a large scale. The eldest brother was Pradan Panch of the village and ~~his land~~ had been given his portion of land on retirement from the ~~village~~ army. House 20, although it may now be improving its position, has been visibly sinking over the last few years, selling off its land in considerable quantities. The fact that there are four unmarried daughters aged 19 to 35 suggests that there are still difficulties. House 84 is reckoned to be investing its surpluses in increasing its very large herds of livestock. As for those at the bottom, house 3B has been selling off land, and the son had been forced to leave the village (where he was an assistant schoolmaster) in order to find a more lucrative job. Even if he found a job in India there would still be problems. House 40 was the wealthy household which contained the poju; he managed to bridge the gap by the grain and money which he obtained for his magical services. The head of the household was the only son of an only son and his lands were extensive; only a very large and young family and the inability of his son to get into the army had pulled him down. House 56 was a recently settled Magar family; the husband was

always moaning about how poor he was becoming. Household 43 was a Tailor joint household where a father lived with his two married sons. If each of the three nuclear families had lived separately, they would have shown the normal lower caste feature, a deficit of 0-2 units per household, but their united deficit was considerable.

We may compare the above tentative budgets with some for other Nepalese groups. Hitchcock, writing of the Magars, makes the general point that a number of families are not economically viable, but he has not, as yet, given any statistics.[3] Caplan reports of the Limbus that 64.6% produce less food than they require, but does not give any figures to show whether total budgets balance or not.[4] McDougall notes that, on average, in the Doti sample, the average cash expenditure exceeds the cash income by Rs.84, and in Sallyan by Rs.43.[5] But he does not show what proportion of households have a deficit/surplus. The best comparative figures come for two south Indian villages, where, in the 1950's, it was reported that "42% of Dalena's sample households and only 38% of Wangala's households have a deficit in their current budget".[6] In Thak, as we have seen, the proportion is higher, at about 50%

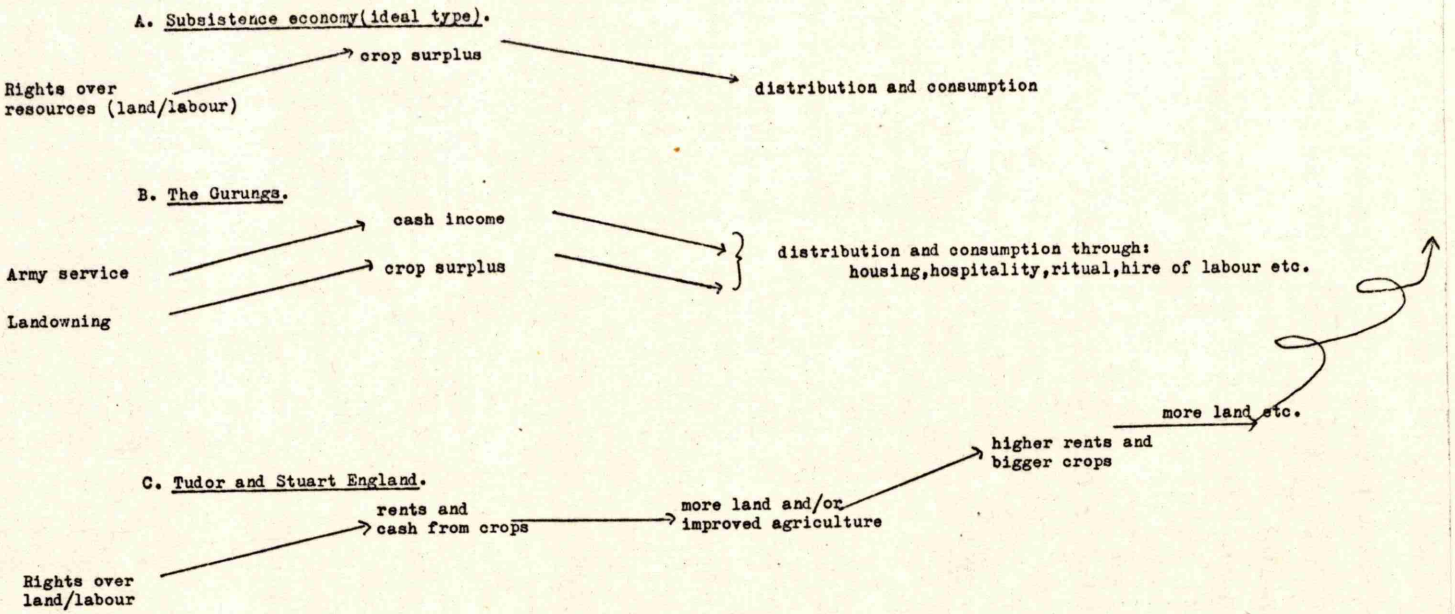
The circulation and distribution of wealth.

While only some families have cash coming in from abroad, almost every household needs money to buy consumer goods such as kerosene and salt. Likewise, while only some families own land, all need cereals. We may wonder how the flow of wealth is achieved. One of the difficulties of discussing this and other related problems, particularly the degree to which wealth differences between groups in the village are growing, is that even five years ago the situation was very different from 1969. An increased supply of consumer goods and an increasing pressure of population on land is even now rapidly altering the situation so that few generalizations account for both the earlier and the present patterns.

a) Pressures towards the equalization of wealth.

Of major importance here is the periodic shortage of labour in Gurung agriculture. The concentration of most agricultural work into the monsoon months means that even now, when there are over-all labour surpluses, there

DIAGRAM 18:2. The flow of wealth in three societies: a simplified model.



are certain months when every hand is needed to plant and reap the harvest. Poorer families can earn good wages, either in cash or crops, by contributing their labour, for it is a scarce resource. This puts them in a good bargaining position, which is reflected in the general Gurung attitude to lower caste workers. They were regarded in Thak as tricky and awkward workmen, likely to back out of an agreement at any time, and to go and work for another household. We have seen from the study of one Blacksmith's income that they were rewarded well for their labour, receiving almost as much profit from their work per hour as a man working in his own field. Many factors have contributed to this labour shortage in the past. The very primitive technology combined with steep gradients has made agriculture enormously labour-intensive. There has traditionally been a vast area of virgin land to be used; labour has been the limiting factor in production. Added to this is the adult migration to the army, often depriving the village of up to 50% of those males at their working prime. This shortage of labour has had many effects. For example it has been difficult to draw much profit from owning more than a limited amount of arable land. The problem has been to recruit labour, not to own land. Those families who were drawing money from abroad had to spend a large part of it on paying for their village lands to be cultivated.

Another vital pressure which has contributed to producing the fairly egalitarian situation in Thak has been the absence of a cash crop. There has been no way of converting the produce of land into a commodity which could then be re-converted into buying further land. The situation may be illustrated by a diagram which contrasts the situation in a cash-crop economy with that in an economy such as Thak.

for diagram 18:2 - see across.

Those who have a large surplus of rice or other cereals can not use this to further increase their economic lead; an abundance of land in the village, and no outside market, means that there is little demand for a man's surplus. Hence surpluses are distributed or destroyed, in order to gain social or ritual power, rather than being sold in order to gain cash with which one may buy more land.

Many stories were told in Thak of very rich men in the past who had, at their deaths, destroyed vast quantities of rice, oil, and livestock by having them thrown on a fire or distributed to holy men. The costly funeral pae partakes of this distributive function. A man used surpluses to buy merit and prestige at his death: there was no way he could transfer such subsistence wealth. In other words there was no real way of converting wealth from land into some more durable form of wealth. There was no cumulative device. At each generation the successful family would return to the same level as other villagers. This problem of storing and re-investing wealth is crucial: it has been discussed by many anthropologists. For example Barth's description of the way in which nomadic peoples find it impossible to rise above a certain level of wealth before they are forced either to become sedentary cultivators or to break up their lands, illuminates the situation among the Gurungs.[7] In this context it is important to remember that even thirty years ago the Gurungs were primarily pastoralists, a tribe who merely grew cereal crops as a subsidiary activity. They were thus still under many of the pressures towards an egalitarian distribution of wealth that are evident in most pastoral societies.

Another important factor which has tended to keep the Gurungs from rigid class differentiation is their multiple sources of income. Wealth flowed from several major channels; pastoral activities, arable crops and army service have all been important. A person who was successful in one sphere had to use his resources to obtain commodities in another. Furthermore, two of the three major occupations tend, by their nature, to inhibit long-term capital accumulation; livestock rearing, for the reasons suggested above, and army service. The qualifications necessary for a successful army career could not be bought. Even the poorest Gurung could enlist, provided his physical condition was suitable; it was a career open to talent. Indeed, it is arguable that poorer Gurungs were more likely to enlist, since it is they who were more desperate for employment and money. In a sense, we might see the army as a negative feedback mechanism, automatically smoothing out wealth

disparities in the village. In Thak, the wealthier landholders of the 1920's did not send their sons into the army; there was plenty for them to do at home. But the poorer families who were recruited then have now profited and increased their wealth. This has led to a considerable amount of bitterness against the nouveaux riche. It is a mobile system which reminds one of the situation in western Europe. A number of channels of mobility leads to a much more flexible and balanced arrangement than that in most agrarian societies.

A more intangible, but crucial, pressure is the general 'ethic of distribution'. There is the characteristic dislike of hoarding and meanness which we usually find in peasant societies, and the normal social pressures towards consumption and distribution rather than saving. Such pressure is most obviously displayed in the institution of the garda sheba dance, which is performed in Thak. Whenever a rich visitor comes to the village, or a child is born, or an army man comes home on leave or retires, a dance is held. For this the dancers must be paid. This is a polite ritual way of extracting money from the individual concerned, money that is consumed by the community as a whole. Nor are the sums always trivial; medium-wealth families would give 30-40 rs. each ~~year~~, when such dances are held at their house. Others sometimes give over 100 rs. for a single dance. On a smaller scale, whenever a person is lucky in a particular way, for example out hunting, or in the birth of a new buffalo calf, he is expected to share such good fortune with others by the distribution of meat or milk. Any piece of expensive property, as we soon discovered with our pressure lamp, is considered to belong to the village and to be permanently available for borrowing. Likewise it is expected that the poorest families of untouchables will constantly come round asking for scraps of soap, herbs, or foodstuffs. There are, in fact, a thousand ways in which people are forced and expected to share, not least at their funerals. The wealthier a person becomes the stronger the pressures grow.

On the other hand, the situation does not appear to be as oppressive as in some wholely agrarian societies. There does not appear to be a strong prevalence of the ethic of "limited good", in which envy is believed to be

rife, and the success of one family is seen as a direct threat to all others. People who had risen to outstanding success in the past were regarded with admiration; families of declining wealth were not generally feared to be envious. People were not afraid to praise babies, or to build expensive houses, or to wear new imported clothes. It is tempting to relate this to the fact that unlike the agrarian societies where the "limited good" ethic normally prevails,[8] the economic situation means that resources, for the Gurungs, are <u>not</u> limited. Wealth has been flowing in, in considerable quantities, from outside. It is neither economically nor psychologically appropriate to consider that the increase in wealth of one family is necessarily paid for by the loss of another. The cake is, or has been, expanding fast enough for everyone to have a larger slice. How people will feel if, as seems likely, the economy begins to contract (with population pressure mounting and recruitment declining) it is difficult to predict. We may expect a simultaneous hostility to those who try to accumulate, and a growing tendency towards such accumulation and economic differentiation. It is a paradox that at present, by encouraging conspicuous consumption of wealth in housing and clothes, a relaxed attitude prevents the accumulation of land which would destroy the present egalitarian system. If there is a growing hostility to the symbols of wealth differentiation, more wealth will, in the end, be deflected from consumption into investment, and thus the problem of inequality will be exacerbated.

An important mechanism whereby wealth is distributed throughout the village is the rising price of land and the cost of housing. At present land and housing absorb most of the wealth that flows into the village. Unlike the case of the Limbus, however, the land is not being bought back from another set of landowners to whom it has been mortgaged.[9] It is bought from other Gurungs. In other words, cash from abroad is used to alter the land-owning pattern at each generation. But so far, because of the factors listed above, as well as others, such land sales have not resulted in permanent class divisions. Rather, the very high prices paid for not particularly productive land are a means of dispersing wealth. It is a process somewhat similar to that whereby seventeenth

century English businessmen bought estates from declining landed families and thus suffused the countryside with new capital. One difference in the situations is obvious, however. In England some of this new wealth was used to increase the productivity of land by improving agricultural technology. Such improvements helped to destroy the vestiges of the small independent yeomanry and to create a large landless labouring class. Neither the technological nor social revolution have occurred in the Gurung village I studied. The technology is almost unchanged, and almost all Gurungs own land. But in the next chapter we will examine whether there are not signs of a long-term trend towards a greater inequality, an inequality that is reported to be growing among the Magars, Limbus, Lepchas, and Gurungs elsewhere.[10]

One final pressure towards equality is especially important; this is the way in which wealth is transmitted between the generations. Such transmission does not just occur at death; education and marriage payments are often as important as the wealth actually handed over at the parent's death. Among the Gurungs there has been little scope, until recently, for wealthier persons to give their children a better start in life by educating them. This was partly because there were few formal educational facilities, and partly because there were no obvious way in which education gave a person any advantage in the absence of bureaucracy, commerce and the professions. A group of wealthier families living just below the main village of Thak had hired a tutor in the late 1940's to teach their children. This was before the village school was founded. But the recipients of this early education have found it to be of little advantage. One is the headmaster of the local school, for which he received far less pay than he would as a rifleman in the army. Another loafs around, bored, yet unwilling or unable to leave the agricultural life of the village. A number of other families have invested considerable sums to have their children educated to a secondary level at Pokhara, but it is unlikely that they will be able to obtain well-paid jobs if we consider the huge quantity of school leavers competing for jobs in a small bureaucracy. Western-style education gives no advantage in village cultivation or recruitment to the army. Thus one valuable mechanism, whereby superior

wealth in one generation can ensure superior wealth in the next, cannot operate.

The transmission of wealth at marriage and death among the Gurungs is such that all children benefit, though sons receive larger portions than daughters. Such partible inheritance between all sons is another mechanism whereby capital accumulation in certain families is checked. A large landholding, such as that of house 17, may well be broken into pieces too small to sustain individual families within a couple of generations. Rich families are also expected to give away a considerable amount of wealth with their daughters. Thus their wealth is being distributed between all the children. This is a significant contrast to the systems of primogeniture which helped to preserve the European class divisions of the seventeenth and eighteenth centuries, at the expense of younger sons who were de-classed. The cumulative effect of partible inheritance is that, at each generation, the number of holdings will increase dramatically. Some families may be forced right off the landowning map, as occurred during our stay in Thak when a man from an illegitimate branch of a carjat lineage was forced to sell off his last piece of rice land and went to try to live off his buffaloes in the forest. Those forced out provide land for those with cash from the army. But the over-all effect is likely to be a village where land is fairly evenly divided between a large number of peasant proprietors, all other things being equal.

b) Pressures towards accumulation of wealth in a few hands.

It has frequently been pointed out that the penetration of cash into a subsistence economy breaks up old relationships, and provides the mechanism whereby an accumulation of wealth may occur which encourages a growing inequality. That cash, of itself, does not necessarily have this disruptive effect is shown by the history of the Gurungs. Ever since the First World War, large quantities of cash have been paid to recruits, but in the absence of labour that could be bought with such cash, of consumer goods, and a market economy, this inflow was minimally disruptive. There was difficulty in spending army wages in the village because other Gurungs did not want or need large amounts of money. There was nothing to buy with it. Hence much of the army pay was turned into non-productive goods with little exchange value; gold, clothes and other

goods from Malaya. Land was widely available, people were not forced to sell much of their labour. Cash was an alien element in a subsistence economy. Recently the situation has changed dramatically. Much of this is due to the factors listed below.

As population grows and land becomes scarce, it becomes a 'good' which it is worth investing money in. Land has, of course, been bought and sold for many years. But now it is becoming more and more obvious that the wealthy persons in the village are those who own land. Also it is becoming more difficult to hold onto land. When land was plentiful in relation to people, anyone with sufficient labour could work enough land to feed themselves; now it is only possible to hold onto land if one is making a profit in annual budgeting, in other words if one is not a 'deficit' household. The weaker are forced off the land in the increasingly competitive struggle for an obviously limited resource. At the same time, a shift towards a surplus of labour on the land means two things. Firstly, people are prepared to hire out their labour to others for cash returns, rather than to live off their own or be idle. Secondly, such returns, both in cash and kind, though at present fixed by "conventional" standards to a certain extent, are likely to decrease as a proportion of the real productive value of the labour. In other words, the bargaining power of labour will decline. There will also be less and less work for people to do, so that the annual income of those who do depend on wage labour will decline. The same amount of land will have to provide work and crops for a growing number of people and there will be less and less to go round.

Such a tendency will be exacerbated by improved agricultural technology without greatly increased yields. Any use of labour-saving devices, such as the new plough and spaced crops (to make non-human weeding possible) as suggested for the Trisuli development area[11] would have an enormous effect in reducing the demand for labour. Likewise the same report suggests the use of automatic grinding and de-husking machines; these would drastically cut the demand for labour. Such improvements would mean, in effect, that larger landowners could accumulate more land and be less dependent on a labour force rapidly becoming redundant. It is not surprising, therefore,

that the same Report argues that such developments must be accompanied by the re-settlement of a large part of the village population. In Thak and many other Nepalese villages such re-settlement is now out of the question, and indeed the population is rapidly becoming more dense. What is needed are methods of making agriculture both more productive and also labour intensive. Double cropping and the use of improved seeds and fertilizers spring to mind here, but there are many difficulties in their adaptation to hill conditions. One social difficulty is that those with spare capital for such improvements are likely to be the rich. For example, as Caplan has pointed out,[12] it is only those who have a large herd of livestock and hence much manure who can afford to grow wheat in the dry season. Thus wealth differences in the village would be accentuated. It is also not yet clear whether the cost of fetching fertilizer to the village and carrying crops down to Pokhara will make it possible to compete with areas nearer the market. For domestic consumption, such use of fertilizer, if it could be combined with regulation of livestock grazing and improved water supplies, would help to feed and occupy the growing population for a few years longer. But behind this are all the dangerous concomitants of the 'Green Revolution'. The disease and pest dangers of a monoculture, the very serious ecological side-effects of fertilizers and pesticides already make it difficult to recommend their use at all. It is a terrible choice - poisoning one's environment or going hungry. But it is a choice which the Gurungs, like all people's throughout the world, will increasingly have to face.

The mechanism whereby certain families are forced down and others up is the budgetary surplus or deficit. A combination of favourable conditions has led the Gurungs to expect a higher standard of living over the last twenty years. The expenditure on what are now considered 'necessaries' such as cigarettes, sugar and kerosene has increased considerably. Yet such expenditure demands an income which many families do not have. They are forced to sell capital, gold and land, or go into debt. At the same time the reserves of good new land have come to an end and each generation sees the present fields sub-divided between an increasing number of children. More and more families find it impossible to balance their

income and expenditure; it is far easier to expand than contract expenses. This process has, I believe, only just started to be apparent in a comparatively wealthy and new village like Thak: in poorer or older villages such as Mohoriya or Siklis it has been obvious for some time. The problem has also been delayed by army money; the poorer households have remade their fortunes by sending a son abroad. But the problem is likely to grow. Such deficits are the way in which an increasing split between a class of small peasant proprietors and a landless group comprising up to half of the village could occur during the next twenty years.

Such a tendency to more permanent class differentiation will be exacerbated by the evaporation of communal resources. Where there are rich resources of wood, fodder, fish, wild fruit and vegetables and wild game, this will be of especial benefit to poorer families. Though they do not have the guns to kill larger game, they can draw on the "commons" to overcome food deficits, and for free fuel and building material. The deterioration in the state of the woods and rivers around Thak has already been indicated It seems likely that within twenty years there will be little of value left. Much of it is being cleared for individual landholdings, particularly towards Taprang. Thus both the quantity and quality is being rapidly eroded. Whether anything equivalent to the enclosure of the Commons, which occurred in pre-industrial England and both symbolized and caused the destruction of small-holders and hence helped create a landless proletariat, will occur in Thak it is difficult to predict. But certainly one important cause and sign of equality will soon be merely a shadow of its former self. The poor will suffer most. They, for instance, will not have the cash to buy the fuel needed to supplement the rapidly vanishing supply of free wood.

Another essential pre-requisite for the growth of economic inequality is a market economy. As argued earlier, only if people can convert their surpluses into a fund for buying more productive power is an accumulative spiral possible. Otherwise small economic advantages are not transformed into permanent and growing ones. Such a market economy is the dream of development experts. For

example the experimental farm at Lumley, where Gurungs are trained (under British Aid auspices) to grow cash crops such as fruit and nuts, hopes to develop widespread cash-cropping. As yet it is not certain whether there will be a market. At present hardly anything produced in Gurung villages is sold outside, which is another reason for their comparatively egalitarian structure.

In this brief sketch of some of the mechanisms whereby a landless labouring class is likely to be created in Thak a somewhat 'ideal type' model society in Thak has been drawn and predictions have been made on the basis of this. It is, however, likely that many other factors, for instance general price changes, as well as changes in the whole situation in Nepal and India over the next twenty years, will alter the outcome. Nevertheless it does seem worth suggesting the following hypothesis. When any land-holding gets below a certain viable size, the owner is forced into debt and then into selling his capital. Holdings will tend to be concentrated into fewer and fewer hand, though perhaps let out to tenants at a high rent. Such renting of land has only just started in Thak. It awaits the development of a cash crop and market, a final depletion of communal resources, and a growing build-up of population before it becomes a major form of landholding. If it does happen, as it happened in pre- industrial and industrializing England, and in India, there will be the same problem of a rural, landless, workless, heavily-indebted proletariat. It is doubtful whether such people will find room in a tiny industrial and bureaucratic sector. The problems India faces now, Nepal will face during the next two decades.

NOTES. CHAPTER EIGHTEEN.

1. McDougall, Village Economy, pp.55-6. I gather that this scheme has now been suspended indefinitely, (1971).
2. They are houses 6,14,23,40,52,55,70A,70B,71,72,83,83A, 86,87,88.
3. Hitchcock, Magars, p.105.
4. Caplan, Land and Social Change, p.77.
5. McDougall, Village Economy, pp.45-6. (Thus the total deficit for 100 Sallyan households would be 8,000, approx. half that calculated for Thak).
6. Epstein, Social and Economic Change, p.267.
7. Barth, Nomads of South Persia, pp.106-111.

Notes. Chapter Eighteen (contd.)

8. Foster, 'Image of Limited Good', outlines the ethic.
9. Caplan, Land and Social Change, ch.5.
10. Hitchcock, Magars, pp.105,108; Caplan, Land and Social Change,p.170; Gorer, Himalayan Village,p.87; Pignède, Gurungs,p.144.
11. Wye Valley Report, 'Crop Production'.
12. Caplan, Land and Social Change,p.13.

CHAPTER NINETEEN. CHANGES IN THE DISTRIBUTION OF LAND.

The nature of the sources.

Only the very great importance of learning how the population-land ratio and the distribution of wealth have changed over the last hundred years in a Gurung village can justify the attempt to use records as difficult to interpret as the surveys upon which land taxes were based. These tiriges (Nep. tirij - receipt given for payment of money also tirja, authorization to collect taxes), as they are known in Thak, were compiled by village headmen or kroh. In Thak they were made in 1883 (Nepali calendar 1940) and 1933. They appear to exist for most or all Gurung villages, but vary in date from area to area. Thus Pignède referred to their existence, though he was unable to use them in the short time available to him.[1] In fact the Mohoriya records were kept in Pignède's informant's own house. They were made in the years 1899,1906,1942. There is also said to be one for 1868 at the Kusma Mal (Land Tax) Office. In Thak also, one copy is kept in the village and another in the local (Pokhara) taxation office.

The documents are written on very coarse paper which has, in the village copy I used, been rolled into bundles. Ink was used. The difficulty my informants experienced in reading the old place names and script was increased by the frequently poor condition of the documents. There were, for Thak, documents written by twelve separate kroh, each one responsible for a dozen or more households. The description of the rice and maize fields took a different form and, in half the cases, each type of land was written on separate paper. Each piece of rice land was listed under the following general headings.
Serial number(mort): Man's number (mohi): field number (kitar): details concerning field (see below): class of land (doyam):[1B] amount due per muri of land (bali): area of land (in muri) (sa muri): total tax due (bali/tiro): extra tax of 4 paise per plot of land (kalo paise): total due. The details concerning each field usually took the following form:

"Narbahadur Gurung became the owner of this land in the survey of 1933. In the survey of 1883 it was owned by Latchman Gurung. In the survey of 1933 it became the land of Narbahadur, after the death of Lakshman. The land is east from the forest, it is north from the path, south from the land of Daljid, west from the land of Lalbahadur. The name of the land is Kogon tari".

It will be seen that details are given concerning the 1933 and 1883 owner, the landmarks on all four sides, and the name of the field. Frequently the size of the land in 1883 is also given. Measurements for the 1933 survey were made by the kroh with a length of rope; a comparison of the figures from this survey and those in the recent very careful survey undertaken in connection with land reform are as follows.

TABLE 19:1. Comparison of the size of certain holdings, as shown in tiriges and land reform survey (rice)

Field name	Area (converted to sa muri)	
	Tiriges (1933)	Land Reform Survey 1965)
Bra taba	14.12.4	34.15.0
Lyju khet	10.0.0.	44.0.0.
Kargord	41.11.2	74.15.0.
Tunibort	9.12.4	32.11.0
Cheemro	10.0.0.	29.10.0
Kogu tari	14.15.0	36.5.0
Cheemro	18.16.6	40.0.0.
Total	126.3.0.	291.16.0

The above comparisons suggest that usually the total in the tiriges is about one third to one quarter of the real amount of land as suggested by a recent survey. It is possible that in a number of cases the use of the holding has become more intensive since 1933. In other words new terraces may have been added on steeper areas which were not cultivated in 1933. This may account for a small part of the discrepancy, but since several of the fields compared above were particularly flat and good ones, which are unlikely to have been enlarged by new terracing, this cannot be a large part of the explanation. It seems likely that sizes were deliberately minimized in order to lessen taxation.[2] But the important fact for our purposes is that the under-registration has been consistent: all but one of the pieces listed above vary between a quarter and a half of the presently assessed size. Therefore, in comparing land ownership over time, although total areas may be distorted, relative size of landholdings will be less unsure.

Another distortion that might arise is connected to the problem of ownership. It is probable that in some cases a man who had sold his land was still credited with it in the survey, and that in others it was being worked by someone other than the owner. It seems unlikely that

either of these factors will be very important in the Gurung context, to judge from the present-day situation. Even in 1969, with considerable land shortage, there was not a large amount of long-term leasing of land, and scarcely any mortgaging of land for security on loans. With rice land still fairly abundant in the past, there is likely to have been even less of this. Furthermore, it would seem likely that when the surveys were made the actual owner, rather than the previous one, was written down. Although the present payment of land taxes in the village shows that people seem prepared to go on paying taxes on pieces of land which they sold long ago, or are not working, it is likely that when the actual survey was made, some care was taken to work out actual ownership.

It is clear from the land records that rice terraces have been owned individually since at least 1883. As has already been described, maize and millet fields were less in demand and were only shared out individually during the years since about 1940. Before then the patches of jungle were slashed and burnt by those who had the labour. The 1933 survey from which I worked did not refer to any earlier ownership of the plots of maize land; many of the entries state that tax has only been paid since the 1940's and 1950's. Some of the later documents specify the bordering lands, but mostly all that is given is the owner's name and that of the field. The quantity of seed it would take to sow the named area, also given, is clearly a standard estimate, bearing no relation to the actual area. The tiriges also list the uncultivated hillsides, which are owned collectively by groups of half a dozen or so Gurungs. Finally, a certain number of house sites are also listed, with their dates of occupation. The tiriges concentrate on the land near the central village of Thak; but some to the north and south, on the borders of the panchayat, is also included as well as a few fields in the neighbouring panchayat of Moja, owned by inhabitants of Thak.

