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SAROLA KASAR

STUDY OF A DECCAN VILLAGE
IN THE FAMINE ZONE

L. B. Jagalpure, Retired Mamlatdar
" " " " *and*
K. D. Kale, Retired Sub-Registrar

1938

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L. B. JAGALPURE,
Retired Mamlatdar
Gongale Lane, Ahmednagar

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THIS BOOK
IS
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SIR ROGER LUNLEY,
G. C. I. E., T. D.
GOVERNOR OF BOMBAY

PREFACE

When Mr. A. M. Macmillan, C. I. E., I. C. S. (retired) who was the then Collector of Ahmednagar in 1927 suggested the carrying out of a survey or statistical account of a typical Ahmednagar village, I, in consultation with Mr. K. D. Kale of Sarola Kasar, selected that village as suitable, because it was conveniently situated near Ahmednagar and seemed in many ways to be representative of the purely agricultural villages of this region.

It is above average size (with over 1500 inhabitants), but it is almost entirely free from urban influences, and is not, to any extent, a recruiting ground for labour for mills or factories.

It happens to have a substantial Mahomedan element, although it is mainly a Maratha village and is large enough to have representatives of a number of other castes and creeds, met with in the Deccan. There are resident Brahmin families, shopkeepers, moneylenders and craftsmen and a normal proportion of the backward and 'depressed' or 'scheduled' classes' (Mahars, Mangs, Chambhars, Holars, Wadars).

It still retains the main features of the old traditional village, social structure and organisation.

At the same time it is not a Bazar or trading centre for other surrounding villages and has not the special characteristics of such market towns.

It is, therefore, a type of the purely agricultural village, but sufficiently large to have also a population of craftsmen and shopkeepers to serve its own needs.

Finally it is situated in what is known as the Famine

The scheme of our proposed enquiry and details as to the statistical material to be collected and the forms in which it should be utilised were settled in consultation with Mr. Macmillan, who kindly put at my disposal many works on economics and visited the village with me.

We based our investigations mainly on:—

- (1) The village records;
- (2) Such statistical records as were kindly put at our disposal from time to time by the Collector and the Mamlatdar of Nagar Taluka;
- (3) The results of a house to house and field to field enquiry made by Mr. Kale with the willing co-operation of the villagers in 1928-29. He specially collected local statistical materials and gave general information as to agricultural matters and village affairs and social and religious observances in the village;
- (4) My personal inquiries and discussions with the villagers and others at that time and subsequently.

Mr. Kale is a resident landowner of Sarola and I spent two months in the village and paid many visits in connection with the enquiry.

Most of the main statistical statements and original notes were prepared from 1927 to 1929. No decision was then come to as to what use to make of them, but after Mr. Macmillan retired in 1935 he found time to look into the papers again. After that, the notes and statistical statements were revised or rewritten and fresh material on various topics was prepared. All the results of our work, both in the form of written notes or drafts and statistical statements, have been submitted to him, and he has given advice and help of every kind and has modified and revised them into the form in which they now appear. Both with regard to the original scheme for carrying out this enquiry and the final form in which the results are presented, we (Mr. Kale and I)

would submit that he is the author and that we have been his helpers and coadjutors.

I have compiled the statistical statements based on official records and prepared all the special statistical abstracts.

With regard to the form of the book I would like to refer to two or three points:—

(1) We found it very difficult to decide how much detail to include, and in this respect different topics have been treated differently.

We have, for instance, given great details with regard to matters which are unfamiliar or not generally known and only referred in general terms to other more important things which are generally known. We have made several suggestions in the book, but we must admit that in making some of them we have hinted the economic defects in the present local practice. The book, we may venture to urge, contains a variety of subjects for all statisticians.

Where the detail we have given seems to the reader to be superfluous or trivial, we must just ask him to neglect it.

(2) In many cases it may be suggested that the same things are repeated in different connections and sections, but we thought it better to repeat such small connecting matters or links to avoid the necessity of references from one section of the book to another where topics overlap. The several agricultural operations are generally intermixed and intertwined.

(3) We have had to give Marathi names where there are no exact English equivalents, but have tried in most cases to give brief explanations.

(4) We have found it difficult to deal with many topics which we have had to mention thoroughly or accurately from the point of view of experts.

India is and will long remain predominantly an agricultural country and it is the daily occupation of the great mass of her population. A large majority of her present

citizens have sympathy with the cultivator and try to understand his needs. We may reiterate that the word Agriculture may be taken in its widest sense in which it has been used by the Royal Commission on Agriculture. A reference is requested to the opening paragraph of its report. These remarks hold good in the case of this village.

Our object is to provide a general description in these matters for the general reader, and we hope that experts will not be too critical of our method of presenting them.

We ventured to undertake this work with the idea that such a study might, in some small degree, contribute to the understanding of the problems and difficulties of the people of the Deccan and so be of assistance to those concerned with the solution of those problems.

We have, in any case, found great pleasure and interest in carrying out our study in cooperation with the people of the village and we would like to express our thanks to them for the assistance they have always given us.

However inadequately we may have carried out our task, we earnestly hope that the reader may find something here and there in the pages of the book which will add to his knowledge or understanding of the conditions and needs of rural life, and that he will overlook its failings and defects.

“ शंशुलभ्ये फले लोभादुद्बुधोरिव वामनः ॥ ”

Map V, of Sarola Kasar, is reproduced with modifications from the Revenue Survey Map of 1905, with the permission but not under the authority of the Government of Bombay. We are very grateful to the Government of Bombay for this permission.

We are also grateful to the Surveyor General of India who has been pleased to grant us permission to publish the two maps (II and IV) in our book

We would like also to express our indebtedness to:—

Mr. J. B. Irwin, D. S. O., M. C. I. C. S.;

Mr. J. G. Simms, I. C. S.;

Mr. W. G. Hulland, I. C. S.;

Mr. W. J. Jenkins, Director of Agriculture, Bombay
Presidency

for the encouragement and help they have given us and to Messrs.

G. F. Sugandhi }
N. S. Phadke } ---Mamiatdar of Nagar,

B. B. Malve—Cintnis to the Collector,

• W. J. Dennis }
M. C. Palshikar } ---Head Clerk to the Collector

for their assistance in furnishing us with statistical information
and other ways.

We have entrusted the production of the book to the
Mohan Press, Ahmednagar and wish to thank the manager
Mr. R. B. Hiray, B. A. for the great interest and care which
he has taken and specially for his assistance with regard to
the preparation of the many statistical statements in suitable
forms which is a difficult and laborious task in printing any
economic book.

We must again refer to Mr. Macmillan for having
arranged to have blocks and graphs prepared in Edinburgh. He
has taken the greatest and keenest interest in the preparation
of the book for these long years, even in his retirement. We
are so much indebted to him that we fail to find words to
express it. We are simply a common thread ' a garland of
sweet scented flowers in his association, as a Marathi couplet
says:—

“ पुष्पांच्या संबंधें सुत्रालाही घडे शिरीं वास । ”

Ahmednagar }
3rd October, 1938 }

L. B. Jagalpure

FOREWORD

The authors of this account of Sarola village have asked me to contribute a foreword to their work.

When I was the Collector of Ahmednagar in 1927, I found that Mr. Jagalpure, whom I had known since the early days of my service, was devoting some of his time after retirement to the study of economic questions, and it was on my suggestion that he undertook this enquiry.

He has explained in the Preface how it was carried out with Mr. Kale's assistance.

The record of its results has taken the form of a very much more detailed description of conditions than I had had in mind.

He considered the possibility of preparing a brief study based on this material, but has finally decided to publish a part of it in full after revision as any other course would have involved complete re-casting and re-writing.

He has submitted all his material to me from time to time for criticism and revision. I have made suggestions freely as to modification, re-arrangement and re-casting, so that I must accept some share of the responsibility for the form in which it now appears.

I have also arranged for the preparation of the sketch maps and the graphs illustrating statistical statements.

Many important studies of Indian villages have been carried out with the help of groups of experts each dealing with his own special subject. Mr. Jagalpure was not, of course, in a position to undertake a systematic investigation on these lines. During his long service in the Revenue Department in Ahmednagar and later as Munsif at ...

Deccan and Knandesh Districts he was engaged in the varied work of general administration and had opportunities of observing and studying agricultural, economic and social conditions of which he has taken full advantage.

It is by such wide general experience and by his personal interest in and study of rural problems that he was qualified to undertake this investigation.

Mr. Kale's co-operation was of special value in view of his local influence and knowledge and his agricultural experience. Since his retirement a dozen years ago he has managed and cultivated his own lands at Sarola and he has also acted as Honorary District Organiser of Co-operative Societies and as President of the Nagar Taluka Agricultural Development Association.

Although this study takes the form of a detailed statistical account of conditions, it seems to me to be of special value because of the extent to which it succeeds in conveying an understanding of the outlook, standards and interests of the village community.

Conditions are described from the standpoint of the village rather than from that of the outside observer.

I hope that, incidentally, the carrying out of an enquiry of this kind with the co-operation of the people themselves, may have been of some interest and advantage to them in view of their increasing responsibilities for the management and administration of their own village affairs.

In the form which it has taken it has turned out to be a much longer and heavier task than the authors had anticipated.

For Mr. Jagalpure especially, the work involved in planning the enquiry as a whole, collecting material, writing the book, preparing it for printing and finally seeing it through the press has been very arduous.

While the authors must have found much interest in carrying out their investigations, they are entitled to the

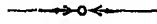
greatest credit for having devoted so much of their attention and of their well earned leisure after retirement to disinterested public service of this kind.

The experiment of making a survey on these lines and preparing a statistical account describing conditions in the village as a whole as a contribution in Mr. Jagalpure's words "to the better understanding of the difficulties and problems of the people of the Deccan," was, I think, well worth making. I hope that it will be found by readers to have, in some measure, achieved its purpose.

2, Merchiston Gardens, }
Edinburgh }
4th October 1938. }

A. M. Macmillan.

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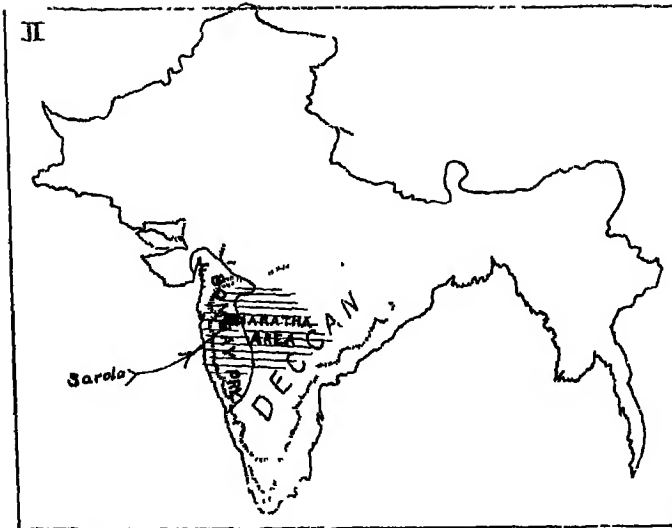
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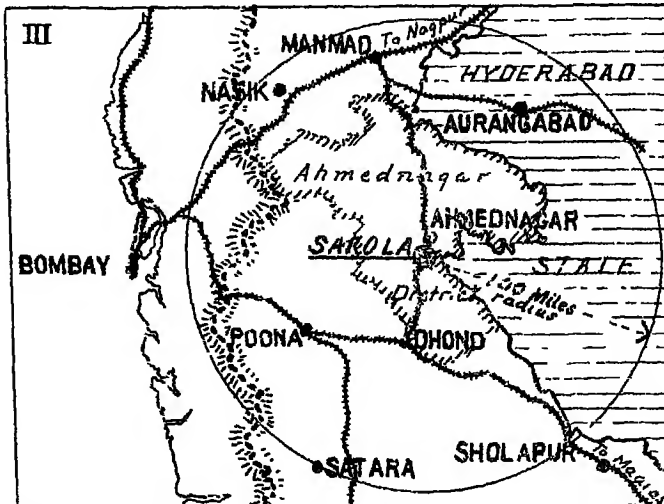
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The Map of India (II) shows the situation of the village of Sarola Kasar with reference to the Deccan.



Map III shows the situation of the village with reference to Ahmednagar District, railway system, cities and large towns within about 120 Miles. A circle of 100 miles radius from the village is marked as a scale. Sarola is about 70 miles from the crest of the Western Ghats (shown by heavy dotted line) and about 120 miles from the city of Bombay and the coast

CHAPTER I

DESCRIPTIVE

TOPOGRAPHY

The village of Sarola Kasar lies to the South-West of the town of Ahmednagar in the Deccan about 15 miles by road (in longitude about $74^{\circ} 47''$ East and latitude $19^{\circ} 6''$ North). It is on a slightly higher level than Ahmednagar (about 2250 feet above sea level). It is almost surrounded by low hill ranges and small isolated hills and eminences rising to 250 feet or more above the village site (2500 feet). These are on the long ridge forming a spur of the distant Sahyadries (Western Ghats), between the valleys of the Sina and the Bhima, which ultimately merges in the Deccan plain fifty miles farther East. The present village stands near the confluence of two Nallas (streams) which are said to have flowing water for the greater portion of the year, with normal rain-fall, unless the previous year's rains have been deficient. The Nalla, which takes its rise in the limits of the adjoining village of Astagaon and which crosses the railway line at mile No. 40, is an important one, though its bed is covered with trap rock for some length. It

dries up when the rain-fall of the previous year has been scanty, but in most years of normal rain-fall the water flows in a sluggish stream, except during one or two months of the hot season, when it is little more than a trickle. In the other Nallas there are pools of water here and there; but after rain they run in meagre streams. On 31st January 1928 we found the Nella running near the old village site still flowing. The well in Survey No. 98 close by, was full of water to the surface. There are no trees of any size or value on the hills. The only tree growth to be found there consists of clumps of scrub jungle and bushes and thorns of different varieties such as Henkal, Amoni, and Khair. The level tops of the hills behind the village and to the East and the West have been cultivated with crops for many years. Some of the hills are still classed as Reserved Forest in charge of the Revenue Department for pasturage of the village cattle. The village boundaries of Sarola are co-terminous with those of Ghospuri, Khadki. Baburdi Bend, Akolner (alienated) of the Nagar Taluka and Astagaon of the Parner Taluka. These boundaries between villages usually run along marked natural features, the crest of a hill or ridge, the line of the water-shed between two shallow streams, or a deep Nalla. The village lands below the hills, situated as they are on sloping and undulating country and subject to heavy flooding by monsoon rains, are covered by a network of shallow Nallas.

No made road of any importance now passes through the limits of the village except a feeder road to the Sarola railway station from the village of Astagaon joining the Nagar-Poona main road at Supa, and another from the railway station which runs to the Nagar-Dhon main road near the village of Khadki.

The line of the Dhond-Manmad State Railway traverses the western corner of the village. The village, before its transfer to the Nagar Taluka in 1886, belonged to the

Parner Taluka, in some villages of which agrarian riots took place in 1875, which ultimately led to the passing of the Deccan Agriculturists' Relief Act (XIV of 1879) by the Government of India, as a special measure on the recommendation of the Deccan Riots' Commission.

The site of the old village was abandoned some two centuries ago, but it is still marked by the old Maruti Temple. There is a tradition that it was deserted on account of the ravages of white ants, but we think that the present village site was preferred, as it is situated at the junction of the two Nallas which flow for the greater portion of the year of normal rainfall. It is also more or less at the centre of the most fertile area of the village. The drainage of the higher village lands is directed towards the low lying land to the south of the village, and this maintains a good supply of subsoil water. A good many irrigation wells have been sunk there, which provide a good supply of water in normal years. Some of the fields immediately to the south of the village are of good black soil. The site of the village has, therefore, been well chosen. The village is situated on what is said to have been in olden times one of the principal military routes to Northern India.

The soil of the village, as a whole, is poor (Murmud), although there are occasional patches of black soil on the more level areas. This is to be expected from its general situation on undulating or sloping land, cut up by innumerable Nallas and depressions. There are a number of deep valleys or Corries in the surrounding hill ranges, the most important of which are called

- (1) Vagh Dari,
- (2) Kal Khori,
- (3) Landga Dari,
- (4) Dhaman Dari,
- (5) Gund Dari.

DESCRIP TIVE

THE VILLAGE LAND

The area of the village including hills, Nallas or stream beds, roads etc. as measured by the Survey Department amounts to 4513 Acres and 18 Gunthas.

The following summary shows how this area is utilised for various purposes:-

	Acres	Gunthas
(1) Gavthan (residential village site)	11	26
(2) Roads	46	30
(3) Unmetalled roads	3	16
(4) Railway, including station yard & premises	41	8
(5) Boundary strips between villages	5	23
(6) Nallas (streams and rivulets)	85	9
(7) Pot Kharaba (uncultivable portions within the cultivable fields)	233	34
(8) Forest	94	13
Total	521	39

LAND SET APART FOR VILLAGE PURPOSES

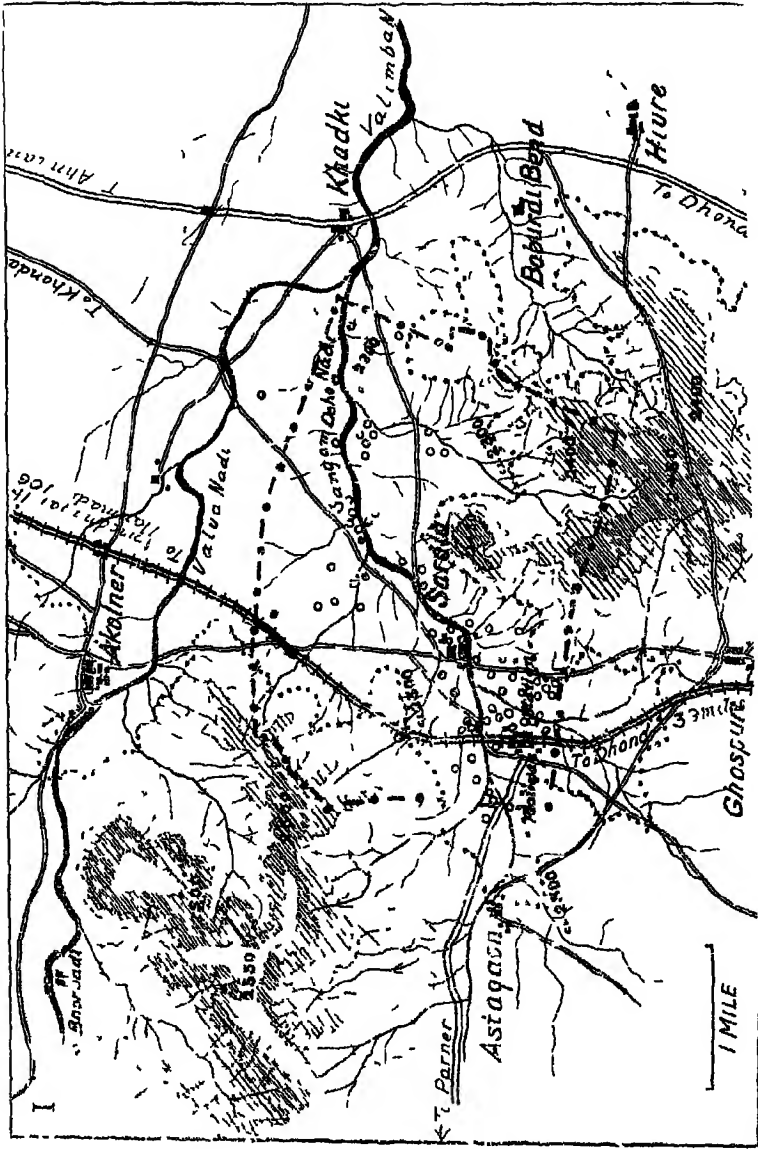
(9) Mahomedan burial ground	0·7
(10) A bungalow (railway station rest house)	0-10
Total	0-17

ARABLE AND CULTIVABLE LAND

(11) Jirait (dry crop)	3695	7
Assessment	Rs. 2335-1-3	
(12) Bagait (garden or irrigable)	295	35
Assessment	Rs. 506-11-9	
Total	Rs. 2841-13-0	3991-2
Grand Total	4513-18	

Inam* (alienated) land is included in Jirait land.

* Inam or alienated land is land, part or the whole of the State land revenue of which has been permanently remitted or given in Inam or gift or alienated in favour of some person or institution; it may be a private land-owner, a family of hereditary village servants or a temple or a mosque



General Map (1) shows the situation of the Sarola village and lands with reference to the main topographical features of the area, adjoining villages, principal roads, and railway and wells in Sarola limits.

The adjoining six villages lie at distances from 2 to 4 miles from the village site.

The symbols used are:

Contour lines
2300 feet contour
Levels	Block figures
General level of top of hills	Close hatched
Level 50 feet lower	Lightly hatched
Wells	Circles
Roads	Double line
Cart Roads	Narrow double line

THE VILLAGE SITE

The residential village site covers an area of 11 acres and 26 gunthas.

The roads, streets and lanes are not laid out in straight lines or according to any regular plan. The village has not even the advantage, so commonly found, of being based on a straight through road forming its main street, and so it has grown up and developed quite irregularly. It was formerly surrounded by a protective wall and fortified gateways, but these are now completely dilapidated and in ruins.

The Mahar Wada, containing the houses of the Mahars and other castes regarded as untouchable, lies in the south and south-east corner of the village site.

In the rest of the village site, there are no separate areas set apart for the residence of particular castes or classes.

We counted 195 houses including 17 belonging to Harijans (depressed classes) occupied separately. Others were divided and partitioned into two or more tenements.

The houses are constructed with walls of stone and mortar, burnt brick and mortar or mud, and with flat mud roof.

Most of the houses are built in the ordinary Deccan method, with the upper floor or roof supported on beams resting on lines of pillars.

As a rule the lines of pillars (about 10 feet apart) run from front to back of the house at a distance of 4 feet. Heavy beams rest on the tops of the pillars in both directions, and above them are rafters and planks. The section of the interior of the house marked off by the floor, pillars and the beams above is known as a Khan. The pillars are usually 6' to 7' in height. A Khan will, therefore, be a section of the house 10' long 4' broad and 6' to 7' high.

The roof, built as described, is usually covered over with a layer of mud, the top of which is smoothed and plastered over with white earth.

In a two-storey house, the floor on the second storey may consist simply of the planks laid over the rafters, or these may be covered with a layer of mud plastered with cow-dung.

In Sarola only two houses are double storeyed, one of which is built of stone and mortar, and iron girders.

On the basis of the valuation of individual houses as estimated by the villagers, the total value of the house property in the village comes to Rs. 94,260. It may be taken in round figures at one lakh of rupees. This does not include the value of farm buildings situated in gardens or fields, buildings and temples dedicated to the tutelary deities (Maruti, Mahadeo, Rama), mosques, or the village Chavadi or meeting house.

Deducting land under roads, streets, bye-lanes and open spaces, the average area of a privately occupied tenement works out at about 2.1 gunthas or roughly 2,300 square feet. The largest may be four times as large.

During the rainy season, June to September, most of the cultivators utilize a part of their houses for stabling their cattle. Some have accommodation for the cattle in their garden lands, but very few have separate sheds for cattle in the village site.

The village site has been occupied for nearly two centuries, and sites on it are held free of revenue by the owners. Two statements are attached in which figures are given of houses classed according to value and according to caste or class of owner.

(1) ACCORDING TO VALUE

Value Rs.	No. of houses	Total value Rs.	Average value Rs.
0- 200	109	14475	135
201- 400	28	8825	315
401- 800	33	19500	590
801-1500	14	18760	1320
2000-5000	11	32700	3270
Total—	195	94260	

(2) ACCORDING TO CASTE OR CLASS OF OWNER

	No.	Value	Average
Agriculturists	114	63050	560
Wage earners	43	14000	325
Service	2	2800	1400
Shop keepers	5	8100	1620
Craftsmen	14	3960	283
Depressed classes	<u>17</u>	<u>2350</u>	137
Total	195	94260	

PUBLIC BUILDINGS

In this village there are public and charitable buildings. We may put the public buildings in different categories according to the use to which they are put:—

[1] PUBLIC BUILDINGS

Buildings used exclusively by Government officers and Local Board officers and others as Kacheris (offices) or residences, or as travellers' bungalows, or a 'district bungalow, or store-rooms or schools. A school house with tiled roof stands in its own walled compound, in a corner of the village site, constructed by the District Local Board some thirty-five years ago at a cost of Rs. 3000. But accurate details are not available. The school accommodation now falls far short of present needs.

[2] VILLAGE CHAYDIS

A Dhaba* of 15 Khans lies just at the village gate facing the East and commands the village roads. It was all constructed of good Malabar timber in the good old days at a cost of Rs. 1500, some 75 years ago. This was all raised by popular subscription in the village. The Chaydi is now a dilapidated old building, and unless it is soon repaired (we are afraid) it will collapse. The exact cost and the year of construction are not forthcoming, and the information given is from the oral statement of old villagers. The building is generally used for quasi-public purposes. It is usually the office of the village officers, revenue officers, etc. The ryots

* It is like most such buildings, an open hall with walls only at the back and sides, built on a stone plinth about 8 to 9 feet high.

attend it on business, or for collection of land revenue. The building is swept and kept clean under the direction of the Patil and his staff. It is daily lighted at night.

The Mahars have a Chavdi of their own in the Maharwada, built at their own cost (about Rs. 200) some thirty years ago.

[3] THE STATION DHARMASHALA

A Dharmashala is used as a place of rest for the night by travellers. The Dharmashala was built by the Local Board at their own cost some 25 years ago. It may be used by any traveller free of any charge or fee for a day or two. It stands just outside the railway station premises on the feeder road, convenient for the railway passengers and others arriving at night.

There is a well in the compound for the supply of drinking water.

A care-taker is in charge of the Dharmashala, and looks after its upkeep. A separate room is provided for the convenience of visitors of the better classes containing a table, chairs etc.

[4] TEMPLES AND SHRINES

(a) Private:--

A small shrine dedicated to Shri Devi (goddess) stands on the top of a small hillock to the north of the village and lies on the land of a private owner, who looks after the shrine and the worship of the diety. It has very little accommodation.

(b) Sectional:—

(i) Radha-Krishna, (ii) Mahadev, (iii) Maruti at the old village site, (iv) Maruti near the railway station, (v) Lakshmi Devi, and (vi) Kalika Devi stands in a niche in the village wall.

Of these Radha-Krishna's temple is commodious and situated in the heart of the village. It is in good repair. The villagers have been observing and celebrating the Birth Day of Shri Krishna* very piously from generation to generation.

* Shri Krishna is the eighth incarnation of Vishnu, whose history is depicted in the Mahabharat with reverence and devotion. The Hindus annually celebrate His Birth Day, which falls on the eighth day of Shravan Vadya (i. e. 8th day of the dark fortnight of Shravan). It is known as Gokul Ashtami or Janmashtami.

The temple is cleaned, white-washed and decorated for the occasion. The Hindus here hold a Bhajan-Puja and Nam-Saptah (choral worship) of the Deity in the temple for 7 days in succession, night and day without intermission, up to the last day, viz. that of His Birth. The villagers allot among themselves the hour of day and night at which a particular group of villagers may attend on and make Bhajan before the Deity. So, each group is ready to perform its part when its turn comes. A group of persons recites Abhangas etc. for some hours, at the expiration of which the next party takes charge and continues the Bhajan, and so on. Instruments for accompanying singing and music, such as Tal (cymbals), Mridang (a sort of tabor) and Vina (the Indian lute) are kept there ready for use. At night when the cultivators are free from the labours of the day, many of them take part in the Bhajans or chantings and recitation of Abhangas, Shlokas etc., between the hours of 8 and mid-night, even though they do not belong to the particular groups to which this time has been assigned. The Bhajan is usually carried on very enthusiastically, devoutly and reverently.

The villagers raise among themselves a subscription for the celebration of the festivities. The hour of Birth of Shri Krishna is mid-night and a large crowd of men, women and children gather in the temple one hour before the time. The whole scene is very animated, and the occasion is observed with great religious fervour. When the hour arrives, there is a din and rush to witness, to take part in the Bhajan, to join in the chorus of the Arti to recite incantations, to cast flowers and Gulal (the red powder), grains of rice (Mantra-kshada) at the Deity and to take Prasad (sweets).

The Deity is taken in procession in a palanquin on the ensuing morning in the village with a large assemblage of men, women and children, headed and led by the party of devotees

reciting Abhangas with Tal and music. On the termination of the procession, the day is devoted to a feast in honour of the Birth, and the residents, along with other villagers (about 250 to 300) from neighbouring villages, take part with their Dindees* (about 10 to 15). All such visitors partake of the food prepared by the Hindu residents as the Deity's Prasad or feast. Most of the cultivators share the common food.

This year the Birth Day of Shri Krishna fell on 6th September 1928, Thursday. The subscription raised this time amounted to Rs. 303. It was contributed by all the Hindu residents here, and was all spent. Every Hindu house-holder is required to contribute either one Seer of wheat or Annas 2 for each member of the family, even a baby. But in a lean year the subscription is proportionately lowered. As regards the share of wheat which a family is to subscribe, the women folk of the family are required to grind the quantity of wheat as their share, and to make and bake cakes thereof. In this way all the women folk of the village co-operate in preparing and baking cakes for the consumption of the worshipper's, villagers (including women and children) and for the people of the neighbouring villages accompanying Dindees in celebration of the Deity's Birth Day. It is all done voluntarily and with the greatest good will. Boiled rice and Varan (a dish of Tur pulse) and vegetable (or Besan, a dish of gram pulse flour) are cooked by some of the men near the temple. Thus food enough for the assembled people with residents, is prepared and a great feast is held in celebration of the anniversary Birth Day of Lord Shri Krishna, and every body in the village is eager to partake of the Prasad devoutly and earnestly. So, after all the preliminaries are gone through, food is served in the evening to those that attend the feast, and so until the ensuing morning. On this occasion food was plentiful and about 1500 to 1700

* A procession of devotees from other villages chanting sacred verses with music playing

individuals (villagers and Dindeevalas) shared it. After partaking of food and Pansupari, the Dindees disperse and return to their own villages, when the leader of each Dindee is presented with the conventional parting gift of a cocoanut.

During the festival the whole village is *en fete*, and there is relaxation from the daily routine for all concerned.

It is a dinner party provided by local subscription for all the villagers (men, women and children) together. Any surplus food is distributed as charity. The food is, no doubt, simple, but many poor families are very glad to have it. The wheat cakes are a special variety — big and well baked.

On the conclusion, the Hardas Bova (the principal priest) of Daithan (a village in Shrigonda Taluka) receives Dakshina (charity and gift) of about Rs. 30 to 50 in cash and in kind out of the subscription, as he attends the celebrations of the Deity. He appears to be a hereditary priest. It may be noted that almost the whole of the amount subscribed is spent. It may be interesting to know what the popular subscription amounts to and how it is spent. There is a sort of organisation of the leading men of the village who join together whole heartedly as a pious and religious duty to perpetuate the long established practice here. Outsiders like ourselves must admire the unity and the spirit of mutual loyalty and good will shown by the villagers.

In normal years the Panchas are glad to collect the public subscription in full quota; but in times of apprehended scarcity (i. e. in the month of Shraavan the cultivators have bright prospects if the Kharif crops are promising) the amount of subscription naturally falls short of the usual requirements. A comparative table for 1928 and 1936 may be interesting and instructive in this connection. The agriculturists' zeal and faith in matters of religion are laudable. Though pressed, at times, by drought, a lot of them hesitate to leave the village until

DESCRIPTIVE

The details of the subscriptions and expenses are:—

RECEIPTS		EXPENDITURE			
	1928	1936	1928	1936	
	Rs.	Rs.	Rs.	Rs.	
Cash Subscription	173	} 200	Rice	45	23
Wheat	130		Wheat	90	54
			Tur pulse	23	16
			Spices	15	7
			Kardi oil	10	20
			Chillies (dry)	4	} 5
			Salt	2	
			Fuel	5	10
			Water	2	5
			Ghee		2
			DECORATION & ILLUMINATION		
			Kerosene oil	3	5
			Cocoonut oil	3	3
			Kardi oil	3	2
			MISCELLANEOUS	15	12
			Prasad for distribution after the Birth	6	7
			Dakshina or charity to the Hardas Bova	4	30
				263	201
			Balance	40	...
	303	200		303	201

(ii) The temple of Mahadev is a stone building constructed in Shaka 1698 (1776 A. D.) i. e. about 150 years ago. It is in good repair, but is very small according to the traditional design. There is a stone tablet at the entrance at the top of the temple. An inscription carved in Marathi (Balbodh) on a slab of stone runs as follows:—

श्री गणपती प्रसन्न स्वस्तीश्री

नृपशालिवाहन शके १६९८

दुर्मुख नाम संवत्सरे श्रावण शु॥

२ आनळ चालविणार बाबजी

निसधत श्रीमंत पंत प्रधान

भार्फत रामचंद्र महादेव

सन हजरी २१८६ हस्त अक्षर

जगन्नाथ गिरधर जोसि

कुळकर्णि.

The temple, which is consecrated to God Shiva, was constructed on the first day of Shravan (bright half of the month) Shaka 1698 (1776 A. D.) by the Peshvas. The month of Shravan is observed by the Hindu community as sacred, as far as the worship of God Shiva is concerned. The name of the individual referred to cannot be traced or identified in the village.

(iii) The temple of Maruti just outside the village gate is the next building of some importance. Its accommodation is limited, but it is well constructed of stone and lime masonry. Some visitors and travellers use it for staying in at night. A cash allowance of Rs. 2 is paid annually from the Government Taluka Treasury for the service of the Deity. The villagers annually celebrate the birthday anniversary of the Deity on the full Moon day of Chaitra.

(c) Non-sectional.--Nil.

[5] MOSQUES AND TOMBS

The Mahomedans of the village have one mosque for saying their prayers, which stands in a site inside the village. It is a well built edifice and in good repair. A cash allowance of Re. 1 is paid annually to the mosque from the Government Taluka Treasury to meet contingent expenses.

There is also a tomb with a Darga Dayara---a spacious building. The Darga Dayara is dedicated to a Mahomedan saint known as Nirgun Shah Avaliya. An annual fair is held in his honour, an account of which is given in the section on Bazars and Fairs.

A survey number is held as Inam for the Dayara, the following details of which are entered in the village records:-

S. No.	Area	Assessment		Judi		Terms
		Rs.	As.	Re.	As.	
80	A' G. 16 19	6	3	1	5	Devasthan Inam

Note:-- Judi is the amount actually payable to Government, so that the difference between it and normal assessment (in this case Rs. 7) is remitted.

THE RAILWAY STATION

The Dhond-Manmad Line (State Railway) now worked by the G. I. P. Ry. Company, runs through the western part of the village lands, and a railway station known as the Sarola Station is situated within the village about a mile from the village site. The station itself has lately been connected with the village by a regular Local Fund road (a feeder road from Khadki on the Ahmednagar-Dhond road) passing under the railway bridge on the Nalla. There is also a feeder road from the railway station, which joins the main Poona-Nagar road near Supa via Astagaon to the other side of the village. The station is 39 miles from Dhond and 106 miles from Manmad, the main line junctions. The station yard is spacious and commodious.

The main building is of a standard type with a platform of the full height. It is a single line, and up and down trains are brought to a stand still on the same platform (right side). There is no goods shed here. At present the goods are deposited in the verandah. It is a small country side station, mainly used by passengers bound to and from villages on both the Parner and Valki sides. Grain, fruits, flowers, etc. from here and the neighbouring villages are booked at the station to Bombay, Indore, Sholapur, etc. Traffic is very limited. Goods from other stations, such as Bombay and Poona, are received here for Sarola as well as for the neighbouring villages.

The station staff consists of

- (1) One Station Master,
- (2) One Assistant Station Master,
- (3) Six porters.

A Permanent Way Inspector is temporarily stationed here with a staff of lorrymen to assist him. As there is no supply of water available on the railway premises here, the members of the staff and other servants draw their water-supply for

drinking and domestic purposes from a well in the neighbouring garden.

Outside the station yard stands a Local Board Dharma-shala with a care-taker in charge. Many passengers arriving by either of the night trains find it convenient to use it till the following morning. Carts or other conveyances are not available for hire at the station itself, unless some arrangement is made in advance. It is an easy matter to secure or hire carts or conveyances from the cultivators in Sarola or neighbouring villages.

There are gangmen's huts within the boundary of the village behind the station yard.

The railway line has divided the original whole Survey numbers through which it passes into two parts or portions, one on either side. Water from wells prior to the construction of the railway was carried in ordinary channels to the land beyond, without any inconvenience and trouble; but in order to meet the cultivators' claim to a certain extent, the railway administration constructed masonry drains for the passage of water for irrigation of crops on the other side. The cultivators are required to set up hollow palm trunks or pipes of some sort to connect their field channels to these masonry drains. The cultivators find it rather expensive to take water in this fashion to the other side for irrigation. There are five drains under the road line so built and maintained by the railway administration at its cost. The drains lie in mile numbers 39 and 40.

As the railway line is enclosed on both sides with wire fencing, facilities are afforded to the cultivators for access to their lands by means of

(1) A passage under the railway bridge at the northern extremity of the railway station.

(2) A level crossing with a gate keeper with accomodation provided with a tiled gate house.

(3) A level crossing with a turn-stile for the use of pedestrians.

(4) A passage under the railway bridge on the Nalla near the railway station premises.

(5) Another foot crossing with stile.

During the rainy season, when the Nallas are in flood, the cultivators can hardly cross the line, and they take their cattle to the other side to their lands with a long detour.

When land was first acquired by the Dhond-Manmad State Railway, it was deemed necessary to set apart a strip of land along the whole line outside the wire fencing on both sides and constitute the plots of land set apart as B class reserved forest. It is left open to free grazing for the adjacent farmers' cattle, and it was a sort of right and convenience to the cultivators. Accidental fires from sparks from the locomotives have been considerably minimised. It is an excellent arrangement, the credit for which is due to A. F. Woodburn, Esquire (I. C. S. Retired).

The location of the railway station and its staff in the village is an economic advantage to the residents. It is not possible to assess the benefit in terms of money, but we may safely estimate that it adds a good many hundred rupees to the annual resources of the village.

According to the imperial census of 1931, the resident population of the railway station is 78, including 44 males and 34 females.

CHAPTER 2

AGRICULTURE

AGRICULTURAL IMPLEMENTS

A table follows giving the number of implements of husbandry in use in the village according to the quinquennial census taken by the village officers for the years for which the records are available.

YEAR	PLOUGHS				CARTS AND VEHICLES			
	Large	Small	Iron	Total	Tongas	Small Carts	Heavy Carts	Total
1915-16	54	12		66	14	31	25	70
1919-20	63	3		66	12	31	21	64
* 1924-25	32		7	39	8	26	6	40
* 1929-30	52	41	29	122	15	16	21	52
1934-35	35		35	70	22	40	20	82

The small plough is one capable of being worked in light soils with one pair of bullocks. Large wooden ploughs are those suitable for working in deeper soils with two or more pairs of bullocks. Iron ploughs were introduced about 1924-25.

The results of the special enumeration we ourselves made are summarised below:—

Ploughs 113			Seed drills Pabnars	Harrowes Kulvas	Hoes Koipas	Carts and Wagons		
Small	Large	Iron				Lan- gadas	Carts	Light
5	85	23	115	182	179	19	32†	46

* These figures seem to be unreliable, perhaps due to errors in classification.

† Some of the carts are used partly for hiring.

We found three old sugar cane juice boiling pans and one wooden cane mill of the old pattern; but now-a-days jaggery is not usually made. When any sugarcane is grown, it is taken to neighbouring villages or Bazais for sale, or if, on occasion, any jaggery is to be prepared, the apparatus is hired from a neighbouring village.

We took no count of the innumerable small hand tools and implements in use.

The right to take water for irrigation from a well is owned jointly by many co-sharers in most cases. Each provides his own Mot or leather bag for drawing water.