Changes in the distribution of land, 1933-1965.

The 1883 tiriges show a total of some 327 rice plots, held by some 113 persons. The vast majority of these landholders (89/113) held only one or two plots of rice land. Fifty years later new rice fields had been made, and one or two plots had been subdivided between heirs, so that now there were 478 plots held by 111 households.

DIAGRAM 19:1. Size of rice holdings in Thak in 1883, 1933 and 1968.

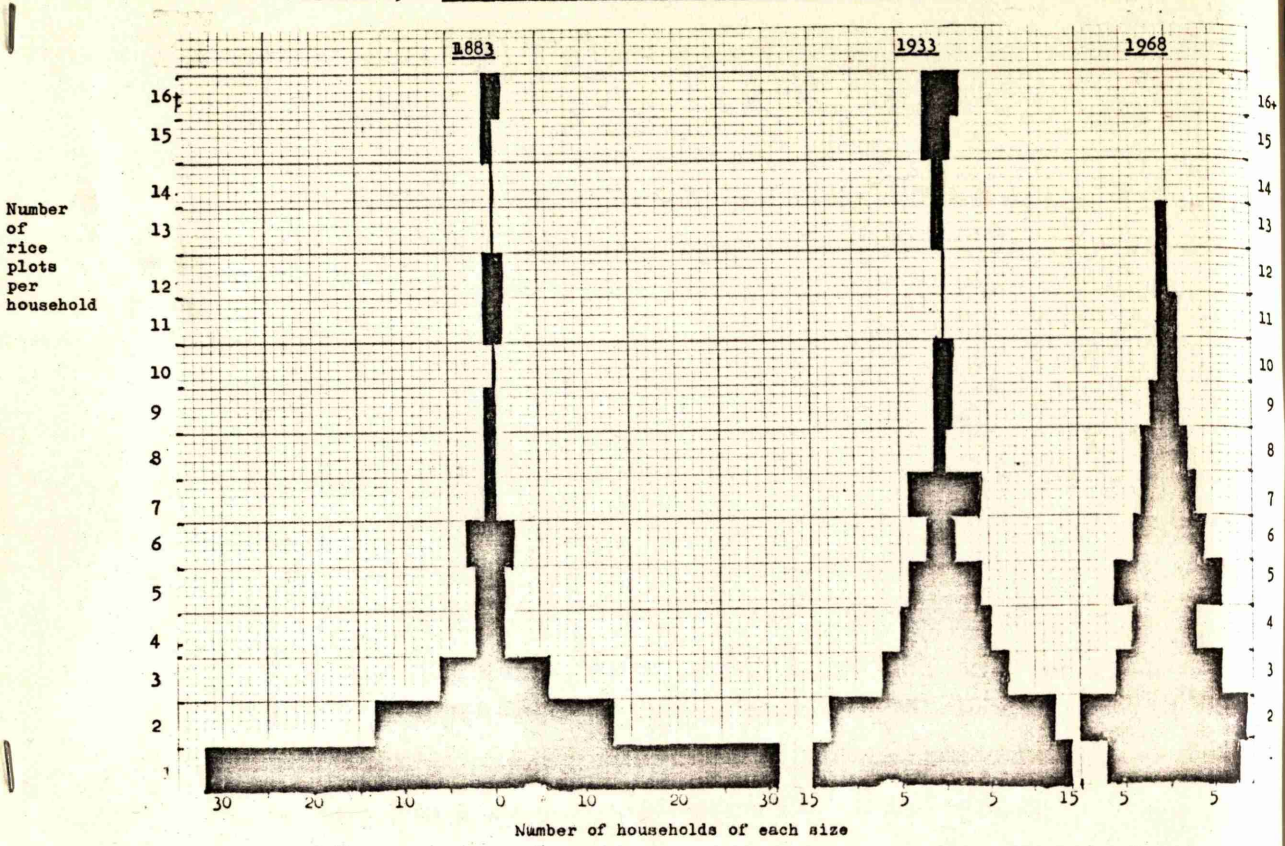
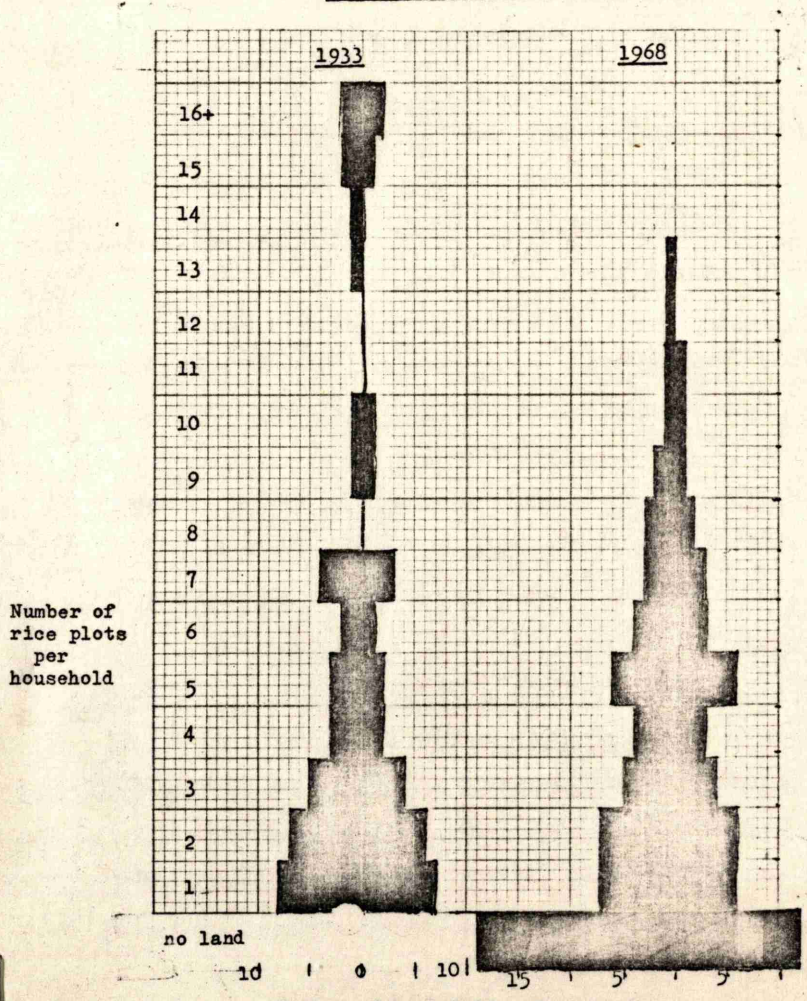


DIAGRAM 19:2. Size of rice holdings in Thak 100 sample households in [redacted], 1933 and 1968.



The distribution of the rice plots in 1883, 1933 and 1965 is seen most easily in a diagram.

for diagram 19:1 - see across.

In 1883 the great majority of villagers had a small piece of rice land; possibly the abundance of land meant that every household had a plot. But few households had many plots. Only seven households had ten or more plots, and only three had fifteen or more. The greatest single holding had 18 plots. By 1933 the clearing of new land, combined with the drop in the number of very small rice landholders, meant that a group of middling and large landholders could emerge. This was perhaps the period of greatest inequality. At the top there were eleven rich households owning ten or more plots of rice land, seven of them owning fifteen plots each. The greatest number owned by a single household was 27 plots. Those lineages which had arrived first in the village had now cleared most the rice land which they claimed was theirs. The continuing dominance of the carjat perhaps enabled them to exact the labour to work this land. At this point, over half the rice land in the village was owned by 22 households. By the 1960's the position had again changed.

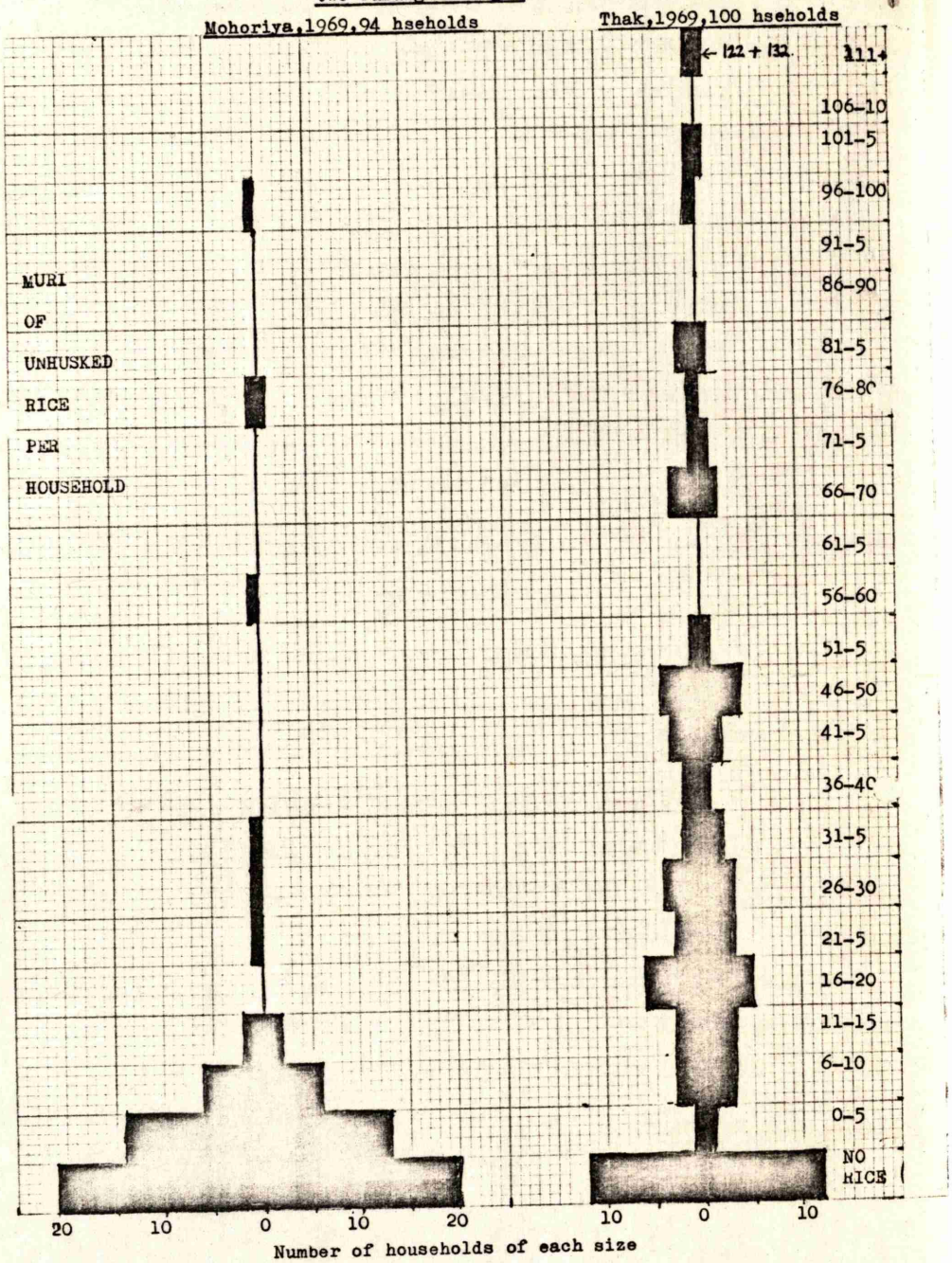
The boom in army service in the Second World War had boosted some poorer families, while rising prices, divisions between inheriting sons, and Land Reform legislation had broken up the biggest estates. There are now no households with more than 13 plots of land, but a greater number with 5-8 plots. The number of very small rice holders has decreased.

A better comparison between the position in 1933 nad 1968 is obtained if we just compare landholdings in our sample hundred households at these two dates, as in the following diagram.

for diagram 19:2 - see across.

This eliminates outside owners from the 1933 calculations, particularly people living in Panigat and a number of Brahmins who often have one or two plots within the area covered by the land records. This accentuates a double tendency. There is on the one hand a growing equalization of wealth among the Gurungs at about the 5-plot level; on the other hand there is growing inequality in that there are an increasing number of Blacksmiths, Tailors and non-Gurungs, as well as a few newly-arrived

DIAGRAM 19:3. Relative amounts of unhusked rice in two Gurung villages.



Gurungs, who have no rice land. Even though there are a growing group of those without rice land, such is the growth of population that the available rice land has also had to be split up among more households. Thus in 1933 there were 64 households with some rice land. In about 1965 there were some 81 such households. It must be stressed that the above figures, since they only deal with numbers of plots, plots which vary enormously in quality and size, only give a rough indication of the relative distribution of rice land. It is also likely that the pattern varies very much from village to village, and this may be checked by comparing Thak with Mohoriya.

I visited the village of Mohoriya in late 1969, and though I was unable to study the land records themselves, an extremely able informant gave me a list of how much unhusked rice was grown by each household in the village. The rice growers numbered 53/94 households, as opposed to 58/94 some 11 years before, according to Pignède.[3] The distribution of the size of rice harvest for the two villages is indicated in the following diagram.
for diagram 19:3 - see across.
It will be seen that only 7/53 of the Mohoriya households have over 15 muri of unhusked grain, or enough, by Thak standards, to support them. The vast majority have very small plots, while there are four families which are fairly wealthy, even by Thak standards. The diagram, in fact, corresponds fairly closely to the situation in Thak in 1883. It is likely that such a distribution is characteristic of a village roughly in its third generation, at a period before the biggest landholdings are split up between sons. The diagram also emphasizes the relative scarcity of rice land in Mohoriya, so that we are not surprised when we remember that 13 households left the village in the early 1960's on the offer of free land in the Terai. Nor is it surprising to learn that 2/3 of the households in Mohoriya had to buy millet from the bacat kos (compulsory savings fund) to tide them over before the new harvest in 1968. This did not occur in Thak.

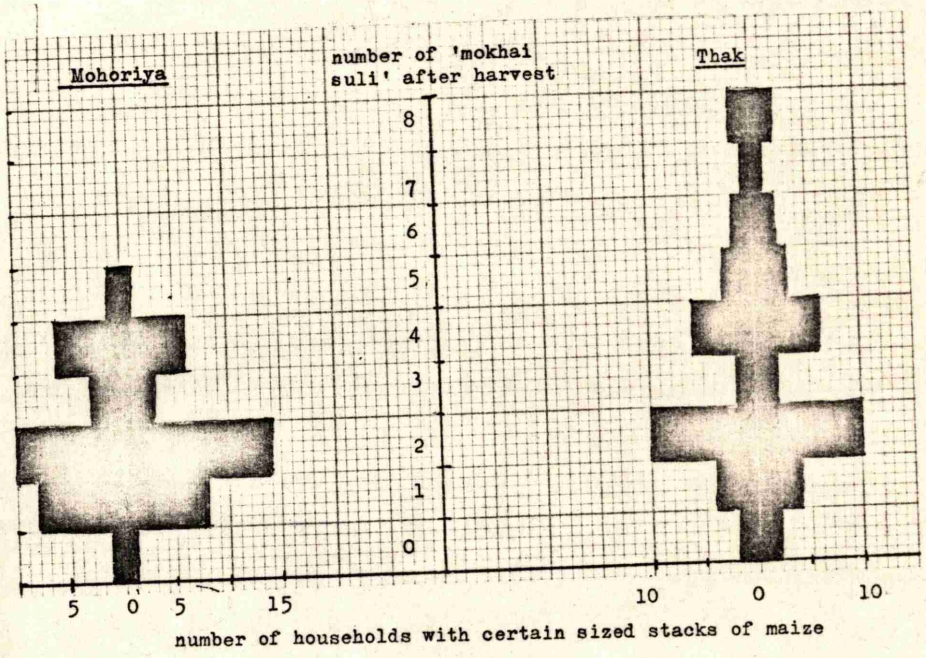
The situation is even more unequal in Mohoriya than it looks in the diagram, for a number of the households in Mohoriya who are indicated as growing rice do not, in fact, own the land they cultivate, but sharecrop it.

Pignède stated that of the 58 households harvesting rice "the larger part of these do not harvest more than one or two muri and the fields do not belong to them".[4] Although, as we have seen, rice holdings were small in 1968, only 8/53 had as little as one or two muri and it seems possible that Pignède was misinformed here. It is also probable that he was mistaken in saying that over half the rice growers were sharecroppers. Although it is likely that I was not given the full figures, there seems to be too much of a gap between his estimate and the fact that only 4/53 of the 1969 rice-holders were specified to be share-croppers. In Thak, as we have seen, only one family with no rice land of its own was able to join the ranks of rice-growers through share-cropping.

The diagram for Thak can only be a rough assessment since it is not based on recorded rice harvests, but on the amount of rice land owned, multiplied by a standard amount to give produce. The assumption is made that every ropani of rice land owned in the land survey records will produce 2 muri of unhusked rice. This is a conservative estimate, for earlier it was calculated that 2 and two thirds muri are produced, on average per ropani; but taking such an estimate helps to allow for the fact that not all rice land is fully cultivated. Taking a standard conversion figure such as this also tends to understate the crops of the richer households: not only do such families have bigger holdings, but they tend to have the best quality land with a higher yield. The Thak diagram shows that only 24/100 households have no rice lands, and 62/100 have what would be considered to be large holdings producing over 15 muri of unhusked grain. It seems that Pignède was premature in saying that some 30% of the population owning all the rice fields, as in Mohoriya, "is a general phenomenon in Gurung territory".[5] One reflection of this situation was that the diet in Mohoriya contained far less rice, even in richer households. While households with 11 or more muri of unhusked grain sold some of their rice in Mohoriya, only those with 30 or more muri did so in Thak.

So far we have been using the better-recorded rice ownership as a sole index of wealth. But it is possible to object that those without rice might compensate by having especially large maize holdings. It could be also

DIAGRAM 19:4. Number of households with specified amounts of maize in two Gurung villages, 1969.



argued that villages such as Mohoriya, higher up the mountain slopes, may have less rice land but more maize and millet fields. The only information I have for comparing maize yields in Thak and Mohoriya comes from observing the amount of maize stacked outside various homes in the autumn. The Gurungs store most of their maize on poles in the courtyard (mokhai suli). A large landowner may have up to eight or more poles, storing seven sections of maize. The number of sections that appear outside a house are a rough, but sometimes inaccurate, guide to wealth. A few households prefer to store their maize along the beams in their attics and the size of 'sections' varies considerably. Yet such maize stacks are still the best indication we have. The pattern for a number of houses in Mohoriya, noted in December 1969, and for Thak in October 1969 are shown in the following diagram.

diagram 19:4 - see over

Neither village had suffered a bad maize harvest the previous summer, and the later observation of the Mohoriya sample will make no difference since it is not until March or April of the following year that the maize stacks begin to be emptied. In both villages two 'sections' were the mode, but in Mohoriya only one third of the households had three or more sections, whereas in Thak roughly half of the households had three or over. If anything, therefore, inhabitants of Thak have a greater amount of maize land, and such land is more unequally divided. It is also clear from the land records that, with the exception of Tamang/Magar families who tend to have large maize holdings, the distribution of maize/millet land is the same as that of rice land. It is the carjat Gurungs, owners of the majority of rice lands, who also own the larger part of the maize lands. In speaking of maize land, we have also included millet since the crops are grown in the same area of fields.

The above comparisons between the two villages are substantiated by such general totals of crop production as we are able to obtain. In 1957, Pignède estimated a total production of 910 muri of (presumably unhusked) rice. The totals I was given for 1969 added up to 610 muri of unhusked rice. The drop of a third during the twelve years might be explained in a number of ways; fluctuations

in the weather, mistaken observation by Pignède or myself, or a drop in the productivity of the land over twelve years as soil erosion and exhaustion grew. Whatever the reasons, it is clear that these 94 families have, on average, some 6-10 muri of unhusked grain per household. The 100 Thak households, at a conservative estimate, have some 28 muri of rice per household. As for maize, Pignède calculated that 449 muri were produced in 1957, or some 5 muri per household. Again taking a conservative estimate, there are approximately 12 muri per household in Thak. One interesting fact that emerges from this comparison is that while the production of cereals in Thak is at least twice as high as it is in Mohoriya, this does not lead to the sale of surpluses; practically all of the grains are consumed in the village. Thus to double the yield of cereal grains in villages such as Mohoriya would not necessarily lead to the marketing of crops. The marginal propensity to consume is highly elastic. The relative affluence of Thak may, however, help to explain why the potato has not become widely popular and double-cropping (growing wheat or millet on the rice lands in the winter as is done in nearby villages) has not become common.

The way in which arable land is distributed at present between different groups in Thak, according to the Land Survey, may be seen in the following table.

TABLE 19:2. Distribution of rice and maize land, Thak 100 households.

Group	Total households for which totals are known 1965	Total maize/millet land owned (ropanis)
Carjat Gg.	50	1622.12.3
Sorajat Gg.	21	433.00.3
Tamang/Magar	4	112.03.0
Blacksmith	11	28.01.2
Tailor	6	17.09.0

Three-quarters of all the land is owned by half the households in the village, the Carjat. The Blacksmiths and Tailors have very little land indeed.

We may wonder how the situation in Thak compares with other villages nearby and elsewhere in Nepal. One set of comparative figures is shown below.

DIAGRAM 19:5. Relative amount of land held by lineages and jats, 1933 and 1965.

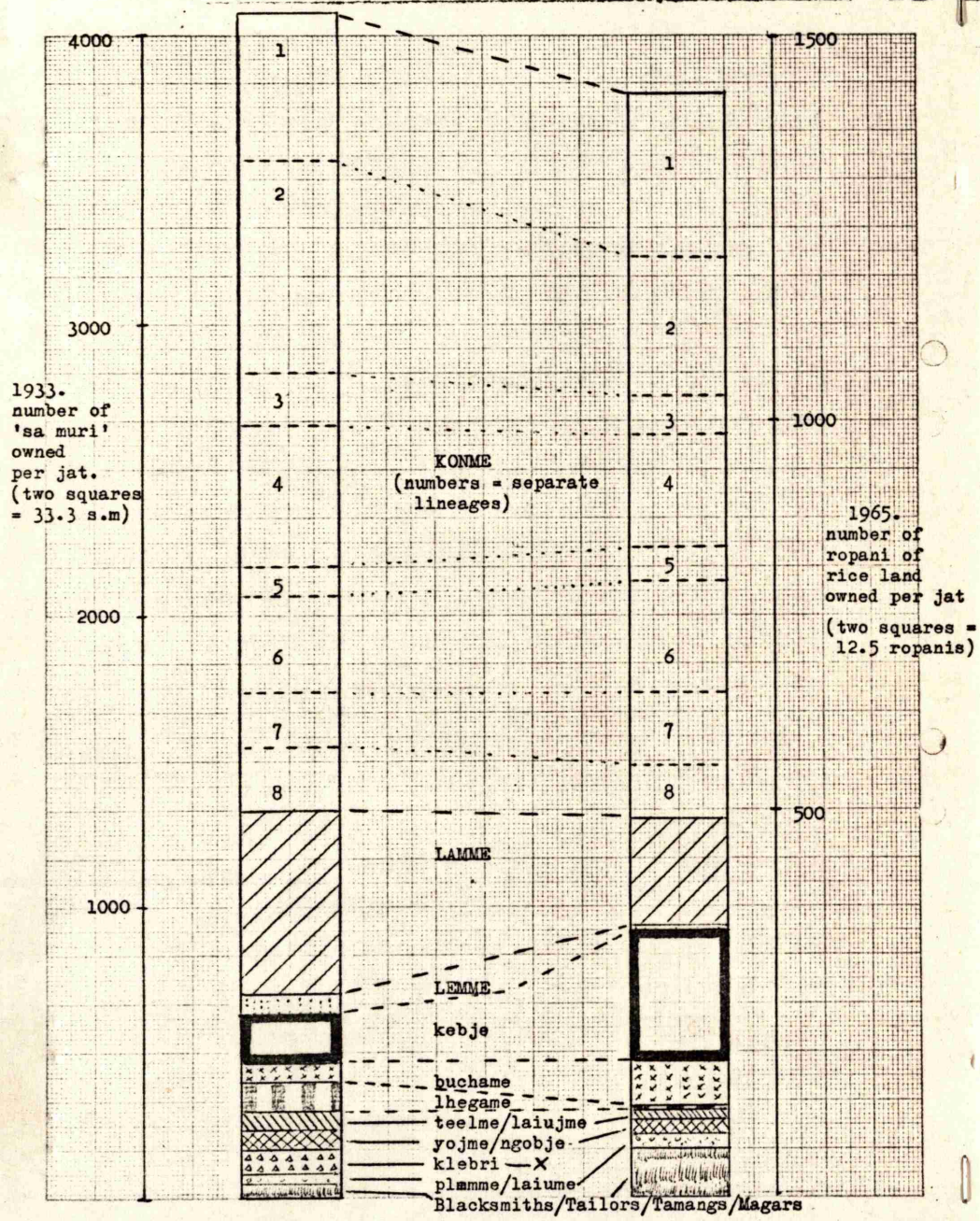


TABLE 19:3. Distribution of holdings of various sizes

Village	Size of holdings in ropani						total
	below 1	1-2	2-3	3-5	5-10	10-20	20+ households
Arghau*	0	3	2	3	11	14	30 63
Armala*	6	6	7	6	14	9	4 55
Thak	13	2	1	3	10	23	40 92

* The figures for Arghau and Armala (a partly Gurung village) are taken from B.P. Shreshta, Report on Village Development in Pokhara(1963) as reported in Shreshta, Nepal Economy,p.55.

It will be seen that Thak is considerably wealthier than Armala; in Thak 40/92 households have over 20 ropanis of land, in Armala only 4/55. The proportion of landless is, however, fairly similar. Landlessness does not appear to be a problem, as yet, in Arghau. We need slightly different categories to compare the Thak figures to those collected by McDougall, for two areas in the Western Hills.

TABLE 19:4. Thak compared to areas in the Western Hills.

Area	Size of holdings in ropani			total
	less than 5	5-9	10+	households
Thak,1965	19	10	63	92
Sallyan,1967*	7	18	25	50
Doti,1967*	22	13	15	50

* Figures for Sallyan and Doti are given in table 13,p.27 of McDougall, Village Economy.

In both Sallyan and Doti there are a smaller proportion of landholders with 10+ ropani of land, and the proportion of small landholders in Doti is very much higher than in Thak. On the whole, therefore, by Nepalese hill village standards, Thak is a moderately wealthy community.

Change in the relative wealth of lineages,1933-1965.

Unfortunately, informants were often unable to identify people named in the 1883 land survey, so that it is impossible to compare the position in 1883 with later estimates of land-ownership by various lineages. It is certain, however, that all of the eighteen households with five or more plots of land in 1883 belonged to carjat lineages. It is possible to make a rough comparison of the lands held by various lineages in 1933 and 1965. This is done in the following diagram.

for diagram 19:5 - see across.

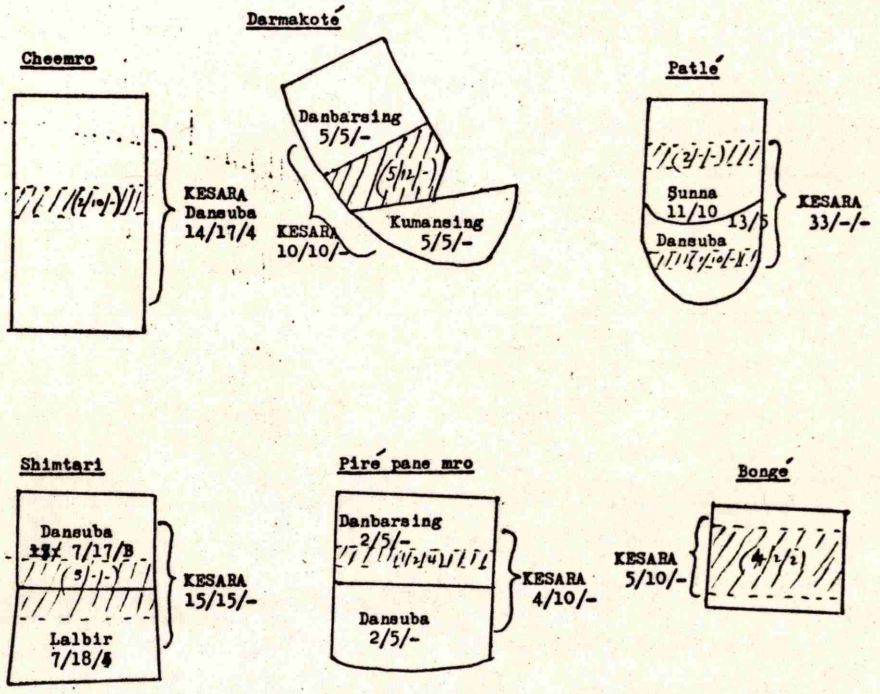
The 1933 position is based on the number of sa muri of rice land listed as owned by each lineage in 1933. All

lineages, except the konme, have been shown as undivided. The konme have been divided into 8 lineages; probably some of these are sub-lineages, but they were recognized as distinct in 1968. Thus lineage 5, for example, comprised household 1,28,33A, who were fairly closely related to lineage 2. The lamme group, though in reality divided into several lineages, is shown undivided in the diagram. The over-all impression of the situation in 1933 is of konme dominance. They owned over two thirds of the rice land. The other third was split fairly evenly between the lamme and eight sorajat lineages. Within the konme, lineages one and two were dominant.

The 1965 situation is based on the more accurate totals of rice land ownership given by the land survey records of that year. Each square now represents 12.5 ropani, a figure chosen to make the total distribution as closely comparable as possible (visually). A number of changes since 1933 are immediately apparent. The sorajat have gained considerably, primarily at the expense of the lamme but also of the konme . There has been a particularly dramatic rise in the rice-owning by the kebje and bucha lineages. The Blacksmith/Tailor/Tamang/Magar increase is entirely due to land acquisition by Tamangs and Magars; the Blacksmiths and Tailors have less land than in 1933.~ The most conspicuous shrinking has been in the lamme and konme.[2] Several of the smaller sorajat clans have also decreased, almost to the point of extinction. On the whole, however, the konme still retain their economic dominance in the village.

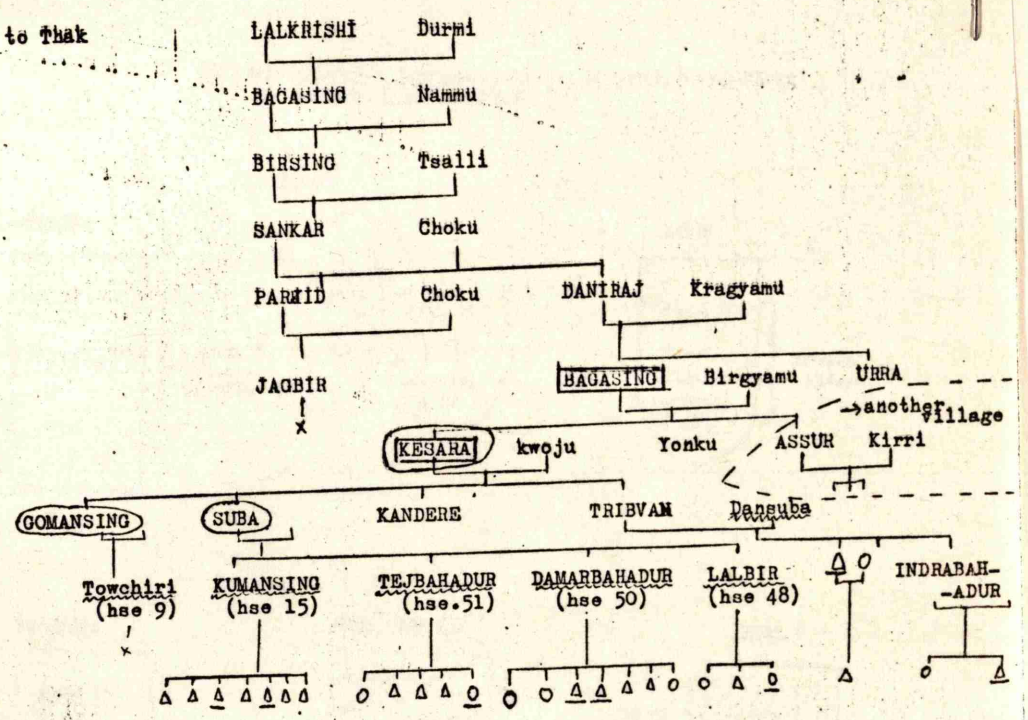
In order to illustrate the way in which estates are built up and divided three types of analysis will be undertaken. For the rest of this chapter we will discuss the land position of particular lineages, in order to study the way kinship and landholding intermingle. In the following chapter we will first examine particular fields, and see how the pattern of ownership fluctuates over time, and then see how the land of particular big landholders in the past have become parcelled out between present households.

MAP 19:1. Schematic representation of Kesara's landholdings and their subsequent owners.



Notes: Bongé field could not be located in 1969. The shaded strips were all owned by Kesara in the 1883 land survey; in the 1933 survey he was described as owning the areas indicated KESARA. The present owners (1969) are indicated by small letters (thus, Dansuba). The figures indicate sa muri of land.

DIAGRAM 19:6. Genalogy of kebje lineage one.



key:

male children = Δ
female children = o
dead children = Δ o

landholders registered in 1883, or as having made the field = □ o
landholders registered in 1933 =
landholders in 1968 = ~~~~

The kebje lineage.

One of the most successful groups over the last thirty years have been the kebje, represented in the village by two main lineages. The genealogy of what we will call kebje 1 is shown as follows.

for diagram 19:6 - see across.

According to a written list of ancestors which I was shown, the founder came down to the village from Lamjung some eight generations ago, or in about 1730. But by the time of the 1883 land survey there was still only one household of this lineage in the village, represented by Kesara. This suggests that, although we know other branches had gone to other villages, the arrival of this lineage was probably more recent than the written genealogy would suggest. Rice land was comparatively plentiful in 1883 and Kesara was registered as owning seven strips, totalling 21.16.0. sa muri of rice land. These strips, and their later subdivisions, are shown most conveniently in a map.

for map 19:1 - see across.

Some fifty years later, in 1933, Kesara was still stated to be the owner of all these lands. By now, however, the land was fully utilized and the area under cultivation had quadrupled (assuming that the accuracy of measurement was equal at the two dates). In addition to this, his sons Subar and Gomansing had acquired, probably by purchase, three further pieces of land, as shown in the map. Thus by 1933 the lineage had accumulated some 133[illegible].13.0 sa muri of rice land in all. This then had to be divided out between the six heirs of Kesara. This was apportioned as follows.

TABLE 19:5. Divisions of Kesara's holding between heirs (rice)

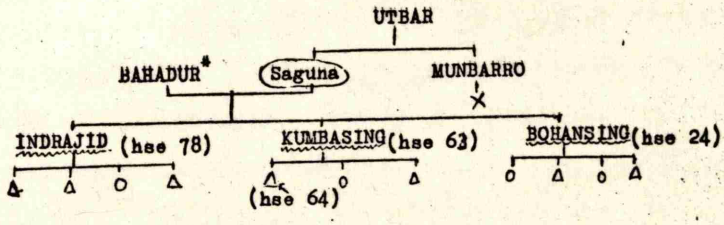
hsehold no.	inherited sa muri	no.plots	now has(1965 Survey) sa muri	no.plots
hse 15	9.3.4.	2	c.100	7
hse 48	19.18.4	2	c.63	6
hse 50	16.9.2.	4	c.75	5
hse 51	15.16.2	2	c.60	4
hse 9	16.5.0.	2	c.11**	3
hse 32	39.7.0	5	c.100	9

** This exceptional decrease was largely due to the washing away of a large field by the river. House 9 was also not a direct heir, and the heir, a woman, had been adopted into a carjat household.

It will be seen that house 32 was the most fortunate, presumably because her husband, being the same generation as Suba, inherited a large share from Kesara, whereas households 15,51,50,48 had to share out Suba's inheritance. The land had by now been divided into 17 pieces between them. These households then proceeded to build up their landholdings. Allowing for what was earlier calculated to be an under-registration of up to two thirds in the tiriges, the total area owned by this lineage had increased from 133 to 409 sa muri, or by a factor of three. This was achieved mainly through the pay from army service. In household 15 there are two sons in the British army and one in the Indian. Household heads in 48 and 50 spent over 18 years each in the British army, and the head of household 51 spent 20 years in the Indian army. Meanwhile household 32, headed by a widow, as well as substantial inherited land and a dead husband's pension, has had two sons in the British army, one of them now dead; the second has just risen to the rank of Lt. Only the woman, adopted into household 9, has not prospered; her fields were washed away and she has no relative in the army.

In this conspicuously successful lineage, landholding has, so far, outstripped population increase. In 1883 there was one male landowner with 21 sa muri or rice land. In 1933 there were three with 133 sa muri, or 44 each. There are now six landholders with some 66 sa muri each. But it is difficult to see how this trend can continue into another generation. Probably the present number of living males is a roughly accurate indication of the number of parts into which the land will have to be divided since deaths of living males will be more or less balanced by sons still to be born. Thus the land will have to be divided into 13 shares, which means that the lineage will have to double its present share of the village rice fields in order even to maintain its present position. This will mean depriving other households of some 400 sa muri of rice land. It seems almost certain that this cannot be achieved and that, although the total wealth of this now powerful lineage will increase, there will be less land per household for the twelve or more houses that will replace the present five.

DIAGRAM 19:7. Genealogy of kebje lineage two.



* Bahadur came from the village of Ianjacote

Key:

male children = Δ
female children = O
dead children = Δ O

landholders registered in 1933 = ⬭
landholders in 1968 = ⬭

An even more sensational rise to fortune, and one that has caused some envy and bitterness even among the generally tolerant and charitable Gurungs, is that of kebje lineage 2. A kinship diagram of this lineage is shown below.

for diagram 19:7 - see across.

It will be seen that in 1933 there was no male kebje landowner in the village; there was only Saguna, who had inherited 7.16.2. sa muri of rice land from her father of another lineage. Saguna's husband came into the village from the neighbouring village of Ianjacote, a landless man. Two of her sons then went into the British army, Indrajid serving for 17 years and reaching the rank of Staff Serjeant, Bohansing serving for 24 years and reaching the rank of Lieutenant. Bohansing told me that when he left for the army, the family had a tiny house at the far end of the village and only 3-4 plots of land, including maize. Bohansing started at 18 Indian rupees per month, and ended up at approximately 1,000 Nepali rupees per month. He did not smoke or drink, to save money, and spent approximately 18,500 rupees on land, and another 12,000 on buying the biggest and smartest house in the village to which he retired in 1967. Thus he fulfilled his early vow that he would "one day be a top man in the village". The way his lands were accumulated is shown in the following table.

TABLE 19:6. Bohansing's estate-building.

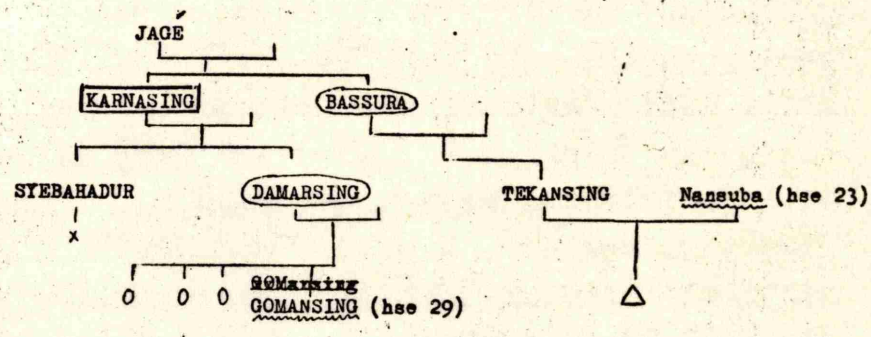
Name of field	Crop	Amount of crop(muri)	How acquired	From whom	When	Price (Rs.)
Koshini	Maize	2	inherited	father	1955	-
Tayikon	Maize	2	inherited	father	1955	-
Puje bari	Maize	2	inherited	father	1955	-
Chynoti	Rice	5	inherited	father	1955	-
Potecho	Maize	6	inherited	mother	1969	-
Mailo bari	Maize	4	bought	Brikaras	1953	750
Chynoti	Rice	12	bought	Brikaras	1956	3,500
Uli bari	Maize	6	bought	Damarsing	1960	1,500
Kergot	Rice	15	bought	Dilbahadur	1963	10,000
Puje	Maize	6	bought	Gungabahadur	1968	2,000
Towli	Maize	6	bought	Parmya	1969	750

Note: 'Maize' = maize and millet, and includes the yield of both.

It will be seen from the table above that Bohansing had inherited four small bits of maize land, and one small rice field. The rest he had bought up over the years.

Meanwhile his elder brother had followed the same course, on a slightly less spectacular scale, a few years

DIAGRAM 19:8. Genealogy of lamme lineage one.



landholders in 1883 = ▭
landholders in 1933 = ⬭
landholders in 1968 = ∿∿

before. His life pattern mainly differed in that he decided to build his own house down below the village. Also he was able to make some of his own rice fields from land as yet uncultivated. The middle brother did not leave the village and is consequently by far the poorest. Although one of his daughters has been adopted by Bohansing (because the middle brother remarried and the new wife found the teenager difficult), and has inherited two small family houses and a little rice land made by his father, he is still very poor and spends most of his time down in the fields herding buffaloes. This is the usual recourse of poorer Gurung men. The total growth of land and households in this lineage can be briefly summarized thus.

TABLE 19:7. Amount of land and number of households, kebje 2

Date	Amount of land (sa muri) (rice)	No. of land-holders	Land per landholder
1933	7.15.4	1	7.15.4
1965	66.0.0.	3	22.0.0.

Again, although the lineage has been extremely successful, it is difficult to see how it can even maintain its present level of living for it will need to more than double the amount of land it owns in order to satisfy the seven present male heirs. If it succeeds, other lineages will suffer. Among those likely to suffer are the lamme, and to them we may now turn.

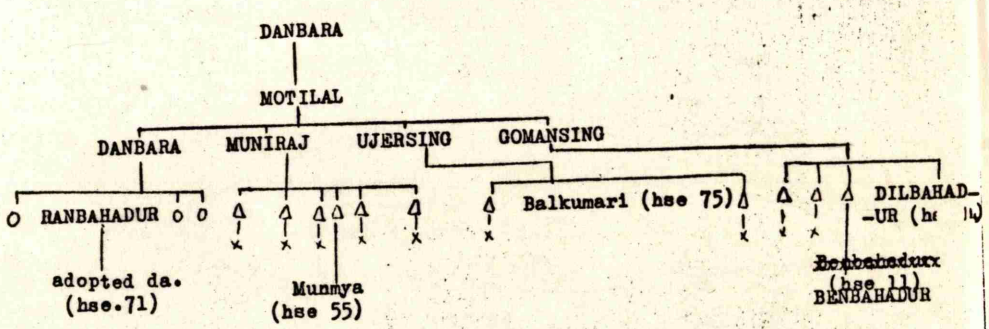
The Lamme 1 lineage.

By the time of the 1883 survey, lamme lineage 1 had already been present in the village for several generations The genealogy since then is as follows.

for diagram 19:8 - see across.

Karnasing was the registered landowner in 1883 and held eleven plots of rice land, five of which were passed on to his son Dambarsing and six others acquired by other villagers by 1933. Dambarsing appears to have been, at first at least, highly successful in acquiring land. By 1933 he was stated to hold 15 pieces of rice land, on top of the five he inherited. This made him the sixth largest landholder in the village. When we visited Thak some twenty-five years later his large two-storey house had been pulled down and a small one-storey house built nearby. In this small house lived his son Gomansing. According to the land survey of 1965, he had no rice land

DIAGRAM 19:9 Genealogy of konme lineage one.



left, though according to the land-tax records and map of the village lands drawn for me, he still had one fairly substantial field. His case illustrates the way in which a family may in one generation drop from the wealthiest to the poorest rank, even without partition among sons (Gomansing was an only son), even in a supposedly stable agrarian society such as the Gurungs.

Unfortunately I do not know how early the family lands began to be dispersed, though, as we have seen, even at Karnasing's generation a considerable amount of land went to people outside the family. Danbarising himself sold off eight plots of land, six of them in the neighbouring panchayat of Moja. Nevertheless, there can be little doubt that the bulk of such sales have occurred during the last twenty years, and have been the result of Gomansing's actions. I was told that he was forced to sell because he had spent a number of unsuccessful years as a government contractor, helping with the construction of bridges etc., in Pokhara. His failures had forced him to sell off his land and that of his wife. Now he has retired to the village, where he maintains a facade of power and importance, playing on the prestige which is still, to a certain extent, accorded to him by other villagers in recognition of his past eminence. But his son, only a rifleman in the Indian army, has no chance of reviving the family fortune and will probably be regarded as among the lowest rank of Gurungs. Unfortunately, it was impossible to discover to whom he had sold all his land. In the ten cases where we can be certain, two pieces had gone to Bohansing (see above), and another to a group of Tamangs who have also been successfully acquiring land. Most of the rest has gone to konme lineage 1, and indeed Bohansing bought his land from a member of this lineage. This konme lineage had been particularly successful during the period 1933-1965, largely because of the activity of one man. A brief study of this man provides a useful indication of the possibility of acquiring large fortunes even without the help of an army career.

Ranbahadur Gurung.

The simplified genealogy of the konme to which Ranbahadur belonged is as follows.

for diagram 19:9 - see across.

According to his surviving wife, Ranbahadur died in 1944, aged 44. Thus he was born at about the turn of the century. By the time of the 1933 land survey he was still a young man of about 33, yet even by that date he was the ninth richest landowner, with 152 sa muri of land. Nor had this land been inherited from his father Danbar. Study of the previous owners of his registered lands shows that only one plot had come from his grandfather Motilal, and none from Danbar. The rest had come from various carjat and sorajat families, including the poju's family, Tamangs, lamme and others. One informant estimated that his parents had contributed property worth 3,000 rs., while, by his death, he was worth well over 100,000 rs. Another informant stated that, though his father was wealthy, already, before inheriting anything, Ranbahadur had built up a considerable estate. Unfortunately there is no way of knowing the size of the final estate since there is no further systematic survey for the eleven years after 1933. A rough estimate may be attempted by analysing the property owned by his heir in 1965. Of the total 172 sa muri owned in 1965 (inherited from Ranbahadur), only 94 sa muri had already been acquired by Ranbahadur by 1933. If this proportion bears any relation to his total acquisitions, he must have had considerably more than 250 sa muri of rice land by his death. This would have made him, by his death, the richest single landowner (for his rival Potamsing's land had been divided up by that time).

2. His wealth at his premature death (he was killed in his own tiger trap) was legendary. Though we may be sceptical of excessive claims, he certainly did own four houses (which still remain), and probably 30-40 buffaloes, about 70 cows, and about 100 goats. Yet he built up this wealth within the village, for there is no evidence that he ever went away to the army. Villagers said that with the money he acquired with his wife, he lent money to other villagers at interest. By the time of his death he was said to have 70,000 rs. out in such loans (or 'boons'); much of this could not be reclaimed. Although he married three times he had no children and since his death his wealth has melted away, though his adopted daughter still had 50 ropanis of rice land according to the land survey of 1965 and had married an extremely rich Gurung in another

village. I was told that there still is one man in Siklis, and one in Khilang, who, in 1969, are of the same stature as Ranbahadur. But in Thak, as we have seen, there is now more equality, at least among the Gurungs. Although Ranbahadur was generally spoken of with admiration by konme informants, I encountered subdued bitterness amongst some of the sorajat families who implied that he had been high-handed and had grabbed their land. His nephew, the ageing and almost blind Dilbahadur, who has continued Ranbahadur's money-lending tactics, is almost universally disliked and there have even been attempts to expel him from the village. Whether feeling ran so high in Ranbahadur's day it is impossible to say.

Another way in which we may analyze changes in the landowning relations of lineages over time is to examine particular field areas. Such an analysis will constitute the first part of the following chapter.

CHAPTER NINETEEN. NOTES.

1. Gurungs, p.153.

1B. Dr. L. Caplan kindly pointed ut to me that properly mohi means tenant or cultivator, not serial number, and that doyam is a class of land (of which there are four abal, doyam, sim, chahar) and is not the term for class. Since, however, the Gurungs who translated the documents for me used these terms and gave the translations I have appended I have left them in the text. Clearly the original words have changed meaning.

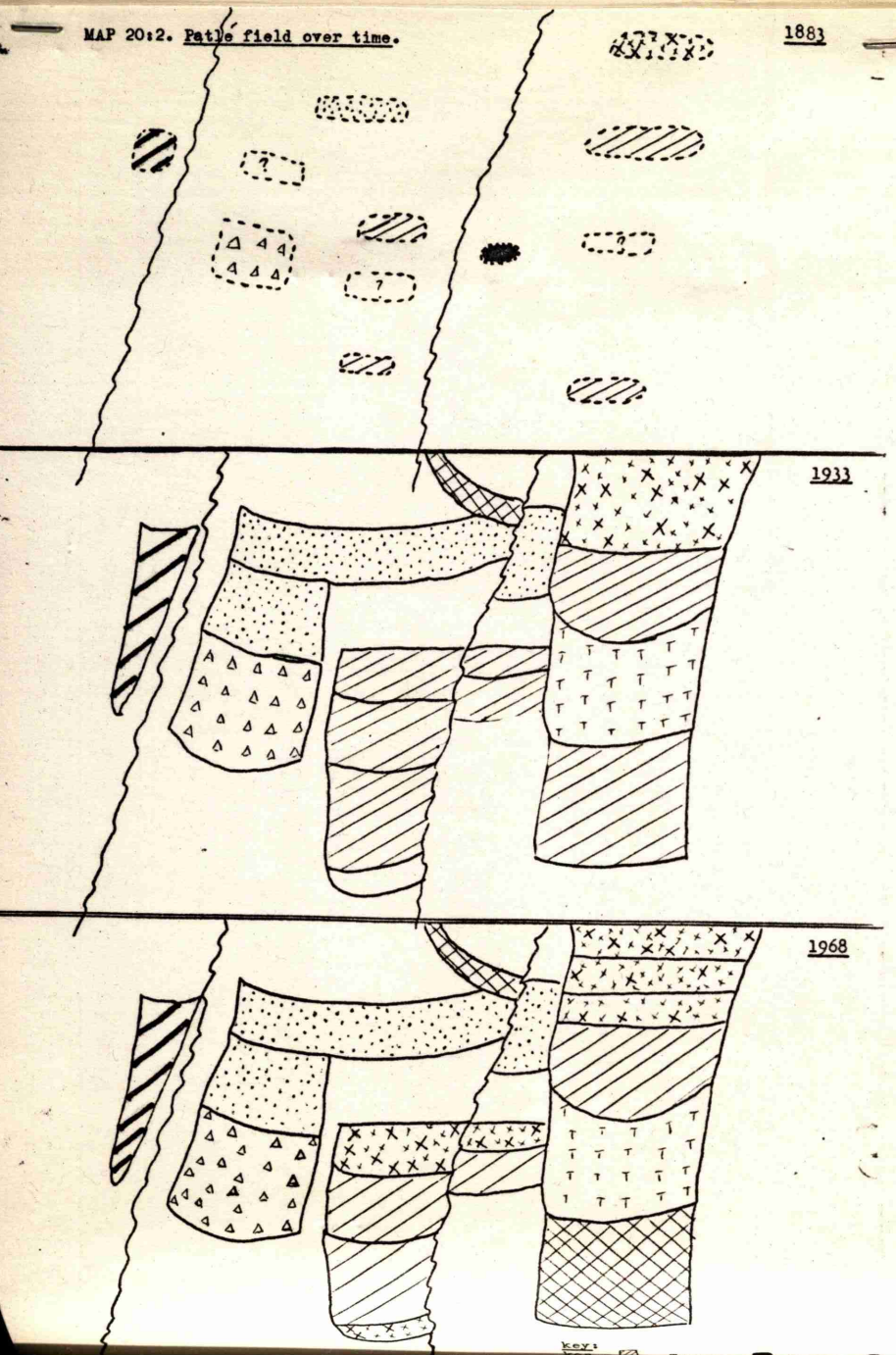
2. For various criticisms of the accuracy of land records see Regmi, Land Tenure in Nepal, i., p.159.

3. Gurungs, pp.156-7.

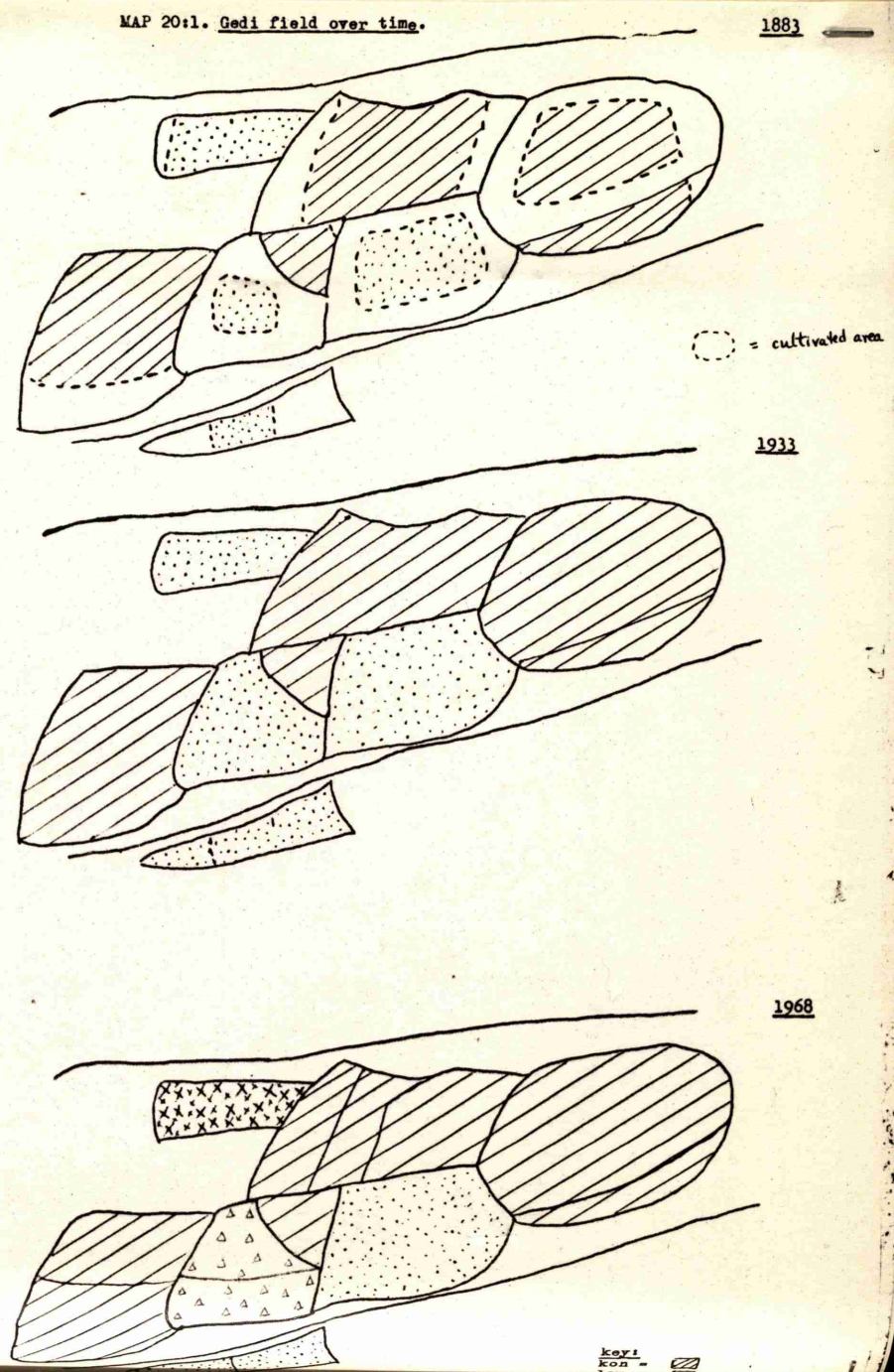
4. Gurungs, p.156.