These Mots are of three standard sizes—seven, six and five Pavali. (The Pavali means a measure of paces.) The small five Pavali Mot is not much used.

We found the following numbers in use:—

Seven Pavali	61
Six Pavli	9
Five Pavali	2

Total 72

The owners of plural wells make use of one Mot at a time. It is not an economic use of water.

IMPLEMENTS OF HUSBANDRY

We have noticed here, as in other Deccan villages, all sorts of implements and tools in use by the cultivator. They are all of a similar type and pattern and make, and they are put to similar uses. These implements are crude and rough, and some of them must have been in use from Vedic times with very little alteration.

It is better to give an account of the tools and implements actually in use at present. It is usually considered that the cultivator should own some of the implements. It is not

either own or get on loan as occasion requires. To simplify matters, implements may be divided into two broad categories, viz. (1) Primary and (2) Secondary. Implements classed as primary are those which are most important or indeed indispensable to the cultivator, because they are required by all at the same time. No one can afford to lend his own to his neighbour, unless he has more than he requires for his own fields. A well-to-do cultivator keeps a full supply of implements of his own under both categories, and may also have the Mot and other apparatus for drawing water from a well for irrigation, and an iron press and accessories for crushing sugarcane. A cultivator also needs certain tools, ropes and other things which will be mentioned in the secondary class.

(1) PRIMARY

- (1) Plough,
- (2) Harrow,
- (3) Seed-drill,
- (4) Pair of inter-culturing implements.

All these implements are made from the wood of Babul trees (*acacia arabica*) which are grown and found in plenty in the village jungle. Most of the cultivators have their own trees, which they take special care to rear and preserve for making into implements at some time or other. Only the wood of Babul trees of considerable age is durable and otherwise suitable. The wood of Babul trees is said to be free from insects. All parts of these implements are made from Babul wood, except one or two of iron in each case, which will be dealt with separately. All the work of making, mending and renewing these implements is done by the carpenter (Sutar) and blacksmith (Lohar) who are village Balutedars. The term Balutedars requires explanation. They are officially known as village servants useful to Government and the village community. The Balutedar system still prevails in most Deccan villages.

For the private service of the village cultivators as a community, such of the following as were required were maintained in each village:— (1) A carpenter, (2) a black-smith, (3) a barber, (4) a Joshi, (5) a Mulana, (6) a Gurav, (7) a Chambhat, (8) a Koli, (9) a Sonar, (10) a potter, (11) a Mahar, (12) a watchman, (13) a Mang (rope maker), and (14) a washerman. This completes the list of Balutedars. We may not find as many as fourteen in every village. They are entertained according to the needs of the villagers and according to the population. They serve the villagers all the year round, and in return get perquisites as remuneration in Baluta at the time of the harvest in the form of a share of the field produce. The Balutedars, who at present get Baluta here, are

(1) The barber, (2) the carpenter, (3) the Chambhat, (4) the Mulana and (5) the Mang.

In most cases a cultivator fells a Babul tree standing in his field and brings the logs and blocks of timber to the carpenter to have them made into the plough, harrow or other implement which he needs. A cultivator very rarely has to purchase wood from another fellow cultivator. He has to buy iron either from the market of Ahmednagar or from his smith. When his implements are being prepared, he helps the carpenter or the black-smith as a labourer or a coolie, at his work. The cultivator's labour or help may consist of and include:—

WOODEN	IRON
(1) Planing	(1) Blowing the bellows
(2) Keeping log in position	(2) Adding charcoal
(3) Boring	(3) Hammering
(4) Sawing	(4) Cooling hot iron

For our purposes it is sufficient to give an idea of the economic value of these implements at the market rate in the village at the time of our original enquiry, October to November 1927. The cost of each kind of implement may vary with its size and weight. Neither cultivators nor Balutedars

keep accounts even when the implements or parts are sold for cash. We have made as close an estimate of the cost or value as possible on the basis of our oral enquiries.

PRIMARY	COST Rs.
(1) Plough	15
(2) Harrow	5
(3) Seed drill*	9
(4) Hoe (Kolpa)	
Inter-culturing implement	4
Total	33

All the implements classed as primary are, as already stated, absolutely essential to a cultivator, and most of the resident cultivators do possess them. The cost of the whole set may amount to Rs. 30 to 40. It may vary with the size and weight of wood and iron employed, but the variation is not very great.

The whole set will last for 5 to 10 years, if not more. If any part or parts are broken or damaged, they can be replaced locally. A prudent cultivator, be it noted, takes the greatest care of his implements. As soon as he has finished using any implement, for the season or for the particular crops for which it is required, the parts are detached, cleaned and stowed in the shade in his hut, suspended or placed on a sort of rack. Thus the attack of white ants is avoided, and accidental breakages are minimised. The implements remain in use for a long period, say, 10 years, and their original cost plus the cost of repairs will be about Rs. 55. From this the annual average cost

* Seed-drills, which are of different types and make are known by different names from the bamboo tubes they carry for the purpose of sowing seed. A drill with one tube is called Moghad मोघड, with two tubes Dussa दुस्सा, with three tubes Tifan तिफण and with four tubes Paubar पाभर. The seeds are sown through the tubes in rows at varying distances from one another.

works out at Rs. 4 to 6, which is a very light tax on the cultivator's resources.

The list of secondary implements is a long one. Most of them are used chiefly by the women folk, but the men also constantly make use of them in one way or other. Most of them are made in the village. The cultivator buys raw iron in the market at Ahmednagar and gets the thing forged and shaped by the local blacksmith. Some of them can be purchased ready made and polished in the Bazar. It is in many cases found to be better to buy ready made in the Bazar than to have the implement made in the village. This is due to the fact that the Ahmednagar Bazar is so near Sarola.

(II) SECONDARY

IRON	Cost Rs.
(1) A weeding hook	0- 2-0
(2) A small sickle	0- 6-0
(3) an axe	0- 8-0 to Rupee 1
(4) A pick	0- 8-0 to Rupee 1
(5) A shovel	0- 8-0 to Annas 12
(6) A pick axe	1- 4-0 to 1-8-0
(7) An iron bar or crow-bar	1- 0-0 to 2-8-0
(8) An iron-basket	0- 8-0 to Rupee 1
Total	<u>4-12-0</u>

ACCESSORIES TO THE PRIMARY IMPLEMENTS

The parts of which these primary implements are made up have been mentioned in detail; but when any of these is to be put into operation on the soil, they have to be put together by means of either leather or hemp ropes.

(III) THE MOT

We class the Mot as a secondary implement, since only those who possess a well for irrigation need keep a Mot, with the apparatus and accessories required for working it. This

group of appliances etc. may be divided into three classes or sub-classes:--

(1) The Mot, itself (a leather bag or a steel bucket).

(2) The Tharola* (थारोले) of the well. The cost of its construction varies. A masonry work may cost about Rs. 25.

(3) An apparatus or wooden frame Vadav (वडाव) at the Tharola to draw water from the well, with props, supports-Ziga (झिगा) and poles (सुळे) surmounted by a pulley and a roller

We may describe these one by one. The old style of Mot is made of local leather, but nowadays imported chrome leather Mots are also obtainable, and in many places galvanized steel buckets are replacing the leather bag Mot entirely. In Sarola neither of the new types is in use, and all Mots are of the traditional kind. Leather Mots are made of three standard sizes measuring seven, six or five Pavalis. The first are worked by two pairs of bullocks and the last by one pair. As the supply of water drawn depends on the energy of the bullocks, specially strong animals are used for this work. They are well fed and looked after with the greatest care by the garden owners Green grass, such as Khondya or Kadval, maize, lucerne, carrots etc. is used as their food; in a few cases a small ration of Kulith, Chuni, oil-cake, cotton-seed etc. is added. A Mot works 7 to 8 hours a day, if there is enough water in the well (7-30 to 11-30 A. M. and 3 to 6 P. M.), and in the winter or spring from 7 A. M. to 2 P. M. A Mot is nothing but a leather bucket or bag with two openings—one at each end. The upper end is called the mouth—Tond (तोंड) and the lower one the trunk—Sond (सोंड); the former is

* A masonry basin or reservoir at the top of the well to receive the water drawn from the well for distribution by a main irrigation channel to many small branch earthen channels.

fitted on to a circular iron ring-Kada (कडा) with four radial bars joined at the centre to a small iron ring to which is attached the main draw rope called Nada (नाडा), and this Nada is made so long as to reach the top of the well from the level of water, pass over the pulley and on to the Shivlat or yoke to which it is attached. A small rope-Saundar (सौंदर)-is attached to the lower end of the Mot-Sond (सोंड) passed over the roller and the other end is also fastened to the Shivlat. While the Mot is being drawn up, the lower end (Sond) is kept at the same level as the upper Tond, being thus folded up against the full Mot. At the top, the Tond is hauled up to the level of the higher pulley, while the Sond is pulled out straight over the roller, at the lower level, into the Tharola or basin, so that the bag is unfolded and at the same time the water pours out into the Tharola. Practically this completes the Mot. Albeit its complicated adjustments and manipulations must be studied carefully; it has been devised very intelligently and ingeniously. But after some experience, even a boy can easily adjust the several parts satisfactorily.

Now as to the Tharola and the frame apparatus, two long slabs of stone are constructed so as to project over the edge of the well, which are pierced with holes to hold two upright wooden posts over which is placed a long wooden beam (Vadav or Vadap) fitted with two pegs (Butali) to support the pulley (Chak), and then again at the base a beam or piece of wood (Kanheri) is so placed that two pegs (Butali) may hold the roller. We have already stated that the great rope (Nada) and the small rope (Saundar) run over the pulley and the roller respectively. The bearings of the roller and the pulley need oiling for smooth working.

For the purpose of drawing water two pairs of bullocks are used, and they are harnessed to two Shivlats one behind the other, and the bullocks are worked to and fro on the ramp or inclined plane (Dhav) abutting on the Tharola.

CARTS, TONGAS AND WAGONS, ETC.

Carts and vehicles are not regular implements of husbandry, but they can be considered as adjuncts. In Sarola we find three types of conveyances, each of almost uniform model. The conveyances in use here are:—

- (1) Ordinary cart for general use.
- (2) Tonga or Dhuri (a small light cart).
- (3) A Langad (लंगड-heavy wagon).

Ordinarily a cart costs Rs. 60 to 75. A cart known locally as Kalyan Bhivandi is favoured by the cultivator. It is brought from Kalyan at Rs. 80, and is more durable than the carts made in the Deccan, because its wheels are prepared out of teak wood well-seasoned, its poles are of straight cut wood and not grained. A cart lasts for ten years and more, if occasional and accidental repairs are attended to.

ACCESSORIES TO CARTS

For a farmer the possession of a cart is almost essential; but ordinarily a small cultivator cannot afford to keep one unless he can also ply it for hire. A list of accessories is given in Appendix.

There are other light and small carts locally known as Tongas, Chhakadas and Pinjams, which are used by men and women to ride with two bullocks yoked. Usually such a vehicle can accommodate three or four with the driver, and it can be driven more quickly than the cart.

TILLAGE

Of all agricultural operations, tillage is perhaps the most important. By tillage as popularly understood, we mean the breaking up and turning over of the ground in order to loosen the soil and to raise the lower layers of the soil to the surface. Why is it so necessary is the question. Through sheer ignorance and curiously enough, a simple resident of the town may risk such an absurd query. The answer is perhaps very simple, but it involves a lot of minute details of importance. Traditionally the cultivator knows that the soil of his field or garden contains all

the food that is needed for the growth of all kinds of crops, plants, trees, shrubs, vegetables, flowers and the whole host of the vegetable kingdom, and that crops grow on, draw off and absorb all the food ingredients that are in the upper layer of the earth and soil, and that the food supply at or near the surface becomes less and less, or more and more depleted, though, of course, it is not entirely exhausted. The deeper we dig the soil, the more food is available with useful minerals and other constituents. All sorts of tillage operations are directed to turn up the soil and so make the food fully and easily available to the crops sown just at the top near the surface. Broadly speaking tillage, as practised here, consists of

- (1) Ploughing once or twice crossways,
- (2) Application of manure,
- (3) Harrowing once, twice, or even more often,
- (3) Seed drilling,
- (5) Inter-culturing twice or oftener, and
- (6) Hand weeding twice or repeatedly.

Ploughing is the central operation of tillage. How it is carried out depends on the nature of the soil, whether clay, black cotton, black, red, Barad or other intermediate class. For purposes of land revenue assessment, a classification of land is made in many different groups by the Survey Department, which is fully described under the head Soil, and of which the cultivator is quite ignorant.

Soil of uniform texture and quality to a depth of three feet is the best for raising good crops. The drawing up of food to the upper surface can be done by two methods, viz.,

- (1) By ploughing, etc., and
- (2) By the growth of leguminous crops.

The one process is artificial and the other is natural. We have no data, nor has there been any research so far made to ascertain the depth from which different leguminous crops draw food.

It varies; but it is natural and no efforts of human labour are required when a leguminous crop is sown. Deep ploughing may be called for more than once, and in different directions.

Prudent and experienced cultivators here are fully aware of the immense benefits and advantages that accrue from ploughing, if properly and efficiently carried out. We may enumerate them:—

(1) Ploughing destroys weeds and their roots.

(2) It exposes the broken soil to the tropical heat of the Sun so as to bring about the decomposition of the organic matter in the soil, and it assimilates inorganic matter with the soil.

(3) The soil is made so loose as to let the whole amount of rain water soak into it and make the soil *conserve moisture for a long period*.

(4) Ploughing helps to raise the level of the underground water, and thereby the supply of water in the wells is increased.

(5) It prevents the washing away of the surface soil by storm water on occasions of heavy downpour.

(6) Well-ploughed soil is easily worked on and little resistance is offered to the passage of other implements because of the reduced surface friction.

(7) The draught capacity of the bullocks is not so heavily taxed, and they get a sort of relief.

(8) Erosion of the soil of Nalla banks, etc. is almost stopped.

So there are different ploughs for deep operations. Ploughing is preferred to the leguminous crops for lands infested with weeds whose roots have gone very deep, as the former is used to eradicate the deep-rooted weeds, such as Kunda and Harali which are very prejudicial to any crop that may be sown on land containing them. None of the ploughs, either Indian or foreign, as at present manufactured, can operate beyond twelve

inches deep at the most, in any soil. Some of the leguminous crops have the vitality to draw food from a depth of more than one foot, because their roots find their way still deeper. For poor and shallow lands any method can be usefully followed. Several times we noticed in Khandesh that the cultivator was engaged in digging deep in his field by means of a pick-axe nearly two feet from the surface to remove the roots. This process is adopted, because the plough shares, either iron or wooden, cut off a portion of roots without eradicating the whole of them. Ploughing annually or in alternate years is deemed necessary in the Deccan or at least in this part. We stress the point not from an academic point of view, but from the cultivator's practical point of view. It is for the cultivator to exploit the soil to its full capacity. For poor and meagre crops he is to blame and has to suffer. It is a lamentable feature in village life that in most cases the responsibility for ploughing is avoided year after year. The soil here is poor for the most part, but where it is deep, ploughing is an easy matter. In this village less than one-eighth area of the whole cultivable land was actually ploughed during the course of the whole season of twelve months in 1927-28. Is this due to negligence on the part of the cultivator? It certainly seems to indicate apathy. The excuses put forward are many: that they have no sufficient bullocks, they have no time left as the Rabi harvesting lasted long, they had to look after irrigated crops, they had to be busy with marriages, etc. The cultivator is the best judge. It is he who must find out ways and means. Economy demands that he should get the most out of the land, and to do that he must arrange his programme properly. Whatever ploughing was done here, was done with some exceptions out of season and hurriedly. Our inquiry shows that ploughing should be done in the months of Paush, Magha and Falgun, and should invariably be finished before the Shringa holidays in all lands in which Kharif crops were grown the previous

season. Ploughing in water is very effective and convenient and less laborious, because some moisture is present in the soil, it gives the longest time for the land to absorb the sun's heat for more than four months, instead of barely two months as at present. It is said and the cultivators think, that it is a sort of manure if more heat and air are incorporated in the ploughed soil. This natural benefit is lost if the ploughing is delayed beyond the Shimga holidays. Natural advantages should never be neglected, but in every way made full use of. It is best for the well-to-do and prudent cultivators to see that all their lands, either dry or garden grown last with Kharif crops, are ploughed up with all despatch and promptitude. When they have reaped the fruit of this system vigorously carried out, some others will imitate them by degrees, and the rest will follow suit when they are quite satisfied of the success of the system. With regard to the lands which are sown with Rabi crops, ploughing can be undertaken as soon as each of the Rabi crops is reaped (in the month of Falgun or Chaitra or the first fortnight of Vaishakh). This programme must be adhered to. No departure from it should be allowed. No time should be lost.

Different types of plough need different numbers of bullocks, and the area which can be ploughed with them in a day also varies. With four to six bullocks a man can plough half an acre of land daily without difficulty. This is a very moderate estimate. For an important operation such as ploughing, a short spell of a fortnight in a space of half a year can easily be set aside by every cultivator, small or large. A large landholder, with greater resources at his command, should find it easy to do double as much as it is reasonable to expect of small cultivators; but there are probably few cultivators who have to plough more than thirty acres during the course of the year. Intensive cultivation is essential, if produce is to be increased. If once systematic arrangements

were made and properly adhered to, adequate ploughing at the proper season could easily be assured.

There are here some iron ploughs (Messrs Kirloskar's No. 100 and No. 9) which, though they invert the soil, do not find so much favour with the cultivator who makes use of his ordinary country plough as well.

Here in the village little deep black cotton soil is found, and what there is, is not so deep, that huge clods of soil are turned up during the operation of ploughing. Small clods lie on the surface, and are dissolved by the early monsoon rains if they remain uncrushed. The cultivators, therefore, keep no clod crushers and no labour is required on that score; but if any large clods are left lying scattered on the surface, they are pulverized by the working of Kulavas (harrows). Let us try to arrive at the cost of ploughing per day with four to six bullocks. The daily cost will vary according to the condition of the bullocks, the season, market rates the nature and condition of the soil, but it will at least be commensurate with the gain, and will probably be much less than the ultimate gain. The cost of ploughing with a plough fully equipped, a driver and six working bullocks, would come to Rs. 2½ to Rs. 3 per day. A cultivator is not, of course, actually required to incur expenditure in hard cash to get his land ploughed. Most of the cultivators have bullocks, implements, workers at their disposal at any time. The question of exact cost does not affect the case, but it is the will of the cultivator to see the ploughing of his land finished off at least in every alternate year, if it is not possible or practicable to do so every year. To a good farmer no excuses and few reasons are good enough to justify the omission of regular ploughing. Subsidiary operations to ploughing are lightened and rendered smooth if the latter is well done.

APPLICATION OF MANURE

The three principal methods of applying manure are

- (1) Mixing farm manure with the soil,

(2) Top dressing, and

(3) Ploughing in green crops known as green manuring.

Items (1) and (2) may be combined with ploughing, because the application involves the loosening of the soil, or in other words the breaking of the surface of the land, and it thus forms part of the tillage. In this village only the garden lands are treated with manure, as they are sure to be irrigated with well water. Farm manure is mixed with the soil either during or after regular ploughing by means of the plough or harrow or some such implement. The cultivation of green manure crops is very rare.

HARROWING

Harrowing is carried out frequently in a field or garden within a single season or within the period of Kharif or Rabi crops. Most cultivators, instead of taking the trouble to plough, find it easy and simple to carry out harrowing more than twice. Harrowing is next in importance to ploughing, and when the latter is neglected or dispensed with, as is generally the case with cultivators, harrowing is done many times, because it forms part of the tillage. Harrowing is very useful and directed to

- (1) Removal of stubble of the last crop,
- (2) Mixing of manure,
- (3) Eradication of weeds,
- (4) Breaking up of small clods,
- (5) Covering seed sown,
- (6) Preparing land for crops like wheat,
- (7) Harvesting ground nut,
- (8) Preparing seed beds and levelling as well, and
- (9) Preventing the evaporation of moisture in the soil;

the evaporation is almost nil or very small when the upper layer of the earth is harrowed.

[10] Harrowing is the only method by which the soil is made as soft and cohesive as possible for the reception and germination of seed and the preparation of crops.

Ploughing is or can be dispensed with, but harrowing is essential and cannot be dispensed with or neglected. It is the most important item of tillage, in absence of ploughing. Without harrowing cultivation is a mere waste of time and labour and the resultant yield is very meagre and poor, practically nil. A few of the cultivators, who are absent from their villages on business elsewhere, manage to get their lands sown, without a single harrowing, with seed, by means of a drill, as soon as the rain is seasonable and sufficient. This practice is uneconomic and wasteful. It is better to let the land lie fallow for the season and recuperate itself. The habit of merely scratching the surface of the earth to keep life in the body must be condemned and given up.

For ordinary harrowing operation one man can work with the harrow and two bullocks, and prepare about two acres of land per day. The daily charges would come to about Rs $1\frac{1}{2}$ to 2. The operation is, no doubt, cheap and easy to carry out, and involves little trouble. It can be undertaken season in and season out, at the convenience or rather the whim of the cultivator. Harrowing covers a comparatively large area of land prepared in a short space of three or four days. It can be worked cross ways and any number of times, if required.

In black cotton soil or tracts of such soil as in Khandesh, where the plough is only used occasionally and rarely, harrowing is carried on as a preparatory tillage. A single harrowing just before the rains or very soon after the rains is what is necessary prior to the sowing of seeds.

By harrowing two or three inches of the upper surface, the soil is loosened, stirred up, and the plant food is naturally raised, but the growing grass and other vegetation draw in the food without being useful to any of the crops. In order to keep weeds out, the operation of harrowing is very often resorted to, unless the land is immediately sown with crops.

The growth of grass amidst the crops is ruinous, as it consumes much of the plant food and leaves a depleted supply for the crops.

SEED DRILLS

The sowing or drilling of seed is the central operation in which the whole system of tillage culminates. 'We reap as we sow' is an old biblical adage, and has stood the test of centuries. We do not exactly know when the present seed drills were first introduced. It is evident that they are not primitive, because the whole process of drilling, now in vogue, is very ingeniously developed and adapted. The implements and their several parts are very skilfully designed for their purpose. The type is usually exactly the same throughout large groups of villages, but differences in design are found in different tracts, probably having been developed to suit local conditions exactly. In the Deccan drills with two, three, four and five coulter, with as many bamboo tubes fixed in them, are in use in many villages; three or four coulters drills are most usual, and in Sarola a drill with four coulters is used. The number of coulters depends on the nature of the soil. In a light soil drills with many coulters can be worked and managed. The distance between coulters varies, i. e. they may be from 9" to 18" apart. The greater the distance between the coulters, the greater will be the distance between the rows of the crops sown. A very thin crop of Jowari can be raised, if the seed is sown by the 18" coulters and so on. The thinly sown crops are well nourished, as much plant food and air is available for their consumption. The fodder and grain of such crops are very well developed and full grown. A thick sown crop is apt to give undeveloped and small seed and stunted fodder at times. The cultivators here prefer thick grown crops, as they supply food both to man and cattle, grain and Kadbi in large amount. In the village here a drill called Pabhar (with four coulters and four

tubes) is in use. It is contended that a Pabhar is the best drill, because four rows of crops are sown at one and the same time with the same power (two bullocks and one man as driver and sower as well). Again the four rows of seed furrowed and drilled can be got covered in one turn, if two Kulvas (harrows) yoked with two pairs of bullocks and managed by two attendants follow the Pabhar. It follows that the operation of one Pabhar (drill) and two Kulvas (harrows) is the only combination which can be carried out simultaneously by three men with three pairs of bullocks, i. e. one pair for the drill and two pairs for the two Kulvas. The sowing is finished in this fashion as promptly as possible along with the covering of the seed furrows. An area of two to three acres is drilled in a day or more according to the nature of soil. In this village the same drills are used for Kharif and Rabi sowings. Only some of the cultivators have a device for the sowing of Tur seed in the same row and along with rows of Bajri crop. The Pabhar (with 4 tubes) may be kept at work for putting in the Bajri seed through the seed bowl with four holes and tubes attached thereto, and in addition a bamboo tube is fastened by means of a small rope to the back end of the working Pabhar (at the outside), and is used to pass the seed to the ground for germination, i. e., in such a case, we have only four drill furrows for the reception of the seed, one drill furrow is twice sown—once with Bajri and next with Tur seed. The device is very simple. A man or woman carries the tube erect in his or her hand at a distance of four feet just behind the Pabhar, and with the other hand grain or seed is passed through it. The tube is fitted with a wooden Vati (wooden funnel with handle) having a hole in the bottom. The tube reaches the surface of the furrowed drill through a hole in a piece of horn attached. Such a method must have been worked out by experts. Drilling is a very complicated operation and involves a good many points for the careful attention of the sower, viz:—

- [1] The Pabhar must be driven in a regular straight line;
- [2] The motion of the bullocks, steady and regular, must be checked and watched;
- [3] Seed or mixed seed must be passed evenly and regularly;
- [4] The collection or concentrating of seed in one place must, on no account, be allowed;
- [5] The orifices of the coulter must be kept free from mud and weeds;
- [6] The sower should see that the coulter goes sufficiently deep before the seed is released;
- [7] A coulter goes from 2 to 2½ inches deep;
- [8] But if the moisture in the soil has gone deeper than three inches, the sower must adjust the drill so that the coulter works at more than three inches depth;
- [9] Triangles and bends of fields must be drilled with the greatest care, ordinarily in regular straight lines and at right angles;
- [10] Uneven and undulating surface of the soil demands all the attention of the sower in respect to all the points noted above;
- [11] The sower should always keep or hold the same amount of power and force on all the coulters of the Pabhar;
- [12] The sower should drive the rows at equal distances from one another, equal to the spacing of the drills;
- [13] At times the rows are not in a regular straight line on account of the bullocks' action or unsteady motion, when the sower should try to drill the next row in a straight and regular line.

The drilling of seed of Jowari, wheat and gram may be differentiated at times when sown in garden or irrigated land, in that the sowing is effected both ways—lengthwise and breadthwise as well; seed required is 1½ or 1¾ times of that of the dry land. Inter-culturing of the crops with bullock-implements is, of course, impracticable, and hand weeding

must be resorted to. Watering is necessary for the soil if treated with farm manure. These are the major points of difference.

The Pabhat is used for the purpose of sowing crossways as well, and the crop grows thick with high stalks. The yield of grain is 25 to 50 per cent higher, sometimes even double that of the dry crop. Hand weeding is a costly operation, because so much human labour is required, and it must be repeated more than twice in one season. Weeding by hand is a slow operation, and may take much longer than if done by bullock power; but the weeds growing mixed with the crops can only be removed by hand. The irrigated Jowari crops grow very tall, in some cases the stalks measure more than 9 feet high, and are as thick as red sugarcane. As fodder for the use of cattle the stalks of irrigated Jowari are less palatable and digestible than those of the dry crop, which are covered with succulent leaves, are devoid of hard fibre and have a sweet taste. If good fodder is procurable, as is always the case in times of plentiful harvest, the irrigated Jowar fodder serves no useful purpose, and the stalks, even if stalked, are allowed to rot and to be utilised for manure. The drilling of seed must be immediately followed by a crosswise drilling without a single day intervening, otherwise the germinated seedlings may be trampled down, and loss incurred. This method of garden cultivation with the cross drill is usually adopted for choice by the cultivators, but it is not absolutely necessary that it should be followed everywhere and in the case of all crops. In rare cases a light harrow or Farat, fitted with an iron blade or bar is worked for covering the drilled seed. It is worked by two bullocks and an attendant, but as the Farat is of the same breadth as the Pabhar, the four drilled furrows are all covered simultaneously. A Farat does the covering of seed with less bullock power and more quickly than two Kulvas.

As we have mentioned that seed is sown by means of different types of drills, so we want to show comparatively the output of each of the drills, and thus to arrive at the conclusion as to which is the most advantageous.

Name of Drill	No. of Coulters	Power for drilling		Power for covering soil	
		Men	Bullocks	Men	Bullocks
1 Pabhar	4	1	2	2*	4 ⁺
2 Tiphon	3	1	2	1†	2†
3 Moghad or Dussa	2	1	2	1†	2†

In all these the coulters are fixed at certain distances from each other, but from the point of view of the output, the Pabhar is the best, because it covers so much land as is drilled at one turn, i. e. a space equal to four coulters. A Tiphon drills as much space as is covered by three coulters; the output by the Tiphon is $\frac{3}{4}$ that of the Pabhar, and that of the Moghad is $\frac{1}{2}$ of the Pabhar; but the smaller the number of the coulters of the drill, the greater is the depth at which seed is put into the soil; which means that a quantity of moisture is available in a great degree, if the cultivator has delayed his sowing. It is no use leaving seed at an unsuitable depth to retard germination, etc.

The covering of seed is an accompaniment of the drilling operation, and it is carried out immediately close behind the drill. A Farat worked by one attendant and two bullocks covers the whole of the piece of land drilled by the four coulters in one turn, but with two Kulvas the power

* When two Kulvas work simultaneously.

† When only one Kulva is at work.

of four bullocks and two attendants is required to cover as much land as is covered by the Pabhar. The weeds are, no doubt, more fully eradicated by the Kulvas. The seed drilled by the Tiphon is covered by means of one Kulva, which does not give sufficient or efficient work. Only the two drills of the Dussa are fully covered by a single turn of the Kulva. A piece of land of even and regular level is drilled to advantage by means of the Pabhar, and similarly the seed is covered by the Farat (four bullocks and two attendants). An undulating piece of land or an uneven piece of land may cause hindrance or obstruction to a degree to the smooth and effective working of the Pabhar and Farat simultaneously. It is seldom that the whole of the land included in a survey number is of one uniform texture and of the same depth, and, therefore, the amount of moisture near the surface is not uniform. The uniform treatment of the drilling is impossible in such a case, but the cultivator should bear in mind that the drilling must be undertaken early in the day. It is for him to be vigilant and watchful that, though the moisture may be deficient in one corner, it may be in excess in another. He must commence drilling under such circumstances that, on the whole, moisture in suitable degree is available. No doubt the cultivator has got no instrument or no means to gauge the amount of moisture present. He must depend on his experience. He is handicapped. Such cases, it appears, were brought to the notice of the Royal Commission on Agriculture, and they were referred to in paragraph 112 at page 116 of the report. Let us see how far the Agricultural Department can deal with it.

INTER-CULTURE

As soon as germination of the seed is noticed and the sprouts have sprung up to the height of nine inches it is for the cultivator to take up the operation of inter-culturing of the young crop, so that the weeds and vegetation may not obstruct the growth of the crop, or deprive it of the light

food, which must all be conserved and made available to the young crop. A small Kolpa (hoe), which is equal to half of the Pabhar (equal to two coulter), may be worked by one attendant and two bullocks. It is a very simple process. Instead of one Kolpa (hoe) the cultivator here arranges to place two Kolpas in the unsown spaces between the rows which are worked with one yoke of two bullocks, and this course saves the yoking of two extra bullocks; but the inter-culturing hoes can be more efficiently managed by two attendants than by one. The out-turn in the case of the double hoe is double that of the single hoe. It is necessary to have rows of crops drilled in a straight line to make inter-culturing with two hoes at one and the same time practicable, so that no young seedlings may be up-rooted or crushed by either of the hoes. This double inter-culturing is very much appreciated by the cultivators, because it gives double work with less bullock power. It is practised by experienced cultivators who have full control over their bullocks, and who can watch the iron blades of the two hoes working in different spaces between the rows. Inter-culturing with Kolpas can be carried out twice or at the most thrice in a crop before it has reached the stage of formation of joints; after that the use of the Kolpas may cause the crops to be damaged and broken at the joints. When the crop is young, inter-culturing gives beneficial results:—

[1] The weeds and grass grown between the rows are removed and eradicated;

[2] Plant-food no longer taken up by the weeds is made available to the crop;

[3] The crop gets a full supply of heat and light, as the surrounding space is quite cleared off;

[4] The moisture is conserved and is available for utilization by the crop;

[5] The risk of attack by pests is minimised.

No further inter-culturing operations are practicable or necessary when the crop has reached the stage of formation of joints, and when it shades the ground underneath. A pair of Kolpas inter-cultures about two acres of land in a day, or it may be three if all the drilling is straight. It would cost a sum of Re 1-8 a day.

HAND WEEDING

We have already stated that when hand weeding is necessary, the weeds are removed either with the hand or with the hook or Khurpa of the labourer who brings her or his own tool for the purpose. It is costly, laborious and slow. Generally women folk are engaged on hand weeding, and they are paid Annas 2 to 3 per diem. How much work a woman can do in a day is uncertain. A group of women are set to work in a row or two, and they go on removing the weeds by means of their hoes or Khurpas, the latter of which is the ordinary tool for weeding. Long weeds and tangled grass cannot well be dealt with by inter-culture, so the manual labour of women is requisitioned. It is, therefore, for the cultivator to take time by the forelock. Drilling and inter-culturing must be carried out punctually, vigilantly and intelligently. It is work, not for the novice, but for experienced cultivators. Incessant rain may at times interfere with either sort of inter-culturing, and weeds may continue to grow and grow.

In Gujarat an ordinary plough is worked between the rows to remove weeds, etc., especially when it is essential to conserve moisture. Here no such practice is followed.

TILLAGE

The operation of tillage is not so simple as one might imagine. It consists of so many different items of a complex and complicated nature, each requiring special skill and pains. But it may be said that most of the cultivators are quite at home in every minute detail of it. There may be a few exceptions, few indeed, who are not able to turn their hand to all of the operations as competently as we might wish.

MANURE

No artificial manures are used here. The cultivator does not even know their names and is ignorant of their properties and mode of application. It is rather costly to make use of fertilisers. Ordinarily the foreign preparations are made use of only in the case of very valuable and paying crops, such as sugarcane, chillies etc., and also in cases where the supply of water for irrigation is fully assured. The cultivators here have been accustomed for centuries to rely on indigenous manure. Most of them are able to preserve and utilise a limited quantity of farm yard manure for their garden crops. They very seldom make use of it in the case of dry crop land, because in this precarious part of the Deccan, the rainfall is very deficient, and crops grown in dry land treated with manure get dried up, if there be a break in the rains, say, for more than a fortnight, which is an ordinary feature of the early monsoon here. The village lies within a zone of the Deccan constantly liable to famine. Thus, in practice, little use can be made of manure for dry crop land, much more so when the soil is poor as in this village. On the other hand the continual raising of crops on dry land would eventually exhaust the soil, so that in a few years a very low yield would be the result. This is termed soil robbing practice. Whatever may be the temporary consequence, we must put into the soil what we take out in the shape of crops, viz. maintain the fertility of the soil. All the cultivator can secure, is the manure prepared locally from the dung of his cattle rubbish, sweepings, ashes, etc. of his household. A large portion of the cattle dung available here has always been utilised by the women folk for making cow-dung cakes, to be used as fuel for domestic purposes. The residue is collected, from day to day, in a dung heap by the cultivator separately in his own place, either on the village site or on a piece of village Mufut Number (waste) or by the side of a street. No

special care or pains are taken for the efficient preservation of the manure. The urine of the cattle, which is the manure richest in nitrogen, is suffered to evaporate, or to soak into the ground, and thus run to waste. Some of the gardeners here have erected sheds or made thatched huts as a shelter for the cattle in their own gardens. They conserve and preserve their own manure in an intelligent manner. Daily they remove the dung and sweepings to deep pits dug in the ground and allow these to ferment during the rains. These heaps remain standing for fifteen to twenty months before they are actually applied as manure, which is locally known as 'ripe' manure (पिकलेले खत). There is a more economic use of the manure than the ordinary practice. The droppings of cattle let loose for grazing in the jungle are picked up by women for use as fuel. Dung-hills of one or two years standing on the village site are generally removed by their owners in cart loads for being applied as manure to their gardens. The operation of carting and application of the manure continues in a leisurely way for nearly two months, Falgun and Chaitra (March and April). Thereafter a new dung heap is started for the next year, and the rainy season is the time to accumulate and store up as much dung and sweepings etc. as possible. During the wet months (June to the end of November) the farmer's wife can scarcely find the making of cow-dung cakes profitable; but the fair season is fully occupied with their preparation. Some of the good cultivators warn their women against making any cow-dung cakes out of their cattle's dung. The housewives are obliged to search for and collect in the jungles dry twigs, branches, pieces of thorn, rotten roots, or dried droppings of cattle. If the village has some forest area, with scrub jungle as in Sarola, dry fuel is looked for and collected. From an economic point of view this practice is rather unsound. Goats' dung is very small in quantity, and it is collected and preserved in the same way as that of the cattle.

As regards the sheep, a similar method is adopted; but in some cases they make use of the more effective folding system during the hot season (March to May). A flock of sheep, perhaps two score or more, are left to roam and find grazing and water in a garden by day, and at night is either penned or folded on the same land or made to stand on it; and thus the dung and urine of the sheep remain and get mixed with the soil of the garden. This process of manuring goes on for a week or so in one garden. The owner of the sheep gets some sort of perquisite or remuneration for himself, or the use of leaves of Babul trees for the feeding of the sheep in addition. This kind of manure is highly prized locally.

A cultivator will rarely sell his heap of manure if he himself tills his land; a landless owner may sell his dung heap at a Rupee per cart-load of manure. No one from the village may sell his cattle manure to another of any other village in the vicinity or *vice versa*. They have a saying, "Amche Gavacha Sauja Jato (आमचे गावचा सौजा जातो)," which means, "our village is deprived of its most nutritious food." This is a tradition handed down from generation to generation, and it is very strictly observed, unless it is specially relaxed by the village. The purchaser has to remove, load and unload the manure in his own land and at his own cost. A cartman can take out four to five cartloads of manure in a day, though it, of course, depends on the distance to the land. The cartman lets his cart on hire at Annas 12 to Re. 1 per day, unless the purchaser has his own cart and men. The gardener arranges to get the manure put on his piece of land in small heaps at a distance of a few paces in proportion to the available quantity of manure. The heaps of manure are then spread on the surface, and the gardener gets it ploughed into the land. A fully adequate supply of farm manure is never procurable. The application of manure takes place in the hot

season or before the rains set in. The cost of one cart load of manure, including carriage and application, will come to Re. 1-8-0 or more. The cultivator estimates that thirty-five cart-loads i. e. 350 maunds of farm manure are required per acre of garden land. The quantity of manure may have to be increased in view of the subsequent crops the cultivator expects to sow in the next monsoon. The holder of garden land here generally uses manure as follows:—

KHARIF CROPS	CARTLOADS* PER ACRE	RABI CROPS	CARTLOADS PER ACRE
1 Chillies	30	1 Wheat	20
2 Onions	15	2 Onions	15
3 Maize	30	3 Gram	15
4 Vegetables	30	4 vegetables	30
5 Bajri	20	5 Bajri	25
6 Ground-nuts	10	6 Garl	30
7 Sweet Potatoes	30	7 Carrots	15
8 Lucern	35	8 Lucern	35
9 Potatoes	20	9 Potatoes	20

Top dressing with cattle manure is seldom applied except in the case of fruit trees such as oranges and lemons. The hollow round the foot of the fruit tree or the bed in which it stands is dug with a hoe, the soil loosened and the roots of weeds removed, the cavity or bed is deepened and three or four seers of cattle manure are heaped at the root of the plant in the shape of a cone. Then the plants are watered fully to the edge of the cavity or bed, so that a large portion of the manure gets dissolved and absorbed by the plants. Top dressing is rather a costly operation and requires great care. It appears that for ordinary crops no cultivator ventures to try it.

* 2½ Tolas 1 Oz
30 Tolas 1 Seer.

40 Seers 1 Mound (Bengal)
10 Maunds 1 Cart load

There is no custom here of drilling manure with seed or applying it just before seed is put in. The cultivators are either ignorant of it or consider it unprofitable. The method of green manuring, i. e., growing green crops such as *Sann* (*Crotolaria Juncea*) during the monsoon, and ploughing them in as manure for the following crops, may be known or unknown, but it is not now resorted to; because the gardener has neither the time nor the seed to spare for the purpose. He is very wise to remember that the rainfall is uncertain.