5. Gurungs, p.157.

MAP 20:2. Patlé field over time.



MAP 20:1. Gedi field over time.



CHAPTER TWENTY. THE SUBDIVISION OF FIELDS.

The land records make it possible to analyse the way in which particular fields have become colonized and subdivided. Two examples will be studied here, the first an area in the very heart of the best rice-growing area where the ground is flat, rich, and easily watered, another from a steep area of only medium-to-poor water and soil.

Gedi/keyrbort field.

In 1883 some 121 s.m. (sa muri) of this field were in use. By 1933 some 200 s.m. was used for rice. Thus, in the central and richest belt of rice land, some 6/10 of the land was already in use in 1883. Some of the smaller strips were already fully exploited in 1883: thus a strip given as 10 s.m. in 1883 was only 11 s.m. in 1933, another given as 5 s.m. was 5½ s.m. some fifty years later. But most of the larger pieces were clearly not fully in use in 1883; thus a piece given as 20 s.m. in 1883 was reckoned to be 41 s.m. in 1933 and another of 20 s.m. as 35 s.m. at the later date. Taken as a whole, however, comparison of the two surveys suggests that the 1883 measurements were not much less accurate than those of 1933.

In 1883 the land was divided into nine plots, held by a total of seven landholders; in 1969 it was divided into 14 plots, divided between 11 landholders. This suggests an increase of some 50% amongst those Gurungs wealthy enough to hold land in this central strip. The actual distribution between the lineages, and subdivision of strips is most easily shown in a map.

for map 20:1 - see across.

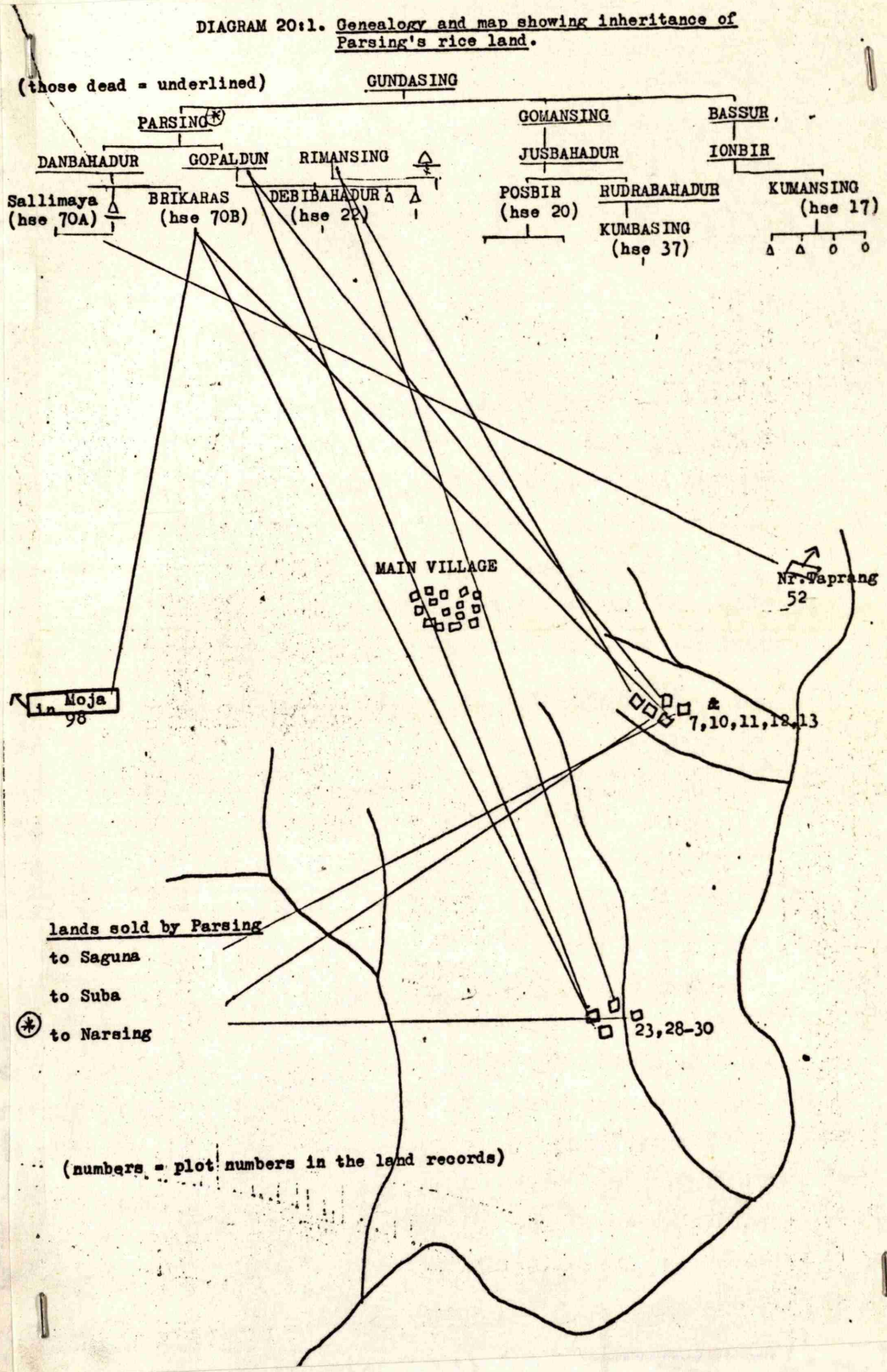
It will be seen that in 1883 the land was fairly evenly divided between konme and lamme lineages. It remained in the same lineages some fifty years later, and the number of landholders was the same. The 50% increase in landholders has thus occurred in the last 25 years. Part of this increase in number of landholders reflects the success of two groups in the village, the kebje and the Tamangs.

Patle field.

Here the situation differed in a number of ways. To begin with, as the map below illustrates, only a very small part of the field had been in use in 1883.

for map 20:2 - see across

DIAGRAM 20:1. Genealogy and map showing inheritance of Parsing's rice land.





MAP 20:28. Distribution of landholdings by lineages.

key

Carjat:
kon –
lam –
lem –

Tamangs } –
Magars }

Blacksmiths }
Tailors } –
Leatherworkers }

Brahmins –

Sorajat:
plem –
kromje –
kebje –
yoj –
laie –
bucha –
lhega –
teel –
ngobje –
laiuj –

streams
paths
houses

(note: circles and numbers on map to be disregarded)

[A = } kon D = Kebje
B = }   E = Blacksm.
C = laiuj F = yoj]

In all, some 32 s.m. were under rice at that date. These same holdings measured 262 s.m. some fifty years later. This is some indication of the amount of terrace-making that was going on over this period, especially in lower quality rice lands. Completely new plots were also started, and this added a further 48 s.m. of rice land by 1933. Another difference, when compared to Gedi, was that even in 1883 other lineages than the konme and lamme were present. The ancestors of the poju, the yojme, kebje and Tamangs all had land. By 1933 the position was substantially the same, with the Tamangs gone, but there was a small Brahmin landholding and a larger Tailor plot. But the konme were, even at that date and in this area, dominant. By 1968 their dominance had been challenged by the kebje and the Brahmins had increased their holdings. There had not, however, been a significant increase in the number of landowners in this area; only one holding had been subdivided (into three parts) in the interval.

The distribution of lineage lands as a whole throughout the village is most clearly shown on map 20:2B. opposite. This shows the present distribution, which still reflects a considerable amount of grouping of lineage lands, despite the effects of inheritance and sale during the last forty years. This grouping is particularly obvious in the case of the largest konme lineagee who first claimed rice land in certain parts of the village and subsequently developed these. The process by which such early claims were distributed may most easily be illustrated if we follow the history of the land owned by three former landowners.

Parsing, ancester of house 70B (konme 2 lineage).

Parsing was one of the biggest rice landowners in 1883, listed as having eleven holdings, with a total area of approximately 170 s.m.[1] Eight of these eleven plots went to his direct descendants. This flow of property and the location* suggests that the very best land, just below pieces 28-30, had already been occupied. Parsing either came from a lineage which arrived slightly later than another konme lineage, or else he decided to develop virgin land. By the time of the 1933 survey his land had been divided between eight different landholders, only one of whom had more than two pieces. Consequently the pattern we see in the land map of 1968 is a very fragmented version of the 1883 position.

* see diagram 20: 1 across

DIAGRAM 20:3. Genealogy and map showing inheritance of Potiram's ~~Matitaitm~~ rice land.

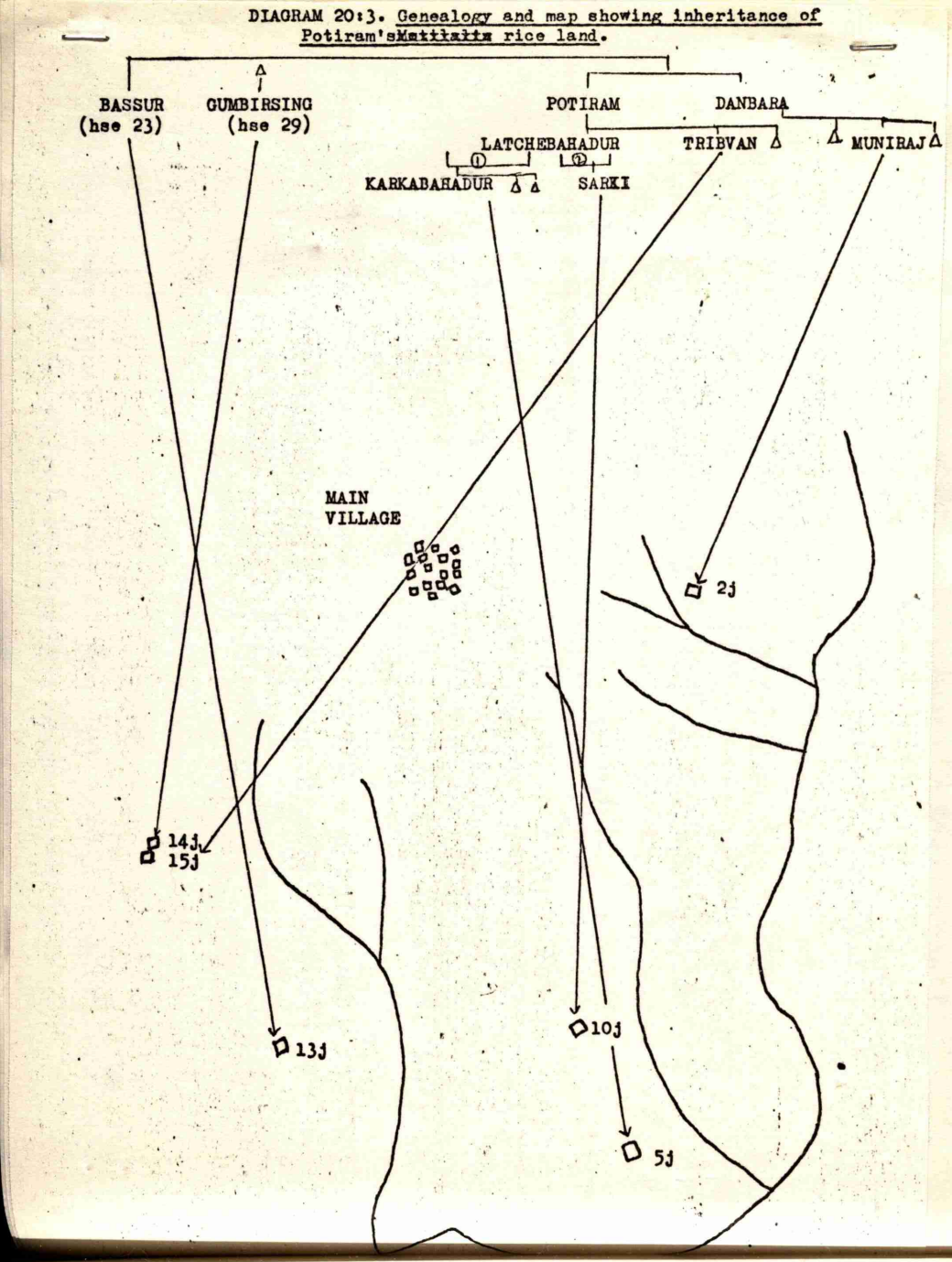
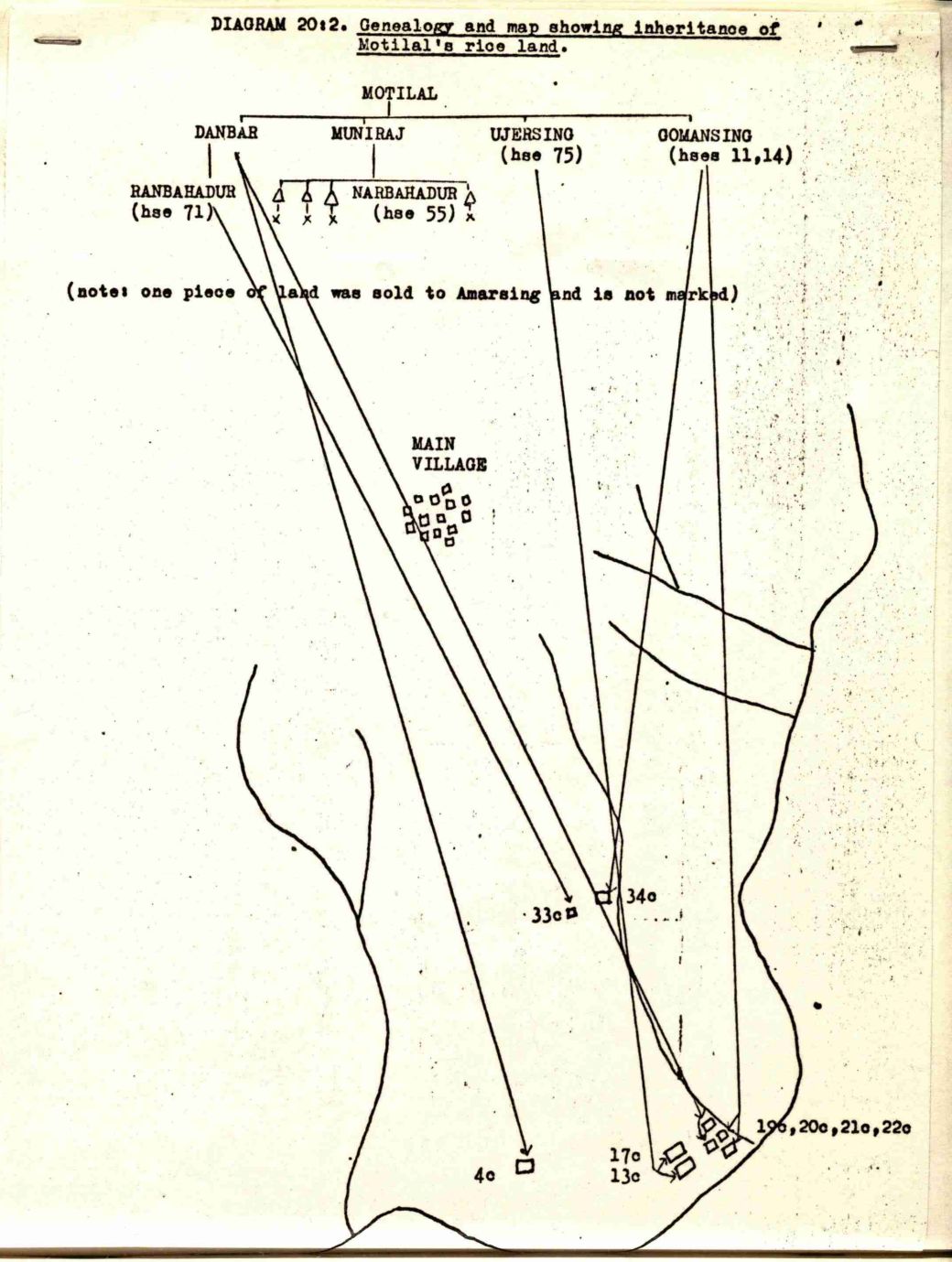


DIAGRAM 20:2. Genealogy and map showing inheritance of Motilal's rice land.



Motilal, ancestor of houses 11,14 (konme lineage 1)

I was frequently told that the oldest house in the main part of the village was house 11, and that this and house 14 were the original settlement when the Gurungs first came down to the present village site. It is therefore of interest to look more closely at one of the richest ancestors of these two households, Motilal. In 1883 he was registered as owning 12 pieces of land, which even at that date measured some 104 s.m. (plus one small piece, area unspecified). The location and inheritance of this land is again most easily shown in a diagram.

for diagram 20:2 - see across.

All but one piece went to direct descendants. It was divided, not exactly equally, between four sons. All the original rice land had been located in two areas. Ten pieces were down near the Modi river, undoubtedly the first area in the village to be planted with wet rice, and two pieces were up in the same area as Parsing's (mentioned above). This latter area was probably developed a little later. By 1933, however, this concentration had been split up between six landholders.

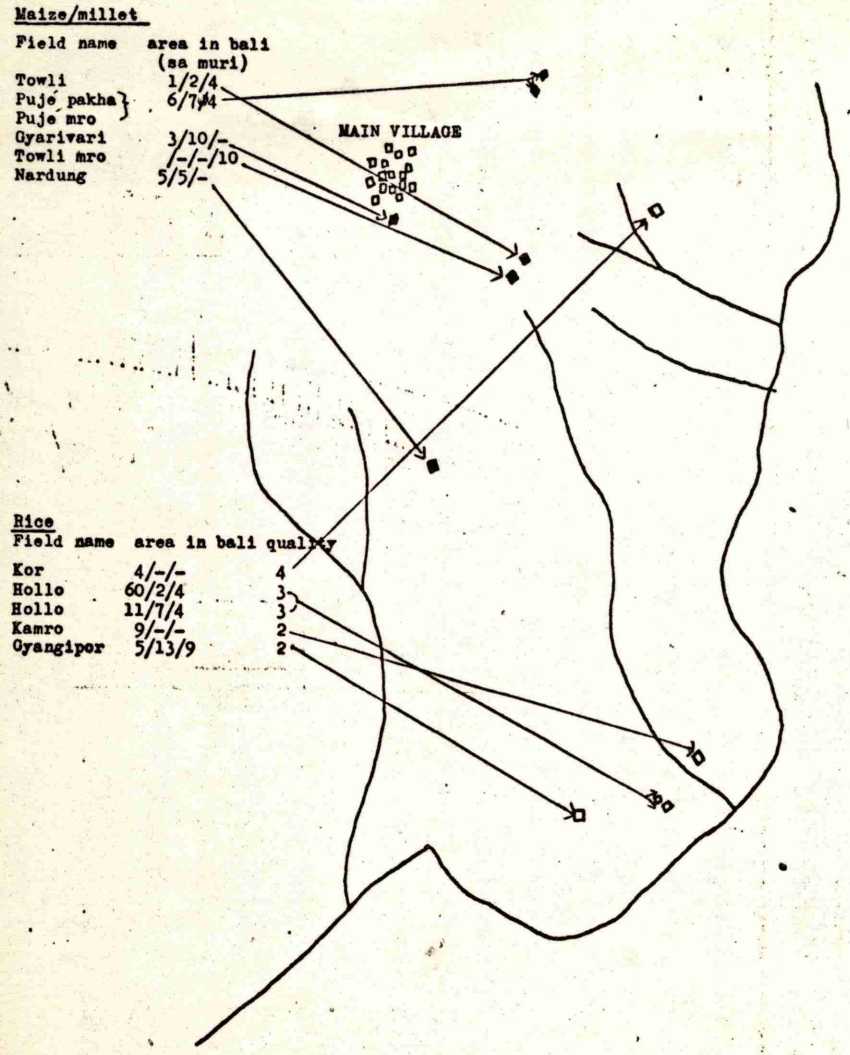
Potiram, ancestor of the lamme.

From the placing of their houses in the village it is clear that the lamme arrived in the village after the main konme lineages had established themselves. They chose to build what is now termed 'lamme village' (lamme nasa) on a steeper slope above the main village street. There are two main branches of this lineage in the village. The first we have already discussed when analysing the declining fortunes of Karnasing and Gomansing. It is not clear in what way lamme 2 [redacted], represented by Potiram in the 1883 survey, is related to the other branch. He may be a junior relative, or the oft-repeated (but unspecified) connection may be a later fabrication. At any rate, we may look at Potiram's landholdings in 1883 to see how they compare with the two konme cases studied above.

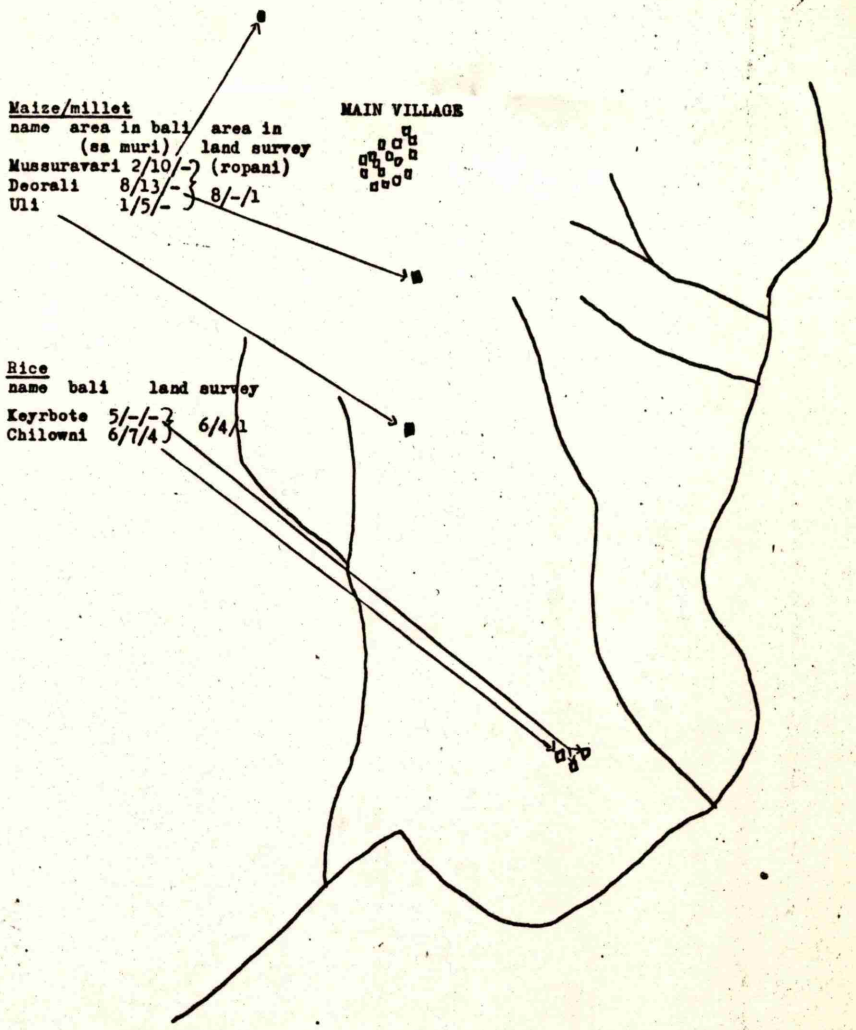
diagram 20:3 - see across.

To begin with, Potiram was clearly less wealthy than the big konme landholders; he only had half the number of plots, and a third of the area of cultivated rice of Motilal, for example. The second obvious difference is the distribution

MAP 20:4. Location of lands of household 17.



MAP 20:3. Location of lands of household 3B.



Potiram's plots were spread all over the village rice fields, even in 1883. In only one field are there two plots. Either there had already been much subdivision or, as seems much more likely, Potiram or his father, having arrived after much of the land had been earmarked by the konme, obtained rice land on the margins of their territory. When the land came to be split up by inheritance, the plots were divided between six lamme landowners some 50 years later, four of them his direct descendants. Although the very few landholdings held by the sorajat in 1883, and the difficulty of tracing the actual lineage of many of the smaller landholders in 1883, makes it impractical to carry out the same type of analysis for the sorajat, it is clear that they would show the same tendency as Potiram - in other words the scattering of holdings in single plots on the margins of the richer rice lands. It is only in the last thirty years that, as we have seen in the case of Gedi field, non-carjat Gurungs have managed to buy themselves into the best rice lands.

Present landowning pattern of two households.

The outcome of the splitting and sub-splitting may be illustrated by two of the household whose budgets we have examined in some detail in previous chapters. Household 3B has its maize and rice land distributed as follows.

for map 20:3 - see across.

It will be seen that the three plots of rice land are concentrated while the maize lands are spread out. The same is basically true of the larger landholding of household 17.

for map 20:4 - see across.

This reminds us that though there has been much subdivision of landholdings, many of the present landholders still have their rice land fairly concentrated since they now have smaller holdings than their grandfathers. The dispersion of maize lands is more dramatic in reality than it appears in these maps since there are very steep hillsides just below the village. Thus, in the case of household 3B, there is a 1,000 ft. drop in altitude between Deorali and Uli fields. This helps to spread out the cultivation of maize and millet, thus easing labour demands in the one period of the year when labour is short. The same is, to a lesser extent, true of rice; thus rice in Gedi field would mature somewhat earlier than that in Patle.

This mention of maize fields reminds us that we have almost neglected crops other than rice in the preceding discussion. This is because, as mentioned above, the records for rice land are much more detailed and stretch further back. Ownership of rice land is also more prestigious and a more accurate index of wealth. We may briefly look at the way maize and millet lands are divided at present to round off this account. The examples show how intermixed ownership is in these maize lands, though there are obvious indications, as in the case of Uli field, that land that once belonged to one household has been divided amongst several members of the lineage.

[redacted]

Another way to view the distribution of maize and rice lands is to examine the process whereby both types of land have been brought into cultivation since 1933.

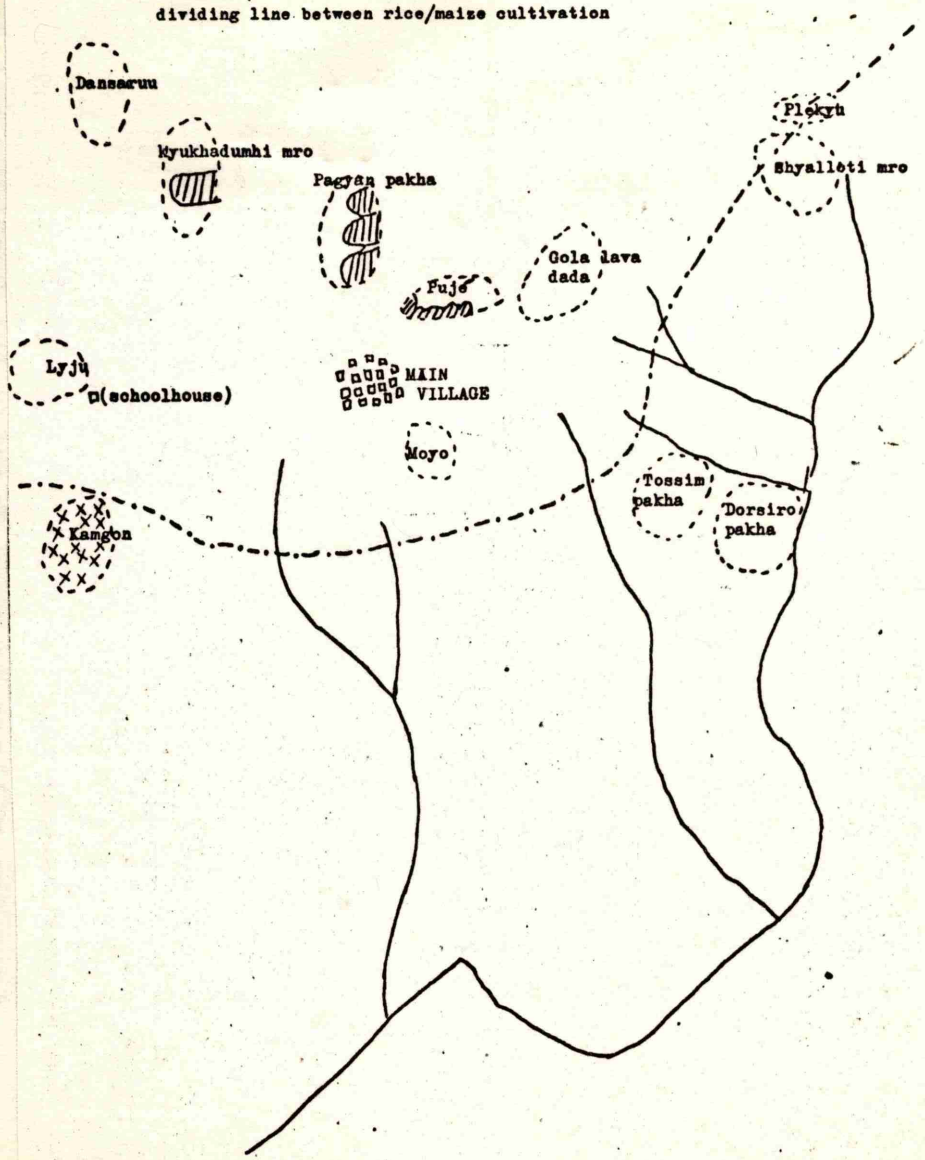
Extension of the area under cultivation; rice and maize.

The figures for rice land in 1883 are too uncertain to allow us to compare the area under cultivation at that date and in 1933. But from the study of particular fields, such as Gedi and Patle above, it is clear that there had been very considerable expansion, especially in the poorer areas. It would not seem an exaggeration to suggest that there had been more than a doubling of the area cultivated during those fifty years. In other words less than half the present rice lands in the village were cultivated in 1883. Since rice has never been sold in significant quantities, this suggests a considerable rise in the rice needs and labour force in the village. It is impossible to date the period of maximum rice-field making, but it seems likely that it was between about 1880 and 1925. One informant told me that all the good land, collectively known as byãsi (Nep. = bisi, besi), was in use before he was born some 56 years ago, in other words by the time of the First World War. But he thought that a considerable amount of the poorer land to the north of the village was terraced after the War. By the time of the 1933 survey there was only a little good rice land uncultivated, of this he was the named owner. Since 1950 there has been no terracing of good rice land, except a little some distance from the village towards Taprang (by Brahmins and Chetris). His opinions on the situation since 1933 are given substance by the land records.

MAP 20:6. Jointly registered unused slopes (pakha), 1969.

key:

now cultivated with maize
now cultivated with rice
dividing line between rice/maize cultivation

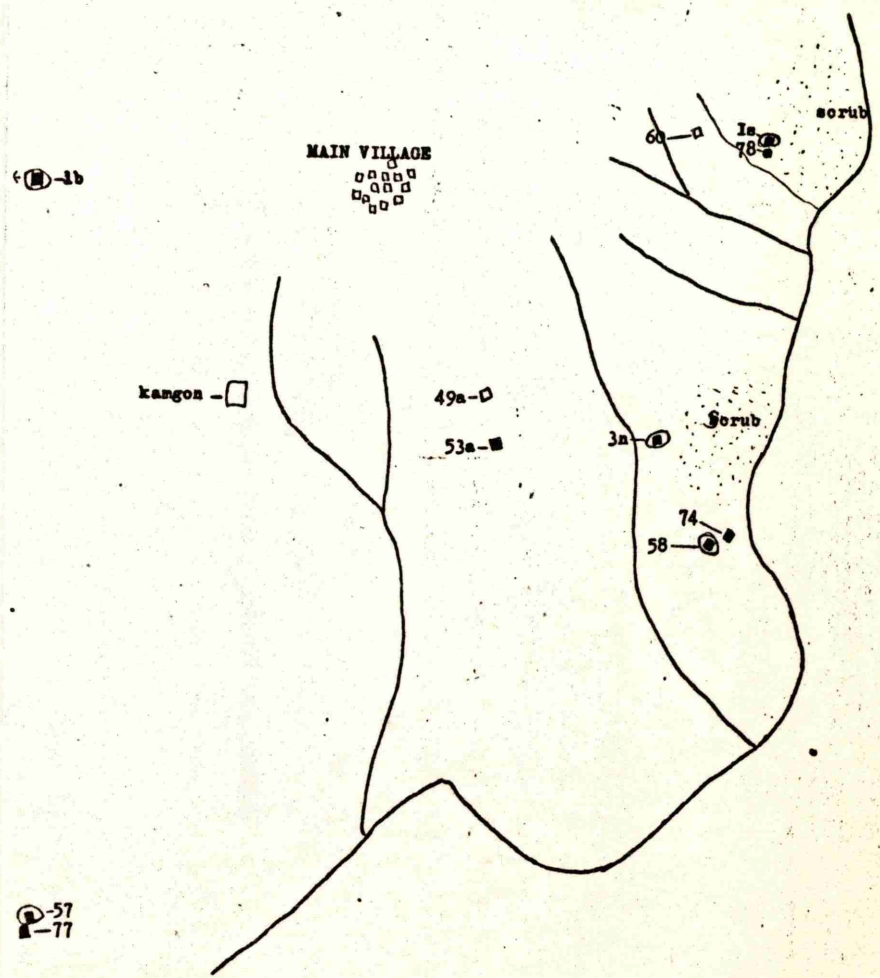


MAP 20:5. Rice fields made since 1933.

key:

made in the 1930's
made in the 1940's
made in the 1950's

(the numbers refer to the reference number in my copy of the tiriges)



Since 1934 only 18 pieces of rice land have been recorded as being brought into cultivation. All of these pieces are classified as lowest grade land, and all except one piece are very small, one ropani or under. The one exception occurred in 1937 when a Brahmin opened up 50 s.m. of rice land some distance away from the village. Apart from this (which may be partly maize land), only 38 s.m. of rice land (approx. 9½ ropanis) has been recorded as being brought into cultivation during the 35 years before 1968. Of the small quantity newly cultivated, some 23 s.m. were opened up in the years 1934-40; since 1940 less than 4 ropanis are recorded as being newly used. Clearly the land records have missed some lands, the one important instance being a large field called Kamgon which was terraced in the 1940's and now contains some 70 s.m. of fairly good rice land. In the 1933 survey it is described as pakha or an unused slope. But including this, and allowing another 30 s.m. for other unregistered land, we still have only approximately 140 s.m. (35 rops) brought into use since 1933. Even if we assume that the totals are only approximately one third of the real area of the land, this represents only one fifteenth of the total area under rice in 1965. The following map, showing the location of new terracing, shows that the process since 1933 has been the last marginal filling in of potential rice-growing areas.

for map 20:5 - see across.

Almost all the pieces are on the margins between already cultivated lands and unsuitable land. Even the pieces in the centre of the map (49a,53a) are on poor land bordering steep cliffs. No rice land was being brought into cultivation in the main part of Thak (though a little by Brahmins towards Taprang). It was clear to any observer that cultivation had now almost pushed to the extreme limits, and from the point of view of soil conservation beyond safe limits. Only two significant areas remain to be opened up. These are shown on the following map.

for map 20:6 see across.

The 1933 land survey included pakha or uncultivated slopes. These were almost all stated to be owned by groups of carjat Gurungs, usually four or six of them. As can be seen above, only four areas lay below the rice growing line. Of these Kamgon has been cultivated, and

Shyallotti is so rocky and the soil is so bad, that little more can be done with it. Steepness, lack of water, and rock outcrops have also helped to preserve Tossim and Dorsiro pakha, but they will probably be cultivated one day, probably when their present owner, householder 70B, divides out his estate. With Shyallotti and every other possible cultivable area on this map, another 50-100 ropanis of poor quality rice land might be squeezed from the hillsides. For practical purposes, therefore, we may say that the period of rapid expansion of rice land really ended in the 1920's; since then only a little poor quality land has been available. Even the small amount of poor land coming into cultivation since the 1930's has probably not balanced the effect of deterioration of land. Some notable fields, particularly Lammaket, have been swept away by the river, other fields suffer periodic landslides - for example Balmorde which had to be abandoned for ten years, and even then could not be fully repaired.

More difficult to estimate is longer-term deterioration resulting from leaching of the soil by rain, and constant re-use of land with little application of natural or artificial fertilizer. Informants admitted that the quality of land had deteriorated over the years, but unfortunately we have no quantitative evidence on this. There seems little doubt, however, that a piece of land which has been used every year since 1883 or before, without the application of more than a tiny amount of manure, or none at all, must lose some of its fertility. The rice fields are also seriously, though indirectly, affected by the destruction over the last hundred years of the forest above Thak. The consequences of such destruction are manifold. Firstly, the water supply has been influenced. One informant in Mohoriya stated that there was now much less water in the monsoons than there used to be, and he connected this with the destruction of forest cover. Such a link could take one or both of two forms. Less rain may have fallen (forested land attracts more moisture than scrub) and that which did fall may run off much faster, not being stored temporarily in roots and foliage. Not only does a speedier run off increase the danger of erosion, it also makes the available supplies of water for the paddy field more erratic and briefer in duration. But water is not the only valuable that flows

down from the hills above Thak, there is also manure. The overgrazing of village pastures and growing shortage of fodder reduces the number of livestock that may be available per acre of rice land. It is clear from the records that even up to the 1930's, parts of the land intermixed with the rice fields were used to graze buffaloes and cows. The bringing of this marginal land into rice cultivation has deprived the other strips of the benefit of animal manure. Rice fields are likely to suffer less than maize from this change, for it is principally on maize fields that animal manure is now put. Yet it is one more reason for thinking that rice production was higher some thirty years ago than it is now, and for suggesting that in another thirty years, when people are even more numerous, the total cereals produced may decrease still further.

Yet the situation in Thak is relatively favourable; though there are some richer hill villages (e.g.Atigar to the west), there are many poorer ones. Thus Caplan reports of the Limbu village he studied, "land shortage reached acute proportions about the turn of the century."[2] We have already seen that the situation is worse in Mohoriya than in Thak, and migration to the Terai from Siklis and other Gurung villages suggests that there, also, conditions are deteriorating. A change from abundance to scarcity seems to have occurred in the Modi valley, where Mohoriya is situated, even more swiftly than in Thak and neighbouring villages. Pignède stated that "thirty or forty years ago a large number of the village fields in the Modi valley had not been distributed".[3] But by the time of his visit to Mohoriya there was clearly little unused, but potentially cultivable, land still available. I was told that in the eleven years since Pignede's visit approximately 12 ropani of rice land had been brought into cultivation. Approximately half of this had been opened up by one household; the rest consisted of small fields of under one ropani each. I was told that there was possibly another 5 ropani or so of land that could be converted into rice fields. The migration of 13 households to Chitawan had temporarily relieved the pressure, but there is little prospect of expansion in the future.

The utilization of maize land.

It has been assumed in the above discussion that only

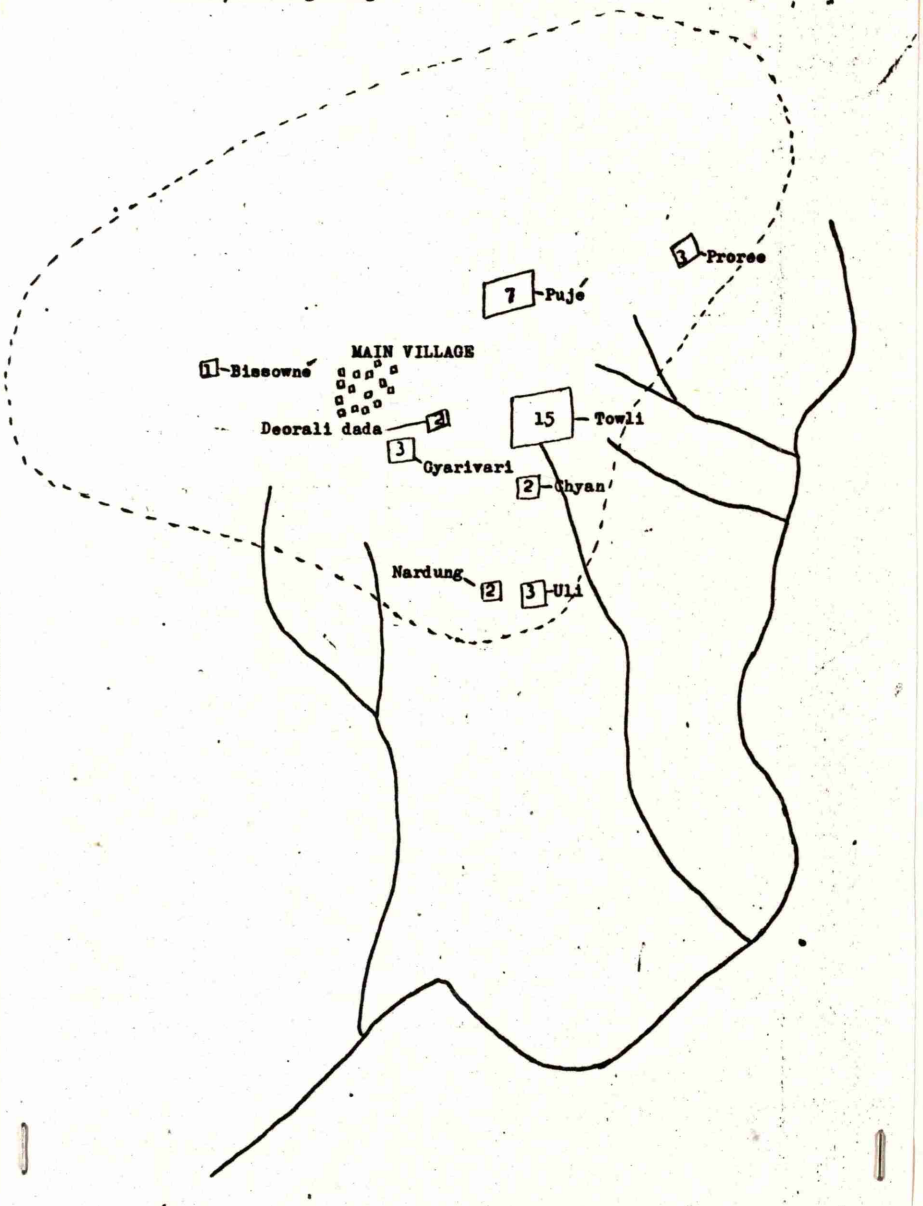
when tax began to be paid was rice land brought into cultivation. This seems a reasonable assumption in the case of rice, but it is not so certain when we discuss maize/millet land. It is quite possible that some of the land which is recorded as first being subject to taxation in the period after 1933 was already being partly cultivated, probably by shifting methods of slash-and-burn. But it was probably not under permanent cultivation and it is unlikely that manure was applied systematically. In the following discussion, therefore, it will be assumed that most of this recently taxed land does represent a real addition to the stock of maize land. In a number of cases, for instance in Proree field, it was possible to confirm the accuracy of land records by questioning and observation.

Whereas, as we have seen, there was very little rice land left to be developed by 1933, this does not seem to have been the case with maize. There are approximately 210 plots of maize land shown on the map of village landholdings (Map.20:2B) in 1968. Yet between 1933-1960 some 110 maize plots are registered as paying tax for the first time. A few of these plots are outside the area of the map, but these are probably compensated for by the addition of a few plots since 1960 (after which date no more maize land is registered). Thus it seems that only approximately half the total number of maize plots were regularly cultivated by 1933. This may represent up to a doubling of the area under maize in the last forty years; though recent plots are probably smaller and on worse land, some of the earlier plots have undoubtedly been extended in size, though such extension does not get noticed in tax records. It is likely that total yield has not increased this much, however, for rich harvests must have been obtained from the earlier slash-and-burn techniques, and there was more abundant manure.

It is likely that the population of Thak found in the 1930's that its supply of rice land was failing to keep pace with numerical growth, and it was from then on that the cultivation of maize was pushed up the hillsides. A fairly close dating of this increase in maize cultivation can be made on the basis of the land records. Between 1934-9, some ten pieces were registered to pay tax;

MAP 20:7. Maize holdings registered since 1934.

note:
the numbers indicate the number of plots registered as opened up in a certain field. The broken line indicates the area of maize/millet growing.



1940-9, three pieces; 1950-9, 98 pieces. Thus in the 1930's the demand was still fairly gradual; it would have taken 100 years to open up all the maize fields at this rate. Then, perhaps because of the war which reduced the labour force and the demand for food, hardly any maize land was opened up. The lull continued until 1949, as it seems to have done with rice land also. Then the rate picked up between 1950-5, when 15 pieces were registered. But it was during the years 1955-8 that there was a sudden burst of activity and some 82 pieces of maize were registered. In the peak year, 1958, some 28 pieces were registered, and only one less in 1956. It appears that this absorbed almost all the available maize land, for in 1959 there was only one piece registered. It is evident from inspection of the village fields and a comparison with known registrations (as shown in the following diagrams) that hardly any maize land has been opened up in the 1960's. During our fifteen months in the village only a couple of small, rocky, and steep, patches were being cleared. It would appear that the limits of maize cultivation have been reached. There are still one or two areas of land which could be cultivated. For instance a flat piece of land above Thak called Garedi was once cultivated but, apart from a little barley growing, is not now used. When I asked why it was no longer in use I was told that there was not enough animal manure to make it worthwhile. Thus, even if there are still a few slopes where maize could be grown, there are other factors which inhibit such use; as well as shortage of manure there are monkeys, whose ravages are given as an explanation for allowing some poor maize land just below the village to go out of use.

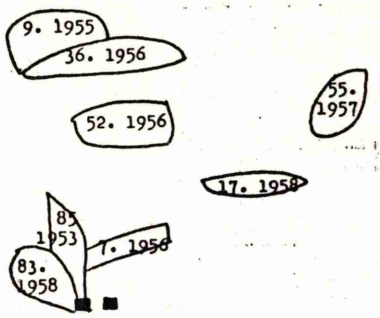
Maize plots have been opened up in over forty different parts of the village lands. Some of the areas nearer to the village, particularly the important fields of Towli and Puje are shown in the following map.

for map 20:7 - see across.

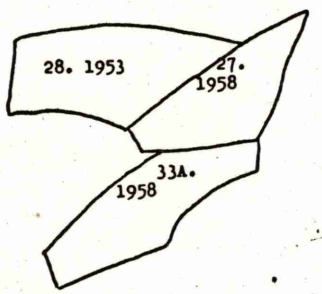
MAP 20:8. Distribution of new maize holdings in two fields.

The figures in each plot indicate the household number of the registered owner and the date of registration. Houses = ■

TOWLI FIELD



PUJE FIELD



It will be seen that there was still a considerable amount of maize land very near the village and unused in 1933. This was very different to the rice situation. Unfortunately it is not possible to place all the new maize holdings, but an attempt to do so in four fields is shown as follows.

map 20:8 - see across.

One of the most interesting things to emerge from this map occurs in the case of Puje field. The common characteristic of the three new landholdings is not kinship but neighbourhood; houses 27,28,33A are near to each other in the village. This suggests that this land was once communally worked and owned by a group from these three households. When terraced it was divided between them. The same may be true of Gyarivari.

There are no land records dealing with arable lands in the forest where potatoes and other root crops are grown. Therefore the degree to which such cultivation has expanded cannot be studied in the same way as rice and maize fields.

CHAPTER TWENTY. NOTES.

1. The 1883 figures, with frequent totals of 40 s.m., for lands which were later less than half that total, seem to be inaccurate in this case: possibly they are those of a joint holding, later split up.
2. Caplan, Land and Social Change, p.45.
3. Gurungs, p.153.

CHAPTER TWENTY ONE. POPULATION GROWTH, HOUSING AND PRICES.

In the absence of even the most rudimentary figures about the annual growth of population in the past we are forced to use every possible indirect measure. Two such indices are discussed in this chapter, the growth of the number of houses and the rapid rise in the price of land.

Housing.

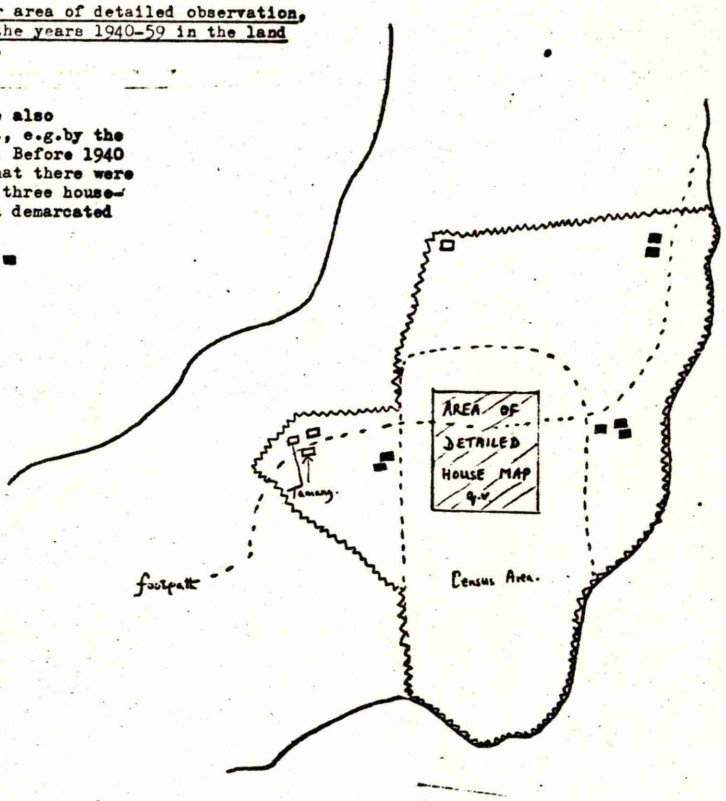
There are a number of difficulties in using housing as an index of population growth. Until approximately 1950, the simple mud, wood and thatch houses could quickly disappear without a trace if uninhabited for a few years. It seems certain that a number of such houses have compPletely disappeared; for instance there was once a house where the new night school stands. Possibly up to half a dozen or so small huts have disappeared without trace, for though I asked informants whether there had been any sort of building on the site before the present house was built, they may not always have remembered correctly. The following maps of house construction are based on two types of information. For the period before 1935 we have to rely on answers I obtained during the village census. I asked each informant whether they knew who had built the present house (it was usually the father or father's father), when it was believed to have been built, whether there had been a house there before and, if so, when the earlier house had been built. For the period 1935-60 such replies can be checked, for from that date when a house site was developed, tax started to be paid on it and this was entered in the land tax records (tiriges). Thus, for example, an entry reads "From 1948(2005 in the Nepali calendar), Manseram, Blacksmith, made a house in the field in front of the path, where the Blacksmith's forge is". Sometimes the entries are not as detailed as this, just giving name and date. Such records appear to have been made in particular years, rather than every year. Thus almost all the houses registered fall under 1948 or 1957, whereas it is highly probable that they were more spread out over the years.

Some 30 house sites are recorded in this manner in the land records. Of these, 11 lie just outside the area studied in the census, and it is therefore impossible to check their dating against replies in the census. What

MAP 21:1. Houses built near area of detailed observation, as recorded for the years 1940-59 in the land records for Thak.

note:
other houses were also undoubtedly built, e.g. by the Tamangs at Mailo. Before 1940 it is unlikely that there were more than two or three households on the area demarcated thus - ▪

Brahman houses = ■



is significant about these 11, as will be seen from the map below, is that almost all are Brahmins and Tamangs. for map 21:1 - see across.
Before these householders arrived there were few, if any, Brahmins in the area. It is thus clear that while the Gurungs arrived in the area and cleared land over 200 years ago, the Brahmins arrived in the 1940's and 1950's, and likewise the Tamangs. Some instances of the accumulation of rice lands by both groups have been observed above.

If we now turn to the area which has been the focus of intensive study a number of points may be made. We may first of all check informant's statements about the age of their houses against taxation records in order to check their mutual accuracy.

TABLE 21:1. Date of housebuilding.

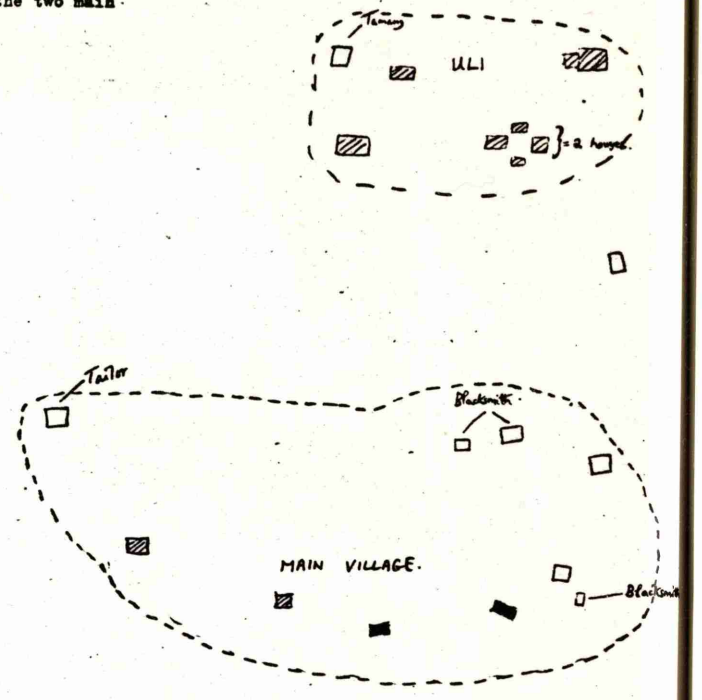
House number	Jat	Date given in the census	Date given in taxation records
57	Blacksm.	50 years ago	1948
56	Magar	45 years ago	1948
41	Gurung	40 years ago	1948
45	Tailor	35 years ago	1948
46	Tailor	33 years ago	1948
61	Blacksm.	17 years ago	1948
79	Gurung	17 years ago	1957
38	Gurung	16 years ago	1957
74	Blacksm.	16 years ago	1957
55	Gurung	13 years ago	1957
78	Gurung	12 years ago	1957
37	Gurung	12 years ago	1957

It will be seen that more recently built houses are remembered fairly accurately, both by Gurungs and Blacksmiths, while there is a margin of error of up to about 10 years for those said to be built between 30 and 50 years ago. That the houses were built in different years, as respondent's claimed, rather than all in one year as suggested by the land records, seems likely. For the purposes of the following analysis in all the above cases, as well as other recorded in the land records for 1948 and 1957, it will be assumed that houses dated thus were built somewhere in the period 1940-59. It is, of course, possible that one or two may have been built a little earlier, but these will be the exception.