The system of raising crops in rotation is another method which augments or maintains the fertility of soil and is in vogue here. The following are the usual local rotations:--

	BAGAIT		JIRAIT	
	1st Crop (Kharif)	2nd Crop (Rabi)	1st Crop (Kharif)	2nd Crop (Rabi)
1st year	Nil	Jowari	Nil	Jowari
2nd year	Bajri alone	Wheat or Gram	Bajri mixed with legumi- nous Kulthi and Mugi	Nil
3rd year	Nil	Jowari	Nil	Jowari
4th year	Bajri alone	Wheat or Gram	Bajri mixed with legumi- nous Kulthi and Mugi	Nil

We believe the system technically known as rotation of crops has become universally established, but it is worth while describing briefly the local system. This is very simple. A cultivator sows Bajri crop on a piece of land one year, follows it with wheat crop the next year, and the third year even another crop (say chillies) is sown.

The leguminous crops serve as rotation crops. The cultivator here is very keen about the leguminous crops, because they yield him grain as well as fodder, even from moderate early rains. In this he is wise. He has no occasion to make use of special manures such as fish, oil cakes or bones.

Nigh. soil is not stored and used here as manure, but in the absence of any artificial system of sanitation, most of the night soil of the village goes to the fields and land adjoining the village site. Poudrette is prepared and held in store by the Ahmednagar Municipality but no one here takes the trouble to fetch it on account of its high price, the long distance of transport and the uncertainty of seasonable and copious rainfall.

An attempt was made to collect statistical information with regard to village manure, but no accurate and reliable figures could be collected. A very rough estimate based on study may be useful. The dung of a pair of bullocks along with that of a cow supplemented by rubbish, sweepings and ashes may form in the year a manure heap of four to seven cartloads. This estimate is liberal, because we must make allowance for cow-dung cakes and for the daily washing of the houses and court-yards.

SEASONS APPROPRIATE FOR SOWING OF SEED

There is no rain-gauge here. The city of Ahmednagar is both its District and Taluka Head Quarters and is the nearest registration station about eleven miles as the crow flies. The fall of rains, from time to time, registered at Ahmednagar:

is adopted as a measure of convenience, though it cannot be ignored that the amount and distribution of rainfall varies greatly even throughout a small area. The Deccan peasants have a saying, "बैलाचें एक शिंग ओळें तर दुसरें शिंग कोरडें," which means, "that one horn of the bullock has become wet, whereas the other is dry." To be plain:—The cultivators have to pay their quota of land assessment or land revenue dues according to the out-turn of the seasonal crops, depending on the adequacy of the rainfall. The Government of Bombay have been pleased to supply and fit more rain gauges in many villages. Generally the rainy season here lasts for nearly four months, say from 15th June to the end of October. The monsoon breaks out about the middle of June, at times even later. The revenue year commences from 1st August of one year and ends on 31st July of the next year. The rainfall of June and July of the last revenue year is taken into consideration for the crops of the next year. The rainfall is registered for the calendar year (1st January to 31st December). These anomalies and apparent discrepancies and inconsistencies are explained, so that the Kharif and Rabi crops may be fully understood in their various stages, i. e. sowing to harvesting. The Hindus divide the year of 358 days into 27 Nakshatras (constellations in the heavens), which the Maharashtrians distinguish as rainy and rainless Nakshatras, with the latter of which we have no concern. The former class of Nakshatras (नक्षत्रे) are supposed to give rain for various crops—Kharif as well as Rabi. The Deccan almanacs show the day and hour when each of the Nakshatras appears, and give forecast of their rainfall. As to the accuracy of the forecast of the weather, we need say nothing one way or the other; but it may be safely said that the cultivator is never hopeless, or his hopes are rarely stultified till the season for sowing operations is lost. The rainy Nakshatras are stated below in their natural order of occurrence or appearance, as supposed:—

1) मृग *	Mrig
(2) आर्द्रा	Ardra
(3) पुनर्वसु	Punarvasu
(4) पुष्य	Pusya
(5) आश्लेषा	Ashlesha
(6) मघा	Magha
(7) पूर्वा	Purva
(8) उत्तरा	Uttara
(9) हस्त	Hasta (Elephant)

Most of these continue for a space of about a fortnight (13 days and odd hours). We are quite sure that the Sun rises daily in the East; that the Moon is visible regularly at a certain point in her orbit in the heavens, and that the principal stars will appear on the horizon at the due date and hour and at their proper season. A scriptural stanza runs thus:—

भीषाऽस्माद्वातः पवते ॥

भीषोदेति सूर्यः ॥

भीषाऽस्मादग्निश्चेन्द्रश्च ॥

मृत्युर्धावति पंचम इति ॥ तै.

(II. 8, 1)

“ Through fear of Him the Wind (Vayu) doth blow;
Through fear of Him the Sun (Surya) doth rise;
Through fear of Him both Agni (Fire) and Indra
(God of rain)

And Death (Mrityu) as fifth do speed along.”

[Robert Ernest Hume, M. A., Ph D., New York]

What we want to stress is that natural laws are very accurate and uniform. It may be urged that our knowledge of science and the monsoon (Hindu God Varuna) is not so

* Appears from 6th to 10th June.

advanced as to enable the scientists or astronomers to calculate and forecast the falls of rain, their amounts, their seasons and the regions, accurately and correctly.

The cultivator is very anxious and longs for the rain from hour to hour, when the monsoon is due to break out or has actually set in—6th to 8th June. The reasons for his impatience are many and evident:—

- (1) The soil has become almost dry, parched and thirsty in the previous six or seven months;
- (2) Water in his well has gone very low;
- (3) Water for drinking runs shorter and shorter;
- (4) His stock of Kadbi has dwindled;
- (5) His cattle have no green grass or green Kadbi available for a long period;
- (6) To add to these economic drawbacks he has to idle away his time, dejected and depressed.

During the whole rainy season (6th June to the end of October) the cultivator expects and hopes to have at least the following rainfall:—

		Inches		
(1)	June	5 — 7	}	Kharif
(2)	July	4 — 3		
(3)	August	3 — 4		
(4)	September	6 — 7	}	Rabi
(5)	October	4 — 5		
(6)	November	2 — 3		

24—29

To return:—Mrig is the first rainy Nakshatra, but in rare cases Rohini gives a few showers of rain either in the last week of May or in the first week of June, when, in the Deccan and specially in Khandesh, the cultivators, with the greatest zest, hurry and get on with the sowing of cotton, because cotton is the most valuable and remunerative crop of the day, despite the fact that it is not a monopoly like jute, and requires a long growing season. In Khandesh some of

the cultivators even run the risk of sowing and putting in cotton seed under dry or loose soil prior to and in anticipation of the imminent and expected rainfall, so that the slightest moisture may be utilised for germination, and any fall of Mrig rain may not be lost, but fully utilised.

As to the sowing operations of the Kharif and Rabi crops according to the rainfall, the season and Nakshatras, the cultivator (who is no botanist) has a traditional programme which is observed regularly and faithfully. It is his practice and may be stated as follows:—

Nakshatra		Kharif	Crop
(1) Rohini	(रोहिणी)	}	Cotton, Mug, vegetables and chillies (कापूस, मूग, भाजीपाला, मिरची)
(2) Mrig	(मृग)		
(3) Mrig	(मृग)	}	Bajri, Tur, Rala, hemp, sesamum, Karhala, ground-nut, Hulga (बाजरी, तूर, राळा, आंबाडी, तीळ, कांदाळा, भुईमूग, हुल्गा)
(4) Ardra	(आर्द्रा)		
(5) Punarvasu	(पुनर्वसू)	}	
(6) Pushya	(पुष्य)		
(7) Ashlesha	(आश्लेषा)		
(8) Magha	(मघा)		
Nakshatra		Rabi	Crop
(9) Purva	(पूर्वा)	}	Jowari, Kardi, linseed (ज्वारी, करडी, जवस)
(10) Purva	(पूर्वा)		
(11) Uttara	(उत्तरा)	}	Linseed, wheat, gram (जवस, गहू, हरभरा)
(12) Hasta	(हस्त)		
		}	Tobacco, vegetables (तंबाखू, भाजीपाला)

The calendar here has added one intercalary month known as Adhik (अधिकमास) every third year, in order to harmonise with the solar year, and so the Nakshatras do not correspond exactly with the same dates of the Western calendar months.

KHARIF CROPS

These Nakshatras are supposed to give propitious rain showers sufficient for the germination and propagation of the groups of crops referred to. Should the rainfall of any of the Nakshatras be inadequate, the sowing of the particular crop or crops may be deferred for a week or so. Mrig, Ardra and Punarvasu send rain useful for the sowing of the Kharif crops as well as their development. Roughly speaking they may synchronise with the English months, June and July. Kharif crops are doomed to failure if the rains of these three Nakshatras hold off or are insufficient. August and September rainfall is necessary for their full development. A good out-turn of the Kharif crops is then assured, provided there is no insect pest or any other unforeseen calamity, such as locusts, rats, floods, etc. The period of Kharif sowings is very limited, say two to three weeks. The earlier the sowings, the more fully can subsequent rainfall be utilised.

The village is treated or classed as Kharif by the Revenue Survey Department, because of its poor soil. Notwithstanding this, the cultivators have assiduously brought a comparatively large area of land under Rabi cultivation. Vegetables are also sown in irrigated land along with and simultaneously with Kharif crops.

RABI CROPS

The rains of Purva (पूर्वा) if adequate (or if the previous moisture is sufficient), are utilised for the sowings of Jowari and safflower, and if they are supplemented by Uttara (उत्तरा), the complete sowings are satisfactorily carried out. The cultivator grows Jowari in irrigated land if the rainfall is not sufficient and if the well has a good supply of water Jowari alone is cultivated in garden lands if it is necessary as a rotation crop.

The Jowari sowings are held to be auspicious if they are commenced after the Birthday Anniversary of Lord Krishna,

the 8th incarnation of the Hindu mythology. Before going in for the cultivation of Jowari, the texture of the soil, the amount of moisture in the soil and the heat of the sun are studied. September and part of October is the time or season for Jowari sowing.

There is in the village no land of the type known as Gavali (गवली), which means rich black soil capable of growing wheat and gram on the rains alone. In Khandesh such lands are found in many survey numbers.

Sarola is a Ryotwari village which measures according to the Revenue Survey 4513 acres and 18 gunthas of land divided into 340 survey numbers. Nearly four-fifths of the land is actually under cultivation of various crops known as Kharif (early) and Rabi (late). In years of good rains the area under crops may come to nine-tenths of the whole village area. The Government of India have been pleased to prescribe a classification of crops in groups for statistical purposes. The whole range of crops comprises crops useful (1) for human consumption, (2) for animal consumption, (3) for local industries and (4) for foreign exports. The classification makes a very long list, but the main classes may broadly be said to be:— (1) Cereals, (2) Pulses, (3) Oil seeds, (4) Fibres, (5) Drugs (6) Narcotics, (7) Sugars, (8) Dyes, (9) Condiments, (10) Vegetables, (11) Fruits and (12) Green Fodder.

The crops raised in the Bombay Presidency are 180 in number, which may be classified as follows:—Fifteen cereals, twelve pulses, nineteen oil seeds, four fibres, five drugs, seven dyes, many sugars, twenty condiments and spices, fifty-six vegetables, thirty-four fruits and five kinds of fodder.

A large number of crops and fruit trees are grown here. In most cases the out-turn and yield fluctuate greatly according to the annual and seasonal rainfall, climate and soil. It is remarkable that there are many species of each crop. Cereals and pulses have distinct and different species, some of which

are favoured by the cultivators here. To illustrate of Jowari, the commonest cereal crop, there are the following different species.—(1) Yellow, (2) red, (3) white, (4) Kalbhondi, (5) Lalbhondi, (6) hard, (7) soft, etc. Similarly there are different species of pulses. The cultivator selects any of the species he finds advantageous. The farmer is very prudent, cautious and shrewd. He is sometimes blamed for being conservative. To be plain: he has no monetary resources sufficient to make researches and experiments; he is afraid that any loss or failure is a dead loss; his annual realizations are barely sufficient to make both ends meet. He may be unenterprising, his knowledge of science is very restricted, or it may be nil, he is generally illiterate, he is in debt, even though possibly not over head and ears in debt.

The areas under crops, for the past twenty-three years which we were able to secure, may not be quite accurate, but it is a close enough approximation to the truth, as the entire area of the village cultivable and non-arable land is accounted for in each of the years referred to.

Bajri is the second staple food crop in the Deccan, but it is sown first just after the early monsoon breaks and rainfall or intermittent showers of rain in June and July measure five inches or more. In irrigated survey numbers Bajri is cultivated as a rotation crop. The area under Bajri has varied from year to year primarily according to the weather conditions. It may be observed from the statement that Bajri crop covered about one quarter of the cultivated area of the village or more in exceptional cases.

Of the Rabi crops, Jowari is the principal food crop, and the area covered exceeds three quarters of the entire cropped area of the village in most years. It is the most important and valuable fodder crop as well. Next in importance is Bajri, which is one of the earliest crops sown. Wheat follows.

The two major millets — Jowari and Bajri — together frequently occupied nearly seven-eighths of the area; other minor millets sown are insignificant and cover a small area. The sowings of wheat are limited and almost confined to garden lands. Broadly speaking, the area under wheat cultivation may range from 100 to 150 acres in small plots here and there. Wheaten cakes are used by a few well-to-do families on some days of the week and on festivities. The labourers and poorer villagers can only enjoy the luxury of wheaten pancakes on Hindu holidays, festivities, and on the occasion of marriages, etc. Jowari and Bajri are more nutritious than rice which is the most important single food crop in India; but here its place is taken by these two millets (Jowari and Bajri). The villagers are in this respect more fortunate than the people of the rice area.

Rice is grown in small patches here and there, on low¹ ground, and is of an inferior sort.

Gram and Tur pulses are used as supplementary diet in a small proportion, say, about one-tenth to one-sixteenth of the amount of Jowari and Bajri, and other minor pulses such as Math, Mug, etc. are used to a small extent in the same way as gram and Tur. Be it remembered that pulses also serve the purpose of vegetables. Pulses are cheaper than the flesh of goats and sheep which is beyond the purse of the ordinary Maratha cultivator, although he is a non-vegetarian. Pulses are said to provide the bulk of proteids in the diet, but the masses have either no taste for them daily or they want changes in diet. Still, the vegetarians here make a liberal use of the various pulses (chiefly Tur), prepared in many ways.

The cultivation of safflower or Kardi calls for reference here. It is sown year after year, and covers an area of land of varying extent. Most of the cultivators raise this crop which gives them Kardi oil for culinary purposes. The oil is edible and is mostly used instead of ghee which is very dear, and

is not available in sufficient quantity. Oilcake of Kardi is given to working bullocks as an extra nourishing food. The village oilman undertakes to get oil and oilcakes pressed and milled. He is not given any cash payment, but receives oilcake and husks after allowing one seer of oil to the villager for every four seers of Kardi seed.

Ground-nut is another oil-seed crop, but nobody here takes the trouble to extract oil from it. Ground-nut seed or pods are, either raw or dried, used for consumption on days of fast with गूळ (unrefined sugar). It is supposed to be nutritious and is used like almonds by the cultivators. The cultivators (Marathas) annually celebrate the Dasara festival (on 10th day of Ashvin Shuddha) in honour of the Deity देवी (भवानी). For these ten days the housewife observes a fast, and ground-nut seed or pods are much used for consumption. (Cultivated areas are not available for the years 1902-04, 1905-09, 1910-11, 1912-13, 1915-18, 1922-23 and 1923-24.)

It appears from the statistics (Crop Statistical Statements in chapter IX) that the area under the sesamum crop has been progressively curtailed year by year. The cultivators here have put forward various reasons, but none of them seems adequate. The lack of seasonable rainfall is the most important cause. The harvesting of the sesamum crop is rather laborious and troublesome; when the crop is ready for harvesting, it must be cut and made up into sheaves then and there, and stocked for fear any accidental or occasional rain may damage the crop or sheaves. Even a strong gust of wind will scatter the bundle of sheaves standing in places. Sesamum crop yields no straw or any kind of fodder; its stems or stalks are practically useless except for fuel. During the rainy season the threshing is a tedious task.

The cultivators and other Hindus make use of sesamum seed for culinary purposes, and distribute a small quantity of seed mixed with jagri or sugar-coated to their relatives and

friends. Specially the housewives of the Hindus observe the Makar Sankrant festival very piously.

Other oil crops, viz. rape-seed, Ambadi (hemp), linseed and castor are grown here in very small patches of land and insignificant areas too small to be recorded under the rules. Nobody in these days takes the trouble to extract Ambadi (hemp seed) oil, but its fibre is used for making ropes, cords, etc for implements.

The principal staple food crops—Bajri and Jowari—raised here are summarised in groups of areas arranged in the past twenty-three years:—

Area	No. of Years	
	Bajri	Jowari
500 acres and under	12	1
501—1000 acres	3	—
1001—1200 „	6	1
1201—1500 „	2	1
1501—2000 „	—	8
2001—2500 „	—	2
2501—3000 „	—	8
3001 and above	—	2
	23	23

Of the twenty-three years Jowari sowings were more than 2001 acres in twelve years, and the total yield of Jowari corn and Kadbi was deemed sufficient for the consumption of the villagers and their cattle and for normal standard of living. It may be safe to observe that these periods are neither continuous nor regular in succession, but a group of three to four may be classed as not abnormal in succession during the last decade or so, when cultivation was more than 2001 acres. It is also to be noted that mere cultivation alone will not be a sure criterion for classification as a normal year; it solely depends on the favourable weather conditions.

Ordinarily a large area under the Jowari crop, if favourable conditions prevail, is certain to give a good produce of Jowari grain, Kadbi, Kardi and grass; what may be emphasised is the intensive agricultural operations.

It is a very complex and complicated problem to assess the annual average out-turn of Jowari and Kadbi per acre for the whole of the village. Data and figures supplied by the Agricultural Department and by the crop experiments conducted by officers may not be inaccurate, but their application to other areas may give unsatisfactory results. In our village records the area under most crops is entered, but if it were accompanied by the amount of produce, it would furnish good and reliable data.

SEED

Villages for the most part in India were self-contained from the very earliest period. There was never any free communication with other villages in the days before the advent of the British Rule. The cultivator was everywhere isolated, ignorant and helpless. He knew his own village. With the extension of made roads, postal communications, railways, telegraphs, etc., the intercourse of villages among themselves increased enormously. The Indian peasants did not fail to adopt the practices prevailing in the West. Till the end of the eighteenth century, all over Europe the peasant proprietor cultivated primarily for subsistence, that is to say, as far as nature allowed, his aim was to live on the products of his farm. Now through Western and Central Europe he has found it profitable to grow for the market and to vary his crops with changes in price demand. Now India as a whole has passed the subsistence stage. She has adopted the system now followed by her Western cousins. The cultivator still buys nothing that he can produce, but in sowing his lands he has begun to look to the market. A portion of his land is grown with food crops for his consumption and the remainder with crops for the

market in a commercial spirit. Before the great famine of the seventies of the last century the cultivator used to grow ordinary food crops of cereals and pulses, and the surplus stock was stored up in his grain pits, granaries and barns. In other words he would hold up his crop. In case of famines or other calamities he had to fall back upon the stored grain for consumption. By experience he found that the commercial crops were not in the same keen demand every year; so he has been equally quick to turn from one crop to another. Sometimes in this process he falls out of the frying pan into the fire, but such occasions are very rare, unless there has been a boom in that particular crop or crops. The Agricultural Department has accelerated this process. The farms managed by the Department have had to overcome difficulties before any improved seed could be acclimatized in the locality. We know that difficulties arise in every field of enterprise, industrial as well as agricultural, political as well as social. Just as the Englishman would find it difficult to settle in India without some deterioration of fibre, so also in the vegetable kingdom it may be that every improved variety of seed must eventually deteriorate for want of some essential property required by the climate, the soil and the general conditions of the country. One seed may demand more water than is available; another matures too early; a third proves too attractive to the omnivorous insect; and what does well in the north may wither in the hotter south. Cotton known as N. R., Spanish pea-nut (ground-nut) and Jowari etc. were tried and were very successful. Acclimatization and development of seeds are very keenly watched and cautiously experimented with, by our conservative peasantry here; but efforts should not be relaxed, as improved seed is the shortest cut to an increase in the yield per acre, and in a densely populated area with few or no mineral resources and no rural industry, the yield per acre is all important.

It is important to remember that two decades ago there was little thought of agricultural progress in India, and that countries like Germany and France have taken a hundred years to reach their present level of development. In both countries there were fifty years of preparatory work before the peasant proprietor began to develop. In Germany the process was not so slow as in France, as the Prussian land-lord east of the Elbe, like the land-lord in England, was as quick to apply as he was quick to learn, and gave the peasant proprietor the lead he needed. This lead the peasant proprietor in France had, of necessity, in the main, to obtain from the Government. Up to 1860, in spite of some technical improvements, agriculture as a whole was still intensely traditional, and marked by the predominance of manual work, and by a resigned submission to the caprice of nature. India was still behind. Like her Western cousins she kept up her traditional custom in the matter of seed, machinery, water for irrigation from enormous dams and embankments, etc. The problem of seed for sowing never occurred to the cultivator as having the importance which has now been brought home to him. Hitherto the whole cultivation of India has been based upon seed stored promiscuously by the farmer or supplied by the Bania, whose only anxiety is always to get the highest possible price for the cheapest possible article. Pure seed, either of cotton, wheat or jowari or ground-nut, etc. was not obtainable. Even at the present moment the poorer cultivators cannot secure good seed. The better class of cultivators make it a point to select ears of corn here and there when the crops are threshed. The selection is generally left to women folk or adult striplings. Never has the cultivator taken care to watch the ears of corn and their development from their very conception. In a very few cases it was noticed that the ears of corn marked for seed were tied in pieces of cloth and in bundles on the standing crops. But such cases are few and

far between. They deserve notice and may give stimulus and incentive to others. The lesson is worth following. The selection of seed, specially of Jowari, is practised here to a certain extent for the ensuing season in choosing the largest heads of the present crop either in fields or on the threshing floor, but as even 'the largest heads' always contain underdeveloped and undeveloped seed either small or mediocre, the whole of the standing crop in one and the same field is not as good as it could be. Any casual observer may notice that the standing crop is a mixture of heads of Jowari of different sizes and weight. Why is it so? It is ascertained that the seed, though selected, is not of uniform size and weight. Experience and observation may show that even a single ear of corn, though selected, does not hold or contain grains of one and the same size and fully developed; i. e., some of the seed is big, some medium and some small. In some cases we get what the cultivator terms *Batuka*.* In order to separate the seed into grades the Agricultural Department have devised a set of three sieves, either or both for Bajri and Jowari crops, which cost Rs. 2-4-0 or As 12 per sieve. We would recommend their use by the cultivators. Again we know that in the Deccan villages which are liable to drought or which lie in the famine zone, the rainfall is often deficient for two or three successive seasons. The result is that fresh seed is not available even with good cultivators, because they have been able to raise no crop owing to the lack of moisture. The cultivator wants to tide over the bad season, and he consumes even the valuable seed which he took so much pains to preserve. The next year when he gets seasonable and well distributed rains, he is without any good seed in his store. He must go either to the Bania or to a town market, if there be any within easy reach, such as Ahmednagar for the village of Sarola,

* Jowari straw with small heads or no heads and of stunted growth.

provided he has ready cash with which to buy the seed. What about the poor cultivator whose holdings we class as fragmented (below five acres) or whose circumstances are strained? He wants to take time by the forelock, if and when the rainfall is by chance plentiful and seasonable. He runs to the village Bania and admits he has no resources and wants to have seed for sowing purposes. Now the astute Bania makes his own terms, in view of the credit of each cultivator. The system is known as Vadhi-Dhidi (वाढी दिदी), according to which the Bania is to get the quantity taken for seed returned with half as much again by way of interest. But in fact the rate varies from $1\frac{1}{2}$ to twice the amount advanced. None of the crops (except sugarcane) take more than five months to mature and be ready for the market. In other words the peasant has to repay the amount with interest at fifty to 200 per cent per annum. It may be contended that Tagai loans may be resorted to by the poor cultivators. We are sorry to state that Tagai loans are not so promptly procurable as to be of any use. There may be, at the time, no Tagai allotment available for the Taluka or district. The village Talati may be in some other village. The Mamlatdar may be touring in a distant part of the Taluka, etc., and so the cultivator can rarely get a loan in good time. It is the same sad tale with Co-operative Societies which offer no immediate relief. There is lamentable procrastination involved. It is suggested in certain quarters that purely Agricultural Banks in villages may be inaugurated, whose business would be to help the ryots with advances even on standing crops at reasonable rates of interest, so that agriculturists may benefit to the full extent of the value of the crops they grow. The advocates of rural Agricultural Banks urge that such Banks have achieved brilliant success in Canada and other countries. It is not a sound and practicable policy to be impressed by innovations and novelties, and immediately urge

their introduction in our villages. Try it, make an experiment of it for some years and in certain localities. Instead of doing this and wasting time and energy over such new things, it would be of greater benefit if the system of Tagai advances were so revised and modified that loans could be made easily and promptly. Now, there is a circular to the Collectors from the Commissioner, C. D. that advances to cultivators should not be made under the Agriculturists' Loans Act, because a cultivator can very easily find a small loan of Rs. 10 to 25 for the purchase of seed, etc. This statement can be readily controverted by any person who has been in contact with the masses of rural cultivators. What we would press and earnestly press for, is that the Tagai rules may be liberally modified, and there should be no difficulty, because the state has the power of summary recovery of arrears, whereas private money lenders run the risk, by advancing a loan, of having to file a civil suit for recovery, if payment is not voluntarily made. We think the cultivator is prudent in having recourse to a Bania or his money lender. In spite of the high interest, he gets seed at once to raise a crop which may leave him a surplus after making deductions for interest, etc.; otherwise he would have nothing to gain in any other way. It is simply gambling on the rain. We may safely state that the seed problem has not yet been properly solved and simplified. Let us allude to an incident in this very village. There was good rain on the tenth, eleventh, twelfth and thirteenth November for the sowing of wheat, gram or Jowari. Last year's rain had failed. There was no wheat or gram available with any of the cultivators here. Some of the well-to-do cultivators just ran down to Ahmednagar by train to purchase wheat or gram for seed, but the poor cultivator was in a bad way. Any delay would dry up the moisture available in the soil. We cannot help referring here to the cultivator's shrewdness. It is a village where most of the area is under Jowari. During

recent years it was the ryots here who introduced the seed of the Jowar known as Bedari (बेदरी) instead of the one they had been raising for many years past. Our enquiry indicated that the Bedari seed was heavier than the Kalbhondi seed, and whenever Messrs Ralli Brothers bought Jowari, they bought that which was heavier in weight than the other. There was then no full supply of Bedari seed available. We know that Spanish pea-nut (ground-nut) was already extensively grown in parts of the Presidency, but none ventured to sow it here. The seed was not procurable in the village, nobody knew when and how it was sown. At our suggestion some cultivators bought and brought Spanish pea and sowed it in a few patches very sparingly and cautiously this season. We would like to give details of the result of the experiment undertaken by one of the cultivators (on our advice) who sowed Spanish pea-nut. They are as follows:—

	Rs.
(1) Ten Seers of ground-nut seed,	3-0-0
(2) Sown in Jeshta, Mrig Nakshatra.	
* (A) Pabhar sowing one day.	2-8-0
* (B) Harrowed by Kulav one day	1-8-0
(C) Hand weeding once 4 women at Annas 3 per day for 2 days.	1-8-0
* (3) Raised on rain and one well-watering	4-0-0
(4) Crop taken out, 3 women at Annas 4 and a man at Annas 8 for two days.	2-8-0
* (5) Carting to the thrashing floor, one day.	1-5 0
(6) Nuts cut and separated from vines 4 women at Annas 4 for three days.	3-0-0
One man at Annas 8 for three days.	1-8-0
Total cost of production.	20-14-0

* These items involve no ready cash payment.

It was reported to be a success. The cultivators have themselves adopted two out of three methods of obtaining varieties, viz., selection and acclimatization; they do not even know or follow the method of hybridization.

We have noticed that a good cultivator makes it a point to select seed from the current crops for the next year. When the seed is ready and prepared, it is mixed either with ashes of cow-dung cakes or saw-dust. It is put into earthen pots or stored in wicker ware receptacles called Kanings. The mouth of the pot or Kaning is covered with hay and spread over with mud or cow-dung. These are allowed to remain in open places protected from rain, water or heat. Weevil cannot find access to the inner contents of these receptacles. Heads of corn are also chosen and collected and left suspended from the ceilings of the houses in the open air. The seed is separated from the husk when it is needed.

We give below the general rates of seed for both Kharif and Rabi crops:—

Kharif	Seers per acre	Rabi	Seers per acre
Bajri	5	Jowari	6-7
Moog	10	Wheat	
Kulthi	10 to 20	(1) Dry	25
Tur	6	(2) Irrigated	45
Sesamum	1 to 1½	Gram	35 to 40
Maize	6	Kardi	10
Ground-nut		Linseed	5
(1) Japanese	35		
(2) Indigenous	30		

Sometimes the rates may vary.

MIXTURE OF SEEDS

Why is it necessary to have a mixed crop? Mixed crops are raised both in the Kharif and the Rabi season. There are many advantages in growing mixed crops;—

(a) The principal crop and the mixed crop do not mature simultaneously, nor are they reaped simultaneously;

(b) The mixed crops are commonly leguminous crops which send their roots deep into the soil, and thus they bring up manurial or fertilizing elements from below up to the surface of the soil to nourish the principal crop such as Bajri or Jowari;

(c) It takes longer for the leguminous crops to mature and to be reaped, so that they can get more space at the stage of development which follows the removal of the principal crops;

(d) The leguminous crops are generally leafy and tend to keep up or retain moisture in the surface layer of the soil for a longer time, and thus help to keep the principal crop supplied with moisture.

It is not absolutely essential that the principal crops should invariably be sown with all or any of the mixed crops. The principal crops such as Bajri, Jowari, gram and wheat may be sown either alone or mixed with others. It depends on the season and climate. etc. We give the proportion of mixed crops, as usually, adopted here;—

KHARIF

(1) For every four seers of Bajri seed, $\frac{1}{2}$ seer of Hulga, $\frac{1}{2}$ seer of Mug or $\frac{1}{2}$ or $\frac{1}{2}$ seer of hemp (Ambadi) or $\frac{1}{2}$ seer of Jowari with a small quantity of seed of Chibhad and Sherani, if available.

(2) In addition to the mixture separate rows are sown of Tur, Rala, Karhala, Chavali, Bhend, Gowar and Til.

(3) Hulga, Til, Tur and Mug are also cultivated as separate and independent crops.

RABI

Jowari is mixed with Kardi at four seers to one seer mixed; i. e., it is sown in the proportion of four seers to one seer. Separate rows of Kardi are also sown along with Jowari

Gram is mixed with Kardi and Jowari or both. Four seers of gram are mixed with $\frac{1}{2}$ seer Jowari or $\frac{1}{2}$ Kardi or both.

In this village cotton is not yet cultivated to any appreciable extent, and so there is no need for any mixture. Many a crop is sown without any mixed crop.

Linseed is cultivated in rows along with Jowari, or separately and independently, or is sown near the edges of fields.

During our rambles amidst the Jowari crops in the fields here, we noticed ear-heads of Jowari affected with smut, locally called Kani (कानी). We were surprised to find that no one had taken advantage of the remedy provided by the Agricultural Department, which has placed the ryots under great obligation by having small packets of copper sulphate kept for sale at two Annas a packet in the Taluka, either with the Agricultural Overseer or the Mamlatdar. Instead of copper sulphate, sulphur dust is now used. It is a very simple process. Take ten Tolas of sulphur dust and mix it with sixteen seers of Jowari seed. The mixing is to be done for about 10 minutes. This costs 1 pice per acre.

Smut is a vegetable parasite. The signs of the disease cannot be mistaken. When attacked by smut, the grain of the whole or part of the ear-head of Jowari is turned into peculiar black powder, consisting entirely of the spores of the smut fungus. It is carried by the spores sticking to the seeds. These contaminated seeds, when sown, carry with them the smut spores which germinate along with the Jowari, grow inside the stem, and when ripe attack the ear-heads.

The Agricultural Department complains

- (1) That the majority of cultivators sow, or rather put into the soil, a larger quantity of seed than is required;
- (2) That the sowings are made in such thick rows that the growing Jowari has not space enough to develop;
- (3) That the grain is small and the out-turn is less than what Government farms yield.

The cultivators contend that, when thinly cultivated, the quantity of Kadba is less than that produced by the method of the Department, and that the straw becomes thick and is less suitable for fodder for the cattle.

REAPING AND HARVESTING SEASON

The different Kharif and Rabi crops take from three to seven months to ripen and mature from the time of sowing.

The Kharif harvest season, therefore, normally extends over the period from September to November, the Rabi season from January to March or April.

In a normal year the principal crops are due for harvesting after the following periods from the date of sowing:—

CROPS (KHARIF)	PERIODS (MONTHS)
Rala and Karhala	3
Sesamum, Mug and Bajri	3 to 3½
Hulga (Kulthi)	4
Cotton*	4 to 4½
Ambadi (Hemp)	4 to 5
Groundnut	
Desli	5 to 6
Japan	5 to 5½
Spanish	3½
Tur	5½ to 7
CROPS (RABI)	
Jowari	4 to 5
Gram	4
Wheat	5
Linseed	4½ to 5

Much the most important harvest of the year is that of Jowari. It is the most widely cultivated crop covering from

* Cotton pickings are undertaken thrice in the season

two-thirds to four-fifths of the whole arable area of the village in a normal year. All the fields are sown about the same time, and so are ripe for reaping almost simultaneously. The work of harvesting involves a great deal of manual labour, as the stalks of Jowari are uprooted by hand, not cut as in some regions, left lying for a day or two, then gathered and tied in sheaves or Pendhyas (पेंढ्या) which are collected and piled in temporary stacks, until they are ready to be removed for threshing.

Although threshing operations can be spread out, the reaping work must be done at once when the crop is ripe.

There is, therefore, a great demand for labour working at high pressure, and hence at this season the daily rates of wages go up by 25 to 40 per cent, or with a specially good crop even higher. Part of this rise in wages is in any case justified by the fact that the work is done at higher pressure and with longer working hours than at other times. It is at this season that the labourers have to earn a substantial part of their remuneration for the year, to make up for the periods when work is slack and there is no employment for them; or even in good years to enable them to save something to pay off debt or to tide them over poorer years in future.

The subsequent work of preparation and threshing and stacking of Kadbi with the harvesting of minor crops provide sufficient work to keep most of the members of the cultivators' families and the labourers of the village steadily employed for a considerable period, 2 months and more.

It is during the Jowari and Rabi harvesting season that the agricultural life of the village is at its most vigorous. Everyone is busy and energetic, the farmers are anxious to get in their principal crop of the year as rapidly as possible for disposal, the labourers to make as much as they can as their share of the produce of the village land.

The other crops are smaller, their harvesting seasons are spread out and overlap, and they do not require the whole labour of the village to deal with them like the Jowari crop. Hence they do not give rise to such an abnormal temporary demand for hired labour, or such a great seasonal rise in the rates of daily wages.

THRESHING FLOORS

There is no land assigned in this village as a threshing floor for the use of cultivators as in other villages in the Deccan and Khandehs. (See section 38 of Land Revenue Code, Bombay, Act V, 1879.) In most villages of the Deccan and Khandesh, the State has, according to the needs of the village, set apart an area of land in the neighbourhood of or contiguous to the village site for the use of the cultivators as threshing floor, where every individual cultivator is allotted a small portion of the land, say, from 2 to 10 Gunthas, which he takes care to enclose with a temporary thorny hedge in order to keep away stray cattle, wild animals, petty thieves, etc. The cultivator has the exclusive use of the plot free of any fee or charge. He takes pains to make the ground hard by ramming or other means, gets it cleaned and cow-dunged. He often plants Nimb or other trees to afford shade and shelter to men and cattle during the mid-day heat. He enjoys the use of the same plot year by year for generations, and at times he puts up huts thatched with straw as stables for his cattle. He sets up his threshing apparatus each year as described on the following pages. Such an assignment of land for threshing floor is conducive to the convenience and comfort of the cultivator. It saves him from the trouble of constant watch and ward by day and night. Some neighbours are always there to keep an eye on the crops, etc. lying in his threshing floor. In Sarola there is no land set aside for this purpose. Every cultivator makes a temporary threshing floor in

the most conveniently situated part of his own fields, though it may be more than a mile distant from his house. Each year he prepares a piece of ground, say from two to five Gunthas, as a threshing floor. The process is simple, but takes up a good deal of time and energy. He gets the plot of land cleared of Bajri or Tur stubble, etc. if any, and sweeps away all the small stones, debris and rubbish off the ground. He waters it from his well, if there be any on his land, or carries water in earthen pots on his head or in carts from the nearest source of water. He has to get it rammed or trodden by his bullocks. He makes the surface as hard and as smooth as he possibly can. This precaution is needed so that no earth may get mixed with grain or corn, and that no grain or corn should find its way into the ground through the cracks or crevices in the surface. While the ground is being prepared, a wooden pole called Tivada, six to eight feet high, is fixed firmly in the centre. A ritual is customarily performed in connection with the fixing of the post in the Leccan villages, and it will be dealt with separately under the head "Agricultural Rites and Rituals." Even before the threshing floor is ready, the cultivator arranges to have all the sheaves, bundles of Tur, sesamum stalks, bundles of Mug, Math and Kulith brought in head loads or in carts, as he finds it convenient, unless his Kharif crops are insignificant and small in quantity. In that case he is saved this bother, and can just carry the crops home to his village, where his wife and other women of the household thresh the crops by means of wooden mallets called Mogari, and the grain separated from the husks is winnowed once or twice, and the cleaned grain is stored in baskets or bags. The Kharif crops in the open are always carefully arranged in heaps or stacks, so that any accidental rainfall, high wind, dust storm, or any other unforeseen natural calamity may not spoil or damage the sheaves. The stacks are hedged around with Babul thorns. Generally a cultivator finds no time to get the

Kharif crops threshed as soon as they are reaped and harvested, because he is very busy with other operations which need his prompt attention, such as the sowing, watering or watching of Rabi crops. These operations demand his constant and vigilant watchfulness, until the Rabi crops are reaped and harvested. The reaping of Rabi crops generally commences in the second week of January. Jowari is the crop that is first removed. Then follow other crops, such as wheat and gram, when they are ripe and matured. Reaping, harvesting and carrying of one crop after another are carried on in succession and according to the convenience of the cultivator. He makes separate and distinct stacks of Jowari, wheat, gram and linseed in or near his threshing floor. He keeps them quite wide apart, so that any conflagration may not consume the whole. When ready and prepared in this way, the cultivator hires women folk as labourers to cut the heads off the Bajri or Jowari stalks. The ears of corn are then generally spread over the whole surface of the threshing floor within a radius of 7 to 15 feet from the pole, to the depth of about two spans. When they have been thus evenly spread, the cultivator fastens a piece of long rope to the pole, and from the other end yokes two to five pairs of bullocks in a line with their mouths muzzled. A muzzle is made of a net of hemp fibre twisted together in knots. A pair of muzzles costs Annas 4 to 6. The muzzle is put on over the mouth and nose of the bullocks, and tied round with a piece of string to prevent the bullocks from eating any grain or ears of corn. During the process of threshing of wheat, bullocks are taken round without any muzzle. A woman ordinarily breaks off 160 to 200 sheaves a day, and is paid in Jowari grain at 1 to $2\frac{1}{2}$ seers per 100 sheaves after the winnowing of grain is over. Each woman is ready every evening to have her day's work measured by the cultivator, who takes a note of it in writing; but the woman picks up a small stone for every hundred pullies and sheaves to represent the quantity of

her labour. On her return home she draws perpendicular lines on the wall of her house, each line representing one hundred. Even women with small babies are engaged on this work. It is stationary and sedentary, and shade can be made by putting up a sort of hut by setting some of the sheaves erect to keep off the heat of the sun. The bullocks are made to go round the pole until the ears are fully separated from the stems, stalks and chaff. This process goes on till the whole of the Jowari crop is well trodden and separated, grain by grain. This mixture of grain, husks and chaff is called Madan (मदन). When the ears have been converted into what we call Madan, the next operation of winnowing is taken in hand. It is carried on most easily when the wind is blowing moderately. A high tripod, called Vavadi (वावडी), of wood is set up on the threshing floor, and a man standing on it shakes out baskets full of Madan, when grain, chaff, stalks, leaves and husks are separated in different heaps on the surface of the ground. Some of the grain is found to be not fully free from husks, etc., and is again subjected to the tread of the bullocks. The man standing on the tripod is served with wicker-woven baskets or other such receptacles full of Madan, by another person standing on the ground. A third person is busy in brushing. The operation of winnowing is rather wearisome if the wind suddenly stops, or when it is dusty and high, and the men engaged are forced to stop it. This method is very primitive and slow. Threshing and winnowing machines are available for sale in the market of Bombay, but they are costly and beyond the purse of an ordinary cultivator. Their mechanism is complicated, and no local smith is able to mend them or even make slight repairs. So these machines and arguments in their favour are commonly out of court, as far as our cultivators here are concerned. Even the supply of any such machine at the cost of the whole village population is not possible for lack of mechanics in the village or in any near

town. The same method of threshing is used in the case of Bajri. Tur is threshed as follows:—The Tur plants lie in bundles, well dried just near the threshing floor. The pods of Tur are separated from the hard stalks of the plants and are spread over the surface of the threshing floor and are similarly trodden by pairs of bullocks, till the Tur grain is separated from the husks. If there is only a small quantity, it is threshed by women folk by hand and the grain separated. The stuff is then winnowed in the same way as Jowari or Bajri, Mug, Math or Kulthi. We have stated that the whole of the cut plants are lying near the threshing floor. These dried plants are laid down on the floor and bullocks are driven over them, and if the quantity is small, they are threshed by men or women with long sticks, till the plants are broken so small that the grains are easily shifted from the chaff. So we get the grain ready. The chaff, husks and leaves of the plants form a good fodder for the cattle. It is stored in wicker-ware baskets or receptacles for this purpose. The stalks of the plants are utilised for making baskets, receptacles, etc. by the cultivator. There is a demand for these in the market at certain times. It can be, for all, a home industry, simple and easy.