The following maps, therefore, while liable to some error, are probably fairly accurate: as stated before, the periods up to 1940 and from 1960 on are based on informant's

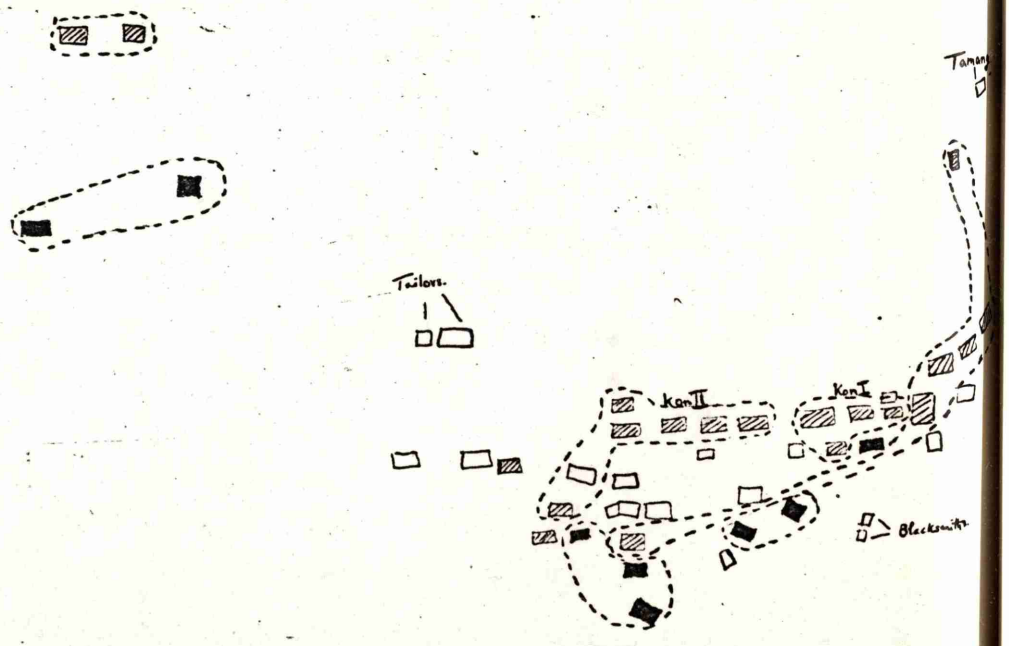
MAP 21:3. Houses in Thak recorded as built 1920-39.

note:
circled areas are the two main settlements



MAP 21:2. Houses probably present in Thak main village in 1920.

Key
kon =
lam =
sorajat =
same lineage = ---
(47 houses, 20 of which = kon)



replies, that between 1940-59 on a combination of such replies and the land tax records. The situation in about 1920 was as follows.

Map 21:2 - see across.

There were then some 47 houses, if we include three now derelict or vanished houses to allow for houses that have disappeared without trace. There are, in 1969, some 97 houses, some of which have been subdivided so that there are 103 households. Over 50 years, therefore, the number of houses has approximately doubled. In the 1920's the great majority of the houses were on the flat ridge where the central village still stands. The presence of only two Tailor and two Blacksmith houses suggests that such groups had not been very long in the area. The three separate lamme groups (indicated in the map) were also probably of comparatively recent origin, possibly dating from the earlier nineteenth century. Two of the konme lineages had six houses each, which, if we assume a 50% growth at each generation (or two sons every alternate generation) would take them back about five generations, or to the late eighteenth century. The tendency for lineages to group their houses together is also noticeable. The fourteen sorajat households already included at least six different jats, of which yojme, lhega and kebje were each represented by two houses.

The houses built between 1920-39 are as follows.

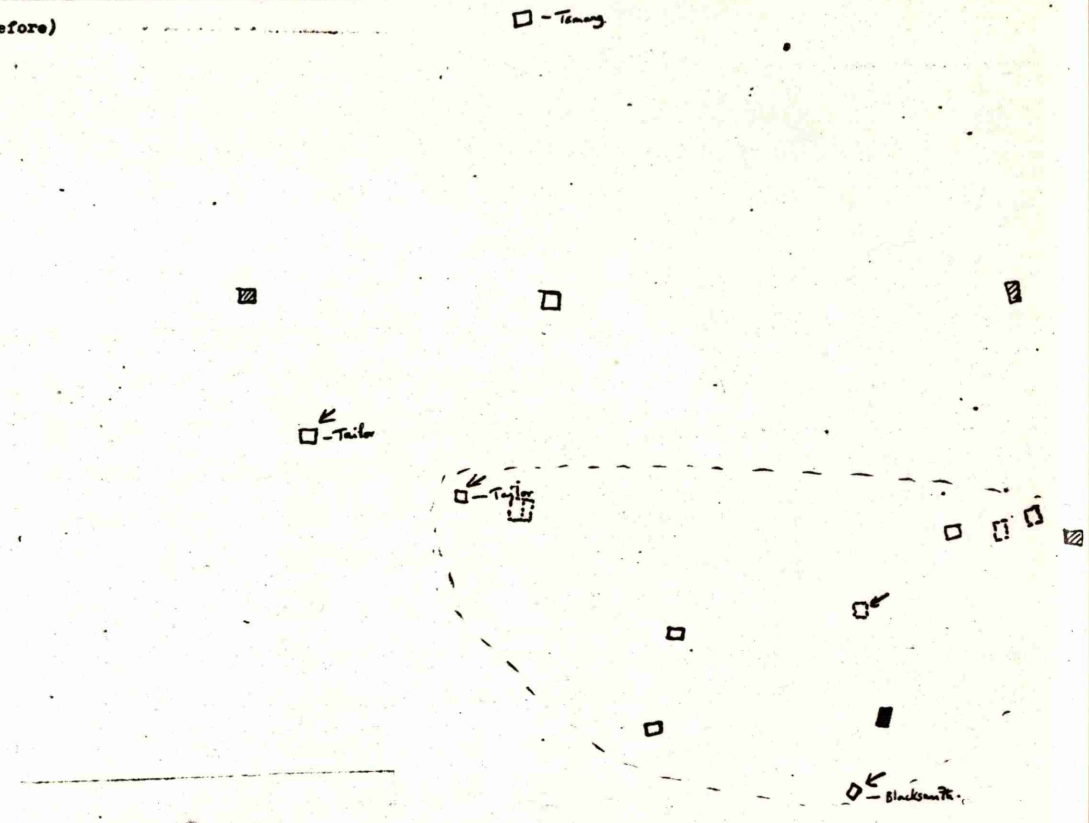
for map 21:3 - see across.

If we allow for a couple of houses that were built and then disappeared without trace, some 16 houses would have been added during this period, an increase of 33% in twenty years. Not all of this occurred through natural population growth within the village. Certainly the Tamang, one of the lamme, and probably two of the Blacksmiths came in from other areas. Thus a 20% natural growth rate, or under 1% p.a., seems plausible. Nearly half of the building occurred outside the main village when some of the richer konme moved down over a thousand feet to found the hamlet of Powlo/Uli in about 1930.

In the following two decades, about which we can be more certain, there was a greater expansion of houses, some 23 in all, or an average of more than one a year. We know

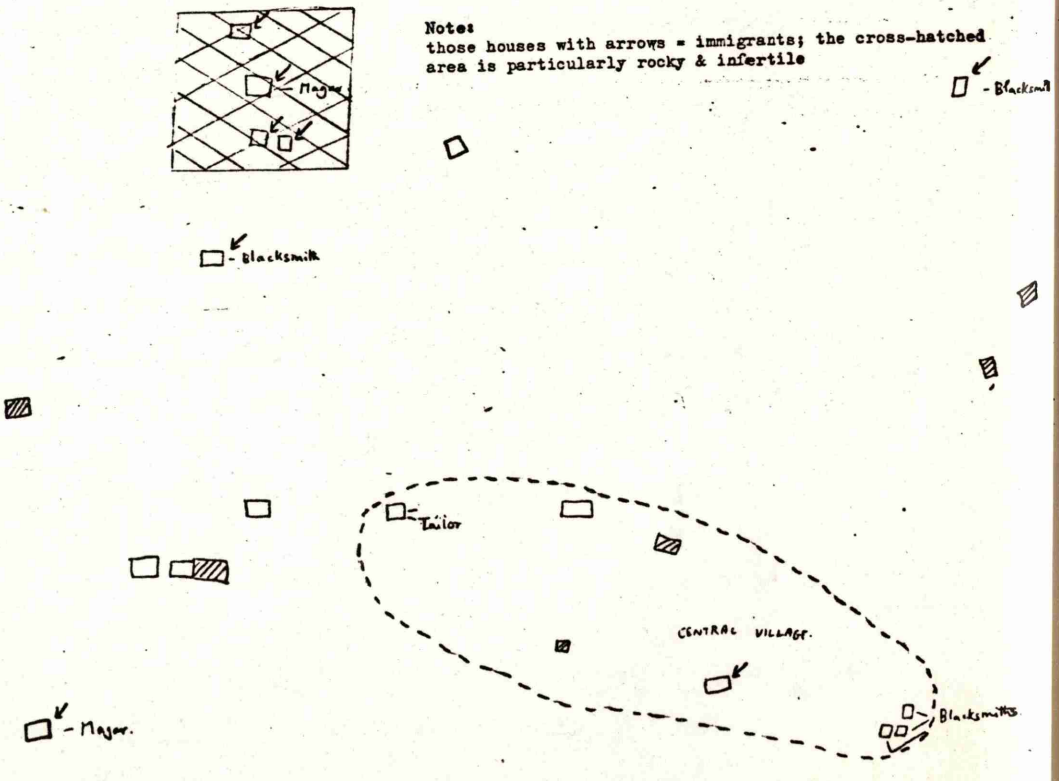
MAP 21:5. Houses in Thak recorded as built 1960-9.

(symbols as before)



MAP 21:4. Houses in Thak recorded as built 1940-59.

Notes:
those houses with arrows = immigrants; the cross-hatched area is particularly rocky & infertile



that the two Magars, the two Blacksmiths and four Gurung (sorajat) households migrated into the area, these being indicated in the following map by arrows.
for map 21:4 - see across.
Those built in the area with cross-hatching were forced to live on very steep and rocky lands. Excluding such migrants, we are left with a total growth of between 20-25% over these twenty years.

Finally, in the period 1960-9, the situation was as follows.
for map 21:5 - see across.
In this ten years not only have 12 new houses been built, but growing pressure on space in the main village (and shortage of capital) has led to five new units being added by subdividing houses. Allowing for two houses that are derelict, there has been a growth of some 15 household units in this period, or 1.5 p.a. Given the fact that four of the houses were built by immigrants, it seems likely that during the period 1960-79 there will again be a natural growth of about 20-25% in housing. But improvements in public hygiene may make the demand much greater.

It appears that by 1960 the ability of even this relatively rich panchayat to absorb land-hungry immigrants had gone. Most of those households which immigrated in earlier periods own a little rice land and considerable quantities of maize; there was still room for Magars, Tamangs and new Gurungs to build up landholdings. But the contrast with those who have come into the village during the last four years is considerable. None of the new immigrants have been able to build proper houses: the three Tailor/Blacksmith households, retreating from areas where there is even greater unemployment and over-population, have all built small wood and bamboo shacks, primitive structures when compared to the other Gurung and caste houses. The fourth case is a Gurung, who, like the Tailors, is also retreating from Siklis in the north. He is temporarily living in a part of his wife's natal house, until her brother returns from the army. None of these four immigrants has been able to buy any land of their own, and none has been given them. This corroborates the evidence from the study of land-use, namely that, given the present technology and even with resources

and employment abroad, this part of the Hills has reached population saturation point. What will happen when population doubles in the next 30-40 years, so that there is a demand for twice as many houses, twice as much food, twice as much grazing land, twice as much fuel, etc. it is difficult to predict.

The future demands for housing within the village may be roughly calculated as follows. There are, at present, taking our 100 sample households, some 67 males aged 41-80. The rest of the households, are headed by younger males or widows. There are also in these households some 183 males aged 0-40. If we assume that all those aged over 40 die by the end of another thirty years, and that roughly fifty of the younger generation of males have died by then (a large estimate, especially if sanitary improvements continue), then there would be roughly double the number of adult males. Given the fact that few of them are able to find alternative places to live in, and that the proportion of households headed by widows and others is the same, there would have to be 200 households where there are now 100 - even if we exclude further migration into the village. At this rate, by the year 2100 there would be 1600 households where, in 1920 there were less than fifty. Clearly the birth rate will have to drop, or the death rate rise before then, or there would have to be massive emigration.

In the past the people produced by surpluses of births over deaths within Thak have found it possible to move out of the central village into the surrounding uninhabited countryside. Among other things this means that estimates of natural growth based merely on the central village underestimates the speed of population increase. What happened in Thak is probably characteristic of most Gurung villages; people flowed down into the village from other more crowded areas and then many of them moved on after a generation or two. Thus we know that two of the lineages which first reached Thak, the Lemme and Ngobje, moved out to lower slopes. Represented in the earlier taxation records of 1883, they had practically disappeared from the central village area by 1969. The main movements that have occurred during the last eighty

MAP 21:6. Housebuilding in Mohoriya.

key:
100 + years old
built before 1920
built before 1940
built before 1958
built before 1969

deserted in 1969

(the oldest house was said to be 115 years old)

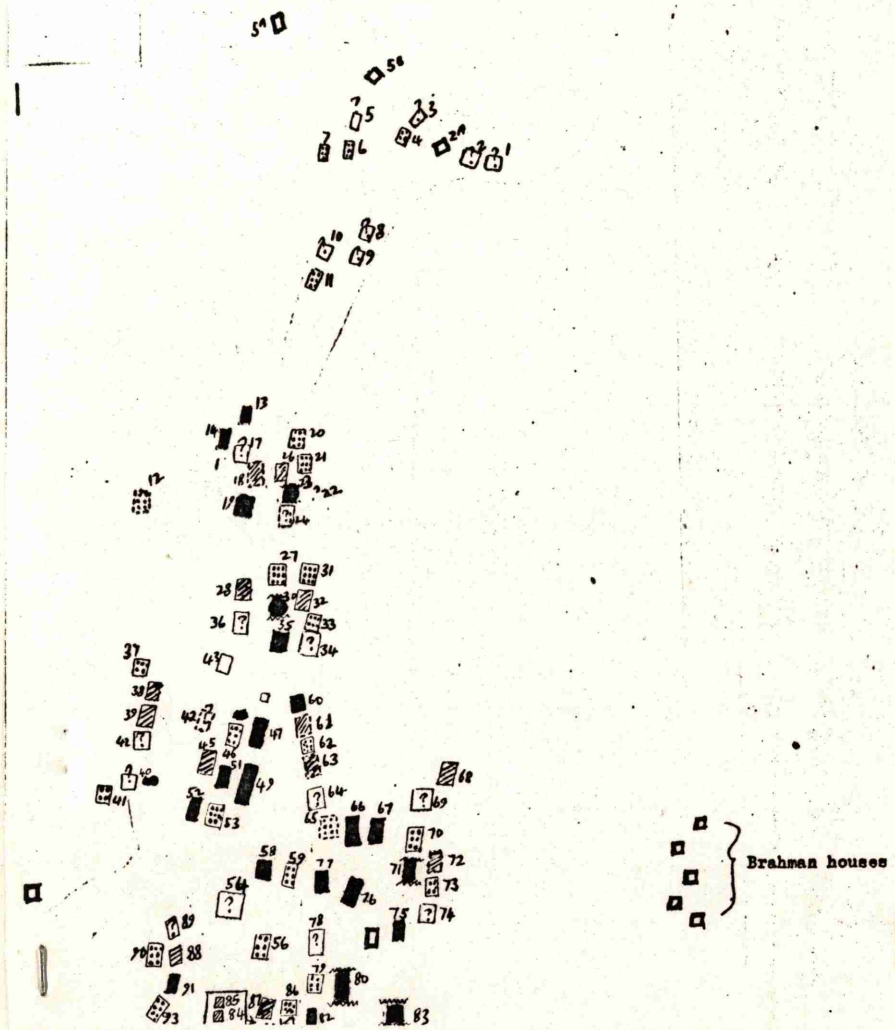
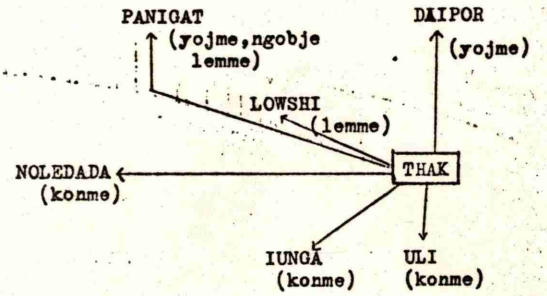


DIAGRAM 21:1. Movement of lineages out of Thak central village over the last eighty years.



capitals = places
small type in brackets = lineages/jats

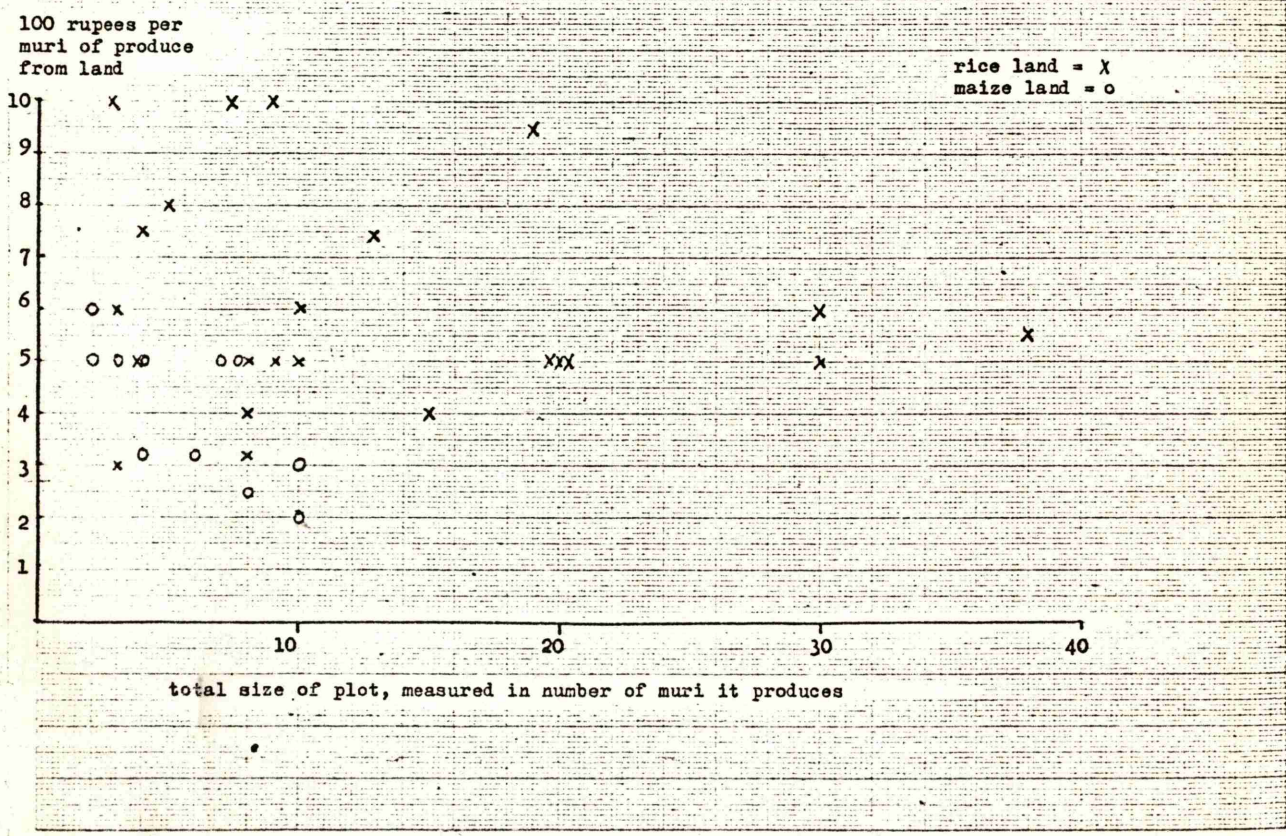
years may be illustrated by another diagram.
for diagram 21:1 - see across.
In each case only a few households probably moved out; by 1969 Panigat and Noledada were flourishing villages in their own right. But the possibility of future relief for pressure at the centre is severely limited. All round Thak there are other villages with a growing surplus of population.

That the speed of housing growth in Thak is, if anything, slow may be seen if we look briefly at Pignède's village Mohoriya. On the basis of Pignède's notes and questions I asked during my visit, it is possible to reconstruct roughly when houses were built.
for map 21:6 - see across.
It will be seen that in about 1920 there were only 22 houses, while in 1958 there were over ninety. This fourfold growth in under forty years was largely due to migration from elsewhere. Then there was a pause when 13 household migrated to Chitawan. But now pressure is building up again, both within the village and in the surrounding area. Without relief, the whole area will be unbearably crowded by the end of the century.
Population and the price of land.

Although the price of land is not, of course, only a simple reflection of population pressure, it is still a useful index of when land began to be scarce. A really comprehensive treatment of this topic would require a protracted study of the unsorted documents in the land registration (Mal) office in Pokhara. It would have taken an enormous amount of time to find Thak individuals, since people are not arranged under villages. Instead, ten household heads in Thak were presented with a list of their landholdings from the land tax records and asked to value them at present. They were also asked to state, if possible, how much money had been paid for pieces purchased in the past. This information, combined with the known acreage and yield, is the basis of the following analysis.

The price of land varies not only with its supposed crop, but its liability to suffer erosion, distance from the village, and a number of other factors. Where everything has to be carried on the back, a difference of

DIAGRAM 21:2. Price of rice and maize land in Thak, 1969.

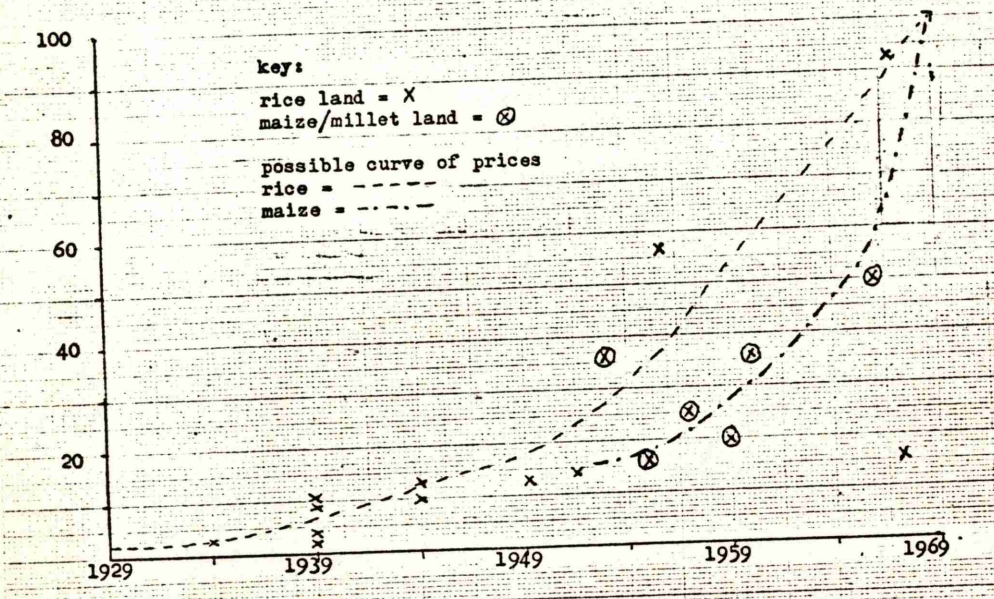


1,000 feet in altitude will have a great influence on prices. This helps to explain the considerable variations in value shown in the diagram below. Informant's estimates of how much their various fields were worth in 1969 are reduced to a common denominator, the number of Nepalese rupees per muri of unhusked rice produced. This was the way villagers themselves calculated the price of land. Thus I was told by one informant that for every muri of rice produced by a piece of land, 1,000 rs. would have to be paid; for every 2 muri of maize/millet a similar price would be paid. Another informant thought that 8-900 rs. would be the right sum for such quantities, if the land were not too far from the village. Thus he reckoned that a piece of rice land producing 10 muri of rice would cost some 7-8000 rs. According to Thak villagers, prices were higher in Thak than in neighbouring villages, for instance Moja and Taprang; they were also about 20% higher than in Mohoriya at the same time. Since land is still more abundant in Thak than these other villages, it is clear that prices are determined by other factors, for example the number of soldiers who are trying to buy land in their home village at the time. The actual valuation of land in Thak, 1969 is as follows.

for diagram 21:2 - see across.

It will be seen that rice land varied between 300-1,000 per muri, and maize land between 200 and 600. The average was about 600 and 400 respectively. The actual selling prices of land is probably about ⅓ higher than this, however. Many of the informants had not sold land for some time, and were not aware of the steep rise in demand. Furthermore, when they valued their land for me, it was not for purpose of sale. They had no desire to sell, and would not have done so at the prices indicated in the diagram. If we allow for the other grains grown with rice, the selling price of rice land in Thak was approximately ten times the annual value of the crop. But this is only a general total, and there are widespread variations. For example, a piece of land owned by household 40 and producing some 9-10 muri of unhusked rice was valued at only 4-5,000 rs., while a nearby field producing only half that amount of rice was valued at 4,000 rs. I was told that the former field was difficult to irrigate, very steep and hence difficult to work, and only produced a

DIAGRAM 21:3. Price of land in the past as a percentage of its price in 1969.



note: the marked discrepancy between rice prices two years ago can be accounted for by the fact that one plot was sold cheaply within the lineage, while the other was sold to a lower caste Leather-worker.

low quality "yellow" rice, and no kwoia or masyan. Thus not only do we have to allow for the quantity of the produce, but also the quality; not only for the steepness of the climb to the village, but the steepness of the actual terraces.

Pignède was told that land producing one muri of unhusked maize would cost 2-300 rs, and the same quantity of unhusked rice, 3-500 rs.[1] Ten years later the prices were reckoned to be twice this. There has, however been a considerable devaluation in the real value of the Nepalese rupee during the period. There are no figures available for the area where Mohoriya is situated, but figures for Kathmandu and the Terai worked on by U.S. AID, indicate the following general price changes:[2]

1957 -70: 1959 -72: 1961 -78: 1963 -86: 1965 -111: 1967 -110: 1968 -125.

Thus in the period 1957-67, prices rose by nearly 60%; possibly up to half of this was due to currency devaluation. Thus it seems likely that land in Mohoriya has increased its real value by between 50 and 70% in the last ten years.

A certain amount of information was gathered on the price of land in Thak in the past. There are a number of difficulties in comparing this with present prices. One difficulty rises from the declining productivity of land. A number of informants told me that pieces of land which had once produced a certain amount of rice, now only produced about 75% of that amount. This is less the result of erosion than of general decline in soil fertility. To allow for this deterioration in crop, since estimates of the crops a field would produce in the past were based on present yield, the present value of rice and maize land has been adjusted upwards a little bit, from 8-900 rs. per muri produced, to 1,000 rs.

If we chart the recorded price of maize and rice land sold in the past as a % of its value if sold now (on the supposition stated above that it would now be sold at 1,000 rs. per muri of producing land) we have the following trend.

for diagram 21:3 - see across.

If we overlooked for the moment devaluation of the currency, we could estimate that the price of rice land had increased by a factor of 10 in the last 25-30 years. Sometimes the

price thirty years ago was as low as 2-3% of its present price. It appears that the sharp rise in land prices began soon after the Second World War, perhaps with the return of a large number of pensioned-off army men who wanted land. The rise in maize prices may have started a little later, for until the 1950's such land was relatively plentiful. The figures are extremely rough, but they do suggest a doubling in prices during the last ten years, as in Mohoriya. Such price changes appear to have been common throughout Nepal. Thus we are told that in eastern Nepal the price of paddy increased fourteenfold in the 50 years after 1914.[3] Between 1934/5 and 1962, it has been estimated that the price of rice in Kathmandu valley went up nearly eight-fold; that of maize about the same amount.[4]

The comparisons over time are complicated in Thak by the fact that until recently, despite trade and army service, the economy of the Gurungs was still mainly a subsistence one, in which specia was looked on with suspicion, especially paper money.[5] The following statements about changes in prices of various commodities in Thak are based on the observations of one extremely intelligent, but young, man. They should thus be treated with caution. He first stated how much had been paid for certain articles when his grandfather, still alive and articulate at 85, was a young man - in other words about 60-70 years ago. Then he gave some of the prices when he himself was a boy some fifteen years ago, and then the present prices.

TABLE 21:2. Changes in prices in Thak(in rs. and paise*)

Commodity	c.1900-10	c.1955-60	1969
Day's labour	4 paise & food	75 paise & food	3½ rs.& food
Plate of meat in Pokhara	2 paise	-	2 rs.
Rice (1 pothi)	6 paise	1½ rs.	3½ rs.
Oil (1 mana)	50 paise	3 rs.	6-7 rs.
Good milking buffalo	60-70 rs.	-	6-800 rs.

* There are 100 paise to the rupee.

Thus we see that the price of a milking buffalo has increased some ten-fold or more, oil some 12 to 14 times, since before the First World War. This is a more accurate indication of price changes than the 56-fold rise in rice

prices, or 87-fold rise in ordinary wages. These latter are influenced by the subsistence nature of the economy. Labour would hardly ever be paid in cash; usually work was done on an exchange basis. During the last ten to fifteen years there appears to have been a doubling to trebling of rice and oil prices. This fits with the changes noted for Mohoriya. It also fits with the fact that a buffalo in 1957 cost about 120-200 rs. according to Pignède,[6] when bought for eating, while in 1969 a buffalo for the same purpose cost some 350-400 rs.

CHAPTER 21. NOTES.

1. Gurungs, p.155
2. U.S.AID, Economic Data Paper, vol.11,no.1. Aug.1969,p.1
3. Caplan, Land and Social Change, p.39.
4. Shreshta, Economy of Nepal, p.116.
5. As Pignede, Gurungs, p.151 points out.
6. Gurungs,p.103.

CHAPTER TWENTY-TWO. CONCLUSIONS.

The general theme of this study has been the way in which population growth alters the whole economic, ecological and social situation of a society. Although population is itself powerfully affected by the very economic and other institutions it acts upon, there has been a tendency in the preceding pages to treat such growth as a determining variable, with other social and economic variables as dependent. The methodological justification for such an assumption is two-fold. In view of the almost total avoidance of demographic analysis by social anthropologists it is important to redress the balance. Furthermore, of all the continuing processes which, in the absence of Malthusian checks, appear almost inevitable, population growth appears to be the most powerful. There are, however, many societies where population is not growing and therefore it is necessary to question the assumption that in the absence of plague, war and starvation the human race will necessarily expand. Such questioning has not played a significant part in this thesis since the emphasis has been on the effects of population growth, rather than on the causes. It is hoped that future research by anthropologists will fill in this gap. They will rightly question the demographic reductionism of the preceding analysis which tends to replace Marx by Malthus and hence to brush aside as irrelevant much of the sociological analysis favoured by anthropologists. Recognizing this weakness we may now turn to some of the conclusions of the preceding analysis. As they are briefly summarized here they appear far more definite than in the text of the individual chapters. Those who read this conclusion first should therefore be on their guard against accepting conclusions before they have read the relevant passage describing the uncertainties behind apparently precise findings.

In the first two chapters the fieldwork methods and general geographical and social background of the Gurungs were set out. Then in chapter three an attempt was made to assess the overall growth rates of Nepalese and tribal populations. In Nepal as a whole the population has more than trebled in the years between 1850 and 1961, from a base of between three and four million. By the year

2000 A.D. it is predicted that it will reach a total of about 25 million. This very great growth has been achieved despite hardly any medical improvement and a very high mortality rate. Studies of particular tribal groups such as the Magars and Sherpas has shown three-fold to five-fold increases in population during the 120 years before 1950. Although it is difficult to be certain about Gurung population growth because the linguistic criterion upon which 'Gurunghood' is judged changes over time, it seems likely that the Gurungs also have witnessed at least a trebling during the last century. In some villages the growth has been much swifter; in Mohoriya, for example, there was an eight-fold increase during the hundred years after 1850. In the whole Kaski region, where the western Gurungs live, the population has probably increased more than five-fold in the years 1820 to 1961, from about 5,300 households to about 27,800 households. Recently the growth of population may have accelerated considerably with the introduction of water pipes in a number of villages. Between 1961 and 1971 in the village of Thak the population grew from 1,214 to 1,733, or over 40% in ten years according to the censuses of those years. At this rate there would be doubling of the population every twenty years or less. The enormous impact such growth is having throughout Nepal on employment opportunities, forest and other resources, and the possibility of capital accumulation is discussed in the ensuing chapters.

Chapter four discusses the age/sex structure of the population and also migration. It is possible to gain unusually accurate statistics on this because the Gurungs, unlike many tribal peoples, know their exact ages. The lho system, a twelve-year Tibetan calendar, enables every person to know their year of birth. Another particularly inter sting feature of the Gurungs is the "demographic disequilibrium" caused by very large-scale labour migration to the army as 'Gurkha' soldiers. At present the general age-structure of the Gurungs, both in Mohoriya and Thak villages, is intermediate between that typical for slow-growing western nations and the steeply tapering pyramid often found in rapidly expanding populations. Thus the proportion of Gurungs in Thak aged under 20 was only 40%, while those for western countries are usually under

30% and those for many Third World nations often over 50%. There are signs that there is a change towards the latter pattern in recent years in the village of Mohoriya, and non-Gurungs in Thak exhibit the very youthful age structure characteristic of much of Asia. Unlike Pignède, who had previously written on the village of Mohoriya, I did not find that males outnumbered females; if anything the reverse seems to be the case among the Gurungs. Migration of a temporary kind is extremely important among the Gurungs. Thus of 109 male Gurungs in Thak central area in 1969 aged 21 or over, some 68% now are, or had been, in the army. Some 60% of the Gurung men in the same area aged 21-40 were currently in the army. There were two females to every male in the village aged 21-50. Yet this does not appear to have had a devastating effect on society, as such labour migration in Africa has tended to have.

In the fifth chapter fertility rates of various kinds indicate that the Gurungs have a level of fertility somewhat below that for Nepal as a whole. This fits with earlier hypotheses that there are two patterns in Nepal; a high rate in the Hinduized lowland areas with low age at marriage, and a lower rate in the Himalayan tribal areas where the Tibeto-Burman peoples marry later. Thus the Crude Birth Rate for Nepal as a whole is probably between 47-57 per thousand, while that for Gurungs in Thak and Mohoriya is probably between 30 and 40. The fertility ratio (proportion of surviving children under 5 to women aged 15-50) is somewhere between 400 and 600 for Thak and Mohoriya, which again puts it at an intermediate level between model 'Western' and 'Developing' patterns. While the completed family size in Nepal as a whole is probably six children or more, that for Thak and Mohoriya is between 5.2 and 5.5. The effect of army service on this completed family size appears to vary between the two samples and we cannot yet be sure which case is representative. In Thak such service appears to make little difference, in Mohoriya there is a difference of nearly two livebirths per family between army and non-army households. On the other hand wealth appears to make little difference to completed size. Age-specific fertility rates also vary considerably between the two communities, but both show levels below those for most other pre-

industrial societies. Likewise the age of women when they bear their first child varies between the two communities; in Thak the mode is 20, in Mohoriya it is 23. There is less difference between the mean age at last live-birth: in Thak it is 35.8, in Mohoriya 37. There is usually an interval of three years between livebirths in both communities, whether the father is away on army service or not. As yet there is little evidence that there have been any major changes in fertility patterns over the last thirty years.

The next two chapters are based on the article entitled 'Social Structure and Fertility: An Analytic Framwork' by Kingsley Davis and Judith Blake. In chapter six the variables affecting sexual intercourse are examined. The most important of these is the age at entry into sexual unions. This appears to have risen slightly among the Gurungs in recent years as pressure against pre-marital sexual relations began to grow. But most people still start such relations between the age of 17 and 20, which is young enough to allow high fertility rates. Like the other hill peoples of Nepal, the Gurungs tend to marry later than many of the groups to the south. Only 8/77 Gurung women in Thak in 1969 were aged under 17 when they married, and less than one quarter of the men were under 20. The mode for women was 20, for men 21 or 23. The most important factors affecting the age at marriage are inheritance customs, the amount of capital needed in the form of houses and gold in order to marry, and religious beliefs concerning the right age to marry children and the necessity to produce a son for rituals at death. In the case of the Gurungs none of these factors tend to enforce an early age at marriage, nor do they tend to force people to marry late. The proportion of women who never marry has been very small among the Gurungs in the past, though there is now in Thak a small group of carjat women who are unlikely ever to marry. Nor is much reproductive life lost between unions because of divorce, separation, desertion or widowhood because divorces are often for infertility and re-marriage is not frowned upon. Finally, the factors governing exposure to intercourse within unions do not inhibit fertility. There is no prolonged post-partum abstinence or much 'occasional' abstinence.

Impotence and illness do not seem to hinder intercourse, though army absence is clearly a bar to much intercourse. The total effect on fertility of such service may, however, be positive.

We then turn to factors affecting exposure to conception and successful parturition. There are a number of possible causes of low conception rates - health, diet, psychological tension, work routines, breast-feeding customs - but only the last of these is likely to lower Gurung fertility appreciably. Infants are usually breast-fed until the next child is conceived, and this is often three years. This probably helps to space births. Deliberate contraception appears to have been unknown among the Gurungs; even coitus interruptus was not practised. Despite considerable government propaganda and the provision of contraceptive devices at the market town of Pokhara, none of the Gurungs in Thak were using contraceptives when we arrived. We offered free condoms and pills as an experiment, gaining the support of most of the opinion leaders in the village, putting up posters, talking to people about the subject. Yet of the 44 women in the Thak area aged under 45 with four or more living children, only just under one sixth came to ask for birth control 'medicine'. Those who did come were already fairly old, the mean average of the sixteen who came in Thak and Mohoriya was 36, and they had already had over 92 children between them. Therefore, even if the contraceptives had been totally effective there would have been little effect on fertility rates. But there is evidence that the devices were not in fact used for more than a short time. The total effect of our experiment was probably nil. It would therefore seem that although touring teams of individuals dispensing contraceptives and undertaking vasectomies would be better than stationary dispensation from hospitals or clinics, it will be necessary to set up a framework of financial and legal incentives and dis-incentives before any appreciable impact is made. Once a Gurung woman has conceived, the likelihood of successful gestation and parturition is high. Although abortions are known about and in certain cases believed to be justified, they are probably infrequent. The over-all rating of Gurung fertility suggests that this society deviates in most ways from the normal pattern suggested

for pre-industrial societies by Davis and Blake. Many of the variables affecting fertility are intermediate between the patterns for 'typical' pre-industrial and western societies.

The mortality rate for the Gurungs also appears to be lower than that for Nepal as a whole. While the Crude Death Rate for Nepal as a whole is between 27 and 32 per thousand, that for Thak village is likely to be between 15 and 20. Likewise, infant mortality rates of about 150 per thousand for Nepal as a whole are much higher than a probable rate of about 80 per thousand for the inhabitants of Thak. While about half of the Nepalese people as a whole die before reaching the age of twenty, in Thak less than one third of the Gurungs do so. If we compare different groups within the village of Thak there appears to be no obvious difference between castes or socio-economic groupings; nor is there much difference between the two Gurung villages which were studied. There is some suggestion in the figures that infant mortality has dropped and expectation of life at the age of forty increased during the last ten years.

The two final chapters of the demographic section deal with the causes of death and the major types of illness and treatment of disease. Water-borne diseases, particularly those associated with fecal matter such as dysentery, gastro-enteritis and typhoid are the main killers, along with tuberculosis. Both types of disease are likely to decline rapidly in the next few years under the impact of improved water supplies and B.C.G. campaigns. The mortality rate could be cut in half in a decade. 'Malthusian checks' on population do not seem to have operated on the Gurungs during this century. Epidemics such as bubonic plague, cholera or smallpox do not appear to have occurred among the Gurungs, nor have harvest failure and consequent famine decimated the population. The third check, warfare, has of course affected the Gurungs through losses in the two World Wars; but the total deaths from this cause, though considerable, do not appear to have halted population growth. It is possible and even likely that the checks of plague and famine will again begin to occur within the next twenty years if population continues to grow at its present rate. The other

minor diseases which constantly afflict the Gurungs could also continue, instead of abating. At present most villagers spend most of the time suffering from minor debilitating and irritating illnesses such as anaemia, goitre, rheumatism, skin diseases, worm infestation, dental troubles and eye infections. These do not appear to correlate with wealth and caste, for example the wealthier seem, if anything, to be more anaemic.

There are a number of possible ways of dealing with constant bad health. The most popular are resort to the local magician (pəju) or the use of western medicines. Each has special advantages. Ritual healing is cheaper, more socially and psychologically satisfying, and easier to obtain. Western medicine is more efficient in some serious situations, for instance difficult childbearing, toothache and TB. As far as western medicine is concerned, it is clear that treatment of most of the illness endemic in villages could easily be offered by one of the villagers, perhaps one of the school-masters, after a fortnight's medical training and with the aid of a simple and inexpensive kit. This would be a far better investment than hospitals.

The overall position that emerges from the discussion of Gurung demography is that population is growing moderately rapidly despite fairly low birth rates and fairly high death rates. It is likely that it will grow even more rapidly in the near future. We therefore turn to the economic situation to see how population has affected resources in the past and the likely reserves for the future.

It is clear that the resource base and economy of the Gurungs has changed enormously over the last century as a result of continued population growth. For many centuries the Gurungs consisted of wandering bands of shepherds, who also practised hunting and slash and burn agriculture. By the middle of the nineteenth century they were also considerable traders over the mountain passes to the north, miners, and a source for army recruits. During the following century population pressure forced them to establish villages lower down the slopes where wet rice could be grown, but herds and flocks could not longer be grazed. They now have permanent fields which they plough instead of hoeing. Their domestic industries,

dependent on sheep's wool, have dwindled away in many villages. Although they still provide army recruits, all the other occupations have also virtually disappeared. They are no longer traders or miners, and hunting is unproductive with the destruction of the forests. Some of the changes are very recent. Thus it seems probable that in Thak the villagers ceased to practise shifting cultivation of maize and millet during the period 1945-1955 as population density passed the 40 persons per sq.km. level and more food became urgently needed. The agricultural technology remains extremely simple and labour intensive on the mountainous rocky slopes. Despite this, however, there are increasing signs of a transition from a society where there was a surplus of land and other resources and a shortage of human labour, to the opposite situation. All these changes continue to have an enormous effect on the Gurungs; if they continue, the familiar pattern of growing unemployment, protein deficient diet, and growing inequality and indebtedness are likely to appear.

In the next chapter we deal with the total resources of land and forest. The Gurungs in Thak cultivate on the side of a steep mountain; from the rice fields at the bottom to the heavy forest at the top is a rise of about 4,500 ft. But in terms of actual quantity of potential arable land it is a favoured community by Nepalese standards. There are some 0.98 ha. of all land per man engaged in agriculture, as opposed to 0.364 for the Western Hills area of Nepal as a whole; there are 0.64 acres <u>per capita</u> of cultivated arable land, as opposed to an average of only 0.18 acres in the Western Hills as a whole. It is therefore likely that the approximately 500 kg <u>per capita</u> of all grains produced p.a. is high both for the region and for Nepal. It is also almost certain that in few parts of rural Nepal is there as much as £194 per person invested in land, as there appears to be in Thak. This high level of investment reflects the high price of land consequent on the inflow of wealthy ex-Gurka soldiers.

The other major capital resource is forest. Theoretically it would seem that Thak, which is renowned for its splendid forest, would have ample timber for its needs, over 800 acres for the hundred sample households. In practice, however, it is clear that the woods are fast

being destroyed and that in another 10-20 years little good forest will be left in the panchayat. There are not only the demands for at least 620 kg. of wood per person p.a. for fuel, but also the need to cut foliage to supplement the 350 acres of scrubby grazing which cannot support the total of over 600 animals now kept. Each individual in the village consumes, via livestock, some 3,000 kg of vegetation and this puts a heavy drain on all resources. Thus a 2% p.a. population growth means that in the one year 1969-1970, the hundred sample households in Thak required an extra 6,000 kg. of wood and 30,000 kg. of vegetation just to maintain present standards. It is difficult to see how such increasing amounts can be extracted for more than a few years.

The villagers have a number of other types of capital, mostly not directly productive, as with jewels, housing, and clothes. The following chapter gives a detailed inventory of such types of capital. Livestock per household is worth, on average, just over £50, which is a large amount by Nepalese standards, houses also are big and expensive and jewels and gold plentiful. Agricultural tools, however, are very simple and inexpensive; wealthier villagers do not gain any advantage over the poor by having better tools. In relation to land, the sums spent on the tools for working the fields and processing grains are minute. For example, one Gurung household in Thak had some £1,625 of land which was worked with tools worth just over £5. The capital available from outside the village is very difficult to calculate. But it would seem that that available in India and the British army is much more significant than that provided through government spending in Nepal.

In a total inventory of resources we also need to consider 'human resources', the working skills of the population. The next chapter tries to calculate the amount of labour available in the hundred Thak households, in order to answer the long-term question of whether there is already considerable concealed unemployment. In order to do this we need to work out an average "production unit" and hence to calculate the relative contribution of various ages, male and female. After detailed consideration of the amount of work done per day and description

of specific work days it was concluded that the total number of 'production units' is equivalent to some 55% of the total population.

In order to see how much of this labour is at present absorbed a detailed analysis of the various processes involved in all types of agricultural and domestic work is made. It appears that at present, of the total man-days spent in 100 households, over half are devoted to arable farming, and nearly a quarter to domestic work. Since arable farming is seasonal, it is necessary to examine the amount of labour needed per month for various crops. It appears that just over four months work at six hours a day would be enough to grow and process all the crops. But in fact most of the work is concentrated in the mid-summer monsoon months, and a majority of the households have a labour shortage. This provides the opportunity for the practically landless lower castes who are able to use the demand for their labour in order to gain a livelihood. Yet abstract figures often exaggerate the shortage of labour, for study of the amount and type of work done each day over these months in three households shows that even in the busiest months there is a considerable amount of leisure. The general conclusion is that even at present there is barely ample work to keep the resident population busy, despite huge labour migration of adult males. At the most optimistic of estimates, the introduction of new agricultural methods, especially artificial fertilizers and high-yield grains, could increase the labour demand by some 50%. At present rates of population growth this would put off the problem of widescale unemployment by about 10 to 15 years. In fact, it is likely that there will be increasing under and unemployment within a few years. The first to suffer will be the lower castes.

In the next three chapters we turn to an analysis of domestic economy; income, expenditure, and surpluses/deficits. Analysis of the hundred households in Thak shows that almost exactly half the total wealth of the Gurungs comes from cereal crop production, nearly one third from army service, and the rest fairly equally from forest resources and pastoral farming. But as far as cash income is concerned, army service is crucial; roughly 37,000 rs. p.a. out of a total of 46,000 rs. comes from army pay and

pensions, in the hundred households. Very little is sold from the village; without army pay there would only be an average of about 70 rs. per household for cash purchases instead of the present 460 rs. Some 54/100 of the households receive money from outside the village, almost all from pay or pensions in the army. Only one lower caste family receives outside cash.

We then consider in detail the relative amount consumed by people of both sexes at various ages in order to construct a standard 'consumption unit'. This leads on to an analysis of diet. A study of several families, both at a point in time and over a number of months, suggests that by Asian standards the Gurungs in Thak, a relatively wealthy village for Nepal as we have seen, eat fairly well. They consume about 20 oz. of wheat equivalent per day in grains, which is considerably above the danger level. This is supplemented by a fairly plentiful supply of meat and milk. Vegetables are also fairly abundant and lentils/soya beans are a more important source of protein than meat. But it is likely that the safe average level of 80-90 grams of protein per day will drop as more and more land has to be converted from pasture to cereal production in order to sustain expanding population. The supplies of wild animals, forest fruit, and forest vegetables are also almost exhausted.

Chapter 17 then analyses other expenditure, both in the village and at the local market. On average, each Gurung household spends between 500-700 rs. p.a. in cash, out of a total consumption of goods worth about 5,000 rs. Thus a population growth rate of 2% p.a. as at present will mean that in these hundred households in ten years time an extra 12,500 rs. of cash will be needed each year, and an extra 125,000 rs. of all types of goods will be consumed each year. Of the total consumed at present, some 3/5 of the total value is foodstuffs, another ¼ is fuel; clothing and other consumer goods constitute 1/16 and 1/10 respectively. Thus the Gurungs live at a level considerably above mere subsistence. The greatest cash expenditure is, in order of expense, on the following: clothes, cigarettes, oil, taxation. As compared to other groups in Nepal and Asia, the Gurungs are, at present, relatively large consumers.

There have been efforts to introduce compulsory saving and hence to encourage the capital accumulation without which it is thought impossible to 'modernize'. Yet it is likely that Thak and many other hill villages are not accumulating wealth. There seems to be roughly 50,000 rs. p.a. flowing into the hundred sample households in Thak; the total cash expenditure outside the village is over 60,000 rs. p.a. If we turn to particular households, we find very considerable economic mobility, with some households visibly rising, and other declining. By comparing "production units" with "consumption units" it is possible to estimate that, theoretically, there are 65 deficit households and 35 surplus ones. It is no surprise that the total of 65 above should coincide so closely with the fact that 64 households do not currently have a man away serving in the army. Wages in the army are at least twice as high as returns on labour in the village, and consequently those without migrant labourers find it difficult to make ends meet. But the above calculations do not take into account the size of a family's landholding; those with good land can earn some surpluses from this. If we allow for this factor it would seem that roughly half the village households have visible deficits each year. There are five households with surpluses of over two "units"; all are visibly rising economically and buying land.

The chapter continues by discussing the various pressures which over the years lead to a more equal or unequal distribution of wealth. Until such factors have been located it is impossible to know whether inequality and landlessness are likely to grow among the Gurungs. A number of features of the economy have tended in the past to keep the Gurungs egalitarian in structure and sentiment. There has been a labour shortage-due to a primitive technology, the periodicity of agriculture, the mountainous terrain, and the scarcity of population in relation to land. The introduction of improved tools and machinery, and the growing density of population will mean unemployment and lower wages. Although there has been much cash paid to Gurungs as soldiers for over a century, it is true to say that until about the middle of the twentieth century the village economy was still largely a subsistence, non-cash one. There were few things in the

village or nearby for which cash was needed; land was plentiful and consumer goods limited in quantity . Nor was there a cash market for surplus crops. All these condition are now changing rapidly. Land prices are soaring; Pokhara market is expanding fast, both as a centre for consumer goods, and possibly, in the future, as a market for grain. This will mean that temporary surpluses in some families can be turned into permanent advantages through the mechanism of land purchase and cash crop sales. Educational facilities which are also being opened up could turn mere economic differences into different life styles, the essence of a true class structure. The rapid disappearance of communal, free, resources of land and forest also weakens the position of the less wealthy. Finally, army service in the British army is becoming less and less important as recruitment is cut. Thus an alternative career, open to the relatively poor as well as the rich, grows less accessible. Against such tendencies there is placed a general ethic of consumption and distribution, as opposed to saving, and a partible inheritance system that splits up large landholdings at each generation. We may wonder how all these forces have acted in the past, and it is to this problem that we turn in the next chapter.

Although land records are notoriously difficult to use, they are our only statistical source for Gurung economics in the past. In Thak, surveys of land (principally rice fields) were made in 1883, 1930 and 1965 and we can use these to show the extension of village fields and changes in the pattern of ownership. If we look at the total pattern in the village we find that in 1883 most households had a plot of rice land, and few had a large number of plots. There was more inequality by 1933, with a larger group of middling and wealthy households. By 1968 there was again more equality amongst those who held some rice land; the largest landholdings of 1933 had been split up. But there were also signs of a fast growing section of the population who had no rice land at all. If we compare Thak to Mohoriya, we find that Thak is much wealthier, and that the distribution of harvested maize in Thak is more unequal. Yet, despite a production of almost twice as much cereal grain in Thak as in Mohoriya (per head), very little is sold outside the village. This

suggests that considerable rises in grain production in many Gurung communities could easily be absorbed by increased consumption.

If we concentrate on who actually owns the land, we find that there have been considerable shifts, even in the period 1933-1968. Although the konme lineage dominates in both periods, other lineages have gained considerably (as the kebje) or lost ground (as the lamme). Even those who are gaining most rapidly, however, are not likely to sustain their position long into the future. For example, one of the kebje lineages had one male landowner in 1883, with 31 sa muri (s.m.) of land; in 1933 there were three owners in this lineage with 44 s.m. each; in 1968 there were six owners with 66 s.m. each. At the next generation there will be at least 13 owners, needing another 400 s.m. just to maintain their position. But by now all the potential rice land has been terraced and it is very unlikely that they will be able to acquire this large amount from other households.

The study of particular rice fields shows very different patterns according to the quality of the soil. Over half the best rice land of the hundred households in Thak appears to have been already in use in 1883; for example, in one field, the number of plots only increased from nine to fourteen between 1883 and 1968. In a sample poor quality field, however, the area under rice seems to have increased from 32 s.m. to 262 s.m. merely in the period up to 1933. Generally there appears to have been a little over a doubling of the area under rice cultivation between 1883 and 1933. But by 1933 there was little good rice land left. During the following 35 years only some 25 ropanis of new land are recorded as being bought into cultivation. Almost all these pieces were small and low quality. Now there is almost no potential rice land left; perhaps if every possible slope was utilized another 50 ropanis of low quality land might be squeezed from the hills. But it is unlikely that such additions would more than compensate for the annual deterioration in the quality of land already used. It is quite likely that, in fact, the total rice harvest in 1969 was less than that in 1933. Not only are there problems of erosion and soil leaching as year after year land is used without manuring, but the supply of water and

manure generally has decreased. There are now less livestock, and the patches of jungle and scrub between the rice fields where they used to graze have been cut down to utilize every inch of space. It has also been suggested by some of the villagers that the rainfall has decreased in total volume, and that which does fall fluctuates much more rapidly than in the past. The cutting down of the forest at the top of the area means that less moisture is attracted. That which does fall rushes straight down the hillsides, instead of being stored and issued gradually by leaves and roots.

Less is known about maize land. It would appear that the limits of maize/millet cultivation have been reached more recently than rice cultivation. The great peak for the private registration of maize land was in 1955-8. By the mid 1960's it seems that the cultivation of these dry crops had reached the limits of the available land. During our year in the village only two very small pieces of ground were terraced, both were rocky and steep; very few suitable slopes remain. Yet Thak is reckoned to be a wealthy village, and if we compare it to many other hill villages it is comparatively affluent. The acute land shortage which is on the point of changing the whole economy in this village has already occurred in many other areas.

The history of housing and prices provide two indirect ways of assessing the rate of population growth up to the present. Retrospective questions on house building and the official dates of registering house plots showed that in the period 1920-1967 the number of houses in the central village has probably doubled. This has occurred despite a considerable amount of emigration and higher than average mortality during the Second World War. If the trends of the last twenty years continued up to the year 21000 there would be some 1600 households in an area which supported less than 50 in 1920. Clearly the birth rate must drop or the mortality rate rise. The above predictions are also conservative since they do not allow for the effects of current B.C.G. and other public health campaigns. Yet already those migrating into Thak can find no cultivated land to use. Those who came into the village in the mid 1950's managed to obtain maize fields and even some rice

land; those who have come in during the last ten years have been unable to do so. Thak is by no means an extreme case, for the growth of villages has been even more rapid in other places. In Mohoriya, for example, there were probably about 22 households in 1920, while in 1958 there were over ninety.