SESAMUM

Sesamum is not regularly threshed. The crop is reaped as soon as it is ripened, but before the pods are fully opened or fully dried up: otherwise if the pods are blown about, the grain is sure to drop promiscuously on the place where it is and be wasted. The sheaves of sesamum are rather wet when cut. They are carried to the threshing floor in the same state, and stowed erect so that the grain may not fall on the ground. It is in this way that the sesamum seed is collected on a piece of cloth such as a blanket or Sutada, etc. It is a very light seed and even a slight wind may carry it off; so a lot of care has to be taken to prevent it from being blown away.

The stalks of sesamum may, at times, be used for thatching or for partition walls. If there is any surplus, it is used as fuel.

RABI CROPS

Of the Rabi crops we have treated of the threshing of Jowari. We have shown what labour and energy is needed to prepare Jowari grain. Jowari stalks are used as fodder for the cattle. If the cultivator has more Kadbi than he wants for his live stock, he piles it into stacks which are either square, rectangular or round. They are made tapering at the top with a slope, so that rain water, if any, may run off. In Sholapur district we have seen that clods of black cotton soil are heaped on the top, that the upper and outer layer may become water-proof, and carry off water if and when once they are well soaked and turned into a sort of plaster. *Ensilage is unknown in this village.* As it is in close proximity to the town of Ahmednagar, any surplus stocks of fodder are sold in the Bazar if prices are high and favourable.

GRAM

The plants of gram are covered with Amb (अंब). When they are cut, harvested and brought to the threshing floor, they are thrown over the surface of the ground, and the bullocks are made to go round and tread on them, so that the grain may be separated from the husks, chaff, leaves, etc. The mixture is then winnowed. Gram is disposed of like any other grain, and the residue is kept and preserved for the consumption of cattle.

WHEAT

Sheaves or bundles of wheat are left lying near the threshing floor. The heads of wheat are separated from the stalks and are trodden by the bullocks going round the Tivada till Bhoosa and grain can be easily separated. The stuff is winnowed and the grain is filled in baskets. The Bhoosa or chaff serves as fodder for the cultivators' cattle. The straw is

useful for the thatching of poor men's huts or for partition walls. It was, at one time, suggested that the straw might be manufactured into straw-boards for which there is a good market in India. This might provide a possible subsidiary business for the villagers.

KARDI (SAFFLOWER)

Safflower is sown either as a mixed crop with Jowari or wheat or as a principal crop, but here we find it as a mixed crop with either Jowari or wheat or gram in dry crop. The mixture is in the proportion of five to one or less.

The Kardi crop ripens late, and it is harvested after all the other crops have been reaped. The plants and their leaves are full of prickles and thorns, and cannot be easily handled and touched. When the reaping is commenced, the reapers get long scythes and cut the plants from their stalks close to the ground. Stubble is left here and there. No attempt is made to carry the Kardi crop to the threshing floor, nor is any attempt made to bind it into sheaves or bundles. The stalks are left in big heaps in or near the place where they are, cut as they are; so the heaps are left lying over the whole area of the land. Kardi is the last item in the programme of the cultivator's threshing operations. The Kardi crop is not carried over to the threshing floor, but the heaps are brought into a central place in the field where a rough floor is prepared for it. All the heaps are gathered together, when some of the men wrap themselves in country blankets (cap-a-pie). They provide themselves with long sticks 8 feet long, with which they thresh the dried plants until the grain is out of the pods and separated. The whole crushed stuff is then winnowed and the Kardi seed placed in baskets. The Bhoosa is full of prickles and is of no use. It is, therefore, burnt there and then. The ashes serve as manure if they are well mixed or buried with the earth. It is a nuisance to leave the stuff to be blown about by gusts of wind, because it may cause injury to the eyes of men and animals.

THE GROUND-NUT CROP

The ground-nut crop requires no threshing; but as soon as the ground-nut is dug out of the ground, some of it is sold wet for consumption. A large quantity of ground-nut cannot be disposed of in this manner for local consumption, as the demand is limited. When the ground-nuts are taken out of the soil, they are carted home and spread out to dry in the cultivator's court-yard or on the roof of his house. They are sold in the husk and are not generally shelled, as this is a costly operation, and it causes some loss if the nuts are irregularly broken or crushed. Women are engaged if any shelling is undertaken with all risks. During shelling operations some of the nuts are always eaten by the workers. There are machines for shelling on the market, but none is in use here.

The most important crop here is Jowari, and when it is fully threshed, a Ras (heap) is made up on the surface of the threshing floor, and the heap is measured with reverence, and the operation is invested with sanctity. As the measurement proceeds the Jowari is packed in gunny bags for removal to the village. It is the Adholi (two Seers) measure that is used. Before the measurement begins, a sort of Puja (worship) is performed of the heap of Jowari. The Puja ceremony will be dealt with under Agricultural Rites and Rituals.

AGRICULTURAL RITES AND RITUALS

The cultivators here have a lot of petty rites and rituals in connection with various agricultural operations.

We can only refer to a few of them which are considered important. The Hindu calendar, according to the Shalivahan Shak which is recognised in Maharashtra, is used for all such purposes. The first day of Chaitra is the beginning of the New Year.

One of such rituals is in connection with the sowing of Jowari. When the season for sowing is coming near, the

house-wife takes up the cleaning of Jowari seed from the store. She cleans it, spreads it in the sun, and tries to shake out and separate the big seed. After exposing it to the sun for a couple of days, she keeps it in a receptacle until the morning of the day for sowing, when the owner is careful to be up at early dawn, and manages to collect some quantity of cow's urine in a pot, with which the seed is sprinkled and moistened before it is carted or carried to the field for sowing. Whether this traditional custom is followed on superstitious grounds or on account of some beneficial effect of chemicals contained in the urine, or with the idea of religious purification cannot be explained by any of the cultivators. It reminds us of the present day use of copper sulphate. This process of purification is only adopted in the case of Jowari seed

There is a different ritual for wheat seed.

The Dasara Festival is celebrated in Deccan villages in honour of Devi (The Goddess) who is known popularly as Kali, Bhavani, Durga or by other names. The ceremony of the installation of Devi is a long one, but we confine ourselves to the ritual with regard to wheat. A small quantity of black cotton soil is collected from the fields and is mixed with three handfuls of husked wheat seed. A heap of the mixture is piled in front of the image of the Goddess at a short distance, is made wet with water and is covered with a small earthen jar full of water, so that the water may keep the heap moist and help to germinate the wheat just in front of it. The installation of Devi is celebrated in the morning of the first day of the month of Ashwin (the bright half), and the ceremony and worship continue for ten days of the month, at the end of which a special more elaborate formal ceremony of worship is performed. The custom of sacrificing a sheep, which is common in some villages in the Deccan, is not a public observance here, but anyone is free to make a sacrifice of a sheep in fulfilment of his or her vow.

During the brief space of ten days, the wheat seed, with daily waterings, springs up exuberantly. It is assumed to be a good omen or foreboding for the future, if the shoots and seedlings are thriving and beautiful. It is taken to indicate that the Rabi crops will flourish well, and that success will attend the owner in all his undertakings and enterprises. Men and women of the household take off some of the shoots and make bunches to wear in their headgear or in the braids of their hair. This they do reverently.

Having given some account of those connected with Jowari and wheat, we need not multiply instances of similar rites.

THE THRESHING FLOOR RITUAL

The threshing floor ritual is the most important of all. It is performed either before the winnowing of the Madan takes place, or after the Ras stands ready for measurement.

The whole business of agriculture in its fullest sense, from beginning to end, is fraught with anxiety, trouble and danger to all concerned, the cultivator, his family and his servants, with regard to his fields, crops and cattle. It is not a temporary or momentary burden of responsibility for a few hours or days, but continuous and uninterrupted for long months.

It is hard to efface or forget them. It is said and aptly said that the cultivator has the sword of Damocles hanging over his head till the Ras of Jowari is over, and it is stored in his granary in his homestead. When the Madan of Jowari is ready, he feels that he is happy and fortunate, that he is out of the wood. So he becomes at last quite sure of his annual harvest, and he is driven to pacify or propitiate spirits, demons, demi-gods, or whatever powers he conceives of. Whether rightly or wrongly, we need not consider. For him it is right and necessary.

The sanctity of the threshing floor, where Jowari grain is lying, approaches that of a sacred temple. No one walks across

the floor with shoes on or bareheaded. The sacrificial meal in honour of the various deities and for their propitiation must be prepared and all cooking done outside the boundary.

The ceremony, which is regarded as solemn and secret, is performed after night-fall. All the things required in connection with the worship are kept ready, and the owner proceeds to worship and offer the meal to the different deities:—

- (1) The five Pandavas and their consort Draupadi,
- (2) The water deity or nymph in the well,
- (3) The field deity or sylvan deity who is known by different names—Maylai, Navlai, Mhasoba, Biroba and others.

After going through these formal ceremonies, the owner receives his neighbours, relatives and friends to partake of the food prepared on the occasion nearby outside the threshing floor.

At this time the cultivator feels happy and contented at the end of his year's labour, if the season has given him even a moderately good harvest, and does not grudge what is required to entertain the friends and neighbours whom he has called to rejoice with him and worship the powers that have enabled him to reap it.

We found from our enquiries that the minor rituals are now neglected, but that the sacrificial ritual at the Ras is still faithfully performed.

A sheep or fowl is killed, and after the worship of the image of the goddess Devi near the floor, which is smeared with red iron powder, and sprinkled with Halad (turmeric powder) and Kunku (red powder), the meat is offered with a small amount of cooked Jowari, and cooked or crushed seed called Ghugarya or Kanya is cast in all directions outside the floor to pacify and propitiate the spirits. It may be noted also that the cultivator takes care to bury under the centre pole or Tivada, when it is being set up at the beginning, the following things or such of them as are available:—

- (1) Eggs,
- (2) Shendur (red lead powder),
- (3) Bibe (fruit of a plant),
- (4) Kāvadi (cowrie),
- (5) Rui leaves,
- (6) Apta leaves,
- (7) Iron nails,
- (8) Leaves of Jambhui stalks,
- (9) Leaves of mango tree,
- (10) Leaves of pomegranate,
- (11) Leaves of lemon tree or a lemon.

Our informant is an old man who adds that now-a-days with the materialistic ideas of the West, none can try to understand the theory underlying the agricultural ritual, no one is interested in it, no one is led to believe in it. He emphasises his assertion that the seed grain contains the Jiva or Shakti, the Life or Power of the future plant.

Incidentally the formal more or less public measurement of the Ras in each threshing floor in the village after the harvest, the correctness of which is assured by the religious sanction given to it by the accompanying ceremonies, is of importance in the economy of the village, as it sums up the resources of the whole village, and furnishes evidence of the ownership of each of the cultivators.

In its theories and its practices the language and the methods of the East are not those of the West.

IRRIGATED CROPS

The raising of an irrigated crop is a laborious task for the cultivator. In this village the only irrigation carried on is with water lifts, i. e., by means of Mots. A Mot is a leather bag or bucket for lifting water from a well to the raised surface of the ground. What quantity of water can a full Mot contain? What power is necessary? How much water is needed for the crops? All these questions

can hardly have one answer. The depth of water and the distance to which it is to be taken are the main facts involved. On an average it is computed that here 30 Mots full of water can be drawn per hour. The Mot can be worked for $8\frac{1}{2}$ hours a day (7 to 11.30 A. M. and 2 to 6 P. M.). Even if there is plenty of water in the well, the capacity of the Mot may vary, but 200 to 225 Seers of water may be taken as the average quantity drawn up. The area of land watered may also vary according to the distance of the plot from the well and the quantity of manure which has been applied. From our study in the village it may fairly be assumed that 8 to 10 Gunthas of land can be irrigated daily. What do the daily working expenses amount to? A calculation may be made as follows:—

(1) Feeding charges of four bullocks including grain etc. per day	Rs. 1-8-0
(2) The Mot driver's daily wages	„ 0-8-0
(3) The water distributor's wages a day	„ 0-6-0
	<hr/>
	Total Rs. 2-6-0

CHILLIES

Good red fully developed chilli pods are selected and the seed is separated from the red husk. A small plot of land is well harrowed and is watered before the seed is sown broadcast. The seed springs up after a week or so. The young sprouts are very tender and liable to be scorched by the excessive heat of the tropical sun; so the cultivator takes care to protect them from the risk of being burnt up by means of covers. The young stalks need watering twice or thrice before they are fully grown seedlings ready for transplantation. These are sown in beds measuring 5 feet \times 7 feet. During the period of germination a top-dressing of ashes of cow-dung cakes is applied as a sort of manure. When the seedlings are ready for transplantation, the bed is watered and women folk take out the young

plants with their roots from the ground and plant them one by one in a row in the bed during the month of Jeshta (June-July). After transplantation the seedlings require watering every week for 18 to 20 weeks continuously. Before the plants are in flower, they are top-dressed with ashes of cow-dung cakes from time to time. Green pods of chillies were sold at $1\frac{1}{2}$ Seer a Rupee. At present they are sold at $2\frac{1}{2}$ Seers a Rupee. Jagree (raw sugar) is sold at $5\frac{1}{2}$ Seers the Rupee and Java sugar at 3 Seers per $13\frac{1}{2}$ Annas; so that weight for weight chillies are about twice as valuable as sugar. They are, therefore, likely to be a paying crop for years to come. The crop flowers thrice and, therefore, watering is very necessary.

GARLIC

The method of sowing garlic is very peculiar. There is no seed for any transplantation of seedlings, but cloves (पक्कडा) are taken and put with the hand separately one by one under the ground in rows in a bed. It is a crop which requires very heavy watering. It is watered 16 to 18 times, at weekly intervals.

MAIZE

This is a fodder grain crop, which is sown in the hot weather to provide fodder for bullocks and ears of grain to men, if there has been a shortage. The crop requires watering thrice at an interval of 10 days. It is grown in beds.

BRINJALS (EGG PLANTS)

Seedlings are prepared and sown in rows in beds. They, too, need to be watered 16 to 18 times at intervals of 6 days. There are many varieties of brinjals. They can be grown almost the whole year round. The crops are matured in 10 weeks after the seedlings are planted.

BAJRI

It requires at the most one or two waterings, if the rainfall is insufficient. A fortnight is a very convenient interval.

All these crops are generally sown, or being sown after the first rains. There is no necessity for watering them by means of irrigation, if the rain is falling from day to day, or if there is enough moisture in the soil.

Of the Rabi crops Jowari, wheat and gram are cultivated in garden land and in rich dry crop soil as well. The latter grow to maturity when there is enough moisture, otherwise the crops are poor. Garden crops do not require to be watered, if there are good late October and November rains, or if the moisture is sufficient. But even then the gardeners do not fail to give waterings in order to raise a bumper crop. The out-turn of the irrigated crops is invariably greater than that of the purely dry crops. The usual numbers of waterings in the case of Rabi crops are given below:—

(1) The wheat crop is watered 4 to 6 times with an interval of 10 to 12 days.

(2) The Jowari crop is watered 5 to 6 times with an interval of 10 days.

(3) The gram crop is watered 3 to 4 times with an interval of nearly a fortnight.

For these crops no regular beds are prepared, but channels for the conveyance of water are dug in the land. The numbers of waterings given above are maxima, on the assumption that the rainfall is deficient and moisture depleted, and there is a good supply of water in the well.

THE WELL AND ITS SURROUNDINGS

Most of the wells in the village lands are circular (with a diameter varying from 10 to 20 feet), and are constructed of dressed or undressed stones with depths varying from 30 to 50 feet or more. Generally rock is reached as a foundation or base on which to raise the side walls. According to the quantity of water available, one or two *Tharolas* are made just at the mouth, either on one side or on opposite sides, where the usual apparatus and imple-

ments for drawing water are set up and provided. In a majority of cases the design of the Tharolas is not as good as possible for the purpose which they are to serve; because some of the water drawn out always finds its way back into the well, a most obviously wasteful defect. The Tharola is often not merely leaky, but is in some cases not a properly designed structure at all. The Tharola should be built of well dressed stone in chunam and mortar; the base or surface should either be of Shahabad stone or well-polished and smooth trap, or paved and plastered with cement and concrete. It should be water-tight. Not a single drop of water drawn out and poured in the Tharola should be allowed to escape or soak away. It should all go into the channel. The sides of the well ought to be higher than the surface of its immediate surroundings so as to avoid seepage, etc. In the case of some wells it was noticed that the mouths were lower than the level of surrounding and adjacent ground. No shrubs or plants or other vegetation should be allowed to grow in the stone-work of the side walls or the adjacent ground. To allow this is not merely negligence but connivance on the part of the owner. It is his first duty to uproot and remove all wild vegetation, shrubs, moss and plants. It involves no monetary liability. Dung heaps and manure should never be deposited within 50 to 100 feet of the well, nor should any pit be dug, or any pool of water allowed there. Cow-sheds should not be built less than 30 feet from the well. No debris, earth or Muram should be stored near it or allowed to accumulate there. The slopes or ramps (Dhavas) for drawing operations must have a regular even surface and be kept clean and free from dust with a regular gradient. The upper surface of the inclined plane must be made hard and smooth. Even in the monsoon the slopes will then be free from mud and sloughs. Dung of the working bullocks dropped on the inclined plane should be immediately removed,

At the end of the day the surface should be cleaned. The slope should be shaded and a few shade trees planted near the sides of the slope, so that the operation of drawing water need not be stopped owing to the heat of the summer sun even at noon, or may be continued for longer hours than at present. Apart from the greater comfort of both men and bullocks, this would enable them to do more effective work. Instead of shady trees a high bower may be made with such creepers as spread over it to provide shade.

The use of an earthen channel for conveying water, say at 10 to 15 feet from the Tharola, is wasteful on account of the soakage and evaporation of a large amount of water. Now it is more often than not infested with Harali and other grasses which naturally absorb on its way a certain amount of water before it actually reaches the standing crop for which it is meant. The longer the channel for carrying water the more wasteful is it of water: it is calculated that 30 per cent of the water drawn from the well is wasted in this fashion. Can such wastage not be eliminated? Is it beyond the power of the cultivator? Unless the available resources are economised and husbanded, no improvement is fully assured. So it is incumbent on the cultivator, if advisable, to adopt any of the systems detailed below:—

(1) At least from the well to the nearest point at which water will be put into the land, the channel should be constructed of impervious material, instead of earth, e. g. stone or brick masonry, Shahabad slabs, concrete, iron pipes or sheet earthen ware pipes, channels, or wooden pipes;

(2) So far as the course of the channel is permanent and has not to be altered from time to time to suit changes in the crops or plots, it should be made as nearly water-tight as possible, either as suggested above or by making the lining of the earthen channel of carefully selected materials like the linings of the large irrigation canals;

(3) Where earthen channels are the only practicable methods, and some soaking of water into the banks is inevitable, this should be utilised for growing suitable shrubs, plants or trees along the channels, the roots of which will not damage the channels or spread over the adjoining plots.

Now the improvement of methods of irrigation of crops in their own beds deserves the cultivator's notice, because it is often carried on perfunctorily and carelessly. Here the amount of water wasted by over-doses is often very great. Instead of the crop deriving any advantage or benefit from the excess water, it suffers in the long run. Like human beings the crop has a system, has powers of assimilation, digestion and nutrition. So excessive irrigation must be avoided as carefully as under irrigation. No definite amount of water can be prescribed as essential for any crop; it may depend on many factors; but weekly waterings, if punctually and intelligently given, should not usually exceed 1 or $1\frac{1}{2}$ inches at the most. The condition of the crop must be carefully watched; whether it is thriving and improving or deteriorating. If the latter, it is for the skilled cultivator, with his expert eye, to diagnose the cause and apply any remedy that is available to him.

Let us think how an exact amount of water is necessary. The Darewalla has, it is true, no means of making calculations and reckonings of the amount of water at hand at the time. But at present he follows a method. When the beds are new, the ridges are high, and water is let in so as to come up to the edge of the ridges; and as soon as water let in through the course runs back or reverts to the original course, it is inferred that the bed is fully irrigated. When after some weeks the ridges become compact and firm and low, water does not rise to its previous level, i. e., less water is then enough to fill the beds.

As to whether this reduction of the dose of water, as the Bandhas settle with a uniform watering interval, corresponds

roughly to the requirements of the crop, we are not qualified to give an opinion.

We would suggest that the scientific study of the utilisation of well water with the least possible waste is of almost greater economic importance than that of maximum utilisation of irrigation water from storage dams or river canals, because in the case of wells every saving of water means an exactly equivalent saving in the current expenditure on labour and bullock power. In canal irrigation the expenditure—mainly capital on canals—is fixed in advance, and the quantity of water available is fixed each season by the nature of the rainfall; so that wastage of water is of primary importance only in years and in seasons in which possible demand exceeds supply. In the case of well water every separate bucketful of water involves an additional expenditure of labour.

HEDGES AND FENCES, ETC

The crops and the fruit-trees grown on garden lands irrigated under well-water need to be enclosed with hedges and fences to protect them from cattle and wild animals. Different methods are adopted by different cultivators. They are as under:—

- (1) The making of hedges of cut Babul and other thorns and bushes;
- (2) Planting of prickly pear;
- (3) Planting milk bush;
- (4) Rearing wild aloe plants;
- (5) Wire fencing either barbed or simple;
- (6) Planting of live hedges of thorn shrubs, etc.
- (7) Combinations of all the above;
- (8) Planting of Nirgudi plants.

The Dhond and Manmad Railway line runs through the whole of the western side of the village, and the line has a wire fence on both sides throughout its whole length. There is on the line only one gate giving access to any of the lands beyond the line: there are two bridges over Nallas through

which the land on the other side can be reached. There is a turn-stile on it. So the railway fences serve a very good purpose and shut the village cattle out. A stray animal can very seldom pass across the line. It is probably on the whole an advantage or a blessing in disguise as the villagers perhaps more accurately put it. The cultivators on the other side complain of the inconvenience they find in reaching their land by a circuitous route from the village site and the delay in getting to their individual parcels of land. At times when the Nallas are in flood in the rainy season, none of the cultivators dare take his cattle beyond the line. But such occasions are very rare. They can put up with the inconvenience half a dozen times in the course of the year.

DRY BABUL AND OTHER THORN HEDGES

These are put up annually. Small branches of trees (such as Babul, Bor, Henkal, Khair, Amoni) are lopped off from the trees standing on the lands of the peasants, and are collected and removed to where the fence is required. The peasant does the whole of the work himself by personal labour, and in many cases he has to spend nothing in cash. In order to arrive at the equivalent it may be well to adopt a method:—These thorn branches are made up into bundles called locally a Phas (फस). In this village a Phas fetches one Rupee. A bundle of branches covers about 30 feet of land on the border. They are buried one foot under ground in trenches (two feet wide) in a regular row. The cost of putting up the fence comes to Rs. 3 per 100 feet. Hedges of this kind need to be repaired and have gaps filled in from time to time during the course of the year. The cost of the upkeep may amount to Rs. 2. During our enquiry we found that there were about 5 miles of this kind of hedge. On this basis we estimate the value of the time and labour of the cultivators at something like Rs. 200 to 300 a year. The thorn hedges have the disadvantage that in the

fair season they are liable to be broken down easily and stolen for fuel by the passers-by or by members of the wandering tribes. During the rains creepers, vines and other plants climb over and through them, and cover them, and thereby the hedges are as though bound and protected by them. The renewals must be promptly attended to and thorn loppings made available; but in these days Babul and thorn trees are, day by day, becoming scarcer and scarcer, and at times loppings cannot be easily and readily procured even by purchase. In the long run a thorn hedge is not a success in view of the labour, cost and trouble involved. Those who own many Babul trees or other thorn trees may find it convenient, others a costly and troublesome business. An ordinary farmer must, of course, keep his crops without any hedge. When some years ago thorn branches were obtainable in abundance by anybody, it was worth while to make use of them merely for the labour involved. It was the cheapest and easiest method and was universally adopted.

PLANTING OF PRICKLY PEAR (निवडुण)

This kind of hedge is permanent, lasting for more than a generation, although it may need occasional repairs here and there. When the prickly pear is over-grown, it becomes a nuisance to all concerned—men, women, children, animals, crops, etc. When it is annually pruned and kept up at the standard height and breadth of 4 feet, it is an effective barrier, though perhaps it may occasionally be cleared by a strong bullock or pony. The cost of planting a hedge would be about Rs. 3 per 100 feet. The annual cost of pruning would be Rs. 3 per 100 feet. The whole length of the hedge in the village is more than 6 miles. The leaves of prickly pear are at times used as fodder for cattle during famine, after the thorns have been completely burnt off. Bhil children eat the fruit of the pear. The hedges of prickly pear have now been almost destroyed by the cochineal insects, and it is

hoped that the nuisance of prickly pear has been completely removed.

However it is said that it is an economic loss when the prickly pear hedges are removed; because any other forms of hedge, which could be substituted, are more costly and not so effective.

THE MILK BUSH (क्षीर)

This hedge lasts for many years, from, say, 15 to 25. When it is full grown, say after 10 years, it is of no value as a fence to protect the crops, unless the intervening gaps are filled in by the planting of brambles and bushes. A considerable quantity of milk bush plants are sold as rafters for the houses or huts of the poorest classes. The worst of the plant is burnt into charcoal and the latter is utilized after pounding into fine powder for the manufacture of fire works, etc. Owing to the destruction of prickly pear, many cultivators have commenced planting hedges of milk bush. It is estimated that the cost of planting a milk bush hedge will be about Rs. 5 to 6 per 100 feet. The whole length in the village may be 2 to 3 miles.

WILD ALOE PLANTS (केकताड़)

An aloe hedge has a long life, say 25 years, if regularly looked after and annually repaired. It is planted during the rainy season. The bulbs of the plant are purchased at Rs. 1 to 2 a hundred, and the covering of 100 feet of land costs Rs. 3. The leaves of the plant, when well grown, are long and juicy. They are cut off, soaked in a pool of water to rot, dried and made into fibre. They are used to make ropes for the use of the cultivators. We shall refer to aloe plants when we describe the rope making business under the head, Mangs

NIRGUDI PLANTS (निर्गुडी)

During our rambles in the jungle here we found some live hedges of the bush or shrub locally known as Nirgudi

(निर्गुडी) around some portion of the garden land bordering on Nallas or brooks. The hedges were high enough (4 to 5 feet) to prevent cattle from trespassing and doing damage to standing crops.

During the rainy season the cultivator arranges to procure small branches and twigs cut or chopped off Nirgudi with a scythe or other sharp instrument, and to plant them in trenches dug $1 \times 1\frac{1}{2}$ feet just on the border of the field and Nalla, so that the planted hedge may get water for some days after plantation, in order that the twigs may shoot up in a very short time without any more labour or care.

The hedge of Nirgudi with full leaves and small twigs, though living, is very harmless, having no spikes or thorns or brambles or the like.

No cattle, goats or sheep will touch the Nirgudi.

The hedge cannot be a paying crop like aloe or milk bush, though it may last for many years with the least trouble. It is very cheap to grow and to keep up. The cultivator can easily get cuttings of Nirgudi for the asking if he has no previous hedge; he can dig a trench at his leisure during the hot season or a little before the monsoon sets in. With the advent of rain he can put in the cuttings under earth. The cost of planting the hedge may be put at Rs. 2 per 100 feet.

It is remarkable that when the hedge is well grown, it prevents the land of the garden from being washed off by erosion. It is, therefore, very useful when any portion of the land is threatened with erosion.

The leaves of the plants, after boiling in a little water, are used by the villagers for fomentation of joints in cases of rheumatism.

Save the G. I. P. Railway fences, none has been erected either of barbed wire or plane wire by any private person.

The cultivator here knows of no other live thorn shrub or plant that may be put up as a hedge.

Regular combinations of hedges of the description mentioned above are not used; but the first four plants may be found here and there running as a fence.

There are no hedges or fences round each and every survey number or separate unit of land abutting in or running along a road, street, path or Nalla, but such survey numbers or portions are generally protected with a temporary hedge or hedges only along the boundaries between the land and roads, etc. Boundary lines between adjacent survey numbers are not hedged except in the case of garden land, e. g., plantations of oranges or other fruit-trees or irrigated crops.

The question of fences was before the Royal Agricultural Commission. (Paragraph 116 on page 121 of the Report.) Fencing is, say the Commission, (Page 121 of the Report) in most cases beyond the means of small cultivators, but stone walls, where stone is readily available, have been found cheap and effective; it is noted and urged that the Agricultural Department should endeavour to discover a cheap and efficient method of fencing. (Page 128 of the Report.)

CHAPTER 3

CROPS

MAKKA (MAIZE—*ZEA MAYS*)

In the Deccan maize is a fodder crop and a food crop or staple crop as well. In either case the crop has the following advantages:—

- (1) Maize will grow in any soil save Murmad;
- (2) It does not require deep cultivation or tillage;
- (3) It can be sown at any time of the year, provided irrigation is available;

(4) It is an emergency crop, that is to say that the seed of maize can be sown as soon as all hopes of rain are lost, and no other crop can possibly be grown on the amount of water available from a well or tank if it is only sufficient for 2½ months to three months;

(5) In ordinary times or seasons, the crop is a nice green fodder for the stock, even in the hottest months of the year (March, April and May);

(6) It is the practice of the cultivators to sow maize seed twice at an interval of a fortnight to one month in different adjacent plots;

(7) A shallow ploughing or harrowing (twice or more) is all that is needed; a light sprinkling of manure, if obtainable, may do it good.

(8) For the purpose of irrigating no regular beds and bunds are necessary, except broad channels at the margin of the plots.

(9) The crop matures as a fodder crop very quickly, say at the end of the second month after sowing, with four waterings or even less;

(10) If the crop is sown in two batches at short intervals, it can supply fodder for cattle and cobs of grain for men continuously for a time when the cultivator has run short of food or staple grains;

(11) The cobs of grain when young, fresh, green and tender can be boiled and eaten with a little salt; the members of the family can easily tide over the bad days; maize grain is nutritious for human consumption;

(12) As a fodder crop it can be cut at any stage of its growth without any such injurious effects as are produced by the feeding of young and unripe Jowar stalks, which are avoided as poisonous;

(13) A number of varieties of seed is procurable suited to varying conditions—some ripening quickly, some slowly, some yielding more grain and little fodder, some much fodder and relatively little grain. A variety of maize with shorter stalks is highly prized as green fodder, for the stock eat greedily the leaves, tops, heads, stalks and everything without leaving any residue; the stalks are sugary like the ripe Jowar stalks;

(14) When it is grown as a hot-weather fodder crop (March, April or May), the land is prepared and made ready for another crop such as wheat or gram or both mixed with linseed if it is possible to irrigate;

(15) The seed of maize is comparatively cheap;

(16) The maize crop is generally free from disease of any kind.

The maize crop is not a money crop, except in the neighbourhood of populous towns where in the Bazars ripe cobs of grain may be sold; but in that case it loses its value as a fodder crop. Fresh young cobs of grain are eaten by bullocks with relish along with the green leaves; and this

provides an adequate diet without the addition of any grain, oil-cake or even lucerne.

When the land is prepared and irrigated, it may be sowed with maize seed with a Pabhar (four coultered drill), and the sown seed immediately covered from behind by means of a Kulav drawn by a pair of bullocks, and satisfactory channels for conveying water can be made by means of the Aut (औत) turned upside down.

Some germination begins to be visible after five or six days. If at the end of eight or ten days no rain has fallen, well watering should be begun; but if the rain-fall is favourable, no waterings need be undertaken. In case of failure of rains or if sown in the hot season, waterings must be given once every week or ten days.

Maize is sown thinly when used as green fodder, and inter-culturings are elaborate and avoidable and not usefully carried out; hand hoeing can be done by women labourers with their Viles (विळे) or Khurpas. If this is not found practicable, and the crop is allowed to grow up, as it is rapid in growth, it soon out-tops the weeds and smothers them. After about a month the crop is full of green leaves, succulent and luxurious; the shade is enough to keep the other vegetation undeveloped or to kill it. It is specially important to grow it thickly on the field; otherwise the lower parts of the stalks become very coarse and the lower leaves become decidedly fibrous. When grown thickly the fodder is very good and not coarse or fibrous. A thin sowing is needed when maize corn alone is to be produced. Maize fodder is not made into hay nor is it made into silage. Dry straw is thrown away or used for purposes of thatching, if there is sufficient Jowari Kadbi for fodder.

When the heads of maize are in ear, the field becomes like a battle field, and if the plot is an isolated one, it is the more exposed to depredations and invasions from wild

animals, birds, human thieves and cattle, by day and night. Wild animals such as jackals, deer, pigs, porcupines do a lot of damage to the cobs; not only that but some of the standing crop is trampled down and spoiled, and the leaves and stalks are not good as green fodder. Birds such as crows, parrots or owls and bats settle on the stalks and eat the grain there and then. Loud cries and shouting seem to have no effect in frightening the birds; slings are made use of in vain. The heads of corn mature and get dried at the end of the third month, when they are cut off the stalks and dried in the sun. There is no mode of threshing as in the case of other cereals such as Jowari. The heads and grain cannot be so easily separated and a machine which is obtainable on the market is required for the purpose. It is devised by Messrs Kirloskar Bros. & Co., Kirloskar Wadi and is sold at Rs. 12. The maize sheller can easily be worked by one woman to shell about 20 times as much as she could do by hand. A labourer on 3 Annas a day separating corn and cobs can only separate 12 Seers of grain in a day.

In normal seasons maize grain is not much used for making bread, though it is said to be nutritious and fattening, palatable and sweet. The grain is also parched into Lahis (लाहिया) for human consumption; at times Lahis are ground into flour and baked into cakes. Maize is sold at 5 Seers per Rupee (24th June, 1929) here. Maize grain is ground into a very coarse flour. It is only rarely used here to feed cattle.

Cobs stripped of grain are of no use, even the upper leaves; they are thrown away to rot as manure.

A cultivator usually carefully preserves long heads of the corn intact for seed, and these are only shelled when it is time to prepare seed for sowing. Most of the gardeners here raise a maize crop almost every year on patches of land—small or large. Enough for a month's feed for his cattle is what he usually aims at. This is a sound practice from every

point of view. During the summer (March to May) when the gardener has no particular use for his well water, he is an economist if he raises such a quick growing temporary useful fodder crop—not only a fodder crop but a food crop—when he is almost at the end of his Jowari.

When we were making our enquiries, in order to show us the process, one of the cultivators arranged to sow maize in the morning by means of a Pabbar (four-coultered drill) drawn by two bullocks, and the sown plot of land was immediately got covered with earth by a Kulav, and with the same Kulav channels were dug all round the sown plot for the conveyance of water. We took two handfuls of maize seed from the sower's bag and picked 100 grains which, when counted, were as follows:—

Grains	Good grains (ungraded)	Grains (weevil eaten)	kardi grains
100	82	11	7

All these were sown on a ridge of the channel. Sprouts did not appear for 4 or 5 days, and on 31st May some germination was visible. On 8th June we could count 67 seeds germinated out of 100 put in the soil. Seed was, no doubt, taken from heads of the corn set apart, but most of the heads of grain were then found to be weevil eaten. The germination per centage is very low, and $\frac{1}{3}$ of the seed is lost and did not germinate. The cultivator was warned as to the damaged seed, but he urged that the seed would germinate and his servant supported him. The crop grown was a thin one. On 28th May there was a shower of rain here and on 3rd June there was more than one inch of rain. There were showers of rain and drizzle from time to time, and a supplementary plot was sown with maize immediately

The plots sown with maize measure together 110 feet × 205 feet (22550 sq. feet), i. e., 20.4 Gunthas. Three Seers of maize seed with a handful of Kardi seed were sown. As there was no rainfall for a long time, the grower irrigated the plots with well water on 27th June.

If seed has lost its germinating power, it is waste of time, labour and money to sow it. Selection and preservation of seed are of the first importance.

FODDER

Indian agriculture still depends entirely on animal power, though we are living in the age of machines, steam, oil and electricity. H's cattle have been considered to be the wealth of the husbandman from time immemorial. It is very necessary to provide adequate food for the agricultural cattle. Owing to economic causes the fodder supply has been declining from year to year. In years of famine and scarcity the amount of fodder is still less adequate, and our cattle power becomes depleted. Fodder, grain, oil cakes and cotton seed are the principal elements of cattle food here. Oil seeds are grown only in small and limited areas. Fodder crops are sown both in the Kharif and Rabi seasons. Towards the end of the year (May and June) the supply of fodder generally runs short. So the agriculturist longs for early rain. He wants to raise fodder crops which mature earlier than the ordinary crops. The early fall of rain, therefore, encourages the extensive cultivation of the leguminous Kharif crops (along with Bajri), which are locally called Kathan. Some of the leguminous crops are sown mixed with Bajri and some are sown separately and independently. Some of them are grown on irrigated land also as part of a rotation. The leguminous crops sown here as Kharif crops are as follows:—

- (1) Tur (pigeon peas),
- (2) Math or Mataka (acenit, leaves kidney beans),
- (3). Mug, (green gram, also yellow and black),

- (4) Hulga or Kulthi (horse gram, dolichos biflous),
- (5) Udid (black gram, also green phaseches),
- (6) Val (the Indian bean, dolichos pablab),
- (7) Bhumug (ground-nut),
- (8) Chavli (Chinese pea, dolichos Chinese.)