Another reflection of population pressure is the price of land. From somewhat uncertain evidence for Thak it appears that the sharpest rise in rice land prices occurred just after the Second World War. At this time the return of servicemen from the war coincided with the end of the period when it was possible to make rice terraces. Even where migration during the last ten years has kept population almost static, however, as in the village of Mohoriya, pressure from outside has meant that land has increased its real value by 50-70% in the ten years up to 1969. Over the years since the Second World War it is likely that, not taking into account devaluation, the price of rice land has increased by a factor of ten in Thak. Prices of other commodities such as meat and oil have also risen, though not quite so sharply.

The future is indeed bleak for the Gurungs, as it is for the rest of the Nepalese population, but my predictions are in line with those of others who have studied the situation in Nepal in any depth.[1] There are only two possible outcomes. One is to let nature take its course. After postponing the catastrophe by the aid of fertilizers and 'miracle' grains, famines, plagues and civil disturbance will cause huge mortality, perhaps cutting population back to half or less than half of its present level of over ten millions. The other course is to invest at least half of the present "development" budget in contraception so as to totally halt population growth within the next five to ten years. Schoolteachers, panchayat workers, doctors and health teams, all could give advice and distribute contraceptive technology. An upper limit of three living children could be set and those who have less than this number could be rewarded, those who have more, once techniques for avoiding such surpluses are easily available would be punished. A minimum age of marriage, perhaps 30 for men, 25 or 28 for women, could be set. This might appear to attack human freedom, but there can be little hope of any freedom at all if millions live in growing

poverty and eventually suffer appalling famines and epidemics. The wealth that would accumulate if the population were somehow kept static would then pose a whole set of other problems, for instance those of how to increase human happiness without over-consuming irreplaceable resources and without filling the land with ~~dirt~~ pollution of various kinds. Such problems are unlikely to emerge, however, for there is little chance that any political party could undertake such a ruthless plan, or execute it if it were brave enough to try.

NOTES.

1. For example, Wye College study, p.12 & passim; Karan, Himalayan Kingdoms, pp.102-3; McDougall, Household Economy, p.120; Shreshta, Economy of Nepal, p.40 & passim.

SUB-APPENDICES AND BIBLIOGRAPHY

APPENDIX ONE. Census schedule utilized.

Section one. De facto census.

a) How many people slept in your house last night?
b) What are their names - starting with the eldest and including informant?
c) Are they male or female?
d) What is their lho(animal year)? How old are they now?
e) What is their relationship to the informant?
f) How many years have they lived in Thak?
g) Where else, including residence abroad, and rank if in army, have they li
h) What is their that(lineage)
i) Have they been to school, if so, for how many years?
j) Can they read or write?

Section two. De jure census.

a) How many members of the family who normally sleep in the house were temporarily absent(up to one month) last night?
b) Questions continue as in b-j above.

Section three. Semi-permanent absence.

a) Have you any close relatives(parents, brothers, sisters, husband, wife, or children) who are permanently abroad(over one month), away at school, living in another village etc?
b) Questions continue as in b-j above, except that instead of f and g above substitute the following.
c) How many years or months ago did the person leave?
d) When do you expect him/her to return to the village permanently?
e) Where are they now living?
f) What are they doing away from the village? If in the army,their rank?

Section four. Marital history.

(Fill in the names of all married persons in sections one to three above and then ask the following questions).

a) What age was the man when he was married?
b) How old was the woman when she was married?
c) How many years ago did they marry?
d) Where did the man live before they married?
e) Where did the woman live before they married?
f) What is the that of the man, and that of the woman before she married?
g) Were they related by family ties in any way before marrying?
h) How did the marriage end, if it has ended?(By death/divorce/separation).
i)How long ago did it end, and have either of the partners remarried?

Section five. Fertility history of one central woman(if possible, the oldest married woman).

a) How many conceptions(including children born dead) has woman experienced?
b) How many of the above conceptions ended in the birth of a live child?
c) What are the names of those who were born(alive), and of those who have subsequently died? (In order of birth,indicating those dead before being named, i.e. still-births and miscarriages).
d) In what month and what lho was each product of conception delivered?
e) What is the present age of those still alive?

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e) What is their relationship to the informant?
f) How many years have they lived in Thak?
g) Where else, including residence abroad, and rank if in army, have they lived, and where were they born?
h) What is their jhat(lineage)?
i) Have they been to school, if so, for how many years?
j) Can they read or write?

Section two. De jure census.

a) How many members of the family who normally sleep in the house were temporarily absent(up to one month) last night?
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Section three. Semi-permanent absence.

a) Have you any close relatives(parents, brothers, sisters, husband, wife, or children) who are permanently abroad(over one month), away at school, living in another village etc?
b) Questions continue as in b-j above, except that instead of f and g above substitute the following.
c) How many years or months ago did the person leave?
d) When do you expect him/her to return to the village permanently?
e) Where are they now living?
f) What are they doing away from the village? If in the army,their rank?

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d) In what month and what lho was each product of conception delivered?
e) What is the present age of those still alive?

Appendix one, continued.

f) In what month and year(lho) did those children who have died, die?
g) How many years ago did that happen? (i.e. did child die)
h) Was the child able to walk, no longer breast-fed, when it died?
i) If the child was dead when born, how long had it been conceived? (i.e. was it a miscarriage or a still-birth).
j) If the child has died, what was the cause of death?

Section six. Details of parents.

a) What is the name of the father and mother of the two eldest members?
b) If alive, where do they live? If dead, where did they die?
c) If alive, what is their age? If dead, how old where they when theyx died and how many years ago did this occur?
d) What was the cause of death of those dead?
e) If the cause of death was illness, how long were they ill?
f) Was the deceased cremated or buried?

Section seven. Previous two deaths in the family, excluding those above.

a) What were the names of the last two persons in the family who died, excluding those mentioned above?
b) Proceed with questions as in section six above.

Section eight. Various questions.

a) How long ago was the house you live in built(which member of the family built it?).
b) How long has your family lived in this house?
c) How many years ago were the family lands last divided?
d) Were they divided when parents died, when a son married, or at what point?
e) Are there any permanently ill persons in the household? If so, from what are they suffering?
f) How far from Thak has the informant been - the furthest point reached - and how often?

APPENDIX TWO. Production and consumption units per household.

House number	Total of prod'n units	Total prod'n units in village	Army-weighted units**	Total of consumption units	Deficit or Surplus	May-July, deficit or surplus	May-July, if absent men returned
1	4	3	6	5.5	+	-	=
2	2.4	1.4	4.4	4	+	=	+
3A	2.6	1.6	4.6	3.5	+	-	-
3B	4.2	4.2	5.2 &	5.75	-	+	+
4	2.4	1.4	3.4	3	+	-	+
5A	2.6	1.6	4.6	3.25	+	-	-
5B	2.4	1.4	4.4	3	+	-	-
6	4.2	4.2	4.2	6.0	-	-	-
6A	0	0	0	1@	+	+	+
7	3.2	1.6	5.2	4.75	+	-	-
7A	2.4	2.4	2.4	3	-	-	-
9	1.4	1.4	1.4	3	-	-	-
10	2.5	1.8	4.6	3.5	+	-	-
11	2.8	1.8	4.8	3	+	-	-
11A	1.2	1.2	1.2	2.25	-	+	+
12A	3.8	3.8	3.8	5	-	+	+
12B	2.6	1.6	4.6	3.5	+	+	+
13	2.4	2.4	2.4	3.75	-	-	-
13A	2.9	1.1	4.9	4.5	+	-	-
13D	2.8	1.2	4.8	4.25	+	=	-
14	2	2	2	3.25	-	-	-
15	6.2	3.2	13.2	7.5	+	-	=
16	1.2	0.2	3.2	5	-	-	=
17	5.4	4.4	8.4	7.25	+	-	-
18	2.8	0.8	4.8	2.5	+	-	-
19	4.6	4.6	4.6	6	-	+	+
20	7.2	4.4	11.2	9	+	+	+
21	2.4	2.4	2.4	3.25	-	-	-
22	4.6	2.8	6.6	6.5	+	-	-
23	4.2	4.2	4.2	5	-	=	=
24	4.6	3.6	6.6	6.25	+	-	-
25	5	3.4	7	6.5	+	-	-

House no.	Total prodn units	Total prod'n units in village	Army-weighted units* Total of consumption units		Deficit or surplus	May-July Deficit or Surplus	May-July, if absent men returned
27	1.8	0.8	2.8	2.25	+	-	-
27A	0.2	0.2	0.2	0.75	-	=	=
28	3.4	2.8	4.4&	4.75	-	-	-
29	2.4	1.4	4.4	3	+	-	-
31	0.6	0.6	0.6	0.75	-	-	-
32	3.2	2.2	6.2	4.25	+	-	-
33	1.3	1.3	1.3	2.5	-	+	+
33A	0.2	0.2	0.2	1.5	-	-	-
34	2	2	2	2.75	-	=	=
35	1.6	1.6	1.6	2	-	+	+
36	1.4	1.4	1.4	2	-	-	-
37	2.8	1.8	4.8	3.25	+	-	-
38	3	3	3	4.5	-	-	-
39	2.6	2.6	2.6	4.25	-	-	=
40	4.6	4.6	4.6	7.25	-	-	-
41	2.4	2.4	2.4	3.5	-	-	-
42	1.8	1.8	1.8	2	-	-	-
42A	4.6	2.8	6.6	5.25	+	-	-
43	8.4	7.4	7.4	10.5	-	+	+
44	3.4	3.4	3.4	4.5	-	+	+
44A	1	1	1	1.25	-	+	+
45	5.4	4.4	4.4	6.0	-	+	+
46	4.4	4.4	4.4	5	-	+	+
48	2.4	1.4	4.4	3	+	-	-
49	6	4	11	7.25	+	-	-
50	3.6	3.6	3.6	4.75	-	+	+
50A	3.2	3.2	3.2	4.25	-	+	+
51	2.8	2.0	4.8	4	+	-	-
52	4.2	4.2	4.2	5.75	-	-	-
53	1.8	0.8	3.8	2	+	=	-
55	2.4	2.4	2.4	3	-	-	-
56	4.0	4.0	4.0	6.25	-	-	-

House number	Total of prod'n units	Total prod'n units in village	Army-weighted units**	Total of consumpt'n units	Deficit or surplus	May-July, deficit or surplus	May-July, if absent men returned
57	2.0	2	2	2.75	–	+	+
57A	1.4	1.4	1.4	2	–	+	+
58	2.8	2.8	2.8	4.5	–	+	+
59	3.2	3.2	3.2	4.25	–	+	+
60	3.8	3.8	3.8	4.75	–	+	+
61	1.8	1.8	1.8	3.5	–	+	+
62	3.8	3.8	3.8	5	–	+	+
63	2.8	0.8	4.8	3	+	?	?
64	1.8	0.8	3.8	2.25	+	?	?
65	2.4	2.4	2.4	3.25	–	+	+
66	2.8	2.8	2.8	3.5	–	?	?
70A	0.6	0.6	0.6	1	–	–	–
70B	2.6	1	3.6	4	–	–	–
71	1.4	1.4	1.4	3	–	–	–
72	3.0	2.0	3.0	4	–	–	–
73A	3.8	2.8	6.8	5.25	+	–	–
73B	6.2	5.4	8.2	7	+	–	–
74	2.8	2.8	2.8	4.5	–	=	=
75	0	0	0£	1	–	–	–
76	4	0.8	6	4.75	+	–	–
77	3.4	3.4	3.4	4.75	–	=	=
78	3.4	3.4	3.4	5	–	+	+
79	1.8	1.8	1.8	2	–	–	–
80	2.6	2.6	2.6	3.25	–	=	=
80A	4.6	3.6	6.6	5.75	+	+	+
80B	2.6	2.6	2.6	3.75	–	+	+
81	3.6	3.6	3.6	4.75	–	+	+
82	3.4	3.4	3.4	4.5	–	+	+
83	0.8	0.8	0.8	1.75	–	–	–
83A	1.8	1.8	1.8	2.75	–	–	–
84	7.8	4.8	13.8	9	+	–	+
85	1.1	1.1	1.1	2	–	–	–

House no.	Total of prod'n units	Total prod'n units in village	Army-weighted units**	Total of consumpt'n units	Deficit or surplus	May-July, defict or surplus
86	2	2	2	3	–	not known
87	2	2	2.5	2.5	–	not known
88	1.1	1.1	1.1	2	–	not known
89	5.0	5.0	5.0	7	–	not known

Totals: deffcit = 65
surplus = 35

NOTES

Symbols

+ = surplus, – = deficit, = = balanced
@ = a menatally defective woman
£ = a crippled woman
& = sbhoolmasters in the village

Estimates of production units are baed on table 14:1 (ch.14,p.5 above) and the discussion there; consumption units are calculated on Bailey's weighting, as discussed on ch.17,p.1 above.

The third column indicates the number of producers residing permanently in the village so that those away in the army/at school/ only temporarily present are not counted.
** 'army-weighted units' takes into account the fact that those working away in the army produce much more than those at home. As discussed in ch.18(p.3) the following rate has been adopted: man labouring in the village,1 unit; man labouring in India, 3 units; man in British army,4 units. Schoolmasters both receive a salary and are able to do agricultural work at busy times, and have therefore been calculated as 2 units

'Deficit or Surplus' in column 6 compares the totals in columns 4 and 5.

The significance of columns 7 and 8, which refer to the over-all labour supply and demand during the busiest agricultural season, are discussed in ch.15,p.23.

APPENDIX THREE. Rituals performed by the Gurung magician (poju).

Information on forty-three rituals, excluding the long and dramatic funeral ritual, was obtained from the magician (poju) and checked by witnessing a good many of the rites. The main types of information obtained were: name of rite; time and place performed; duration; purpose and spiritual power towards which it was directed; how often and at whose houses it had recently been performed; names of myths(pé) recited during it; method of performing; meaning of the various symbols used. Many of the rituals are extremely complex and interesting; it will probably take anything up to 10,000 words or more to describe them. The following is merely a list of their names and one or two other facts about them. A full analysis, which may throw considerable light on old tibetan ritual, must await later treatment.

	Gurung name	Pignede page reference	Length of rite(hours)	Number of times performed in last year	Sacrafice/offering made
a)	Invocation/worship of godlings, for protection and good luck.				
	Pweylu lava	-	12	once(own house)	chicken and other food
	Kemmae tiba	-	½	five	milk, fish, vegetables
	La tiba	-	2	not performed	chicken and food
	Cae tiba	333	2	not performed	chicken
	Li waba	328,330	2	three	rice and milk
	Yo kuba	331	10-12	five	no gift, wealth displayed
	Chop chueba	333	3	c.twenty	chicken
b)	For those in dangerous astrological positions.				
	Gra waba/toba	-	3	four	Hindu puja, rice etc.
	Parga/ladda teh	331(gra waba)	3	not performed	chicken or goat
	Rupa kweyva	-	2	fifteen	cock or goat
c)	Damage by fire or lightning.				
	Mee leh seyba	334	7-10	twice	chicken and goat
	Nabri sheyba	-	8	not performed	chicken and goat
d)	After an accidental death(to prevent soul becoming an evil spirit).				
	Moh donva	-	5	once	grains only
	Sigra moshee tiba	-	12	once	goat and chicken and egg
e)	General rituals to protect households/individuals against all evil spirits.				
	Di bar lava	-	2½	forty-six	chicken
	Jantra keh	-	1	fifty	rice
	Joalla/chondi peeba	-	1	eight	nothing
	Moshee tiba/pirow teh	329-30	9	six	goat, chicken and egg
	Nawmu lava	-	6	not performed	chicken and egg
f)	Illness caused by several possible evil spirits.				
	Ma bidey	-	2	ten	rice
	Naga dsidsa peeba	-	½	twenty	baby chick
	Ngongeh sheyba	-	7	twenty-five	chicken
	No nani	-	8	once	chicken
	Pih ngeh sheyba	-	10	eight	goat
g)	To retrieve souls captured by evil spirits and thus bring back health.				
	Kara korey	-	5 mins.	frequent	rice(done by any adult)
	Plogu waba -di/mra	-	10-12	five	hen used, but not killed
	" " dapa	-	½	ten	rice and foodstuffs
	" " la	-	10-12	four	rice and foodstuffs
	" " mula	-	4	five	chicken
	" " turja	(?327)	9	four	hen used, but not killed
	Ru toba lagyan kreeva	-	6	twice	lured by flowers/food
h)	Against witches.				
	Gyan seyba	-	2	thrice	chicken
	Mwimon/dobodey waba	-	1	about fifty	chicken
	Patlu waba	-	½	about fifty	various foodstuffs
	Putli tiba	-	7	not performed	chicken
	Ringey tava teh	334	10	not performed	goat
	Tunar lava	-	5 mins.	now banned by govt.	no offering
i)	Against moh, bhut (evil spirits).				
	Banakunti lava	-	4	twice	cock
	Bhuta teh	-	2	nine	chicken
	Kyulmoh tchegi kreyba	328(Sinja)	25mins	ten	rice and water
	Prabron lava	-	12	two	goat
j)	Against bhaio, banquetta(ancestor and forest spirits).				
	Tan theyba/mahibhaio teh	-	4	three	goat and chicken
	Tsagaley teh	-	1	five	chicken

APPENDIX FOUR. Sex, age and jat composition of eight nogoras.

(for analysis, see ch.2, p.31 above)

1. Mal kwoba (dung carrying).

sex	age	jat
M	15	C
M	12	C
M	13	S
M	15	S
M	12	S
M	12	C
M	11	C
F	13	C
F	15	S
F	11	S
F	15	S
M	14	S
F	13	C
F	14	C
F	12	S

2. Shee kwoba (wood carrying).

M	22	S
M	16	S
F	23	S
M	23	S
F	32	C
F	41	C
F	17	C
F	30	S
F	23	S
F	24	C
M	19	S
F	21	S
F	18	S

3. Nor tsaba (preparing rice fields)

M	20	C
M	?	C
F	?	C
F	?	C
M	26	C
M	19	S
M	34	C
F	25	C
F	27	C
F	23	C
F	20	C
M	21	C*
M	36	C
F	34	C

(* a Blacksmith working for a carjat household)

4. Nor tsaba (preparing rice fields)

M	16	S
F	20	C
F	17	C
F	18	S
F	41	C
M	48	C
M	45	S
M	18	S**
F	27	C
F	23	S
M	20	C

(** a Tailor working for a sorajat household)

5. Nor tsaba (prepare maize fields)

M	48	Magar
M	32	S
F	21	S
M	24	Tamang
M	23	S
F	24	S
F	16	S+
F	?	Tamang
F	20	Magar

(+ this girl lived with a carjat family, but it is not certain whether she was working for them or her own household in this case)

6. Nor tsaba (prepare rice fields)

M	36	C
M	26	C
F	18	C
F	18	C
F	19	C
F	26	C
F	19	C
F	19	C
F	24	C
F	28	C
M	15	C++
F	19	C

(++ was a young Tailor, working for a carjat household; all the above were of the konme lineage)

7. Mla shwiva (weeding rice)

F	42	C
F	18	C
F	18	C
M	36	C
F	19	C
F	35	C
F	26	C
F	?17	C
M	48	C
M	20	Tamang
M	20	C
F	17	C
M	17	C*
F	24	C
M	20	C
M	32	C
M	26	C

(* a Tailor working for a carjat household)

8. Mla shwiva (weeding rice)

M	20	S
F	23	S
F	18	S
F	49	S
F	16	S
F	44	S
F	47	C
F	16	S
F	39	C
F	30	S
F	33	S
F	32	C
M	23	S

APPENDIX FIVE. Symptoms of possible TB cases (of those already dead).

hse.	symptoms	Other member of family=TB?	Been in army?	Near rel'n. in army?	Likelihood of being TB	Wealth rating	Jat	Age	Sex
a) Those aged 1-9 years (at death).									
13A	swollen stomache for a number of years	brother	no	brother	50%	3	C	5	F
52	shrinking & high temperature, ill since birth	no	no	father	50%	2	C	1	F
45	body wasted away, ill for 4 months (TB of abdomen?)	no	no	no	50%	5	Tailor	5	F
32	temperature, 5 months ill	elder bro.	no	elder bro.	50%	2	S	9	F
50	wasted away for a long time	mother's mo.	no	father	70%	3	S	3	F
74	much pain in stomache, 3 months ill	no	no	no	50%	5	Black'	6	M
40	iill for four months: septic sore in groin	no	no	no	70%	2	S	3	M
b) Those aged 10+ years. (at death)									
73A	one year ill, breathless, stomache pain & lump	no	no	son	50%	1	C	66	F
71	two years ill, swelling of stomache, "dumgi"	no	no	no	30%	1	C	50	F
58	coughs a lot, ill for many years, "dumgi"	yes(relative)	no	no	70%	5	Black'	70	M
60	ill many years, bedridden 1 week, "gola"	yes(relative)	no	no	70%	5	Black'	37	M
23	TB of chest?, three or four years ill	no	?	son	70%	2	C	35	M
11	TB?	no	?	son	50%	2	C	49	M
37	TB for many years	no	no	no	50%	3	C	40	F
32	TB? ill for many years	sister	yes	bro.	90%	2	S	27	M
50	coughed blood, one year ill, went to Pokhara hospital	?	?	?	90%	3	S	44	F
12A	TB for many years	husband	no	son	80%	4	S	36	F
12A	" " "	wife	no	son	80%	4	S	56	M
79	loss of appetite, coughed a lot (including blood)	possibly child	no	husband	90%	4	S	38	F
73B	TB? of chest, two years ill, went to hospital	?	?	?	80%	?	C	18	M
33	TB of chest, more than three years ill	husband(& son?)	no	husband	95%	5	C	32	F
72	body swelled for about a year, died in hospital	?	?	?	30%	2	C	32	M
35	TB? of chest, 2-3 years ill, not to hospital	no	?	?	50%	5	S	29	M
55	ill for several years, wasted away since his youth	no	?	?	50%	3	C	65	M
61	panting, swollen stomache & joints, ill 10 months	yes	no	no	50%	5	Black'	46	M
20	ill for many years, TB of chest	?	no	?	50%	?	C	?	F
28	TB? ill for a long time	?	no	?	50%	?	C	54	F

notes: All the above died in Thak. C = carjat Gurung, S = sorajat. Where 'TB' is stated under symptoms, this was given by my informants as the cause of death.

APPENDIX SIX. Marriage, inheritance and death of parents in Thak.

House no.	Years since division	Man's age at	Who between	Years since marriage	Years since death of father	mother	Stated cause of division
3A	c.10	35	brothers	22	32	47	-
3B	c.10	49	brothers	23	32	47	-
2	c.10	27	brothers	c.16	32	47	-
7A	c.80	unborn	?	c.18	3	not dead	-
11	c.17	7	?	c.17	c.17	17	father's death
12A	23	32	brothers	32	15	?	at father's marr'ge
13	c.10	32	brothers	20	39	not dead	(wives quarrel?)
13D	c.10	34	brothers	18	39	not dead	" "
14	c.20	40	brothers	41	?	?	after marriage
15	12+	33	brothers	37	19	4	all brothers were
50	12+	36	brothers	24	19	4	married and had
48	12+	28	brothers	14	19	4	many children
17	this year**	36	brothers	18	not dead	8	fa.old, yo.son wants
20	13	55	bro's son	45	40	14	younger man's mge.
37	13	20	uncle	12	17	15	at marriage
21	8	37	brothers	21	?	?	-
24	13+	29	brothers	26	24	not dead	because all
78	13+	40	brothers	29	24	not dead	their families
63	13+	36	brothers	34	24	not dead	getting big
25	c.25	c.38	brothers	36	?	?	all bro.married%
28	23	29	brothers	27	23	not dead	fathers's death
32	41	c.25	brothers	43	?	?	all bro's married%
33	48	?	?	48	?	?	at marriage
33A	56	34	?	56	?	?	at third marriage
34	c.10	39	one bro.	31	24	not dead	eldest bro.
48		26	takes up his	7	24	not dead	had married,&
49	c.10	21	claim from	5	24	not dead	retired, with
49		14	the rest	not married	24	not dead	children
38	c.15	38	brothers	31	c.9	c.9	-
39	c.15	33	brothers	19	c.9	c.9	-
72	c.25	37	brothers	39	56	7	each had a family
83	?	?	brothers	45	50	70	before marriage
83A	4	37	father/son	11	alive	alive	a quarrel fa/son
86	12	32	brothers	16	38	alive	each brother
87	12	27	brothers	11	38	alive	had a family

Notes: ** this was an attempted division during 1969; it was not accepted by one of the brothers. The younger brother wished to retain the money he was earning in the army, rather than invest it in a communal estate with his elder brother.
% = and had several children.

APPENDIX SEVEN. Estimates of relative wealth by three Gurungs.

I asked three young Gurungs to place each household on a five-point scale of wealth. I gave no guidelines as to how wealth was to be assessed beyond stating that category 1 = "very rich", 2 = "rich", 3 = "middling", 4= "poor" and 5 = "very poor". It will be seen that the three informants largely agreed on their assessments, though informant 3, the one carjat assessor, tended to see his fellow carjat villagers as richer than they appeared to the other informants. The estimates were as follows.

House no.	Informant 1	2	3
1	4	4	3
2	4	5	3
3A	4	4	3
3B	4	4	3
4	4	4	3
4A	4	-	-
5A	4	4	3
5B	4	4	3
6	1	1	1
6A	4	5	5
7	3	3	3
7A	4	4	3/4
8	5	5	4
9	3	3	3
10	3	2	2
11	2	2	2
11A	5	-	5
12A	4	4	3/4
12B	4	4	3/4
13A	4	4	3
13C	3	-	-
13D	-	4	3
13	4	-	3
14	3	2	2
15	3	3	3
16	4	3	3
17	2	2	1
18	4	4	4
19	4	-	4
20	4	3	2
21	4	4	3/4
22	3	2	2
23	2	-	2
24	3	3	2
25	3	3	3
26	4	4	4
27A	4	4	4/5
28	3	3	2
29	4	3	2
31	4	3	3
32	2	2	1/2
33	4	5	4
33A	3	3	2
34	3	4	3
35	5	5	5
36	2	-	2
37	3	2	3
38	3	3	3
39	3	3	3
40	2/3	2	2
41	4	3	3/4
42	3	2	3

House no.	Informant 1	2	3
42A	4	5	4
43	5	5	5
44	5	5	5
44A	5	5	5
46	5	4	5
47	4	5	5
48	3	3	3
49	2	2	3
50A	-	-	5
50	3	3	3
51	3	3	3
52	2	2	2/3
53	4	3	3
54	5	5	-
55	3	3	3
56	3	3	4
57	4	5	5
57A	5	-	5
58	4	5	5
59	4	5	5
60	4	5	5
61	5	5	5
62	4	5	5
63	4	4	3/4
64	4	4	3/4
65	5	-	5
66	5	4	5
67	5	5	5
70A	3	2	3
70B	2	2	2
71	2	1	1
72	2	2	3
73A	1	1	2
73B	1	1	2
74	4	4	5
75	2	2	2
76	3	2	4
77	3	3	3/4
78	3	3	3
79	4	4	4/5
80	4	4	4/5
80A	4	4	4
80B	4	4	4
81	4	4	5
82	4	4	5
83	2	2	3
83A	2	2	3
84	2	3	3
85	3	3	3
86	1	2	2
87	1	2	2
88	1	2	2
89	3	3	4
90	4	4	5

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