Mug, Udid and Kulthi are sometimes grown separately as unmixed crops. Mug and Kulthi are of different varieties distinguished by their colours. Mug is either green, yellow or black; Kulthi is either black or reddish black. They are found mixed at times. Most of the Kharif leguminous crops mature early. The mixed crops are not all in flower and pod simultaneously. So their harvesting times do not coincide though they are sown at one and the same time. A comparison of the progress and growth of mixed crops may be useful:—

Crop	Flowers in how many weeks	Pods in how many weeks	Harvesting in how many weeks
(1) Mug	7	9	10 to 11
(2) Math	10	11	20
(3) Kulthi	12	14	16
(4) Tur	20	22	26 to 28

The Udid crop is rarely raised here.

The Bajri crop is in flower after 10 weeks and harvested after 12 weeks. The leguminous crops do not grow tall. If early rains are favourable they thrive well, but their height varies from 1½ to 2 feet, except Tur which reaches the height of 3 to 4 feet, if not more. The characteristic feature of leguminous crops as fodder crops is that they are eaten by cattle—roots, stems, leaves, etc. in their entirety, except Tur, the stems of which are rejected, but serve for thatching purposes. The Mug crop is the first to

be reaped and harvested: it gives grain to the cultivator for domestic consumption and its stems and leaves, etc. are used for fodder immediately it is uprooted. It is never stored as fodder in a dry state. None of the crops are used as green fodder. The roots, stems, leaves and husks are dried and kept in stock for use as fodder. The grain of these crops is at times given to milch animals or ponies as forage. The milch cattle and bullocks are fond of the fodder of leguminous crops.

The Bajri crop is harvested after 12 weeks, and its straw is not used as green fodder. nor is it available for fodder immediately the stalks are removed or pulled off the ground. Bajri straw serves as fodder when dry and not unless the heads of corn are cut off. Here there is no practice of making Bajri straw into Kutar as in Khandesh; so the use of Bajri straw as uncut fodder is uneconomic. When other fodder is procurable in abundance, Bajri straw is utilised for thatching huts, stables, cattle-sheds, etc., and if it is in profusion, or if the straw is very thick, it is allowed to rot into manure. The preservation of Bajri straw as fodder in a silo or silage is unknown here. Bajri straw is carefully preserved in stacks as a fodder. It has no great nutritive value, and the older it becomes the more it loses its value as a fodder. The other Kharif crops, millets, oil seed crops and vegetables are sown as follows:—

(1) Millets:—Varai, Sava, Rala, Bhadali.

(2) Oil seeds:—Ground-nut, Til, Karhale, Ambadi.

(3) Vegetables:—Bhendi, Bhopala (red and white gourd), Karli, Dodake and many others.

None of them are useful as fodder except ground-nut, the leaves and stems of which are served either as green or dry fodder. The milch animals relish it. Gavar, Methi and chillies are grown as Kharif garden crops, but are not used for fodder in any form.

The out-turn of the Kharif fodder crops may depend very much on the seasonable and sufficient rainfall, but it is remarkable that the rains of the Mrig, Ardra, Punarvasu and Pushya never altogether fail, though the rainfall may not reach the normal (fall). Consequently the fodder of the Kharif crops is hardly ever a total failure; but the out-turn may vary greatly. The statistical information for these crops is given in a consolidated statement of principal crops in Chapter 9.

As we cannot get any record here of the out-turn of the Kharif fodder by weight, we must base our estimate on local information. Annewari may be useful in the calculation. What amount of fodder can be raised on an acre of land?

Bagait	Jirait
Bajri stalks only 15 to 20 maunds.	Bajri stalks with husk of mixed crops 10 to 12 maunds.

Kadval, Khondya and maize are generally raised as Kharif garden fodder crops. They are sown in the hot weather in Chaitra and Vaishakh (April and May). They are irrigated crops grown on well water here. The land is ploughed up and prepared, manure is applied, beds are made, and water channels are repaired. Any ordinary Jowari seed (Bedari) is selected and sown broadcast in the beds prepared as the Kadval crop. Separate seed is sown for Khondya, and it is necessary to water the crops once a week for three months. It takes about 2½ months for the crops of Kadval and Khondya to mature. It is used green. It is cut with a scythe leaving the stems in the soil. It gives grain, but it is not cultivated as a grain crop. Before the grain is in ear it is cut and used as green fodder. It is not usually used as dry fodder. If any grain is produced,

it is devoured by birds. The yield per acre may be taken at 30 to 50 maunds. The crop provides fodder (green) for a short period, say two months or so (June and July).

MAIZE

Maize is a crop grown for fodder as well as grain. It is raised on garden land. There are two varieties of maize used here, viz. Bakshi and Sudhi (Gavrani). The seed of both varieties is available in the market. The Bakshi variety sells at a rather higher rate. Their current prices are about four and six Seers per Rupee respectively. Land is prepared in the same manner as for the Kadval or Khondya crop. Both varieties are sown by drill and watered with well water once a week for 2½ months. The Bakshi crop grows 5 to 6 feet in height, and it bears large cobs of grain 8 to 10 inches long. Its grain is rather large, and it has more ears of corn.

The Sudhi maize grows four to five feet and yields smaller ears of corn. The yield is smaller than that of the Bakshi variety. It needs to be watered 7 times at an interval of a week.

During the last decade (1926-1935) Jowari fodder has been more than plentiful and the area under maize has declined.

RABI FODDER CROPS

Of all the plants grown in the world for the production of fodder, Jowar (*Andropogon sorghum*) probably stands first, under a variety of conditions, in fulfilling the necessary characteristics of good fodder crop:—

- (1) The production of a large quantity;
- (2) It is palatable, digestible and non-injurious;
- (3) The short time, four to five weeks, required to grow it successfully and quickly as a fodder crop;
- (4) The large yield of fodder per acre (Bagait 25 to 40 maunds and Jirait 20 to 30 maunds);

(5) It can be preserved as an edible fodder for two or three years dried or in stacks covered with a thatching plaster of black soil;

(6) It does not need a good black cotton soil or heavy manuring or any irrigation. In short, a medium soil and reasonable and timely rainfall and a suitable rotation of crops are the only essentials.

Here Jowari is grown both on irrigated and dry crop lands. If the later rains have been sufficient, there arises no necessity to water the crops. A deficiency of rainfall may involve, under some circumstances, the necessity of giving four to five or at the most seven waterings. We have here found, as in other parts of the Deccan, that Jowar is sown both as a fodder and as a staple food crop. Jowar is hardly ever grown purely as a fodder crop here. But in consequence of the deficiency of moisture it may not reach the stage of flowering, and in that case it may turn out to be a fodder, pure and simple. But such occasions are very rare. Different varieties of Jowar are raised here, one called Bedari is sown in irrigated land and may be given water if necessary. It takes from 4½ to 5 months to get it matured and harvested. If and when the crop is watered, the stems become thick and grow tall, sometimes six to seven feet in height. So the nutritious elements are rather diminished, in comparison with the crop raised on dry crop land. The out-turn varies and depends upon the soil, the previous rotation or manuring, sufficiency of moisture, etc.

During our enquiry we learnt that the Bedari Jowar has lately been introduced in place of Kalbhondi into the village. It has been the experience of the cultivator here that Bedari is better than Kalbhondi in point of yield.

The other varieties of Jowar known under the name of Utavali, Nilva, Mal-dandi, Hundi, Sudhia, Dudhia, Dagadi, yellow and red are scarcely ever raised here. Indeed even the

names of most of these varieties are unknown to the cultivators. Some of them can be identified, and the cultivator here is quite sure that the seed of Jowar known as Bedari is the most profitable of all the varieties of Jowar so far known to him.

As we shall deal with Jowar crops as staple food crops separately, it is unnecessary to refer to them here among the fodder crops.

As regards out-turn, it is very plain that the yield of the garden land is better than that of the dry land. We have no written or definite information on the point.

From local investigation we come to calculate the out-turn:—

Crops	No. of pullies per acre	
	Garden	Dry
Jowari	250-400	300-400
Bajri	250-300	200-250

Lucerne is cultivated here as a garden crop for fodder. The seed is purchased from the Ahmednagar City market. The ruling prices vary, but we give them as we got them from the villagers here. Lucerne is used for the working bullocks either on the Mot or on the farm. The crop once planted lasts for 3 to 4 years. It may be affected with diseases at times, but the original crop improves. The area under lucerne is increasing.

Though we have adopted the figures for lucerne as they were supplied to us from village records, they are not very convincing. (Statistical Statement of Crops in Chapter 9).

LUCERNE

(1) Preparation of land; (2) Purchase of good seed; (3) Sowing of seed; (4) Irrigation; (5) Weedings; (6) Manuring and top dressings; (7) Periodical irrigation; (8) Cuttings at different periods how made; (9) Seed production; (10) Suggestions for extensive cultivation in Deccan villages; (11) Description of the plot with details; (12) Cost of plantation etc.

When going over the lands of the village in the last fortnight of May 1925, we came across more than a dozen plots of land in gardens in all parts of the village sown with lucerne grass which was full grown, healthy and luxuriant, and so thought it worth while to make detailed inquiries as to its cultivation. Most of the plots were cultivated last season (known as the Margashirsha cultivation, viz., in and after October). Lucerne can be successfully grown at only two periods in the year; the first of these is just at the commencement of the monsoon (June), the other and more profitable is in October and the two succeeding months. Sowings undertaken at other times are threatened by injurious diseases and specially by caterpillars and other insect pests, and are liable to get dried up. The agricultural experts assure us that if lucerne is to succeed well, it must be well established before the following hot season sets in, and village practice recognises this as essential.

Before lucerne is put in, the land must be completely cleared of weeds and of their roots. Grasses known as Harali, Kunda, Lavala must be extirpated; their long and deep roots must be dug out upto more than 2 feet deep and the Kasha (dry roots) must be taken out, dried and burned. The dug portion of the land must be well filled in and made level and even. No foul land should ever be sown with lucerne. It would be far better to keep the land fallow for a year, and in the meantime to cultivate the land; finally it must be

ploughed both lengthwise and crosswise, harrowed twice if not more; in short, it must be very fine and treated with farm manure. Treatment of the plot of land with heavy manure is useful later on. We have no ridge furrow system here. The cultivators seem not to be ignorant of it but to find it unprofitable, as furrowed spaces are left unsown. The bed system alone is practised here and practised with success. As soon as plots of land are ready and fully manured, beds are made, and the whole of the plot of land is divided into as many beds as will grow enough grass for the consumption of the live stock; it depends on the number of cattle that are to be daily fed. One bed of lucerne grass a day is the ration for a pair of working bullocks; but in each case the cultivator makes his own calculation. If a cultivator owns 8 bullocks, four beds of lucerne provide the daily ration for them; the cutting of lucerne for 24 days will bring up the total number of beds required to 96.

Beds are made of different dimensions, but not very large. An ordinary one measures eight feet by four feet (5 cubits by $2\frac{1}{2}$ cubits or 10 cubits by 5 cubits) on plots of even surfaced land. Square beds are convenient, and after the beds are finally laid out, the seed of lucerne is thrown broadcast in them and the seed is lightly covered with soil by means of a wooden rake. A through water channel generally runs between each double line of beds, and the surface of the garden soil is made smooth and even to ensure a convenient and efficient supply. After the seed is sown it is slightly covered, and the plot is irrigated. The ridges of the beds remain almost unsown; the cultivators here are not accustomed to dibble on the bunds of Wafas (वाफे) such grain as maize, coriander, radish and onion as is done in some places. Here lucerne is always grown alone without any mixed crop. The crop needs to be irrigated every seventh day in the hot season or at an interval of ten days in the rainy season, even earlier if and when the rains

hold off. Punctual irrigation is essential for raising a good and successful crop. Lucerne seed is very dear. The seed, if fresh, should be plump and glossy, and must be of a rich brown colour and be free from any admixture of dust, dirt etc., or weed, seeds of any kind. As the seed is very small, a practised eye and hand is required to judge of its purity. The seed is as big as a mustard seed, and is as yellow as the Methi seed (Fenugreek). Many cultivators complain that the Bazar seed is not of good quality and that they are swindled as they, through foolishness, accept the offer of a cheap rate. New seed must be and is the rule, the use of second year's seed the exception and wholesale rejection of old seed (three years) must be and is enforced. It is true that absolutely pure seed is not obtainable in the market, unless the purchase is privately made from some cultivator who has seed to spare. Now to-day (29th May 1929) seed of the best quantity is sold at Rs. 12 to 15 per Payali (a measure of 16 Seers). One acre of plot of land needs 12 to 14 Seers of seed (about 28 lbs.). Rates fluctuate. Selection of good seed is the most important and essential thing in lucerne cultivation. At the start irrigation must be repeated every six days for a month or so. The seed is small; the seedlings are delicate; the October heat is injurious; so this stage of growth of the plantation has to be very carefully watched. During germination and growth of the seedlings, weeding must be resorted to; because the young lucerne plants have no capacity for smothering or checking weeds or other vegetation; but on the contrary lucerne itself is liable to be killed. The crop is able to stand the heat of the hottest months (March to May) with a temperature of 105° F. It can endure frost to a small extent, though at times the actual fodder may be damaged; but the plants themselves remain unaffected seriously. But it is injurious.

As the cultivators here sow the seed in beds, the use of inter-culturing implements is impracticable. So the use of the hoe and bullocks in weeding must be set aside and hand weeding resorted to. Women labourers have to be engaged at Annas 3 to 5 per diem to remove the weeds and other vegetation with their Khuipas (a country iron weeding hook) by hand. Hand weeding by women is continued for a month or so. If lucerne is healthy, it is due for the first cutting after about two months. It is probable that the first growth will be somewhat uneven, some plants being immature and some a little past the best stage; but afterwards it will tend to get more equal in growth. Though many investigations have been made in other countries as to the best stage at which to cut lucerne, we have not come across records of any such enquiry in India; but in this village it is considered that the right stage is when a large number of plants are in bloom; more than $\frac{1}{2}$ plants in bloom is, on the whole, a good rule. A period of 21 days is generally taken to be the correct interval between cuttings, but this may be extended to 28 days; but the appearance of flowers is a natural rule to be put into practice, unhesitatingly. If cut too early, it is usually watery, and there is possibility of harm to the stock. If cut too late, it has sometimes been found that the following growth is not so vigorous.

Immediately after cutting growth begins again and crops are obtained from the same plants many times. But when a plant is cut or eaten off, the stalk dies down to the very base, and produces buds from the upper part of the crown of the root, forming new stems in a dense cluster. We have already mentioned that the cutting of lucerne sufficient only for a day's feed of the live stock is necessary, and so a regular systematic rotation of cutting of the beds is absolutely essential.

Lucerne is cut, not very close to the ground and its roots: but a stubble of about 2 inches is left clear over the

surface of the soil. Prior to the cutting it is necessary that watering should have been stopped for up to 4 or 5 days. Cuttings should be undertaken once or twice in a day—once for the mid-day feed, and next for the evening feed, if the hours are convenient to the owners. Here cattle are fed on green lucerne; dry fodder is not made from it. Milch cows and buffaloes are not fed on green lucerne fodder, as it is supposed to diminish the flow of milk. It must be and is constantly borne in mind by the mowers that while cutting the lucerne any stray weeds detected growing among it should be eradicated; of course, no new growth of weeds or other vegetation is possible as soon as the cutting for the day is finished. Watering must be begun the same day, if possible, but in any case the following day must be devoted to irrigating the bed or beds just cut. Cuttings have to be strictly regulated, and a cutting a month or 13 cuttings in a year is the usual practice. No exception is possible even in the rainy season for the cutting, even if the lucerne is not fully eaten by the stock when other green grass is plentiful.

When once planted and established, the lucerne crop lasts for three years or even more, provided all precautions as to (1) the irrigation, (2) timely cutting, (3) periodical re-dressing with farm manure, (4) eradication of weeds, if any, are taken. The first year's crop is generally the best or more than the average, the yield of the second year is often lower than in the first year, and the last year's yield is the lowest of all. We were not able, for want of data, to make a comparison with the produce of other fodder (green) crops, such as maize, Kadval or Khondya, or even sweet-potatoes or carrots, but we were assured that even the yield of the third year's crop is better than any of these latter crops. Lucerne is the leguminous fodder crop of the longest duration amidst the many crops sown and grown.

The same crop can continue for three years giving a good return economically profitable without any additional labour, and expenses for the following two years, viz, (1) ploughing, (2) harrowing, (3) seed, (4) drilling of seed, (5) making of beds and channels and (6) weeding, if necessary, twice a year. This is no small gain and can easily be realized by any farmer without the assistance of accounts or records.

In point of cultivation, Ahmednagar is the premier district in the Bombay Presidency as far as lucerne is concerned. The area for all the districts is given for the year 1924-25:—

District	Area in Acres
Surat	21
West Khandesh	82
East Khandesh	7
Nasik	1724
Ahmednagar	2709
Poona	1537
Sholapur	72
Belgaum	29
	Total 6181

The Central Deccan, which is within the famine zone, cultivates lucerne. The cultivation does not extend over all the Talukas; but it is mainly confined to the villages in the neighbourhood and vicinity of the City of Ahmednagar, &c.

within a radius of 6 to 8 miles. Buran-nagar, Bagroja, Burudgaon, Bhingar, Vakodi, Arangaon, Kedgaon, Shendi, Nepti, Bolhegaon, etc. grow a large area of lucerne, because Ahmednagar is the Army Head Quarters of the Remount Depot and an expensive stud farm is maintained here, and most of the lucerne is meant for the feed of the horses there. Besides it is a Cantonment. In the City of Ahmednagar goats predominate and are kept both by Mahomedans and Hindus for their milk; a large number of pony-Tongas ply for hire and these animals are all fed on lucerne without any grain or Chuni or a little of either. Lucerne is cheaper than any of the grains, cakes, etc. Lucerne serves the double purpose of fodder and grain as well. Outside of this tract round Ahmednagar the area of lucerne is very limited. Even on Government canals such as the Godavari and the Pravara, lucerne is not so much cultivated. In the recent report of the Settlement Officer of Kopargaon Taluka he stresses the point that the number of bullocks on these canals has fallen considerably. There may be patches of lucerne grown here and there. Gardeners in the vicinity of Ahmednagar City who can raise three crops in a year try to feed their bullocks on lucerne and get irrigation for summer crops, mainly vegetables and chillies, for which there is a good market, by means of water drawn from wells. This system of cultivation seems to be very effective and profitable.

Lucerne seed is dear; the cultivators think that they have seed of poor quality palmed off on them when they buy it in the open market. It is a sound investment for a cultivator even to harvest seed for private use and sale. Some of the cultivators try to grow seed for profit and sale as well. It is an easy matter for them to grow for seed. Generally the hot season is most favourable for the yield of seed. If plots are reserved for this purpose no cuttings for fodder can be made for four months (February to May); but the plants are

left to bear full flowers and allow seed to be produced. The cultivator has realised that to take a crop of seed is always paying, and he is very careful to grow seed only when the crop is not likely to receive rain, even accidentally, that during the growth of seed the irrigation is either withheld or it is given so that the seed may develop instead of the leaves and the stems, etc. The amount of waterings may be varied at both the stages and phases of the crop, viz. fodder and seed. Seed may be grown on a small selected plot or patch, leaving the other area for the cutting of fodder as usual. It is unnecessary to grow seed on the whole of the area under the lucerne crop; this may be uneconomic. As some of the crop is not cut for fodder, it grows rather high and may be allowed to diffuse and spread over with many pods suspended from the stems of the plant. Gradually and naturally the pods develop until fully grown and dried on the plants, and then the dried pods are cut or plucked off, removed and the seed unhusked and collected for use. About the size of a tamarind fruit, the pods grow of a semi-circular shape, curiously twisted and rather small. If the seed is gathered during the second year of the crop, lucerne may continue to be cut for fodder after the usual growth right through to the end of the third year; and if it is in the third year, the cuttings for fodder may be taken until the three year period is complete. The lucerne plants can yield a fodder crop for the fourth year, but it is not so good or profitable. Very few cultivators grow seed in large quantities or in excess of their requirements; a commercial spirit may be present in few cases. Ten to sixteen Seers of seed can be grown profitably by each cultivator for his own use.

Dr. Harold H. Mann, D. Sc. has the following instructions regarding manuring:—

“If lucerne is to be really a paying crop, it must be regularly and heavily manured. As already stated a dressing of

10 to 12 tons of well rotten farm yard manure per acre should be mixed with the soil about a month before the planting is to take place, and this should be evenly spread, and by subsequent ploughing and harrowing mixed thoroughly with the soil before making the ridges. We have had no experiments to ascertain whether this farm yard manure can be replaced by other dressings.

Later on the usual recognised method of manuring is to give about 5 tons per acre of well rotted farm yard manure every third time the crop is cut. If such farm yard manure is not available, three to four cwt. (330 to 450 lbs.) per acre of caster cake at similar intervals is recommended."

To follow these recommendations would involve an exorbitant outlay on the part of the cultivator which he could rarely afford. Similarly in Bulletin No. 6 of the Land Records and Agricultural Department of North Western Provinces and Oudh it is stated, "A fair quantity of manure to be applied would be from 500 to 600 maunds per acre." Well water for such highly manured plots is not often available.

A gardener here treats his plot of land with farm manure at the rate of 15 cart loads for 120 Vafas (beds) before he sows lucerne. The area of 120 Vafas is about 16 Gunthas and one cart load of manure is all that can be spread for one Guntha of land under lucerne. After the lapse of eight months (July 1929) 15 cart loads of manure may be applied again. It is not feasible to put on more manure for a fodder when the gardener can hardly procure more for staple food crops at least. The climatic conditions here are in favour of the cultivator and his lucerne crop.

The following statement gives details of the cost of production for the season of 1928 (5th November 1928).

Kind of operation	Labour units			Total cost in Rs.	Remarks
	Men	Bullocks	Implements		
(1) Ploughing (thrice)	4	24	4 Ploughs	16	Men As. 8 each Bullocks „ 8 „ Ploughs „ 3 „
(2) Harrowing (twice)	2	8	4 Harows	6	Harows „ 4 „
(3) Beds	4	-	-	2	
(4) Manure (20 cart loads)	-	-	20 Cart	30	Cartlo Re.1½ „
(5) Carting of manure	4	8	2 Carts	7	Cart As. 8 „
6) Seed		-	-	15	Lump
1½ Payali					
Carriage of seed	1	-	-	0-8	
(7) Sowing (broad cast)	3	-	-	1-8	-
(8) Irrigation (1½ days)	3	12	3 Mot	9	Mot „ 8 „
(9) Irrigation (8 times) at Rs.9 per time	-	-	-	72	Till the crop is ready for cutting for two months.
				159	Initial cost
(10) Weeding yearly	-	-	-	4	15 Women As.4 each
(11) Cutting monthly	15	-	-	7-8	
(12) Irrigation monthly	-	-	-	36-0	
				43-8	

A plot of land (17,500 sq. ft.) was sown broadcast with lucerne on 5th November, 1928 (Ashvin Vad 8th, Shake 1850) and divided into 120 beds (one bed measuring 18 ft. by 7 ft. = 126 sq. ft.) including water channels. Watering was repeated every 7th day, and weeding continued in progress for some time and the crop was ready for the first cutting after the lapse of 50 days after sowing, i. e. after two months.

Four beds are daily cut for the feed of eight bullocks once. One bullock gets bundles of lucerne (6 to 7½ Seers). One hundred lbs lucerne is the daily feed of eight bullocks. No extra grain is given and is not wanted. They work at the well in drawing water, a heavy operation

A bullock gets lucerne costing Annas 2½ daily, and the total cost of lucerne for four pairs of stout bullocks for the day comes to Re. 1½. Let us now turn to the expenses of the plot.

WAGES

- (1) Men and women labourers are paid at Annas 8 and Annas 4 per day respectively.
- (2) A pair of bullocks at Re. 1 per day.
- (3) A plough at Annas 8 a day.
- (4) A harrow at Annas 4 a day.
- (5) A cart at Annas 8 a day.
- (6) Irrigation from a well at Rs. 3½.
 - (a) A driver at Annas 8.
 - (b) Two pairs of bullocks at Rs. 2.
 - (c) A Mot at Annas 8.
 - (d) A Darewalla at Annas 8.
- (7) Cutting of lucerne in 5 beds at Annas 4 a day.

Lucerne is a perennial fodder crop and the expenditure is not evenly distributed over the whole period of three years the crop continues. If the initial expenditure on the establishment of the crop, say, for the first two months or till the date of the first cutting is calculated separately, the current expenditure for the remaining part of the three years

will be fairly uniform. In the case of which the details of cost are given on page 115 the initial cost amounted to Rs. 159 and the other costs may be considered as recurring charges and accounted for month by month or for a period of the year, or season to which the annual cost of weeding can be added. The recurring cost per month in the present case amounted to Rs. 43-8 0 and Rs. 4 may be added annually for weeding.

We may remind the reader that the above calculation is based on very careful and economical working, because the cultivator has all the facilities at hand at his disposal. He has to make cash payments only with respect to the daily items, 1 and 7

Details of crops sown are given in a consolidated statement of principal crops in Chapter 9.

GROUND-NUT

Three varieties of ground-nut are grown here. They are the indigenous variety (Deshi) and two exotics known as Big Japan and Spanish peanut. They differ from one another in several important respects.

(1) The period of growth of the Deshi variety is longer than that of the exotics. Irrigation is essential on this account for it but not for the others.

Spanish peanut is earliest matured and most easily and quickly harvested, so that the land on which it is grown can be cleared early enough to be available for planting with a second crop.

(2) Deshi and Japan are more deeply rooted than Spanish, and are, therefore, believed to have a better effect on the soil as leguminous plants. On the other hand deeper digging or harrowing is required for harvesting, while Spanish peanut is very easily uprooted by hand.

(3) The seeds are of different sizes, Japanese being much the largest and Spanish the smallest.

The yield of oil and oil cake is greater in the case of Japan and Deshi.

(4) The Deshi variety is preferable for human consumption.

The Deshi variety is confined entirely to garden land, while the others can be grown either as a dry crop or under irrigation. Planting is done either with the drill or by dibbling. When the drill, fitted with specially large bowl and tubes, is used, the seed is sown in almost straight lines at a uniform depth and with the rows at a regular distance apart. Hence a bullock hoe can be operated for weeding without the risk of harming the young plants. Dibbling is done in the furrows by women following the harrow, and by this method neither absolute uniformity of depth nor regularity of distance nor straightness of the rows is secured, so that weeding by hoe is more risky. On the other hand sufficient moisture is made sure of in dibbling. There is no such security in the case of drilling, unless the soil is freshly irrigated to the proper depth. No beds, ridges and subsidiary channels are prepared, the water being simply allowed to flow over the land from suitable points on the main channels according to the slope. With all varieties the proper selection of seed is of primary importance. The use of seed from selected pods is not sufficient, because the seeds are liable to damage in husking, while those selected must be undamaged with the reddish skin which covers them intact. Further the two to five seeds in a pod are not uniform. Heavy seed is preferred, but there seems to be no way of telling with certainty whether a particular seed is sound and likely to germinate. Some of the cultivators tell us that if a lot of seed is thrown in a pot of water, the seed that floats on the surface can be rejected as worthless for germination. Selection in practice is done by simply picking out the best and largest seed from the pod.

Shelling by machine is useful for large quantities, but with this method many seeds are cut or bruised or stripped,

With regard to watering, ground-nut is a Kharif crop which can be grown on adequate rainfall alone, but if the rain is deficient, watering may be given once a fortnight.

When the crop is about to mature, wild animals such as jackals and pigs do much damage. Crows may be seen at daybreak or sunset, picking up pods here and there. Generally Spanish peanut suffers most, the pods being nearer the surface. Watching is also necessary to prevent petty pilfering and damage by trespassing cattle.

There are two methods of harvesting—by harrowing and by digging. In either case the vines and leaves are first removed and stored as fodder. With harrowing, the picking goes on simultaneously, the pods being gathered out of the ground by hand by labourers. Harrowing is repeated twice or thrice crosswise, to make sure that all the pods have been uncovered. The second method is by hand digging with a pickaxe, the pods being gathered out of the loose earth in the pits by women labourers. The women engaged are paid not in cash but in the form of a share of the pods which has been gathered. The gatherer's share varies from $\frac{1}{4}$ to $\frac{1}{3}$. This is said to give them a higher wage than the ordinary current cash rate, as might be expected under a piece work system applied to a valuable crop, mainly a money crop destined for foreign markets.

Pods are selected and set apart for future use as seed at the time of harvest.

The last operation is that of shelling. The cultivators here have not taken to shelling by machine. A good deal of the crop is sold raw in husk. Whatever is kept for domestic consumption is shelled by hand by the women in their own houses.

Ground-nut is no doubt a valuable money crop, but it is unsuitable for small holders cultivating fragmented land, and so for the most part they grow only sufficient for their own domestic requirements.

It could not be ascertained definitely when Big Japan was introduced into the village, but the cultivation of Spanish peanut was taken up as late as 1928 at our suggestion.

The total area now grown in normal years is from 8 to 12 acres.

ONIONS

The onion is a garden crop which needs an exceptionally large supply of water. It is grown extensively as onions, and their leaves are used by all the cultivators as vegetables, as a remedy against heat, etc. It is used raw at times. It is an article of almost daily consumption, and is considered a tonic and health giver. It is used medically by cultivators and others. For planting, full grown, well developed and healthy onions or bulbs are selected one by one from a heap of onions; the onion is then cut off and sliced into two almost equal parts, the upper one with leaves, and the lower with roots or bulbs. The lower, with its roots, bulbs and tendrils—which is the only useful portion—is kept aside. The land has already been made ready ploughed, well manured and harrowed 3 or 4 times. The plot so prepared is made up with ridges, beds and channels for irrigation. The beds are well soaked and completely filled up with water to the top of the ridges. It is in the month of Pausha (December and January) that the cultivation is undertaken. A man or a woman takes up the divided lower parts and dibbles them one by one into the mud with the cut parts or buds turned upwards. After a week or so the cut parts take root and spring up into sprouts—two or three. Essentially the crop is watered once a week. The plant then grows to a long hollow stem topped with flowers with small black seed (three grains) in each of its ovaries. It is after a period of three months or more that the seed is obtained. It is light and can easily be blown away. It is hard; if broken, it is seen to be white inside. It is sold at Rs. 10 to 15 per Payali (16 seers).

The rates vary. Today (29th March 1928) it is sold at Rs. 10 per Payali. The seed is useful for germination for one year. It loses its vitality after twelve or thirteen months. It is in good demand at times in the Madras Presidency and the local Banias here collect as much as they can from the neighbouring villages. Selling price of seed fluctuates. The cultivators complain that they suffer, as at times old seed is palmed off on them and it fails to germinate.

It is thus that the cultivators get seed grown for the rearing of the seedlings. The process of growing from seed is in most respects the same. The land is ploughed up, prepared, divided into beds and channels in the same way. The seed is broadcast and is covered with light earth and irrigated. The seed germinates in a week; but it takes two months to grow into a seedling with a small bulb at its root. The seedlings are transplanted into beds previously and similarly prepared and irrigated. Watering is necessary once a week until the seedlings are fully grown, that is, for about three to four months.

The cultivation of onions is peculiar and curious. It differs from the cultivation of cereals and pulses. It takes longer than any other crop except sugarcane and plantains. Onions are cultivated twice or thrice during the course of a year.

Onions are very cheap and are extensively grown to meet the great demand for consumption. Generally it is cultivated by almost all cultivators possessing facilities for the supply of water. The supply is always more than the demand. It is used as a staple vegetable, a condiment and for medicinal purposes. Most of the growers have a surplus of the onion crop beyond their own requirements which is sold in the Bazar.

It is remarkable that when onions are available in large quantities, the cultivators find it very difficult to keep all

their produce safe and sound; because onions deteriorate very quickly in the excessive heat of the tropics. They put out sprouts and shoots if they are not kept in an open and airy place. They are examined at short intervals to see that they are not spoiled. The spoiled ones are picked out and put aside. This is a matter about which the cultivator must be specially careful, otherwise he may lose much of the crop which he has raised so laboriously. The onions are not generally kept nor stored in baskets or other receptacles for more than two or three days, in closed or airless places, to avoid risk of their being spoiled. For the preservation of onions a shrewd cultivator has the following rules:—

(1) The onions should not be kept in closed and dark rooms;

(2) They should be frequently examined, and spoiled ones should be picked out and removed to some other place;

(3) They should be left in open and airy places exposed to the fresh air;

(4) They should be kept suspended from above and should not touch the ground whenever the quantity is small enough to make this practicable.

The cultivators have a grievance that in these days of agricultural advancement no scientific method for the preservation of onions in sound condition for a long period has been discovered.

The ordinary yield of the onion crop is about 120 to 180 maunds per acre. The onions are sold at $\frac{1}{4}$ to $1\frac{1}{2}$ Annas per Seer according to the season and demand from other places.

Members of higher castes such as Brahmins etc. generally do not use onions for a period of four months annually, during the rainy season (चारुमास).

A statement under "Condiment and Spices" shows the area occupied by onions.

GARLIC

We have dealt with the garlic crop under "Irrigated Crops" and under "Condiments and Spices." The cultivators make use of garlic daily 3 to 4 times. It is mixed with vegetables, Chatnis (powdered chillies and salt), etc. to give flavour and relish. Garlic is one of the ingredients used for mango and lemon pickles. It is also made use of medically.

It is said that onions and garlic are now grown under irrigation in the new canal areas and transported for sale to Ahmednagar, and that, therefore, local cultivation has been declining. It is no doubt possible for the growers on canal water to raise crops of onions and garlic on a large scale more cheaply and profitably.

In rural areas onions and garlic are consumed largely, and if a housewife finds that her supply has fallen short, she can always get some from a neighbour free for the occasion. It is a sort of mutual assistance, ungrudgingly given, probably because these are considered necessities for the preparation of ordinary food.

Areas grown with garlic are mentioned in a statement under "Condiments and Spices."

TOBACCO

In the month of Ashadha (June or July) the seed of tobacco is sown, broadcast in a plot of garden land, well ploughed, harrowed, fully manured and prepared. Seedlings spring up after a week or so. Unless the rainfall is deficient, no watering is needed, but in case of want of moisture the seedlings are irrigated with water from a well once in every ten days, or whenever the plot becomes dry. The seedlings are ready for transplantation after 2 or 2½ months. The seed of tobacco is of a brown colour and is very fine, and is as small as poppy seed. It is sold at Rs. 1½ to 2 per Seer. The

seed sold here is indigenous and not of any foreign country such as America, or of any variety tried by the Agricultural Department (Nos. 6, 20 and 22). A plot of seedlings is sold at Annas 12 to Rs. 2 per bed, and they are removed at the buyer's cost. A plot of land for transplantation is previously prepared and women are employed at a wage of Annas 3 to 4 per diem to dibble the seedlings in the soil at two feet apart. A woman labourer can plant 200 to 250 seedlings a day. It is in the month of Bhadrapada (September and October) with the rainfall of the Hasta Nakshatra (हस्त नक्षत्र) that the transplantation takes place, and it is generally, the days of rainfall when moisture is more than sufficient in the soil; the seedlings flourish quite well, if the weeds and vegetation are removed from time to time, and the seedlings are left quite free to draw sufficient air from above and food from the soil. Ordinary farm manure is applied as top-dressing in some cases by prudent cultivators. When the crop is about two months old, the suckers are removed and the top of the plant (डिन्या तोडणे) is nipped or removed by the nails of fingers in order that it may develop and its leaves may grow longer and broader and more juicy. Be it noted that a Maratha cultivator is not willing to undertake the removal of suckers and tops of plants, through religious scruples, and it is a labourer of another community who is engaged to do this. The cultivator here treats tobacco as a minor and subsidiary crop and pays no sufficient attention to it. He treats the crop as primarily for his own private consumption and for sale only if there is a surplus. He does not think that it is one of those commercial crops which can find a market in any country on the face of the globe. Despite this he finds it rather laborious and requiring more intelligence to raise the crop in a small corner plot of his land than an ordinary crop of cereals and pulses. Notwithstanding that India is an agricultural country and that a vast area is

capable of growing good tobacco. A large supply of tobacco is imported from other countries in the form of cigarettes etc. manufactured. Only special qualities which cannot yet be produced in India are imported and the quantity is trifling. Foreign tobacco is rarely used for chewing purposes as is the Indian produce. Hindu men chew tobacco, but women rarely do. $1\frac{1}{2}$ to $2\frac{1}{2}$ Tolas of tobacco are ordinarily chewed by a man daily and on special occasions. The tobacco crop matures and is ready for harvest after four months, and it is cut with a scythe with all the green leaves and stems of the plant leaving only short stubble on the ground. Exposed to the heat and air, the leaves and stems, as they are gathered, are spread and stored one plant above another for some days, so that the moist leaves may not go bad and the plants may be fully dried. The next process adopted here for curing is very important, and needs the expert's attention and care. A rectangular pit is dug in the field about three to four feet deep and of sufficient length and breadth to hold all the cut leaves and stems. At the bottom of the pit, on its surface, a thick layer of Bajri straw is placed and is made wet by sprinkling water, and the bundles of cut leaves are stored therein one over another with intermediate layers of wet Bajri straw, until the pit is almost filled in; when again a thick layer of moist Bajri straw is laid over the top surface and loose dry earth is shovelled on up to the regular surface, of the surrounding ground or perhaps sometimes a little higher. As the leaves are, as it were buried in the earth, they assume a red brown colour and acquire a taste and flavour which consumers and smokers desire. The process of curing, though simple and easy, needs expert handling and care. After keeping the tobacco in the pit for fifteen days, the bundles are taken out one after another, and are either carted away to the market for sale or conveyed home to the cultivator's house in the village for storage. For lack of knowledge of

the method and experience on the part of the cultivators, no cheroots are prepared out of the leaves, nor is any attempt made to manufacture them out of the fresh leaves, for which there is a good demand in the local market. In spite of large imports of foreign cheroots, the Deccan will find it profitable to manufacture them.

Tobacco in bundles is sold in the Bazar at $1\frac{1}{2}$ or 2 Seers per Rupee. Prices, though varying, are always higher than that of any other items of agricultural produce. Unlike the Europeans, among the Indians, tobacco, in the crushed form mixed with chunum, is chewed in small mouthfuls, and the juice or the saliva is taken in and the quid or lump is thrown away. Most of the adult male members of the cultivators are habituated to take and chew a lump of tobacco, and this chewing is repeated eight to twelve times daily from 6 a. m. to 10 p. m. The chewing of tobacco follows after the chewing of betel leaves and betel nuts (Pansupari), but is not a regular course for all.

A preparation of tobacco called Jarda (जर्दा) is used by the better class of Indians for chewing. Leaves of tobacco and the stems are cut off by means of an Adkita, and after the cuttings are exposed to the heat, mixed with a combination of cloves, nutmeg, cardamoms, etc.—all well powdered and saturated with water and at times with scents, etc. The things referred to, may be added to the combination at the pleasure of the shop-keeper who knows the taste of his customers. In small villages like Sarola, Jarda is not available, but it is bought from Ahmednagar. One other form of tobacco known as chewing pills is also manufactured. It is used only by well-to-do persons or on special occasions. Even cultivators of the better class arrange to provide them on the occasion of such ceremonies as marriages, etc. It has a flavour and taste quite different from that of the ordinary preparation of tobacco.

Some of the cultivators here are addicted to tobacco-smoking through earthen pipes (बिलीम) baked by potters. Some make use of leaves of Vad tree (banian) or Rui for making up rolls with a bit of powdered or crushed tobacco, in the inside; but this latter method is resorted to during the course of a journey by road; it is not now frequently practised. Of late, most of the cultivators—adults as well as young—make use of Bidees. Bidees are more convenient for use and handling than earthen pipes. Earthen pipes are made small or large, so that the quantity of tobacco may be smoked by more than a couple of persons at a time. They are charged with as much tobacco as will suffice for the smokers on one occasion; the smoke is drawn through a moist piece of cloth (छापी). Now the sulphur matches or safety matches are obtainable everywhere and at the lowest price, viz., at one pice (three pies) per match box; and Bidees and pipes can be easily lighted. However, we meet with cases of smokers who still retain their primitive method of striking fire by means of a piece of steel and flint with which a small bit of Pankanis or tinder ignited. As Bidees or cigarettes are used almost entirely now in preference to the other methods, the habit of smoking has very considerably increased, and even boys of fourteen years of age smoke without little hesitation. Hindu women make no use of tobacco for smoking or very rarely. They have no such things as the small cigarettes used by Western ladies. More than half of the cultivators and some young boys are given to smoking.

Now it is unnecessary to obtain Bidees from other Bazars, because some shopkeepers here have started small concerns for their manufacture. Mahomedan women have taken the lead and four or five shops are busy in manufacturing Bidees daily at the rate of 500 Bidees per concern; i. e. in the village about 3000 Bidees are prepared daily. One thousand Bidees are made to hold or contain five Chhatakas of tobacco

(25 Tolas). The tobacco used is not local produce; but is purchased from the market of Ahmednagar from the stock which is commercially known as the Miraj tobacco, at about Rs. 10 for 12 Seers (of course prices may vary) and the leaves of Tembhurni tree which are not grown in the jungle here are obtained from Ghospuri, Kamargaon, Rayatala or Ahmednagar at 3 pies per 100 leaves. The cultivators here are customers to the extent of 1000 Bidees daily at ten Bidees a pice (3 pies) and the remaining output (2000 Bidees) is sold in the neighbouring villages of Ghospuri, Khadki, Astagaon, Pimpalgaon Pisa and Sarola railway station. Smoking is enjoyed sometimes more than a dozen times during the course of a day and at night too. One Bidee a time for one person is commonly the scale. The offering of bidees in villages and of cigarettes in towns has now become a form of hospitality or entertainment in substitution for or in addition to Pansupari or tea. Bidees are also made from leaves of the Apta trees. It is said that a Bidee contains a small bit of tobacco, and the smoke of tobacco and the portion of leaf and a bit of the twine combined is not good enough, though it may not be so pernicious to health. The Hindus generally condemn tobacco-smoking, either in the pipe or hookah or as cigarettes, cheroots or Bidees. It is said that it gives some amusement and stimulus; it is a narcotic. Smokers of Bhang or Ganja mix bits of tobacco and Ganja together before they charge their earthen pipes (चिलीम).

Snuff is another preparation made from the cured tobacco leaves and is mostly used by women folk. Snuff is nothing but tobacco leaves and stems ground and finely powdered in a large stone mortar with wooden pestles. No snuff is manufactured in the village, and it is brought for sale from the markets of Poona or Ahmednagar. A small bundle or packet is made up of leaves of the Palas tree containing snuff and the bundle is wrapped up in a paper cover outside. A bundle

contains snuff weighing $\frac{1}{8}$ Seer and is sold at Annas 2 and $\frac{1}{2}$ Seer at Annas $1\frac{1}{2}$. 150 individuals use snuff daily at a cost of Rs. 25 a month. The use of snuff is an innocent indulgence and is considered as a remedy to shake off cold and chills. A mixture of snuff and ghee is an application for the skin of ponies etc. to ward off flies and fleas (गोमाशा). One application may not cost more than half an Anna, a very simple remedy.

Bits of tobacco leaves are crushed together and made into fine powder, and this powder is used both by men and women for rubbing, cleaning and rinsing the teeth and gums daily in the morning with the right hand (no brush is used) in order to prevent tooth-ache or any tooth disease or trouble, and help to protect the teeth from decay. This process serves the purpose of several of the modern dental creams, dentifrices or powders. The use and comparative efficacy are not tried and are unknown. The ashes of tobacco leaves mixed with particles of salt are rubbed with the hand into the teeth and gums to serve the same purpose as the western tooth powder or paste.

Tobacco finds a place as medicine for human beings as well as cattle. The cultivator knows that tobacco is effectively used for certain kinds of maladies, that it is easily available locally, that it is the cheapest medicine, that it is a herb and no chemical preparation, (for which he has an aversion). But the use of tobacco as a specific medicine is confined to a few cultivators, and a large majority is quite ignorant of its medicinal value. No regular prescriptions are standardized or systematised.

A story from the Ramayan about tobacco may be mentioned. It is said that in the long and hard struggle between Ram and Ravan, Laxman, brother of Ram, was mortally wounded and the Royal Physician of Ram prescribed tobacco,

but it was not procurable then and there, and it was Hanuman (the Monkey God) who fetched the drug from the Northern mountains, known as the Dronagiri (a part of the ranges of the Himalayas). Tobacco is an imported plant from a distant region; it is now well acclimatized. But how far it has kept its original properties is simply a guess.

The following table gives the area under tobacco crop for the years for which it is available:—

Year	Acres	Gunthas
1901—02	1	4
1909—10	4	20
1911—12	1	11
1913—14	3	18
1914—15	0	33
1919—20	0	5
1920—21	1	5
1921—22	1	2
1923—24	1	5
1924—25	0	29
1926—27	1	26
1927—28	3	20
1928—29	4	25
1929—30	1	15
1930—31	2	5
1931—32	1	36
1932—33	1	36
1933—34	1	36
1934—35	3	15
1935—36	9	32
1936—37	1	8

It is a money crop and there is scope for its extensive cultivation. To lose such an opportunity shows lack of foresight. The present is an era for exploitation.

VEGETABLES

A list of vegetables and pot-herbs grown here is as follows:—

(A) LEAF VEGETABLES

S. No.	Marathi Name	English name	Use of leaves* and other parts	When maturer
				Months
1	मेथी	Fenugreek	Seed used for medicine, condiment, etc.	1½
2	वाकवत	Goose foot		2
3	बुका	Bladder dock		"
4	बंदनबटवा	Goose foot		"
5	फडी	Safflower	Seed used for oil	"
6	कोथिबीर	Coriander	Seed as spices	"
7	धांवटबुका			"
8	धांवाडी	Brown hemp	Seed used for animal-food Fibre used for ropes	"
9	पोकळा	Amaranthus mango stanus (green pot-herb)		1½
10	पालक	Beet-root		2
11	सोपू	Anise	Seed used as medicine	"
12	भाठ	Bengal amssianth (green pot-herb)		"
13	मोहरी	Indian mustard	Seed as condiment and medicine	
14	कांदा	Onion	Onions used as vegetables and spices	2½
15	हरबरा	Gram	Tender top leaves of young plants used as vegetable, gram used for various purposes	1
16	भाळ		Stalks used as vegetable	4
17	कोबी	Cabbage		3
18	फुल कोबी	Cauli-flowers		"

* Leaves of this group are all used as vegetables. The use of other parts, if any, is given in this column.

(B) POD VEGETABLES

S. No.	Marathi name	English name	Use of pods* and other parts	When matures
1	आवई	Sword bean		months 3
2	कुयरी	Negro-bean		"
3	गोवारी	Field vetch		"
4	चवळी	Chinese Dolichos	Seed for consumption as food	"
5	फेवडा	French bean		"
6	डिग्या	Pods of radish		"
7	भेंडी	Hibiscus esculentus	Seed eatable	"
8	भाल	Indian bean	Seed used as food; green seed as vegetable	"
9	वाटाणा	Garden pea	Do	"
10	पावटा	Large fruited Dolichos	Seed used as vegetable	"
11	सेवगा	Horse raddish tree		years 2
12	हातगा	Sesbania tree	Flowers used as vegetable	"

* Pods of this group are all used as vegetables. The use of other parts, if any, is given in this column.

(C) FRUIT VEGETABLES

S. No.	Marathi name	English name	Use made	When matures
1	कारले	Bitter Gourd varieties	Fruit used as vegetable	Months 3
2	कोहळा	Cucurbita pepo	Fruit used as vegetable and medicine	"
3	खिरा	Cucumber (varieties)	Fruit used as vegetable	"
4	चवकी	Pumpkin	do	"
5	पारहा-दोडका	Towel gourd (varieties)	do	"
6	पेंडसे	—	do	"
7	तोडले	Small red gourd	do	"
8	दोडके	Towel gourd	do	"
9	पडवळ	Snake gourd	do	3½
10	बांगी	Brinjals (varieties)	do	3
11	भोपळा	Gourd	do	
	„ दुध्या	Bottle gourd	do	"
	„ काशीफळ	Pumpkin	do	"
	„ मुगा	Bottle gourd	do	"
	„ तांबडा	Large reddish gourd	do	"
12	बेरुबांगी	Tomato (varieties)	do	"

(D) FLOWER AND BULB VEGETABLES

S. No.	Marathi Name	English name	Use made	When matures
1	केळफूल	The flowering head of a plantain	Flowers used as vegetable	Months 12
2	गोराखू	Yam	Bulb used as vegetable	6
3	नवलकोल	Nol-kol	Root used as vegetable	3
4	मुळे	Radish varieties	do	"
5	बटाटे	Potatoes	do	"
6	गाजर	Carrot	do	"
			Root used as cattle food also	

All these plants, creepers, climbers, bulbs, roots referred to, (on page 131 et seq) are annually cultivated and grown from seed sown, except Abai, Alu, Shevaga and Hatga (आबई, आळू, शेवगा व हातगा) which are perennial. The last two grow tall trees and last for many years. They give shade and their bark is used for medicine. Abai is one of the creepers climbing high trees, and continues for many years after plantation if fostered and maintained. During the hot season it is generally neglected when it is not watered, because the gardener makes no use of water for some time. Its stem becomes very strong after some years, and it spreads its green foliage on the top of big trees. It bears sword-shaped long pods which when green are used for vegetable. Alu is nothing but a sort of bulbous root planted and preserved under ground for years together in deep pits full of water and mud and slush mixed with farm manure at intervals. It thrives very luxuriantly on sewage and drainage water, if it is made available. The manurial value of sewage is well recognized with regard to the Alu plantation. The Hindus have a liking for the Alu vegetable and it is prepared in different ways, albeit it is cheap. When once it is planted and cultivated, it can last

for many years if care is taken yearly to remove the bulbs to other plots and to supply it with water and at times with farm manure, without any extra labour and trouble on the part of the cultivator.

Like all villagers in Maharashtra, the cultivators and others classify the vegetables grown here in four groups:—

- (1) Leaf vegetables marked A.
- (2) Pod vegetables marked B.
- (3) Fruit vegetables marked C.
- (4) Root, flower, seed and bulb vegetables marked D.

The Bazar rates vary and fluctuate according to the season, but generally the leaf vegetables (मेथी, पोकळा, चंदनबटवा, कडई, कोथिंबीर, आंबटचुका, आंबाडी) are the cheapest of all. Some of the leaf vegetables are grown in different plots under irrigation four times even during the course of the year if there is a good market for them, i. e. in the villages round the city of Ahmednagar.

The list may appear to be unnecessarily long, but it contains only such vegetables as are grown here. It is not that every cultivator sows all these vegetables or even most of them during the course of the year. It is simply the choice and convenience of the cultivator that influences him. Sarola has not, like so many other villages situated on or near the Railway, attempted to develop a regular trade in vegetables with Bombay. The cultivator wants to gain money on crops early matured and reared without much labour, irrigation, manure, weeding, etc. No one from here has yet come forward to undertake any such enterprise or even to take the necessary risk and to take the consequences.

Leaf vegetables, marked A in the list, are nothing but young and tender leaves, and can hardly reach Bombay even by rail in a fresh condition. Most of them are liable to speedy and natural decay and are not fit for transportation. Pod and fruit vegetables marked B and C in the list can

find a good market in Bombay, if they are sent fresh and young. But in Bombay their prices daily fluctuate very much, irrespective of the keen and heavy demand there in response to the variation in the large consignments daily arriving from other places such as Gujrat, the Deccan, the Karnatic and so on. From Poona large quantities of coriander plants (green) and green chillies are daily consigned to Bombay for sale, in addition to other vegetables such as Govari pods, Bhendi pods, gourds which are not so easily perishable. We find that the cultivators here have not yet cultivated the commercial habit like others. They say that as they have not sufficient land for the raising of their ordinary staple food and fodder crops, they can spare no land for commercial crops. There is weight in their contention, but it is a question whether they might not find it more profitable to grow some crops for which local conditions are specially favourable for the sale, and buy some of the grain and fodder they require from less favourably situated areas. Some cultivators and holders of fragmented land must be ruled out, though there may be exceptions of thrifty cultivators. But the other cultivators might awake and look up.

The cultivators here raise barely sufficient vegetables for their domestic consumption. No separate plot is ordinarily assigned for any of the vegetables. Some of the leaf vegetables are sown as mixed crops. Some of the pod vegetables are sown on the ridges of the beds. There are many varieties of gourd, and many of them are sown either in channels or in small vacant pieces of land in corners and irregular patches or along the hedges and fences. No particular trouble is taken to manure and foster any of the vegetable crops, even though they are actually cultivated. This may be ascribed to apathy on the part of the cultivators whom we might expect to bestow equal care and assiduity on all the crops they may choose to rear. The results of our enquiry here, as far as

vegetables are concerned, are not very encouraging. It is true that these minor products are not of much importance, because they are apparently of little value. But the cultivator must try to copy a shrewd Bauia. He can hardly make much from dealings with a single individual cultivator. But he tries to save some money from one, some from the other, some from the third and so on. So the cultivator must try to realise a little profit from every crop, however unimportant. We must recall a Marathi adage, "A tank can be filled with water drop by drop. (धेने धेने तळे साचे.)"

All European and American doctors and physicians recommend the use of vegetables; principally green ones are commended, and these are available here in large quantities and can be easily grown abundantly. The vegetables specially green are nutritious and are specially liked by the villagers. Green vegetables are preferred to pulses. They are healthy and wholesome. Most of the green vegetables are matured and ready for use within about two months, and their season continues for two or three weeks. After $2\frac{1}{2}$ months the crops are removed unless seed is needed and the plots of land covered by them are ploughed and prepared for another crop. We were surprised to find that none of the cultivators here had the idea of cultivating the leaf vegetable crops more than twice in the course of the year. Villages round Ahmednagar grow these vegetable crops thrice, if not four times, in the course of the year. They realise a good profit. Let us take the Kardi crop as an illustration. We can get a small bundle of Kardi plants now at half an Anna (6th June). In July, August and September and even in October, we can buy a bundle containing twice the number of plants at a quarter Anna. In February, or in March or in April, we can hardly buy half the quantity for half an Anna, even for more. In short it is plain that the cultivator can clear four-fold profits in summer or for nearly $5\frac{1}{2}$ months in a year. These facts cannot be

ignored. The margin of profit is good, but the season is limited and the crop is restricted in area. The law of supply and demand must have full play. But the fact remains that the crops leave an economic profit. Exploitation of the soil to the fullest extent is the first duty of the cultivator; he must blame himself if he is remiss or fails to realise his responsibility. His loss is the greatest and cannot be recouped, because the soil can bear no more and no longer if it once remained vacant, or if the owner has failed to procure the full yield at the proper time.

Whenever the early monsoon rains in June are sufficient for the germination of the various wild grasses, creepers, plants, climbing plants, etc., wild vegetation appears as an immediate growth within a week or so. The surface of the ground is covered with verdure. Among the vegetables which grow but are not cultivated, the following are grown naturally from seed carried by the wind and scattered over the soil here and there in its course along a hedge or the bank of a Nalla or in some secluded corner:—

- | | |
|------------------------|--------------------------------|
| (1) Kunjirtha कुजिरथा | (8) Barbata बरबाटा |
| (2) Kurdu कुरडू | (9) Ran Karle रान कारले |
| (3) Chila चिल | (10) Sarata or सराटा किवा |
| (4) Tarvata तरवटा | Gokharu गोखरुं |
| (5) Tandulcha तांदुळचा | (11) Sindal Makadi सिंदळ माकडी |
| (6) Tilvani तिलवणी | (12) Haran Dodi हरण दोडी |
| (7) Pathari पाथरी | |

After two or three weeks, these are well developed and the cultivators' women folk pluck the tender leaves from the tops and make use of them as green vegetables. The leaves are edible as vegetable for nearly a fortnight, as long as they are not in flower, and are at the best before they are in pod and seed. These are wild and indigenous and grow naturally whenever there is good rainfall. Here, as in the Central Provinces, further inland, women are often to be

seen plucking and gathering leaves for domestic use and even for sale if an ample supply is available. The cultivators have a liking for green vegetables because they are nutritious. They can be had for nothing, only the labour of the women folk being required for some two hours a day. In the long run it is a very cheap and economical and a wholesome form of diet, though it is apprehended that an excessive use and consumption of any of these green vegetables may result in dysentery or diarrhœa. With wide experience the cultivator and the members of his family are more than cautious in their use. When the plants are in seed, they are only used by the cattle, and cease to be of use as vegetables for human consumption.

THE PRESERVATION OF VEGETABLES

There is no scientific and regular preservation of vegetables grown in India as in Western countries and America. Tins of vegetables, air-tight and in good preservation, are shipped to India from Norway, Sweden and Switzerland, etc. The potentialities in this direction are great and the prospects bright and promising; because the Indian soil can produce a very considerable quantity of vegetables of varieties much more in excess of her actual wants and consumption, but for lack of market. Nutritious as green vegetables are (which are highly recommended by the medical experts) they are much valued by the Hindus of all classes alike and used with relish. But in distant and out-of-the-way rural villages (which may be linked with towns of importance in the nearest future by the advance of motor traction which may be organised as soon as the roads are made), green vegetables are not so much grown in winter and absolutely none in the summer. Even fresh fruit and other vegetables are not then available in rural areas; but the cultivators' women folk, if they are assiduous and thrifty, pluck, collect, gather, clean and expose to the sun such collections for drying and curing. After they

are well dried, they are deposited in large earthen jars, or pitchers or earthen pots. During the hot weather they are taken out, cleaned, boiled, cooked, salted and spiced like the fresh ones and are found to retain much of their savour. No system is known here for the preservation of vegetables in green and fresh condition. Canning is unknown. A list of vegetables that are cured, dried and preserved, follows:—

(1) Leaves of Kardi	(कडी)
(2) Leaves of gram	(हरबरा)
(3) Pods of Govar	(गोवार)
(4) Pods of Chavali	(चवळी)
(5) Pods of Bhendi	(भेंडी)
(6) Brinjals (cut into slices)	(बागों)
(7) Dingrya (pods of radish)	(डिंग्र्या)
(8) Pods of Val (beans)	(वाल)
(9) Carrots (cut into slices)	(गाजरें)
(10) Leaves of onions	(कांदे)
(11) Leaves of Methi.	(मेथी)

Some of the vegetables, specially gourds, are kept in their natural state in store, in the open air for two or three months or more. The principal are:—

(1) Kohala	(कोहळे)
(2) Kashifal Bhopala	(काशीफल भोपळा)
(3) Goradu	(गोराडू)
(4) Onions	(कांदे)
(5) Garlic	(लसूण)
(6) Potatoes	(बटाटे)
(7) Uarya or Sheranya	(उसत्या-शेरण्या)

These are in demand and realise good prices after the season is over. A poor cultivator cannot afford to preserve any of the vegetables by salting or drying. A cultivator of moderate means may save some vegetables for preservatio n

Be quite sure that many cultivators' house-wives may have some of the dried vegetables in their store for use. Daily they depend on their preserved (dried) vegetable for a number of days of the fair season.

THE VEGETABLE DYES AND TANNING MATERIALS

An account of the present condition of the cultivation of vegetable dyes makes rather melancholy reading when we remember the world wide fame of Indian dyes and coloured fabrics in past times. The cultivation of indigo was mainly confined to Indian soil, but now indigo is raised in a very limited area even in Khandesh where a number of pits and masonry works are still found in the jungle for the manufacture of indigo. The cultivation has been discontinued and cotton has taken its place. During crop inspection it was noticed that the village officers (Patils and Talathis) who were just out of their teens knew very little of the cultivation of indigo and its manufacture. Some of the old cultivators and Bhils are still able to describe the method of its preparation; but we are afraid that after this generation nobody will be able to give us any information about its cultivation, etc. There is another plant which is called Indian Mulberry (Alita) which gives red colour and was used as a red dye for Fadkees, Jahajams, Lepas etc. but it has also given place to aniline dyes. Alita, which was once cultivated on a large scale in Khandesh for the bright red dye, has also become extinct. Kardi (safflower) plant not sown in Khandesh, but extensively cultivated in the Deccan districts as a mixed crop in Rabi or an independent crop in some places in the Poona district produces a good red colour from its flowers. Kardi is a thistle-like plant growing $1\frac{1}{2}$ to 3 feet and bears red flowers, from the dried petals of which a dye is made. It is a very laborious task to pick up the dried petals and collect them in large quantities when the crop is standing. It has no sale in

the market on account of the foreign dyes and colours, and no cultivator is induced to deal in it. In a very few cases villagers make a dye of it for domestic use. It is not possible to revive the dye of safflower on a large scale. The method of collection of flowers is very primitive and crude. It is very cheap and indigenous when "Use Swadeshi" is the popular cry. The flowers are now crushed and threshed in extracting the Kardi seed and form part of the Bhusa which is burnt along with the stalks, etc. The dried petals, when collected, have an appearance like saffron but without smell and taste.

The bark of the Babul tree when mixed in a certain proportion with a small quantity of the bark of Jambul, Bor, Umber or Tarwad and boiled in a quantity of water together makes a brown colour rather like Khaki, and some of the villagers do manufacture it and steep their white clothes in the liquid mixture and expose it to the sun to dry. This Khaki colour is a fast dye and withstands washing.

Tarwad plant is another plant the bark of which is used for the purpose of tanning. The plant is not regularly cultivated but grows wild here and there in the fields, on the boundary lines, on the banks of nallas, on grazing lands and on waste lands, though during the Great War an attempt was made to cultivate it. It is a perennial plant. It grows on until it is cut. It bears yellow flowers all through the year and these flowers particularly are offered to Shri Devi during the Navaratra festival. The Mahars and Mangs uproot or cut the plants, strip them of their bark. The bark is dried in the sun and sold in the market for tanning and the other parts serve as fuel.

The bark of Babul trees is similarly used for tanning purposes. In this village when a cultivator wants to fell a Babul tree, he contracts with one of the village Mahars or Mangs to do it free, provided the bark of the tree is allowed him in return for his labour. It is treated as his wages.

The business of collecting bark is controlled by agents, and most of it is despatched to Bombay.

The local shoe-makers make use of the bark for tanning purposes. They purchase it from Mahars and Mangs.

We have no statistical information. But it may be noted that the preparation of bark is a good business for the Mahars in their spare time. The twigs and branches, etc. of the Tarwad plant are used as fuel after the bark is stripped off. The women folk sell it as fuel.

THE SWEET POTATO

We need not repeat here, in full, the details as to the preliminary preparation of land for the cultivation of sweet potatoes. It is an irrigated crop and is cultivated when there is available an adequate supply of water, and its cultivation is not confined to any particular season or period of the year. It is the cultivator's choice and he is the master of the situation—weather and climate conditions. During seasons of drought he can raise the crop to supplement his store of Jowari or Bajri. The land for the purpose is well ploughed, harrowed and farm-yard manure is applied. Beds of ordinary size are made with ridges and water channels. The method of cultivation is curious and unique. It is grown not from seed, bulbs or roots, or by transplantation of seedlings, but from cuttings made of the green and fresh trailers or stems of the sweet potato plant. The cultivator gets a bundle or a head-load of fresh trails or stems with leaves and nodes from a fellow cultivator for the asking in ordinary seasons. These trailers or stems are cut into pieces with their leaves and nodes, about, say, one foot in length. Prior to the actual cultivation the plot or piece of land is thoroughly soaked with water. Women labourers are usually engaged for planting at Annas 3 or 4 per day. A woman takes up a handful of the cut pieces and dibbles them apart one by one

in rows in the irrigated ridges. The dibbling process, though routine, is perfunctorily performed, because exact uniformity of depth is neglected. The consequence is that some of the sweet potatoes, when mature, are full and of elongated growth; some are smaller and others are mere tubers. In some cases both ends of the cuttings are left uncovered. After a fortnight or so the buried pieces take root and later on sprouts spring out of the nodes.

Generally weeding is dispensed with unless there is growth, because later on the surface is covered with trailers and leaves which go to smother or choke any growth of weeds.

Watering is necessary for the development of the plant and is repeated at intervals of 8 to 10 days until the crop is ripe and tubers under the ground are fully grown, sweet and edible, i. e., for a period of four or five months. The fully developed sweet potatoes are elongated and not like ordinary potatoes. Digging with a pick-axe to a depth of about a foot or more is necessary to take them out of the ground. The sweet potato is a trailing plant and it is used as a green fodder for cattle. On days of fast the Hindus make use of the sweet potatoes for consumption instead of their usual Jowari or Bajri. On the occasion of the Mahashiv-Ratra (fast in veneration of Shiv) and of both the Ekadashis (Ashadhi and Kartiki) these are invariably consumed by all the members of the family—even children who also observe the fast, as a religious duty. They are also used on other days, cooked, mixed with either milk and Jagri or a pinch of salt and chilly powder. The cultivator makes use of them partly as staple food when the staple grain (Jowari or Bajri) is comparatively dear. He and his family live on them in lean years as was observed even in Khandesh during the year 1918-19. The crop is not harvested all at once or at one stretch, but digging goes on from day to day so as to give a sufficient supply of food for the family and fodder for the cattle.

So in course of time the whole area of land under the crop is fully and completely broken up and its surface turned up. This is the best kind of tillage, and greatly improves the condition of the soil.

There are two varieties of sweet potatoes known here. One has a reddish outer skin, the other whitish. The red is sweeter and less fibrous than the white.

In normal seasons sweet potatoes are sold at Annas $1\frac{1}{2}$ to 2 per Seer, by weight.

Whenever there is a large crop and there is no market for the surplus produce, the women cut the sweet potatoes into slices, dry them in the sun and grind them into flour for use like arrowroot or corn flour. Sweet potatoes are not quickly and easily perishable. They last in good condition for a week and can find a market in big centres of trade.

The village records show the area under the crop as follows:—

	A. G.
1901-02	8-18
1921-22	1-21
1929-30	1-13
1933-34	0- 5
1935-36	0- 1

But these totals do not include the many small patches grown along with other crops the area of which is below the minimum area of a crop which need be recorded under the rules.

THE SHEVANTI FLOWER

This is not an important commercial crop; but as the cultivators here make the best use of it, an account of it may be interesting as evidence of their industry, thrift and skill. It is a garden crop and its cultivation is rather curious; it is not raised from seed, cuttings, or transplanted as a seedling,

but is grown from the old roots year by year for a period of four years or so. When the usual flowering season is over after the Divali holidays, the old plants are kept alive by means of irrigation once a week or so from the month of Margashirsha (October - November). As soon as the plantation season comes round in the month of Pausha or Magha, the old roots are unearthed, taken out and transferred to other beds previously ploughed, harrowed, manured and prepared ready for the new cultivation. With regular irrigation the roots spring into young new plants with profuse foliage strongly scented. The roots are planted in rows 2 to 3 feet apart, so that each plant may have plenty of room to expand and grow tall and luxuriant. Watering is necessary once a week for nine months from Magh to Ashvin except during the monsoon when from time to time the rainfall alone is sufficient. Farm manure is always applied but only as a top dressing. The plants burst into bud in the month of Bhadrapada or late in Shraavan. With the annual Dasara holiday, its flowering season commences, and as soon as the flowers are well developed they are plucked off, packed in bamboo baskets of two sizes viz. large enough to hold five Seers or ten Seers. There is always a good market for them either in Bombay, Surat, Ahmedabad, Sholapur, Indore and other towns. Generally the price obtained is about Annas 5 to 6 per Seer. The season lasts for about two months, a portion of Ashvin and Kartik. Flowers of Shevanti are less fragile than many other flowers, such as rose, Nevali, jasmine, and their petals are harder and firmer and not liable to be broken from their stems so easily. There are two main varieties of the Shevanti flowers which can be distinguished by their colours, white and yellow, and two kinds of flower—small and large. Even in the scorching heat of a tropical country like India the flower remains naturally fresh and sweet for a longer time than any other flower known here. This quality in a flower of its beauty and fragrance gives it a unique

value. During its season of two months and more the cultivator is careful and vigilant (and he ought to be) to pluck the flowers in good time for transport elsewhere. Even a slight delay may spoil or damage the flowers and cause him loss. Punctuality and watchfulness on the part of the cultivator are all important. During the rains weeding is essential, though watering can be dispensed with if the rainfall is sufficient to keep up the moisture. The same crop is carried on from year to year for four or five years; but at the end of this period fresh roots are brought in newly from other places or villages or where they are available in bamboo baskets which they term Hundedes (हुण्डी). Our inquiry here shows that the Shevanti flowers are also grown in Ghospuri, Khadki and in the nearest village of Astagaon in Parner Taluka about two miles from the Sarola railway station. At Akolner, a neighbouring village, the cultivation of roses is specially profitable. It is necessary for the cultivator to keep up a portion of the crop in beds the whole year round and for the next to rear it in other plots of his land and so on. It depends on the area of land sown with the flowers and the condition of the crop whether the cultivator can make a regular substantial profit. At times the variety known as white (large flower) is affected with pests. From this crop a cultivator can get ready cash in his hand from day to day and his whole earnings for one season may amount to Rs. 50 or even more if the area covered by the crop does not exceed half an acre. A very lucrative return indeed. As a rotation crop it has no manurial value; the crop may even exhaust the soil slightly.

As the flower is in great request in important towns such as Ahmedabad, Surat, Sholapur, Indore and Bombay, prices are always comparatively high; the flower has a longer life than any other flower; it is almost free from any pest, and any which affects it can be dealt with by spraying. It follows that the crop is more lucrative than any crop grown

on land under command of a canal. Labour, watchfulness and skill on the part of the cultivator are essential. The working of the Mots for the whole year round except the days of normal rainfall leaves no recreation for the cultivator or his bullocks. Making liberal allowance for all these, the crop, if successfully grown and fostered, gives quite a good margin of profit Rs 100 per acre is a substantial return. There is nothing speculative or risky. A sufficient water supply for the season must be assured. It is a good thing to have an orange garden, but still better to have one of Shevanti flowers.

The area grown with Shevanti flowers is given as far as it was available from the village papers.

YEARS	AREA	
	ACRES	GUNTAS
1911—12	2	5
1919—20	0	3
1920—21	1	27
1921—22	1	22
1927—28	0	30
1935—36	0	15
1936—37	5	32

ORCHARDS (ORANGES AND LIMES)

THE ORANGE

We must deal with trees regularly cultivated in orchards separately from other fruit trees. Orange, mozambique, lime, lemon, Vedalimbu, citron, guava, fig, pomegranate, custard apple, Ramphal (bull's heart), Chickoo, plantain, banana, grape, papaw, etc. are the orchard plants cultivated here to a small or large extent. Of these the most important is the orange which gives a handsome profit to its growers. The orange belongs to the same genus as lime (Limbu), mozambique (Mosambi) and lemon,

though these are all different species. The orange tribe comprises many varieties—संत्रे (orange), मोसंबी (mozambique) and लाडू (Ladu) are found here. They all have different tastes, serve different purposes, and are used on different occasions. Their rind differs, their pulp differs in colour. The fresh rind of orange is very oily and the slightest touch outwardly brings out oil. Here the cultivation of mozambique or Mosambi predominates. The area and the number of trees under cultivation are comparatively large. From a commercial point of view its value is admitted and recognised. Its advantages are:—

- (1) The fruit lasts longer in good condition;
- (2) Its juice is sweet;
- (3) Its flavour differs from that of others.

The preparation of the seedlings of an orange plant is a very intricate process which requires patience and careful watching. It needs expert knowledge; but no seedlings are prepared here locally and no attempt is ever made to grow seedlings. No one here has any experience in preparing seedlings. They are bought and brought ready for transplantation from the private nurseries of farmers of Talegaon Dhamdhere in Sirur Mahal of the Poona District at Rs. 20 to 25 per hundred bound in bundles (Hundis made up of roots and rootlets of the seedlings covered with earth, etc.) in bullock-carts. A cart can carry about 1500 Hundis and the journey to Talegaon and back can easily be performed in four or five days. Rs. 2½ to 3 per diem is the cart-hire during the fair season. Rs. 10 is the cart-hire for one trip. With the advent of motor service the seedlings are now carried by motor bus.

Beds, plots, ridges and channels are made ready beforehand in that part of the garden which is fully commanded by the well and assured of a constant supply of water. Cultivation is undertaken only in gardens, in which there is an un-failing supply of water in the well. Seedlings are planted fifteen feet apart in rows in straight lines, say in the month

of June-July. It takes about four or five years for a seedling to grow into a tree ready to bear fruit, but the interval is utilised for raising small crops between the rows, such as ground-nut, chillies, coriander, Bhandi, Cavar, radish and vegetables, and care is taken that the young orange plant is not smothered in any way. Except in the rainy season, if the rains are plentiful, the young plants need watering once in ten days or a fortnight, and are kept clear of weeds till they arrive at the stage of yielding fruit (i. e. the fifth year after plantation). The orange tree is in blossom thrice a year, and it needs to be specially treated for one of the particular Bahars (blossoming season). The three seasons known are Hatti-Bahar (हत्तीबहार) (September-October), Ambe-Bahar (आंबेबहार) (December-January) and Mrig-Bahar (मृगबहार) (June-July). During the season, September-October, though the days grow hot enough to create some demand for fruit for cooling drinks, the demand is not very keen. During the December-January season the fruit is in great demand and is sure to fetch good price because of the forth-coming hot weather. During the rainy season fruit growing receives little attention and nobody takes the trouble to get the fruit from the Mrig-Bahar (मृगबहार). It is not in demand. Generally two of the Bahars are selected according to the convenience of the growers who must see that during the season there is plenty of water available for irrigation. Before the orange tree is treated for fruit it is essential that the irrigation of the whole of the orchard should be discontinued for nearly two months, that weeds are hoed very carefully, that a bed for each plant is dug, loosened and laid out, that the roots of the plant are opened out, that the plant is carefully pruned, if necessary, and that a top dressing of farm manure is applied. One iron basket (8 to 10 Seers) of manure for a plant is a moderate estimate. After these preliminaries are gone through, the beds are filled with water, and watering is repeated once in ten or fifteen days so that the trees may put forth

blossom and in due course bear fruit. A lot of blossom is lost, a lot of fruit drops, a lot of leaves fall during the interval, weeds appear and reappear and hoeing must be carried out regularly and thoroughly and the weeds thoroughly eradicated. Women labourers use their Khurpas for the removal of vegetation. It is a costly operation, because the women work in a very leisurely way and the out-turn is not great. A wage of Annas three to five is paid per labourer. It takes about three to five months for the fruit to develop and ripen. Like the apple tree the orange plant is so much weighed down with a large crop of fruit that its branches are in danger of being broken or of giving way, unless small pieces of bamboo or stumps of Shevari plants (which are even less costly) are used as props around the plant. The props are carefully watched, arranged and rearranged, and extra props, if needed, are requisitioned; so in this fashion the fall of fruit is minimised. A single tree should bear from 800 to 1000 oranges at the age of nine or ten years. Wild animals such as hyenas (तरस), deer, foxes, jackals, pigs, porcupines and bats and birds such as owls, crows, parrots, etc. are a great nuisance and do considerable damage to the crop, and a variety of measures are devised to keep these away. Extra watchmen are engaged who scare away the beasts and birds, some of them keeping awake the whole of the night near fires. Explosives are at times used, though they are costly. Noises are made with the beating of tin-pots, etc. In spite of all these precautions there is always some damage done to the crop, although it is minimised; but nocturnal birds such as owls and bats make roosts high up on the plants in secluded places, and the watchmen are unable to scare them away in the pitch dark nights. A watchman is paid about Rs. 10 to 15 per month. If a Bhil is available he may accept a lower wage than the other labourer, but he is usually less careful and trustworthy. A Bhil's work is always supposed to be indifferent and

inefficient, but at times the *Bani's* services are reluctantly retained. Something is better than nothing. These watchmen put up small huts, thatched with grass, straw or leaves. For the night watch, firewood or fuel is collected. When the crop for the season is assured and a little before it is ripe, the grower sells it outright to a fruiterer or middleman or agent who arranges to transport the fruit to Bombay by rail. It is a sort of contract, the terms of which may be usually as follows:—

(1) The grower binds himself to water the crop for two months or as long as there is fruit on the trees. The cost of watering and water distributor (दारे धरणार) is borne by the grower; it may amount to Rs. 2½ to 3½ per diem according to the season.

(2) A rate is settled at so much per tree, perhaps about Rs. 2.

(3) The grower gets a share of fruit at so much per hundred of fruit picked up for his private consumption.

(4) Watchmen are entertained by the buyer at his cost.

(5) Huts for watchmen are provided by the grower.

The terms may vary according to the wishes of the parties, but we have quoted the commonest and most usual.

The following is the result of an enumeration made on the 12th November, 1928, of the orange and lime trees (including mozambique trees) etc. in the village:—

No. of Growers	Area of Land		Assessment	No. of Trees
	A.	G.	Rs.	
8	13	25	20-0-0	2200

All these trees have been yielding fruit for some years past except those of one Dhamane who has grown the orchard within the last four years and who expects to have a crop of oranges in the next season. Once an orchard of oranges is planted and well developed and established, it lasts for thirty to thirty-five years, and the grower's profit is secured if he does not run short of irrigation water at any time at least when the trees are especially treated for fruit. It is certainly a good investment in its way, if properly and reasonably cared for.

For a long period of thirty-five years no ploughing is necessary, no harrowing is called for and no heavy and rich manuring is needed for the whole of the plot except the annual top dressings. This enormously reduces the annual cost of cultivation or tillage in its primary stages. But hand-hoeing is a costly operation, and the women labourers are inefficient workers. Repairs and renewals of hedges must be attended to. In the long run, however, the outlay on the maintenance of the orchard may be equal to that of the average of thirty-five years, of ordinary crops. If the grower is prudent he is certain to plant some hundreds of mango trees within the interval on all sides of the orange plot. So the investment is sound. Monetary investment at four per cent doubles itself at the end of twenty-five years. Deducting the cost of the upkeep of the orchard and any incidental outlay a net profit at Re. 1 per tree per annum is a very moderate estimate. There is ample and full work for the bullocks and servants throughout the whole year and no subsidiary occupation is required. This is an immense advantage. A grower is not short of money when the fruit is regularly marketed. He tries to make money out of the fruit he reserves for private consumption. His share always exceeds his actual domestic consumption.

It is expected that for part of the first ten years and the last five years of the plantation, the trees may not give

a full yield, i. e. for seven or eight years the produce may be lower than during the maturity of the trees. Local consumption is very limited, and generally inferior and spoilt fruit finds a market locally at, say, Anna $\frac{1}{2}$ apiece or even less. Twenty years ago the use of oranges was confined to the well-to-do classes, but now even the humblest of the people can enjoy the fruit even if they cannot yet afford the best quality.

An attempt was made to ascertain when it was that the cultivation of oranges was first introduced in the village. The village papers prior to 1901 were destroyed. It appears from the records that in 1902 there were 500 orange trees standing in the gardens. In 1911-12 there were 900 trees here. It was in 1929 that the number of trees rose to 2300. Now in June 1936 the plantation of oranges has advanced considerably. More than 5000 trees have been planted during the last three to five years.

THE FRUIT TREES

MANGOES

Like the adjacent villages of the Patner Taluka which provided a large part of the supply of mangoes (Amba) (*Mangifera Indica*) for the City of Ahmednagar, Sarola contains a large number of mango trees. Some of them are in small topes and groves in the gardens of the village, and some are found here and there scattered and isolated in fields and gardens and on the banks of the Nallas which appear fresh and vigorous. Some of them are old and fully grown, noble trees. Most of the mango trees here have been reared up and fostered by the cultivators themselves some scores of years ago. On the 12th November 1928, we arranged to take a count of all the trees in the jungle here.

The trees were distributed as under:—

	Occupation or Caste	No. of Trees	Value	
	Marathas.—		Rs.	Total includes
1	The Dhamanes (7)	36*	720	* A mango tope of 13
2	The Kadus (6)	35†	1025	† 2 topes of 10 & 12
3	The Kales (3)	29	320	
4	Other Marathas (3)	6	115	
5	Mali (1)	3	15	
6	Brahmans (2)	20‡	600	‡ one tope of 15
7	Marvadis (3)	37§	1040	§ one tope of 25
8	Musalmans (2)	7	95	
	Total (27)	173	3930	

The value is estimated approximately. Trees of long standing and of many branches were appraised at a higher value. Trees standing in groves were similarly assessed at a higher value. Most of the trees here are owned jointly by the members of the Maratha community (farmers) and they divide the total yield of fruit in proportion to their ownership shares. Owners of a few trees, say two or three, have scarcely any fruit to spare for sale. The others having topes of mango trees realise good prices by sale. Prices fluctuate; but it may be reasonable to estimate the value of the produce at Rs. 5 to 10 per tree. It may be calculated that a sum of Rupees 1000 to 1200 can be recovered from this source for the owners. It is no doubt a good source of profit annually. It is necessary to keep watchmen for a period of up to two to three months at

the mango topes of importance at a cost of Rs. 8 to 10 per month. A round sum of Rs. 100 may be put down to meet the wages of watchmen.

The plantation of new trees has been, of late, very much neglected for one reason or other. Not only that but no attempt has been made to substitute plants for any that died or were blown down. During the last quarter of a century (1905-30) hardly a dozen trees have been reared and planted, notwithstanding that many old ones have died in the interval. The future generation may have to regret the remissness of their forefathers, the present generation. The plantation of such trees is to be carried out by one generation in order that the fruit may be reaped by another generation. It is said that some of the odd mango trees are more than half a century old. As in the United States of America there ought to be a sort of festivity annually in celebration of the Day of Tree Plantation. The rainfall of Mrig Nakshatra (S. W. Monsoon) may be an auspicious and seasonable time, but it mainly depends on the early advent of the monsoon. The village records prior to 1900-01 were destroyed. We could ascertain from the village papers for 1901-02 that there were then 200 mango trees in the village; at the time of our enumeration referred to above (1928) there were only 173 in all. The reduction may be due to some of them having been blown or cut down or died. We may certainly affirm that all the trees now standing are more than thirty-five years old, though we were assured that most of them are as old as half a century, if not more. We made a further enquiry in June 1936 and were glad to ascertain that about 125 to 150 mango trees had been planted during the course of the last three or four years, bringing the total up to 300 to 350. The planters take every care and precaution to see that they thrive very well notwithstanding accidents, etc. etc. Let us wait the result of the latest plantations.

From stones of ripe and rotten mango fruit of the best variety seedlings are prepared in nursery beds, and are kept to grow up for a year or so before they are transplanted in a regular line, if in large number, along the boundary of the land or a water channel or along the bank of a stream in one or two rows as it appears convenient to the land-owner. As they are planted more than 30 feet apart and at times on uneven ground, water is carried on the head in earthen pots to their roots in beds. They need watering once in ten to fifteen days for three years. Unless the grower himself does the watering it costs him a quarter Anna per Ghara per tree. The open and vacant spaces, if any, between the trees are grown, if possible, with small vegetables, coriander, ground-nut and other minor crops for five years or more till the trees are well spread. A mango tree is due to produce fruit five or six years after it is planted. For half a dozen years later, the young trees yield a moderate crop and after nearly a score of years the trees are in their prime. The raising of seedlings is an easy matter and costs very little.

It is a general complaint of the grower that the work of plantation is very irksome and annoying on account of the need for its being constantly and vigilantly watched; because during a part of the hot season when no crops are standing and none of the growers are present to keep watch and ward, stray goats, sheep and other cattle are sure to damage or even completely destroy the young trees though they may be growing within thorny hedges or circular wicker ware baskets or cages or other guards. Such damage is immeasurable and irreparable, and means that the labour and care of years are wasted. This is we think the real reason why the plantation of mango trees has been neglected or rather discouraged. This is another instance of the advantage of having farm-houses. Here many cultivators complain that when all the surrounding and neighbouring fields are without crops, the growing crops

(like an oasis) are subject to the constant trespass of stray cattle. This abuse may cease when more of the neighbours follow the example of the more active farmers.

The renewal of hedges is a source of trouble from time to time. Unfortunately no satisfactory type of hedge, sufficiently effective, durable and cheap has yet been devised to suit local conditions.

A yearly programme of plantation of mango trees should be framed and carried out as a social or religious duty by the cultivators here. The work of plantation in large numbers and on a large area is a commercial speculation.

We need not repeat here that mango trees do not ordinarily yield so much fruit annually but on alternate years, and with a poor crop for the last four or five years owing to the succession of years or seasons of precarious rainfall in the village. During the season of 1928 (March to May) the mango trees here bore no blossom and the crop was poor, not even enough for local consumption. Whenever the trees bear fruit they yield a return of about Rs. 1000 or more according to the sufficiency of the rains. A large number of mangoes is used for domestic consumption and any available surplus is sold, but those who have topes and groves are able to offer some of their fruit for sale. In the village there are five topes of mango trees.

Once a tree is planted and is well grown, no further expenses or pains are necessary. Not even special watering is required. Some of the trees get water along with the other irrigated crops from wells.

A tope of mango trees on the bank of the Nalla is certainly cool, and a convenient spot for a short stay in a tent in the tropical heat of the day is very welcome and pleasant.

No wild mango trees are found in the jungle here, as in the Dangs and Western Ghats where wild mango trees

grow in abundance in villages, on the banks of rivers and in valleys, and their fruit is picked up and gathered by Kolis, Thakurs, Varlis and Bhils.

The villagers are practical cultivators and are neither speculative nor even enterprising in temperament. The cultivator is very cautious, though he is said to have plenty of potential energy and enterprise in reserve.

None of the mangoes here are of the best type such as Payari, Alphonso or of any known variety, but some of the trees are said to produce fruit with special relish and flavour. A few of the trees bear fruit which have a taste locally called "Shepya". Almost every tree has its own special character. No grafted trees are yet planted here. Nobody has any knowledge of them.

A mango fruit is used at every stage of its development, in one way or another, except when it is very small. Raw mangoes are cut into slices, and they are mixed, cooked, boiled with bit of Jagri, and all these preparations are known as: Chatni, Varan, Kadhi and Panhe, etc.

The juice of mango fruit, when ripe, has a good flavour and taste. It may be thick or thin, sweet or sour. It is eaten with wheaten cakes or bread. It is delicious. It is made into what they call Polya (पोलया) (thick cakes); (i. e. the juice is spread in a plate the size of a cake and dried in the sun). Polyas and Vadyas made of the juice mixed with sugar and heated and cooked over the fire, last for two or three months if they are kept free from moisture, and when they are eaten they have the flavour of a fresh mango when these are not procurable.

Pickles (लोणचे) and preserves (साखरआंबा, गुळआंबा) are made of the raw mango fruit. The cultivator's women folk would rarely fail to make pickles of the raw mangoes, because they make use of them on many occasions in place of vegetables along with other articles of diet for the whole of

the next year. Green mangoes are cut into halves partially or are made into slices or pieces with the stones thrown away, and the cut portions or slices are mixed with powdered salt, spices such as turmeric, Methé, mustard seed, sweet oil or mustard oil and at times chillies (powdered) for pickles.

For preserve:—Either Jagri or sugar is boiled and made into syrup, and slices of raw mangoes are boiled together in a brass pot, and the preparation when boiled is kept in clean pots or jars for future use. This kind of preserve lasts for some months and is eaten on occasions and as a treat to guests. Nobody here knows about mangoes in syrup. The method of preservation of mango pulp is unknown to the villagers.

During the Great War, the Indian soldiers serving in foreign lands, either in Flanders or in any part of France, Africa, Turkey or Mesopotamia, etc. were supplied with pickles from India for consumption as they were very fond of them. Many ladies of rank in India took a lively interest in the preparation of pickles of a variety suitable for transport.

Green leaves of mango trees are used for house decorations on auspicious and religious occasions. The dry leaves serve as manure.

The village is self sufficient as far as the mangoes are concerned, though the supply may be supplemented from outside at times. Mangoes from other places are brought here very seldom, unless they are of a better and special type and in small quantities. Mangoes are rarely sent out to other villages in large quantities. A commercial spirit regulates the demand and supply of mangoes. We noticed some owners picking up fruit on 20th May 1928 and removing them home for being warmed (आदी लावणे) to hasten the process and action of ripening. Some had done it already beforehand. Some will follow suit in a couple of days. As the prices are not favourable some trees were still found laden with fruit.

During our strolls in the jungle here more than a dozen trees out of a score were seen covered with fruit on 1st June 1928. They were awaiting picking.

A thin long bamboo fastened with a kind of noose at its end is used in order to pull off mangoes from the branches. This noose or knotted net bag has small pieces of bamboo or iron inserted in it to break the stalks with a jerk. It is called a Gudhi (गुडी), costs Annas 8 and is always found with owners of mango trees. If mango fruit is plucked off the high branches and allowed to fall from a height, it is sure to get bruised or otherwise damaged. In order to save the fruit intact a kind of net bag or net sack is held up by other men just beneath the branches and the fruit is allowed to drop into it. This is called the झेला (Zela) and it costs As. 8 to 12. It is made of hemp fibre.

The wood of mango trees is sawed into planks or boards if it is sound, and they are used as shutters for doors, etc

POPAL (CARICA PAPAYA पोपई)

The Popal (papaw) plantation is mainly confined to irrigated land. The tree continues to give fruit for three years in succession when old plants are removed and the land under them is cleared up and ploughed. The stumps, stems, leaves and trunks of the plants are absolutely of no use; the trunk which is fibrous and hollow is thrown away and burnt. The crop has no manurial value, either as a rotation crop or like a leguminous crop, except that as the crop stands for three years, the soil is recuperated to a certain extent. The seed of Popal is easily available, though it is not always of the best type. No one here makes any special selection of the seed. A full grown and ripe Popal fruit of oblong shape, good size and yellow colour locally known as Bakshi (बक्शी) is, as a rule, procured, and the seed is taken out and sown broadcast, and seedlings are ready after a month or so,

They are transplanted in beds at a regular distance of four feet or even more; a large open space between plants is purposely left in order that each individual tree may have sufficient room for its leaves and roots to spread. The seed of such a fruit as Bakshi (बक्षी) which contains only a few seeds is always chosen as the best for planting; a fruit containing a large number of seeds must be rejected as of no use for seed, as it produces round fruit of less value. Gardeners say that generally a crop grown under the shade of any other tree or plant does not thrive well and in many cases dies; but the Popai plant is an exception and remains unaffected, nor is it in any way damaged, nor is its fruit in any way spoiled by the thick shade of surrounding trees, creepers, hedges, etc; because the Popai plant out-grows and out-tops all surrounding vegetation and undergrowth in a period of less than one year, or it becomes immune from the shade cast by other plants. As it grows, it keeps its foliage and leaves only at the top and its shade is limited and moves with the sun. A Popai plant grows more than eight feet in a year, and is loaded with fruit in clusters or bunches just near the top as we find cocoanuts at the top of the palm tree. There are many different varieties of Popai plants, and so many different sorts of seed. The young seedlings have male and female (नरमादी) varieties, but at the first stage or at the time of transplantation they cannot be distinguished, and are planted indiscriminately and allowed to grow up together until after they begin to bear yellowish flowers and fruit, when the cultivator cuts and destroys the male ones without any fruit. The crop needs watering in the dry season once in ten days or a fortnight and also during the monsoon when the rains hold off for a long time. A top dressing of farm manure is very useful, but it is rarely applied. A plant may yield from 75 to 100 or more Popais in the course of a year, but much depends on the care bestowed on the crop.

A Popai fruit, when ripe, fetches from $\frac{1}{2}$ to 4 Annas or more according to its size, colour and flavour. It has a green skin similar to that of a mango before it is ripe. The fruit is procurable in the market of Ahmednagar almost throughout the year although in varying quantities. Fruit-sellers in Ahmednagar even try to get partially raw fruit and let them ripen after pulling. By this method, however, the natural taste and flavour are lost.

The Popai fruit is sweet to eat and is very digestive. Its pulp or flesh, like that of a good mango, is thick and rich and has a nice flavour. The Ayurvedic Vaidyas prescribe the fruit as a part of the diet for the cure of dyspepsia. Many patients use it as medicine. The Indian patients are very fond of the fruit which they or some of them use daily. When plucked raw off the tree, the fruit is cut into slices and used as a vegetable, mixed with salt and chilly powder, etc. The farmer's wife here is not very well up in domestic cookery and can make no use of the fruit for pickles, preserves and other such preparations; but as the fruit is edible and has heavy pulp—either when raw or ripe—it can be used as food or medicine in its natural condition. Cultivation of Popai could be considerably extended in lands under the Godavari and Pravara systems of irrigation, and when sugarcane growers can conveniently do so in place of sugarcane, new fields might be opened for exploitation. The extension of cultivation under Popai is attainable with less labour and expense than the growing of sugarcane. Soil for Popai plantation may be chosen in corners of irrigated lands in small patches here and there; poor muddy soil even can grow the plant. The Visapur tank is now in operation and the plantation of Popai there in small patches and in corners would be very welcome. Within a radius of six miles of the Visapur railway station the cultivation of Popai would be very paying if a market in Bombay, which is easily accessible, is secured.

It is said that the Popai plant is not a native of India, but that it has been introduced from foreign lands; we have no definite evidence. It may be affirmed, however, that the Ayurvedic medical men make use of its fruit, as it is looked on as a classical plant known in India for many centuries even before the Christian era.

During our study we have noticed that the cultivator has taken to increasing the land under the crop, but we cannot gauge its economic value one way or the other just at present: whether it would be advantageous to extend cultivation or not; but certain it is that the crop will be fairly profitable. A light irrigated soil is what is needed for the plantation. When once it is planted there is no expense to be incurred for the next three years, on account of tillage, seed, harrowing, watching, etc.; only punctual watering is required.

Popais of medium size are sold here when they become ripe at two pice (pies 6) apiece. The true type of Bakshi is not available. They are not for sale in the local Bazar in large quantities; but a dozen and more Popais are daily offered for sale in this or neighbouring villages or at the railway station.

OTHER TREES AND THEIR DISEASES

The important trees in the village are:—

FRUIT TREES	TIMBER AND OTHER TREES
(1) Amba (Mango)	(6) Nimb (Melia Azadirachta)
(2) Chiach (Tamarind)	(7) Babul (acacia Arabica)
(3) Bor (Jujubi Tree)	(8) Umbar
(4) Kavat (Wood Apple)	(9) Gondhan
(5) Jambhul (Eugenia Jambolana)	(10) Bhokar
	(11) Pimpal (अहवत्थ)
	(12) Pimpri
	(13) Banyan (वृक्षोष्)

During our enquiry here many trees were found to be diseased, eaten or damaged by white ants, to be hollow in the inside, to have one of the main branches dead or worm-eaten or otherwise damaged. To our surprise the cultivators seemed to pay no attention to this branch of the agricultural yield or produce of their lands. It can be described as agricultural produce, because the trees referred to are fostered and reared in the area of the field and garden of the cultivator. They receive all the same attention and care as do the other cultivated crops grown along with them. They are not here as a natural growth of trees as in a forest. Mangoes are the only trees that have been planted and reared in the gardens of the village, they are grown in groves or topes, but also here and there singly. Many of the Babul trees are quite hollow in the inside, though some of them may be more than ten years old. When the core of the stump is rotten, the tree is of no use either for implements or for any domestic purpose. It is simply used for firewood. It follows that so many years' labour and care and the area of the land occupied are wasted. Is this no loss? Suppose the fire-wood of the tree fetched Rs. 3 and the tree, if sound, might probably have fetched Rs. 8 to 12. Is not the cultivator heedless in allowing the tree to stand so long? A dead loss? Our suggestion to the cultivator is that no such tree should be suffered to stand on the smallest piece of arable land whether dry crop or garden. It should be felled and the ground cleared. A sound Nimb tree that stands on a piece of land for twenty-five years or more fetches an extraordinarily high price because the timber is said to be better in some respects than teak. Its wood is red or brown, compact, sometimes resembles mahogany, takes a beautiful polish; is fairly durable and is so bitter that the white ants and other insects will not touch it. It is used for construction. From the fruit oil is extracted. Cattle and goats do not eat the leaves, and little protection is

required. When the tree endures for twenty-five years or more and if it has grown straight and high it undoubtedly provides a valuable timber. As regards fruit trees (such as mango, tamarind, Kavat, Bor and Jambul) they may be kept on and maintained, even though they may be hollow in the inside or any way deformed, provided they continue to bear fruit. If not, they, too, must be cut down and the land cleared. Some of the trees bear fruit, but before they ripen they are full of maggots, insects, etc. None of the cultivators have devoted the least thought as to why there are maggots inside. So no idea of remedial measures enters his mind.

It may be observed as a rule with respect to the fruit trees that the cultivator should have a cavity dug around the trees, large and deep enough to hold rain water, but not so deep as to allow the roots to be injured. A top-dressing of farm yard manure may be applied. It may be worth while to put a small layer of salt at the root of the tree. In the local Bazar we get salt for human consumption at a higher price, but salt for agricultural purposes is procurable in Bombay at the cheapest possible rate and can be made available in the local market if the demand is sufficiently great and remunerative. When the trees are at the stage of flowering and if it is observed that they have been attacked by insects, the best course for the cultivator is to get all the trees sprayed over. Raw fruit is not so sensitive to worm as the ripe one. There is no harm if the operation of spraying is directed to the raw fruit as well. The Bor fruit, when ripe, is often full of maggots. It is for the cultivator to take steps to adopt all the remedial measures in time. It is he who is to blame if he cannot realise anything from the produce. With regard to the Kavat, tamarind and Jambul, our observations and instructions, as detailed above, hold good.

The trees get damaged, diseased and deformed during their growth. Is there any remedy for this? We have gone

through a long list of bulletins prepared by the Agricultural Department for the last twenty years, but we are sorry to state that the subject does not appear to have attracted their attention. As far as we know no bulletin is available on the subject. No research has yet been made to our knowledge. The first thing is that ant-hills near the trees should be eradicated. The formations of new ant-hills should be watched. Some weevils infect the trees, but as soon as it is noticed they should be cleared off. Ants and beetles hang about trees, and it must be a business to ward off all of them. The surroundings of the trees should be perfectly clean, and rotten things lying about should be collected and consigned to fire. Mark that the trees have not been developing signs of degeneration or deterioration even after so much care and precaution. It is better to remove a hopeless tree than suffer it to grow any longer, notwithstanding the cost incurred.

We have advocated spraying as a remedy for insects and tree diseases. But what is it? In America, too, once, the farmers did not know how to combat these infestations and sat idly by to see their once splendid orchards deteriorating, so much so that it afforded the farmer not even enough fruit for his own use; but they have found that by spraying their trees in the spring and summer they can rid their fruit of these pests. No general calendar of spraying for all villages can be attempted but a general idea can be given.

Such chemicals as (1) arsenate of lead, (2) lime sulphur and (3) Bordeaux mixture are the most common sprays used for the purpose.

The chemicals are poisonous and their use must be made with the greatest care and vigilance. Poisons to be effective should be sprayed with good sprayers. To apply these sprays, successfully a spraying pump capable of producing at least 150 pounds pressure is required. Even in a rich country like America, many farmers, who only have a few

trees, do not feel justified in investing money in such a pump, but often this is adjusted by several neighbouring farmers purchasing together such a pump for use. In this way many farmers can all have an opportunity of using the pump at comparatively less expense. The Co-operative Societies, Agricultural Associations or the Village Panchayats can take interest in matters like this. In the Bombay Presidency a general demand for spray parties may be satisfied by the District Local Boards under the supervision of the Agricultural Department. Every District Local Board should have a party of men trained in the use of sprays. The party may have a regular programme of tour. They must take one village after another. The charge for the party and the chemicals should be very moderate. Exemptions may be granted at the recommendations of the Taluka Local Boards. But when such parties are not organised, nor is there any probability that before long any may be entertained, the cultivator must be enabled to make use of the sprays, so to stand on his own legs. Sprayers, either bucket type or those which are easily carried on the back, are becoming more and more essential for spraying insecticides or fungicides in various crops like grapes, potatoes, etc. Sprayers are available for sale at present from Rs. 25 to 100 from Mr. H. V. Gore, Nasik and Messrs K. B. Joshi and Co., Bombay.

Various chemical preparations have been devised for keeping off insects. A few simple formulæ for the use of the cultivator are mentioned below :—

(1) KEROSENE SOLUTION

Mix two Chattaks of hard soap or soft soap in half a gallon ($2\frac{1}{2}$ Seers) of boiling water. Stir till the soap is well dissolved. Then add at once one gallon of kerosene oil. Churn the mixture vigorously till it becomes cream. This forms a stock solution. For use add eight parts of water to one part of this solution.

(2) COPPER SULPHATE SOLUTION

Take two Chattaks of copper sulphate which may be had in any Bazar. Dissolve in half a gallon ($2\frac{1}{2}$ Seers) of boiling water. Add two gallons of cold water for use.

(3) TOBACCO WATER

Boil four Chattiaks of dried tobacco in half a gallon of water for half an hour. Dissolve in this one Chattiak of hard soap. Add three gallons of cold water for use.

The three prescriptions referred to are for any common cultivator who chooses to make use of them. We have already said that care and proper precautions must be taken by the cultivator concerned. Instead of any pump a common syringe, such as a tube of bamboo or zinc, or such as is used by boys at the Hindu Rang Panchami festival, may be conveniently utilised. Either of them is very cheap. The Public Works Department, the Local Boards and Municipalities now apply dammar to the trunks of road-side trees about one foot to one and a half from the ground level in order to prevent white ants and other insects from destroying the tree; but despite its efficacy the method is inadequate, in that no care is taken of the roots under the trees which are more oftener than not affected. Trees growing in a garden or a field are under the constant supervision and observation of the owner, who, as soon as his attention is drawn to any injury to a tree, must see to it that no more damage results. Next to sprays we come to the matter of pruning the trees. By pruning we mean cutting out the excessive woody growth of the trees, so that all the plant food can go to nourish the fruit. Trees will produce extra branches, if they are left untouched: they will continue to produce too long branches, and in this way the plant food may be reduced so that the plant itself may die. Pruning is very essential, but it must be carried out prudently. Generally the trees should be pruned while young; the smaller the branches

are when pruned the less the harm done. It may distribute the plant food in proportion and give tone to the tree. Dead branches of the trees including the twigs, etc. may be pruned nicely. Be it borne in mind that in the operation of pruning the top of the trees can be kept in balance with other branches and the system of the stump or trunk. Babul trees not only need to be pruned but they may be lopped of their secondary branches. It is true that in the village there are no farmers who are experts in the art of pruning. In India or at least in the Deccan no pruning was ever undertaken by any private owner, but experience and long experience will prove that pruning is very easy and can be carried out by any careful cultivator. The age at which pruning should be commenced and the amount to be pruned depend on the rapidity and vigour of the growth. It is a bad practice to prune a tree by hacking off the branch it is wished to remove at six inches or a foot from the stem, leaving a jagged unsightly stump. These snags rot and bring about the quick decay of the tree. All this can be avoided by using the saw instead of the axe and by cutting off the branches smoothly flush with the stem. Such wounds soon heal and become covered with bark. Pruning could be done with an axe even, if sufficient care were taken, but note that this care is never taken and so it is imperative that no axe should be used. We would recommend tools and implements for pruning, etc. of trees:—(1) Khurpa, (2) scythe, (3) pruning knives, (4) pruning shear, (5) a tree pruner, (6) a branch pruner, (7) Indian saws, (8) pruning chisels, (9) wooden mallets, (10) axe.

An Indian cultivator keeps implements of agriculture as specified, but these never included anything for pruning. It is not necessary that all of them should be available, but some of them are absolutely essential. Such are pruning knives, saws, etc. Others may be tried by and by.

There is one more point which we must refer to and stress. It is during heavy rains that the roots of large trees are left open or exposed on account of its upper layer of soil having been washed away. The cultivator must try to put a quantity of earth to cover the roots and rootlets before any herdsman uses his axe on them. They nourish the plant, and if they are left exposed, they may be injured or damaged and the amount of nourishment curtailed. The roots should remain embedded in the ground intact in their natural state. Stone masonry work should never be constructed round a tree, unless it is needed badly for the purpose of shade.

The cultivator who makes an attempt to rear a tree so carefully is certain to have fruit, pods, branches and the usufruct developed, fully developed, so much so to realise a good return without any extra tax or cess.

Except the mango for which there is a demand in the market all other fruit trees bear fruit which is consumed locally even by cowherds.

Most of the trees referred to give dense and good shade and make the atmosphere cool when the sun is very hot (106° F. temperature). These trees give shelter to the cultivators and their cattle and humidify their immediate surroundings.

CONDIMENTS AND SPICES

The Indians, specially the Hindus, are very fond of spices and condiments. The available vegetables, when served cooked, are tasteless and unpalatable unless such flavouring and seasoning ingredients are added. In Sarola the people make use of chillies, turmeric, coriander seed, leaves of green coriander, cumin seed, garlic, onions and mustard.

These must be considered as an essential element in their every day diet. Practically none of the important spices and condiments such as cardamom, ginger, black pepper, turmeric,

cloves, cinnamon and cumin are grown here. The local grocers get them from Ahmednagar. The cultivators sow some of the condiments, viz., chillies, garlic, coriander, tamarind, fennel, mustard and fenugreek. Apart from chillies, only very small pieces of land are devoted to the cultivation of these crops, which is not developed because consumption is confined to the village itself.

We have dealt with those grown here under either Irrigation or Crops.

On special occasions the housewives make use of all sorts of condiments and spices. There are tamarind trees in the jungle and a large quantity of tamarind fruit or pod is gathered and stored by the women at the proper season.

We have picked out the figures of area sown with chillies, onions, coriander and garlic, and they are noted on page 173. The information for some years was not procurable. The figures are not very accurate, but they may indicate the trend of cultivation here. Of these crops the chilly is the important one, as it is used with every kind of vegetable. The cultivated area under it varies from year to year. The crop depends upon many factors, chiefly the early rains of the monsoon. It is one of the money crops. So the area sown depends on seasonal conditions and the prospects as regards demand and market prices. The other crops, save onion, are mostly cultivated in very small plots of land and below the limit of area to be recorded in the crop registers under the rules.

A cultivator with irrigation will rarely fail to grow some coriander. It is the easiest and the earliest of all crops. The raising of the garlic crop is rather tedious and laborious. Within the last dozen years the crop of chillies sown is about as much as is required for local consumption. A great amount of chillies is transported by railway from other villages to Ahmednagar.

CONDIMENTS AND SPICES

Year*	Condiments and Spices			
	Chillies A G	Onions A G	Coriander† A G	Garlic A G
1901-02	13- 9	5		
1904-05	9-22	3-35		1- 7
1909-10	32- 5	10-22		0-20
1911-12	14-27	3- 5	0- 1	0- 5
1913-14	7-15	0-24		0- 1
1914-15	15-13		0- 2	0-13
1918-19	14- 1	0- 6	0- 2	0-22
1919-20	10-22	1- 7	0-18	0- 7
1920-21	7-10	2-17	0- 1	0- 1
1921-22	8- 0	3- 9	0- 2	0- 2
1923-24	9- 2	0-17		
1924-25	12-36	0- 2		0- 2
1925-26	35-15			
1926-27	11-36		0- 3	0-12
1927-28	15-25		1-24	0-30
1928-29	12-36	3-39	0-14	0-20
1929-30	22-22	3-30		
1930-31	18-22	1-39		0-12
1931-32	20-10	2-11		0-27
1932-33	14- 5	0-13		0-16
1933-34	12-27	2-19		0-15
1934-35	8-31	4- 2		0-21
1935-36	19- 8	0-10		
1936-37	1-20	0-32		

* Records for the years 1902-04, 1905-09, 1910-11, 1912-13, 1915-18, 1922-23 were not available.

† Coriander is often cultivated thrice or even four times during the course of a season; but its area being insignificant is generally neglected to be recorded.

THE KADHI-NIMB (कढी निंब)

During our rambles in the jungle here we met with some plants or rather trees which are locally called Kadhi-Nimb (Curry Leaf, *Murraya Keenigii*) and which must not be confounded with Kadu-Nimb (*Melia Azadirachta*) commonly found all over the Deccan. They are easily distinguishable; the leaves of the latter are quite bitter and are not edible, while the green leaves of the former have a peculiar smell which attracts anybody when he happens to approach any one of them; he is pleased to inhale the scented atmosphere of the surroundings. The leaves are mixed with Kadhi as spices and give it a good flavour; they are similarly mixed with Fodaniche Varan, and Chatni (i. e. bruised dry chillies, etc.) is prepared from its leaves mixed with chillies and salt well powdered and crushed together. The leaves are used in other ways by the women folk and they do not lose their fragrance for some days.

Here the Kadhi-Nimb trees are cultivated on the edges of water channels in the gardens and serve as a hedge. So no separate plot of land is allotted for the plantation, nor is any extra labour or water is needed. Seed for plantation is obtained from the fruit of the tree; the fruit is as small as that of a small jujubi tree and it assumes the same colour as the jujubi fruit at different stages before it ripens; the ripe fruit of the one can only be distinguished from the other by minute inspection. The taste differs from that of the jujubi. The fruit is not used for eating. The tree grows ten feet and more in height and has branches with deep green leaves just like the Kadu-Nimb (Compound Leaf).

The cultivator's wife cannot make frequent use of the Curry Leaf for Kadhi as she is always short of butter-milk or curds. She cannot get the leaves without specially visiting the gardens where they are grown. The tree has no economic value. The leaves are not sold here. But in the city market

of Ahmednagar there is a demand for them. It does not make a good timber, but it may serve for rough rafters for huts, cow-sheds, etc. It is not good for firewood or fuel. But in small villages the tree is rare; in villages in the Dangs and Konkan the tree is grown in the court-yards or compounds of houses. On the village site, the tree thrives well if water is available. When once planted it continues for many years—ten years.

We would advise some of the garden cultivators here to try the Kadhi-Nimb trees in their gardens along the water courses in their lands as hedges. It is a kind of spice and should be encouraged.

CHAPTER 4

CATTLE

BULLOCKS

We give the census figures for bullocks in this village for the years for which they are available. In the Bombay Presidency the census of cattle takes place quinquennially in the rural areas under Government supervision. The results for the two last decades are:—

Year	No. of bullocks
1915—16	483
1919—20	348
1920	334
1924—25	414
1929—30	424
1934—35	461
(1928—29)	(389)

Though the latest total (1934—35) falls short by 22 of that of 1915—16, the reduction is small. For all practical purposes we may take them as equal. The last figures against 1928—29 are the results of the enumeration we made on the basis of a house to house enquiry.

Sarola is purely an agricultural village, and it has, from time immemorial, had to depend solely on bullock power for agricultural operations.*

* Bullocks are ordinarily used in pairs both for vehicles and field work.

An oil engine has recently been set up in a farm to pump water from a well for irrigation. Apart from this no mechanical power has been used for agriculture work. Two oil engines have been started for milling purposes.

Bullocks are usually engaged in agricultural operations, but a few are occasionally used for non-agricultural purposes. For agricultural purposes bullocks are used in pairs or yokes. A single bullock is used only by the oilman for his oil mill (चरणा) and for a small passenger cart or Tonga. Some cultivators have no pairs of bullocks of their own. A few cultivators and others possess one or an odd number of bullocks. A comparative table follows showing the number of cultivators with pairs of bullocks and odd bullocks:—

	1928-29		1934-35	
	No. of cultivators	No. of bullocks	No. of cultivators	No. of bullocks
One bullock	4	4	4	4
One pair of bullocks	42	84	51	102
Three bullocks	5	15	12	36
Two pairs of bullocks	42	168	38	152
Five bullocks	1	5	5	25
Three pairs of bullocks	6	36	9	54
Seven bullocks	0	0	0	0
Four pairs of bullocks	3	24	7	56
Nine bullocks	0	0	0	0
Five pairs of bullocks	1	10	2	20
Six pairs of bullocks	2	24	1	12
Total	106	370	129	461

Nine cultivator families had no bullocks of their own. None of the labourers have any bullocks. Bullocks are owned by six of the Mahar families. The details of non-agriculturists' bullocks are:—

(a) Marwadis (3).....	7
(b) Barber (1).....	2
(c) Oilman (1).....	2
(d) Vadars (2).....	6
(e) Carpenter (1).....	2

Total 19

These are included in the census of the village.

It is the popular view that the possession of less than two pairs or two yokes of bullocks is of no real practical utility. The plough or the well needs at least two pairs of bullocks; the employment of a smaller number is not effective and may be termed uneconomic and wasteful. An owner of one yoke of bullocks plies for hire if he owns or can hire a cart. But here there is no regular steady demand for hired carts. There are thus 142 odd bullocks whose services are probably not fully and effectively utilised, although a certain proportion is needed as a reserve, when some are sick or being rested. These constitute 30·8 per cent of the whole. It may be interesting to describe how the owners of less than two pairs of bullocks make use of them. Suppose A and B have each one bullock and C has one pair. All these worked together make up two pairs. C makes use of their labour for eight days, B for four days and A similarly in his own turn. As to the feed of these two pairs, the cultivator who takes their labour and work feeds them together at noon. For the night their respective owners feed them. It is a sort of co-operative arrangement. The utilisation of odd bullocks in this fashion is very occasional and rare. Another point is

that the feed of such odd bullocks is usually poor. Whereas most of the bullocks in pairs used continuously get good and substantial feed—such as lucerne and green fodder (Khondya, Kadval, etc.), oilcakes and grain.

A complement of 500 working bullocks would be fully adequate for the village as a whole. Bullock power thus accumulated and concentrated may open up new spheres of activity. The maintenance charges of a pair of bullocks depend on the amount of grass, Kadbi, etc. which the cultivator can raise on his land. A majority of the cultivators generally sell Jowari straw (Kadbi) in order to meet their land revenue assessment, keeping sufficient for fodder for three to four months. Sometimes the cultivator has to sell his Jowari produce (grain). It is true that the cultivator is not, in a normal year and in the ordinary course, required to incur any expenses (in hard cash) on the maintenance of his cattle; but it may be worth while to make an estimate of the real costs involved in the different seasons.

- (1) The crop season (November to April—six months);
- (2) The rainy season (July to October—four months);
- (3) The other season (May and June—two months).

During the crop season Kadbi is cheap, and Annas seven to eight is a fair daily charge for a pair of bullocks. During the rainy season, when grass is plentiful, Annas four may be taken as the cost per diem. The pinch comes in the third season when Annas ten to twelve may be required per day per pair of bullocks. Thus the total cost of maintenance of a pair of bullocks works out at Rs. 130 to 175 a year exclusive of the cost of lucerne grass and concentrates—such as oil cake. A few of the cultivators having ready cash in their pockets adopt different systems for the cultivation of their land (dry) and for securing the crops. They employ hired labour (bullocks, men and women) to get their lands made ready for sowing and for harrowing, weeding etc. They get

their crops reaped, harvested, threshed and winnowed by hired labour. In this fashion they avoid the capital cost and the maintenance of bullocks, implements and tools. Another method is to purchase two pairs of bullocks at the beginning of the season, work them at ploughing, sowing, drilling, harrowing and then dispose of them in the Bazar when the need for their services is over. Generally the bullocks are kept in this way for a period of four to five months.

Government have made notes to ascertain and record the ruling price of plough bullock from month to month at all Taluka Head Quarters. In some cases the prices fluctuate from month to month, but in most cases they are stationary for months together depending on the demand. A statement of the ruling prices from month to month would be tedious reading; we are aware that keen students of economy have based interesting conclusion on such full data. However, we give the price of a plough bullock ruling for the months of May and November of the years 1905-1936.

Year	Prices in Rs.		Year	Prices in Rs.	
	May	Nov.		May	Nov.
1905	25	20	1921	30	30
1906	25	25	1922	30	30
1907	30	30	1923	30	32
1908	30	27½	1924	30	32
1909	30	30	1925	32	32
1910	30	30	1926	32	45
1911	30	30	1927	40	40
1912	27	27	1928	50	50
1913	20	25	1929	50	40
1914	25	25	1930	35	35
1915	25	40	1931	30	40
1916	40	45	1932	32½	30
1917	45	50	1933	25	25
1918	50	20	1934	25	25
1919	30	50	1935	25	30
1920	20	30	1936	28	12

No simple conclusions can be drawn from these records. It may be pointed out that prices over long periods vary with the general level of prices, i. e., the purchasing power of money; over shorter periods on account of the great variations in the cattle population and the supply of bullocks due to cycles of good or bad seasons; and from year to year on account of seasonal conditions and local prices of produce, and hence on the strength of the demand based on the immediate money resources of the cultivators. A plough bullock is commonly a poor ordinary bullock. A bullock of good breed and of a better type fetches more than double the price of the common bullock. It may be observed that the level of prices in November is higher than in May; because the bullocks by the month of November improve considerably on green grass and new crops, etc. raised during the recent monsoon; whereas bullocks offered for sale in May are lean, emaciated and neglected and fodder is expensive. In some few cases it is true that the cultivator is pressed to sell them owing to exigencies of circumstances, e. g., payment of land revenue, marriage ceremony, money lenders' debt, etc. Owing to famine conditions in the Deccan the prices may go as low as from Rs. 20 to 12 (vide years 1905, 1918, 1920, 1936) per bullock. An analysis of the figures in groups of years is of little value, because the purchasing power of money varies greatly over long periods.

CASUALTIES AMONG WORKING CATTLE

For the cultivator the death of one of his working bullocks is a misfortune. At the height of the working season it is nothing less than a calamity.

We could not find any authoritative information as to how many bullocks die a natural death and at what age in the rural areas of the Deccan and Khandesh.

Even books on village economics are silent on this point. The Royal Commission on Agriculture has made an elaborate

enquiry on various aspects of agricultural problems, but this point which vitally affects the agriculturists' life has been overlooked.

After consultations with many cultivators we have come to the conclusion that the annual death rate among bullocks may be about five or six per cent. This is based on the experience of the cultivators that a bullock here has a life of fifteen to eighteen years. The local bullocks are not of any special good breed, and the circumstances of the village make it impossible that they should be well fed throughout the different seasons from year to year.

On this basis the death rate would be the total number of bullocks—say 461—divided by twelve to fifteen, i. e. their average working age, or about 40 to 30.

The following notes give the results of our enquiries as to the way in which the cultivators deal with, maintain and manage their stock of cattle.

(1) A large proportion do not keep and maintain the same set of bullocks throughout their life, but season after season, buy, sell or exchange them in the open markets or privately.

(2) A few work their bullocks continuously, and only dispose of them shortly before they cease to be serviceable.

(3) Well or garden cultivation needs a team of strong young bullocks—say from four to eight years old—throughout the year for different operations. In this case the cultivator usually brings into use young stock which he has bred and reared from his own herd, and disposes of the superannuated bullocks when they have been worked for four to six years.

(4) A farmer of means buys a young bullock, say, four years old, maintains it in good condition and in full work for a period of two to five years and then sells it at a profit.

(5) Few cultivators who have kept the same set of bullocks continuously and lose any of their worn out bullocks

have saved anything in the nature of a depreciation fund or any other source to fall back on.

They must manage to get a substitute in exchange for young stock or purchase one with borrowed money.

(6) For the poorer cultivator who is not in a position to take advantage of any these ways the loss of a bullock is a very serious calamity.

As a rule the cultivators are shrewd enough managers to avoid burdening themselves with inefficient work cattle, and try to get rid of their bullocks as soon as they show signs of falling off.

Any serious shortage of rainfall means starvation or semi-starvation for the cattle.

Dry cows, calves and heifers are the first sufferers. Most of them are sold to butchers or dealers as soon as all hope of rain has been given up, followed by bullocks, good cows and other healthy stock.

In 1920 after the famine of 1918-19, a special cattle census was taken. It was found that a large majority had been sold, a small proportion transported to distant grazing grounds, and many had died. The proportion which had been kept in their own villages and survived was not very large.

It is found to be the best policy, under stress of famine, to sell the live stock at the initial stages for whatever can be realised. Some of the cultivators arrange to send some of their cattle to the nearest Pinjrapol (charitable home or hospital for cattle).

With the advent of the next monsoon, bullocks can be bought in distant markets and brought home for agricultural operations, and this is said to be in the long run the most economical policy, even although very high prices have to be paid.

The cattle have to be sold for next to nothing. Some say that at times when famine conditions are well advanced the prices obtained are less than could be got by the sale of the hides.

At such times lots of cattle are purchased whole-sale, the usual procedure of selling each animal by a separate bargain is not followed.

Most of the famine-stricken cattle from the Deccan are driven off, in large herds of perhaps four to seven hundred heads, to Bombay by road in charge of the dealers' men. On their way to Bombay they graze on such scanty herbage as can be met with on the road-side, and the men in charge arrange to purchase and distribute any Kadbi or grass available on the way.

They can only get water for drinking at long distances.

COWS, BUFFALOES AND THEIR CALVES

The cattle census in the Bombay Presidency takes place quinquennially. We give figures for the years for which they are available:—

Year	Cows	Calves	Buffaloes	Calves
1915-16	284	350	47	36
1919-20	135	155	33	14
1920 *	199	174	22	21
1924-25	230	271	18	16
1929-30	347	293	25	22
1934-35	375	208	51	32

* Special Census under Government orders.

The figures that are available do not make any distinction between milch and dry cattle. So we have to make a reference to the special census in August 1928, which we arranged, and the result according to our enumeration is:—

Cows			Calves	Buffaloes			Calves
milch	dry	total		milch	dry	total	
99	172	271	249	6	10	16	6

The last census of 1934-35 shows an increase except in calves. From the figures it will be seen that the number of buffaloes fluctuates more than that of cows. The reason is obvious. The buffaloes are useful only for providing milk, as male buffaloes are not used for draught purposes, while the cows are required not only for milk but to maintain the supply of bullocks as work cattle. Therefore in bad years or cycles when fodder is deficient and numbers must be reduced, the buffaloes are allowed to go first. Apart from this, cows' milk is preferred on the score of quality, and buffaloes are only kept because they give a greater quantity.

The importance of the cow in Hindu religion is easily understood when it is realised that cattle are the driving power of the agricultural system and, therefore, the foundation of the whole economic and social structure of their society.

Every Hindu desires to possess a cow from religious as well as economic motives, i. e., for the ghee and other products and preparations, milk, curds, buttermilk, butter. One hundred and thirty-eight families in the whole village had 375 cows and rest had none. To have an assured supply of milk continuously for years together it is necessary and economic to keep more than three cows at a time all along; at times even owners of three cows may have to go without milk for months. In this village there were forty-nine families who owned three or more cows, of whom seven families kept half

a dozen cows. Four Maratha families kept 10, 13, 14 and 15 cows. So they could have three milch cows at a time simultaneously and could be said to have a sufficient supply of milk and its products to provide a fully adequate diet for the members of these families. It follows that the majority of the population had not the means to provide for the optimum of nutrition. It is gratifying to note that the number of cows in 1934-35 was a record. According to our census 39 per cent of the cows are milk giving during the period of lactation and others are dry. She-buffaloes have increased and it may safely be inferred that the milk supply has been, of late, augmented.

When there is a shortage of cows' milk children are fed on goats' milk, but some poor children get no milk at all for long periods. Some of the women folk manage to sell sparingly some portion of their milk owing to economic stress.

The cow is again useful and serviceable as an animal for the supply of future bullocks and cows for the cultivators. It is evident that the number of calves has gone down; it does not approach the number of cows (375). No full explanation was forthcoming.

The cow reared here is not of a good or valuable breed but of a very poor type. No stud bull is maintained and hardly any one arranges to have his cow served by a stud or pedigree bull from outside.

We give a table below showing the number of young stock and comparing their values.

1928-29		1934-35	
	Rs.		Rs.
83 × 12	= 996	69 × 10	= 690
83 × 8	= 664	59 × 6	= 414
83 × 4	= 332	70 × 3	= 210
<hr/>		<hr/>	
249	1992	208	1314

They include both heifers and bull calves (गोरु) up to three years of age. The young stock becomes serviceable at three years or over, depending on their health and strength when heifers are useful as cows and calves as young bullocks. We may allow 10 per cent for casualties amongst calves during the period of three years. Along with the falling of prices of other commodities there has been a fall in the price of all cattle; but we have no statistics. We may estimate the total value of young stock at Rs. 1200 at the outside. There is a fall in the price of cows and we may calculate it at Rs. 15 to 35 per cow ($375 \times 20 = 7500$). A rough liberal estimate may be pitched as high as Rs. 10,000 in round figures.

The she-buffalo is generally kept for her milk and ghee by individuals who are rather well off or who are professional milkmen (गवळी). It is an augury of good times that fifty-one she-buffaloes were found in the village in 1934-35. Even a Mahar had two she-buffaloes. This implies an improvement in diet, for some, at least, of the villagers. The buffaloes here are not of any known good breed, and their value may be put at present prices at Rs. 40 to 80 ($51 \times 60 = 3060$) and that of their calves at Rs. 10 to 20 ($32 \times 15 = 480$). So Rs. 3400 to 3600 may be taken as their total value in round figures.

Though prices have gone down recently all over the continent of India, there has been a record increase in numbers during the two last decades (1915-36) which is due mainly to a recent succession of good years (1929-30 onwards).

SHEEP AND GOATS

The herding of sheep and goats used to be a nomadic occupation in India. Here in this village sheep and goats are kept permanently. We give census figures for the period for which they are available:—

Years	Sheep	Goats	Total
1915—16	351	329	680
1919—20	122	153	275
1920 (Special)	153	254	407
1924—25	615	572	1,187
1929—30	300	280	580
1934—35	130	254	384
1928*	301	449	750

Sheep and goats are very useful to the cultivators. Both supply valuable manure for their irrigated lands. Goats provide milk for their children. Sheep give wool twice a year and it is spun and woven into fabrics, such as coarse blankets which provide a bed and a cover for the cultivators, their women folk and children. These Kamblis and Ghongadis are the only woollen clothes they have to keep themselves warm in winter and sometimes during the rainy season. Apart from these blankets they do not wear any woollen clothing. Warm and more costly imported blankets of mixed wool and cotton (Italian) are almost unknown here. They are looked on as expensive luxuries. On very cold days they have to make fires to keep themselves warm.

The census figures show that the number of sheep and goats fluctuates greatly. Why is this? Sheep and goats multiply very rapidly and the leading cultivators take a keen and lively interest in breeding. Within a period of two to three years they are doubled or trebled. After a period of nearly three years the herds of sheep and goats become unmanageable and the owners have no choice but to dispose of them by scores or hundreds in one or two transactions with dealers. In the long run, the tending of sheep and goats is a paying concern. The village has hills, valleys, Nallas, hedges and other places which afford them grass, shrubs and twigs, etc.

* These are the results of our special house to house inquiry.

for browsing for about nine to ten months of the year. For one or two months they are driven to villages on a river with water flowing, if the wells of Sarola have failed to supply sufficient potable water for drinking; otherwise they feed on Babul twigs, pods, etc. on lands on which they are penned. So any such migration is now only necessary to enable sheep to get good water for drinking. The selling prices have now fallen considerably.

Year	Sheep	Goat	Sheep	Goats
	Rs.	Rs.	Rs.	Rs.
1928	6	10	$301 \times 6 = 1806$	$449 \times 10 = 4490$
1936	4	7	$130 \times 4 = 520$	$254 \times 7 = 1778$

The herding of sheep and goats is a remunerative occupation here. Within a period of two years or less the value of the flock can easily be doubled. In this village in 1928-29 there were four herdsmen, of whom two disposed of their stock, stopped breeding and invested the sale proceeds in other ways. Now there are only two carrying on this business of herding and breeding. Many of the cultivators keep two or more goats for milking. About five cultivators have a score or more of goats alone.

It is said that the breeding of goats alone is easier and simpler than that of sheep only. Goats always realise good prices and are not so susceptible to disease as the sheep. Also a goat skin is sold for a bit more than a sheep skin. Generally rams and he-goats are restricted and limited to a certain number. Any surplus of rams and he-goats is eliminated from time to time.

With regard to wool we have referred to it in the section regarding Dhangars or shepherds.

Here there are no breeding rams (stud) or he-goats. We did not notice any fighting rams here.

Bones and horns are taken away by Mahars. Except the vegetarian castes all residents here use the flesh of sheep and goats occasionally. It is urged that it is more costly to use meat than cereals and pulses. We were not able to ascertain for comparison the cost in either case. The cultivators (Marathas, etc.) admit that meat is more nutritious than their ordinary diet, but it is beyond their means. Some purchase small amounts of meat when a sheep or goat is slaughtered by the Mulana. Again they have to incur the extra cost of condiments and oil (Kardi). It is said that the poorer labourers and others cannot have the luxury of meat for years together. Their diet is not sufficiently nutritious and this affects their health. Major-General Sir John Megaw, Ex-Director-General of the Indian Service has pointed out that, "it is the quality of the diet that is at fault rather than the quantity."

It is a good sign of the times that the Government of India are contemplating the establishment of a Nutritional Advisory Board whose purpose would be to advise Government on the basis of information already available.

HORSES AND PONIES

When we made our enumeration we found only nine ponies in the village, six belonging to agriculturists, the rest to three other villagers.

The ponies are small (9 to 11 hands*) and of very poor type. The cultivators use their ponies for riding, to their fields or gardens, or to adjoining villages, or for harnessing in Tongas. They are also used on the occasion of Hindu marriage ceremonies when it is, according to traditional custom, essential for the bridegroom to ride in the marriage procession.

* 1 Hand=4 inches.

In this area horses or ponies of a heavy powerful type suitable for use in ploughing or other agricultural operations are not bred and the local ponies are never used for this purpose.

Since there is a railway station in the village and the railway and motor services provide quick and easy communication with the market town of Ahmednagar and other more distant places, it is not now worth while maintaining pony Tongas for everyday use. The value of these small ponies is about Rs. 20 to 30 and the total value of these in the village may amount to only Rs. 200 to 250.

With increasing use of motors and bicycles even the small number now in use is likely to decrease.

GRASS AND GRAZING

The economics of grazing are not a cheerful subject so far as the village of our study is concerned. The increase in population, the extension of cultivation, the increase in the number of cattle, the shortage of rainfall and the necessity of bringing under cultivation every small portion of available and arable land have all contributed to the curtailment of the quantity and quality of grazing in the village. Such statistical information as can be collected for the past years is given:—

YEAR	POPULATION
1871	(not available)
1881	1373
1891	1329
1901	1573
1911	1432
1921	1360
1931	1519

The population is given according to decennial census (Imperial or General).

CATTLE CENSUS

Year	Oxen	Buffalos	Cows	She Buffalos	Calves	Buffalo Calves	Total Cattle
1915-16	473	1	284	47	350	36	1191
1919-20	346 + 2	27	135	33	155	14	712
Special 1920	334	1	199	22	174	21	751
1924-25	404+10		230	18	271	16	949
1929-30	377+47	2+4	347	25	293	22	1017
1934-35	461	1	375	51	208	32	1128

Year	Ponies	Donkeys	Sheep	Goats	Total Sheep & Goats
1915-16	23	29	351	329	680
1919 20	9	12	122	153	275
Special 1920	15	17	153	254	407
1924-25	10	22	645	572	1217
1929-30	7+5	12	300	280	580
1934-35	7	23	130	254	384

The Cattle Census in the Bombay Presidency is taken quinquennially. The figures are repeated for elucidation.

Fallow or fallow by rotation or temporary fallow, etc. are divisions or sub-classes of rotation, but different figures are not available. Area of fallows may vary year by year.

We observed that some of the tops and slopes of hills which had been used as grazing grounds some years ago are now under cultivation as far as practicable, and thus the

amount of grazing has been depleted. Some previously uncultivated land has now been put under staple crops. Some patches of land overgrown with prickly pear were seen here and there. Now most of the pear has been destroyed, and some of this area may be available for grazing, if not cultivated. A large stretch of land (forty-one acres and eight Gunthas) under the railway line has been economically lost to the village. B class forest land measuring twenty-four acres and thirty-nine Gunthas along the whole line on both sides is open to free grazing of cattle of the owners of the adjacent and contiguous survey numbers only. A large portion of the B class forest area along the western side of the railway line has unfortunately been cut up and made into a sort of Nalla and does not serve the purpose for which it was set apart. This is a very good example of the danger of sharing the use of land without any clear arrangement as to the responsibility for its maintenance and conservation.

An area of ninety-two acres and twenty-seven Gunthas classed as Reserved Forest in the village has been opened now to the grazing of cattle on payment of fees. Most of the Forest areas on the plains of the Deccan were constituted as Reserved Forest, and the Forest laws were rigidly enforced under the supervision and control of the Forest officers even in respect of the most barren and rocky areas in villages isolated and scattered here and there, which formed part of the Reserved Forest. Offences of cattle trespass were numerous and impoundings of stray cattle frequent, and the cultivating owners were criminally prosecuted and had to pay fines, compensation, double cattle fines, etc., for a single act of casual trespass. All these were said to be sources of annoyance to the peaceful cultivators who were at times exasperated and were in arms against the Forest guards. Generally the cultivators as a class considered this the greatest source of grievance and hardship, and there were loud clamour and protests against the working of the Forest Department.

J. P. Brander, Esquire, M. A., I. C. S. (Retd.) studied the whole system carefully from an economic point of view in many villages in his charge, and represented to Government that most of the land classed as Reserved Forest might either be brought under cultivation or thrown open for grazing on payment of fees. Government were pleased to sanction his proposal, and most of the ryots felt it a great relief; it was a sore grievance of the peasantry. Mr. Brander was a pioneer worker.

In pursuance of the revised policy, the Reserved Forest survey numbers here were opened to grazing or for cultivation. Grasses found in the village were identified, and are mentioned by their local names:—

मारवेल	कुई	कोखंडी	मोळ
हरळी-डुर्वा	विचका	घोळू	पाथरी
शिपी	रानकरडई	सपकांदा	घुई
पीना-पवना	तांडुळवा	or	कोथपी
कुंदा	सूयाचें गवत	रानकांदा	जोधळी
शेंवरा	शूरी	गोधडी	चिल
चिमणचारा	लांडग्याचें गवत	रानओवा	बरवडा
केना	पंधड	कडू-कान्हळा	कुडमुडी
माळ	डोंबली	लोहाळा	सिजुडी
कुसळी	कुसुमोड	नागरमोथा	त्रिशूळ

In addition to these mentioned above, there are others vaguely described as grasses, but they are properly treated by the leading villagers as herbs and creepers, which follow:—

HERBS			
धोत्रा	सराटा-गोखरू	कासोदा	सब्जा
तरवड	धमासा	अस्कंद	करंडी
रई	कांगुणी	टाहाकळ	चिचूक
कन्हेर तांबडा	चिल्हारी	उटकटारी	अचकीर
„ पांढरा	रब्बर	अजोदा	हळद

CREEPERS

गुंज	चाटुफळी	म्हातारा	घोडवेल
घोडईद्रावण	कुयरी	रतरवेल	चांदवेल
गुळवेल	खोकरवेल	काडवेल	रिंगणी
ढोरगुंज	उतरंडवेल	म्हैसबैल पांढरी	
भांबरवेल	फटाकडे	चिकणी	

In this village herbs and creepers are found growing spontaneously here and there in gardens, on the banks of Nallas, on the outskirts of the village, on the hedges or intertwined in Babul or Nimb trees. Nobody takes the trouble to cultivate them. Some of the villagers use them as medicine or drugs, internally or externally, for certain ailments. It is asserted that they have curative powers. Some of the herbs and creepers are used as veterinary remedies. These remedies are simple and cheap. We were told the properties of some of them, but we can only stress the point from an economic point of view. It is said that some of the herbs and preparations made from them are prescribed by the Ayurvedic physicians. Any of the leading villagers knows the merits of most of the herbs and creepers.

There are some more of these grasses or shrubs which could not be locally identified, and no more information could be obtained.

SEED

These grasses, herbs and creepers are grown either from seed or from bulbs or roots. Some of them are perennial, some annual. There is no organisation as elsewhere for the collection and storage of seeds for sale. No one has a store for any of the known grasses, herbs or creepers. Nobody cares to preserve the bulbs or roots. Seed is neither gathered nor held in stock. It is often as fine and light as that of mustard or even finer. The seed is blown away and carried by the wind, storms or storm water. Some of the seed is picked up by birds and devoured. Jungle fires consume a lot

A careful study shows that seed of some of the grasses is available at any season or at different times during the year. Wild birds feed on some of the seed of the grasses as they perch on them. Seed is available on barren ground, on ploughed and tilled land and everywhere without any human pains or labour, awaiting the fall of the rain.

There is, not only here but over the whole of Maharashtra, a long spell of dry weather for more than six or seven months (November to May) annually. The land becomes dry, hard, parched up and devoid of any moisture. Not a single blade of green grass is seen anywhere away from the streams and wells. Just before the monsoon has set in, the cultivator becomes anxious and eagerly waits for the earliest downpour of rain to ease the monotonous situation and the sultry heat of the day and night. The earliest rainfall, about, say, 2 to 3 inches at a time or within a space of three days, infuses new blood and energy into the classes of actual tillers of the soil and their livestock. Green grass appears springing up everywhere, even in nooks and corners, for the pasture of animals. Any heavy downpour of rain, followed by intermittent showers or drizzle, helps to strengthen the growth or the development of the grasses, which, though raided by animals and browsed from day to day, supply food in the form of green and fresh grass to all the cattle except the working bullocks. Growth, re-growth or revival of grasses is very rapid, and their grazing by rotation is welcome and is practised. Grasses available in this fashion are not adequate, but enough to put new life into them.

The consumption of undeveloped new or fresh grass tells upon the health of some of the cattle; their cowdung is changed. Showers, drizzles of rain from week to week afford a supply of grass to the middle of the month of September, when, after the harvesting of the Bajri crop, the whole area so cleared is available for grazing. Again, as soon as the Kharif crops are fully and completely sown in the fields, the

owner puts his cattle, other than work cattle, in charge of a herd boy for the full exploitation of available grass or pasturage.

It will be illuminating to note here and stress our conviction that grass and grazing get a setback and ultimately fail when the early rains hold off. Now here, in this village of our study, this year there has been such a situation. We had very little rainfall from June to 15th September 1936 in Ahmednagar and here, and the total fall for that period has not exceeded three inches and six cents, which were made up of light showers and drizzle at long or short intervals. This deficiency or inadequacy of the rainfall led to the total failure of grass everywhere throughout the village. Not only that, but it has brought another distress in its train. Grasses growing in a normal season in the area under Kharif (Bajri) crops would have been available for the pasturage of cattle by, say, the middle of September and might have afforded grazing up to the middle of November 1936, if not later. Should intermittent showers of rain or drizzle at short intervals continue after the middle of September, they may lead to the revival of some of the grasses and make them available for grazing, or, at least, browsing from day to day after the end of September to famished or half famished cattle. Such chances may save a number of useful cattle, even after the failure of the early rains.

THE ECONOMIC SITUATION

Are there any means by which the agriculturists may be able to tide over the unseasonable deficiency of grass or fodder? What does a well-to-do cultivator do under these circumstances to save his cattle or some of them? He has a well containing enough water to irrigate a fodder crop, and he, by all means rises to the occasion and tries to raise the Kadwal crop (fodder). Now when there is scarcity of water and Government can command water for irrigation from

their canals, allowing an adequate portion of it to sugarcane or any other valuable crop standing on the land, the surplus water may be utilized to grow fodder crops. G. F. Keatinge, Esq., C. I. E., I. C. S. (Retired), Ex-Director of Agriculture, had a scheme to grow fodder crops from 15th April yearly on some portions of unoccupied land or on others here and there under canal irrigation, to meet any unforeseen contingency. Now Government have ample money in the shape of Famine Fund which can be utilized for growing such crops from, say, 10th April to 15th June. The full scheme need not be described here, but in the budget some such provision might be made annually and some such scheme worked up. A provision out of the Famine Fund could be made available for any palliative measures of this kind.

Now bundles of grass are transported from Government Forest areas in Thana District by rail. The cost of such transportation is very high, and the cultivators, it is said, are able to gain very little relief. Transport of dry grass or hay from Thana Forest areas may now perhaps be arranged by motors, as this is calculated to be cheaper, quicker and more convenient than transport by rail. Railway transportation involves delay, procrastination, double loading and unloading, cartage both ways, high freight rate according to mileage. All these items go to increase the selling price of grass for the famine-stricken locality. So these economic measures may be adopted. Human memories are short; it may be remembered that during the Great War (1914-18) the railway wagons were not readily and promptly available for carriage of war materials, etc. Government had to make special arrangement to watch the railway transport service.

GRAZING AREAS

Save the working bullocks, most of the cattle here have grass for feeding, though scanty, on the plots or patches of land detailed below:--

(1) The uncultivated occupied land. (2) B class forest land. (3) Banks of rivers and Nallas. (4) The sides of roads, paths and water courses. (5) Sides of hedges and fences. (6) Boundary lines of fields and villages. (7) Burial and burning grounds. (8) Steep slopes of hills. (9) Ordinary and other fallows. (10) Reserved Forest areas. The total area of all these lands fluctuates from year to year. Although it is a long list, the grass available on all these lands is short and small; but it suffices in a moderate measure in normal years for the grazing of cows and their calves and non-working cattle.

The casual visitor to the village lands will not fail to notice that all the fields, all the banks of rivers, Nallas, tanks and pools are alive with grazing cattle scattered here and there and everywhere within the village limits. Every farmer has his herd boy in charge of his cattle just near his own land. Cattle are generally let loose for grazing from their sheds or their tethering places in the morning after 9 a. m. The cowboy drives them slowly to his pasture ground within an hour or so.

A boy or a girl serves as a herd—either a son or a daughter of the cultivator himself, or one of the children of the labourers or depressed classes. These are paid at Rs. 2 to 5 a month according to their age and the number of cattle in their charge. The cowboys take breakfast at about nine in the morning at their homes. Their mothers generally supply them with Jowari cakes, etc. for the midday meal which they generally take in the jungle while watching their charges. For their afternoon meals, their mothers take them food to the fields, if they have no cakes left from the midday ration. During their wanderings in the jungle they are able to watch their masters' crops.

All the while the cattle are grazing on whatever grass they meet with on their way. If the cultivator keeps sheep and

goats, they are driven along with the other cattle. So they get grass one day in one place, the next day in another, and so on. Intermittent or continuous rainfall or occasional showers help to develop or revive the grass already once cropped by the cattle. Absence of rain for any long period is very severely felt and results in greatly diminishing the total supply of grass. Everything depends on rainfall—shower or drizzle, intermittent or continuous. That it is a gamble in rain is a trite saying.

Most of the grasses are liked and eaten by animals as long as they are not in flower. The question of palatability or indigestibility of a certain grass does not arise when the grass is young and has not reached a stage past flowering. The cattle will not touch the grass which is injurious or indigestible.

Of the grasses referred to, the first six (मारवेळ, हरळी, शिंपी, पीना, कुदा, चोदरा) are important and highly valued as nourishing food for cattle. They are even a nutritious feed for milch animals. Marwel and Pavana grasses are found here and there in small quantities and also Shimpi grass. Harali and Kunda cover patches or strips of land in the midst of Bajri and Jowari crops in a large number of fields. They grow generally on the boundary strips between the survey numbers, and on the banks of Nallas. All these grasses go to form a good feed for milch cows, and women folk make it a point to take in a head-load in the evening to increase their milk supply. A woman may be seen moving here and there in the field to pick grass of the sort she wants. She manages to cut Harali one day, Kunda the following day, and so on, if they are procurable.

Grasses known as Kunda and Harali are very common here, as in other villages. Both are perennial grasses and are the worst weeds of cultivation, forming an almost ineradicable network of deep roots underground two to three feet below the

surface. Dr. William Burns, D. Sc. (Director of Agriculture, Bombay) says of Kunda, "It may be noted that the grass is succulent and comparatively rich in albuminoids. These decrease slightly in the flowering stage, while the carbohydrates increase slightly."

Shimpi is found here in cultivated areas along with and mixed with crops. It is a delicate grass of small size. In favourable conditions it reaches five to six inches in height. It has a fine narrow green leaf. It is a nourishing fodder.

Grass locally known as Kusali (कुसली) is very common here on poor land, on the slopes of hills, on shallow light soil, on tops of hills and sides of Nallas. It grows with a couple of showers of rain and has the power of drought resistance. It does not grow tall and seldom reaches ten to twelve inches in height. It is known as spear grass (कुसली), the spear being the black twisted awn with the sharp pointed fruit at its lower end. It is relished by cattle before it is in flower, and it is nutritious in the flowering stage. None of the animals touch it when it is full of spears, because the spears cause injury and pain in their mouths. Any unseasonable shower or rainfall makes the spears or awns drop. Then sheep and goats relish it very much.

Dr. Burns has given, after research, an analysis of the grasses known as Kunda (कुंदा) (a Hindu classical grass), Kusali (कुसली) and Shimpi (Bulletin No. 78 of 1916). We would refer the reader to the said Bulletin. The analysis is very interesting and impressive.

Some of the grasses, etc. overgrow and out-top the crops of Bajri and Jowari.

Whether any hay is made here is a point. A few cultivators, whose survey numbers are large and have long boundary strips, allow grass to grow to the full height, four to seven feet, and take care throughout the season to protect it from any cattle trespass or grazing. They cut the grass so preserved,

make it into hay and tie it up into bundles. It is estimated that in a normal season the village may yield two thousand to five thousand pullies (bundles) of hay in this manner, and it is sold at Annas 8 to 20 per 100 pullies. It is used more for domestic and building and other purposes than for the feeding of cattle. Kadbi is more nutritious than hay.

To sum up: It is economically wasteful to maintain live stock here, and this theory was fully stressed by the Royal Commission on Agriculture. Further, the whole of the live stock remains in poor condition except some plough bullocks and milch cows and buffaloes with young stock during the lactation period. So more than half of the cattle are half famished and poor, and the consequence is degeneration and lack of vitality among dry cows and their calves. For a period of four to five months (January to May) these cattle are meagrely fed and that with coarse feed. The Commission (Paragraph 179 of the Report) has suggested methods, *inter alia*, for increasing the production of grass, grazing and other fodder, but some of their suggestions or golden rules are not of universal application (Paragraph 187). We can here deal only with the suggestion as to increased production of fodder. Here in this village there are vacant strips of land known as boundary strips:—

	AREA	
	A	G
(1) Boundary strips between various survey numbers.	54	14
(2) Boundary strips between villages	5	28
	<hr style="width: 100%; border: none; border-top: 1px dashed black;"/>	
	60	2

A portion of this area can be utilised and conserved as grass plots or a grass reserve with the co-operation of the cultivators and the Revenue officers.

We ask our readers not to cavil at our reference to the names of particular persons whether in active service or other-

wise, who had in the routine of their service taken measures useful to the peasants and their live stock. Everyone has done his share as far as he had an opportunity. Economically their achievements may not be very striking, but it may be noted that they had had no full scope, and owing to their transfer to other stations with different spheres of duty, it was not possible for them to develop their systems or policies fully. In the long run the useful work they had done suffered. It is to be noted that there are many emergencies such as war, famine, floods, which make transfers necessary and so on; but perseverance and continuity must be the watch-word so far as administrative exigencies permit. We would like to quote F. L. Brayne, Esq., (I. C. S.) in this connection, which runs as follows:—

“Many people fight shy of helping, because they feel that the subject is too technical, and only the expert, agriculturist, doctor and so on can do any good. This is by no means correct.”

“.....There is work to suit all talents, there is no more reason for us to hesitate, for want of technical skill.....”

(The Indian and The English Village)

ANIMAL HUSBANDRY

We need not describe in connection with Sarola the common characteristics and difficulties of animal husbandry which are found throughout rural India.

There are, however, one or two points with regard to fodder supply and cattle feeding to which we would like to refer.

There is practically no scope in Sarola for extending the area available for grazing, as practically every acre of land in the village, whether private, public or Government, is grazed already since the Forest lands have been thrown open to grazing. It is useless to complain of the inadequacy of grazing land, when no additional land can possibly be provided.

The possibility of increasing the yield from such land as there is by improving the grass and by better management is a question for experts in consultation with the people.

Taking conditions as they are, the special difficulties of a village situated like Sarola in a precarious tract are:—

(1) The fairly rapid changes in the cattle population due to cycles of good and bad years.

(2) The yearly variation in the yield both of grass in the grazing lands and of fodder from the main crops according to the nature of the monsoon.

Thus there is a considerable long period variation in the number of cattle to be fed, and a yearly or short period variation in the supply of fodder for them.

A famine year leads to reduction of numbers by abnormal mortality and by sale.

In a poor year, all the cattle are underfed and in bad condition in the hot weather and for some time at the beginning of the next monsoon.

With regard to the feeding of cattle with crop fodder and hay or grass we think there is great room for improvement in local practice.

We know from our experience in Khandesh that the cultivators there make use of their fodder very carefully and economically, since most of their land has been put under cotton, the supply of Kadbi (Jowari straw) and Sarmad (Bajri straw) is correspondingly diminished and the fodder supply scanty. Whatever they get they make into what they call Kutar (कुटार)—a finely chopped mixture of Kadbi, Sarmad, stems and roots of Mug, Math, Kulthi, etc. with the dried leaves of Tur, Bor, gram, etc. added. When Kutar is prepared in this fashion, nothing is allowed to go waste.

Let us explain how differently the cultivators here make use of their fodder. About three-fourths of the village is under Jowari, which gives grain as well as Kadbi.

Whatever the amount of Kadbi, grass, straw, etc. produced on the cultivator's land, it is generally used lavishly and wastefully. No estimate of daily requirements for consumption is made overnight, and the cultivator or members of his family simply throw down the fodder in a heap in the shed or stable before the animals on the ground (there is usually no manger) and in this wasteful manner a lot of good fodder is damaged, trodden under foot and rendered useless. In the morning the housewife removes the heap of rubbish and consigns the collection to the dunghill. This process goes on until the level of the big Kadbi stack is obviously reaching a dangerously low level.

With regard to storage, the stack is usually made up of a mixture of different types of bundles or sheaves (Pendhya) from various fields. Even the straw in the individual bundle is not of uniform type, some short, some long, some thick, some thin, with or without leaves, fully developed or immature.

Thus the kind of mixture of different kinds of Kadbi that comes out of the stack from day to day is not uniform and cannot be controlled. We would suggest that the Kadbi should be graded or mixed in some orderly way before the stacks are built, so that either the whole may be a fairly uniform mixture, or separate stacks of different kinds may be made so that the mixture may be made as required.

We observed that even the green fodder (Kadval etc.) and green grass, used as a valuable fodder for the consumption of working bullocks at the height of the season, is collected in large heaps and much of it finds its way to the dung-heap.

We are sorry that the cultivator in this matter does not take a lesson from the methods of preparing food in his own household where there is no wastage.

Some of the cultivators here chop the Kadbi for fodder with an axe, which reduces wastage. Little attention appears

to be given to any deliberate varying of the kind and amount of the fodder given to the cattle at different seasons.

We consider that the effective fodder supply of the village for maintaining the cattle in good condition throughout the year could be greatly increased by better and more economical and systematic utilisation of the amounts of material already available, and that improved methods suited to local conditions could easily be worked out with the help of experts and from the study of the experience and practice in other areas where the most economical utilisation of the fodder supply available is an absolute necessity.

CATTLE DISEASE

From such records as are available and the testimony of the villagers, it appears that Sarola has long been singularly free from serious epidemic cattle disease.

In the last twenty or thirty years there have been only two outbreaks, in both cases of "Foot and Mouth" disease, in two successive years 1934 (March—April) and 1935 (August—September). These were of so mild a type that with 128 and 150 cases no deaths were reported.

The climate is dry and healthy, and the drinking water supply is from wells and running streams, not tanks.

There is practically no seasonal migration of cattle to other grazing grounds, and the village is not on the line of any drove road by which cattle of other villages or areas are taken either to grazing grounds or to large cattle markets.

The services of the veterinary officers of the Local Board are always available when there is an outbreak of disease. Under the rules, the village officers must send a report of the occurrence of any case on the day on which they learn of it to the Mamlatdar and a copy to the Veterinary Assistant Surgeon. The Veterinary Officer at once visits the village to treat cases and advise as to the measures to

be taken. Frequently the Mamlatdar accompanies him. Any such outbreak causes great loss and anxiety to the cultivators, especially if it occurs in the working season, and they are, as a rule, very ready to adopt any practicable methods of dealing with it.

Apart from curative measures and preventive inoculation the segregation and separate watering of cattle is often recommended. With regard to this the villagers have great difficulty, if the epidemic occurs during the monsoon, as there are no cattle sheds outside of the village except in the gardens, and materials for constructing temporary sheds in an emergency are not readily available as in some areas.

In the case of plague epidemics the local authorities are responsible for providing shelters and hutting materials.

We suggest that similar arrangements should be made for providing materials for cattle sheds or camps for segregating affected cattle, when this measure is necessary, perhaps out of the grant for Village Uplift scheme.

For ordinary ailments and sickness of cattle, the villagers usually resort to indigenous remedies and traditional methods. They rarely call in the Veterinary Surgeon or take their cattle to the Veterinary Dispensary except for serious wounds or injuries or for difficult surgical treatment.

DAIRYING

There is no dairy farm or dairy industry here. There are no settlements of Gavalis (milkmen) in Sarola or in the neighbourhood. The reason is very obvious. There is no good grazing in the village itself or its vicinity, except some Forest grazing area in charge of the Government Remount Department in Ghospuri kept for the supply of grass for the Military Stud Farm at Ahmednagar. There is no perennial water supply either natural or artificial. The village is not within easy reach of any town of importance except Ahmednagar which is more

than fifteen miles away. It can only boast of having a railway station of its own name within the village bounds. In short, the village has no economic incentive for carrying on any dairying business. Most of the cultivators here keep milch cattle to furnish products for home consumption only, but during the season of maximum supply any surplus is turned into butter by the usual local methods:—earthen pots, large and small, are used for boiling, curdling and churning the milk. The women folk pay insufficient attention to cleanliness in handling the produce. It must be admitted that the professional Gavalis are cleaner in their methods than most of the women of any rural area. Butter obtained by indigenous methods is accumulated for days before it is offered for sale. It becomes stale and its exposure in this hot climate makes it lose its freshness and taste, even if it is not contaminated. It is taken as butter or ghee to the market of Ahmednagar, if no customer turns up in the village. Ghee is sold here at Rs. 2 or $2\frac{1}{2}$ per Seer. As the local supply of ghee is insufficient, Rs. 10 to 15 worth of ghee is brought monthly from other villages. Both cows and she-buffaloes are kept here as milch animals. The cows are of the ordinary Deccan breed, small, very adaptable hardy animals, giving milk as well as a calf or heifer once in two years. A bull calf may be ready for work as a bullock in some three years or may be sold for Rs. 20 to 25 according to its size and breed; a heifer, full grown, after three years is apparently from religious scruples not usually sold, but is added to the farmers' live stock. If sold it will fetch Rs. 20 to 25. Any unforeseen calamity, such as famine or scarcity, may drive the cultivator to sell the surplus young stock, cows and calves when the pinch of fodder shortage is felt. Buffaloes here are of little importance, and they seem to be of different hybrid types. The young she-buffalo (female) is sold for Rs. 30 to 40 after three years, but the male offspring fetches a very low price. There is no local market

as buffaloes are not used for draught purposes. None of the animals, either cows or she-buffaloes, have good milking capacity. Both quantity and quality of milk are poor.

FEEDING

The question of improvement of milk yield is intimately associated with the question of feeding. It may be noted that, as in other parts of the District, the feeding of milch animals here is very much neglected, and this may be due to the farmers' poverty. The cultivator has very crude ideas on the subject. A milch animal can easily be fed, without any extra cost, on the leavings of the working bullocks, and its milk will serve for the consumption of his children. In the rural areas milk is the only highly nutritious form of food for the farmers' children. Dry cows and buffaloes are fed overnight almost entirely on the leavings of the working bullocks; while during the day they are fed on whatever they can find in the jungle on pasture grounds, etc. It is an admitted fact that with animals of the present low producing capacity, we are obliged to maintain a very large number to get the necessary out-turn. It is ordinarily out of the question for the average cultivator to keep high producing animals. The cost of an undertaking of this sort (the cost of the animal plus its maintenance) is beyond his means. He has no savings nor has he any other resources. Besides it is a secondary business. If and when any supply of succulent fodder is made available for the feed of milch animals, it is simply thrown down or heaped on the ground in its natural state, with small clods of earth hanging on its roots without any attempt being made to chaff it or to cut it into suitable small pieces. No pains are taken to make it more attractive to the animal. This form of wastage may be due to the idleness or ignorance of the owner. In any case he pays too little attention to it. We have noticed during our enquiries that some housewives, with a view to

increase the quantity and quality of milk, add to the feed a high grain ration which is, at times, not compatible with good health. With a similar object in view the women of the cultivator's family cut and mow green grass daily from their fields and bring it home in bundles or head loads to feed their milch animals with. The most succulent grass relished by milch animals is chosen as far as it is available. It is customary for the housewife to fetch every evening a bundle of grass sufficient for the feed of animals for the whole night and may be even enough for the young calf, at its tether, during the following day. It has already been noticed that milking capacity is very low. No attempt is ever made to improve the breed of animals or to substitute new breeds from other places. Cross breeding is unknown, or, if known, no pains are taken to take advantage of it. Whether innately conservative or not a cultivator is slow to adopt new ideas and methods unless they are successfully tested. The irregular rainfall and the possible absence of any stocks of previous year's grain and Kadhi make stable economic arrangements impossible. Every year there is uncertainty. In order to increase or maintain the quantity of milk, the housewife occasionally tries to add some extra grain ration, etc., if she can afford to spare it in one form or another from the crops and grain reserved for her household. She may buy oil cake or cotton seed, if and when she can, with the money she realises from the sale proceeds of milk.

The following are the rations ordinarily given twice a day:—

Names of articles	A cow	A she-buffalo
	lbs.	lbs.
(1) Chuni (चुनी)	1	2
(2) Oil cakes	$\frac{1}{2}$	1
(3) Cotton seed	1	2
(4) Husk (gram or Tur)	1	2
(5) Hemp seed (crushed)	2	3

Half of this ration is given in the morning, half in the evening. It is sometimes made wet with a little salt added to make it palatable. The ration given varies with its cost too, depending on the ruling prices in the market. Some of the cows are easily frightened when they are about to be milked and their hind legs are tied together with a piece of rope to prevent them from jumping about. A rope for this purpose costs Annas three to four. This process is called Bhala (भाला) in Marathi.

The system of housing is unhealthy and unhygienic. The milch animals are tied along with other animals in grass-thatched huts or even in open spaces which may have surfaces not merely uneven but often with deep pits and hollows. Dung and urine are spread over the surface mixed with fodder, etc. During the night the animals get smeared with dust, mud, dung, urine and dirt of all sorts. The milking is done in a very slovenly fashion. The milk pots are not kept scrupulously clean. Traces of dust and even of the dung and dirt may find their way into the milk. The method of milking in the rainy season is uneconomic and unhealthy. The milch cow or she-buffalo is not washed with sufficient care before milking. It follows that milk drawn in this fashion gets sour or spoilt in a very short time under the sun of the tropics. The milking is generally done by one of the men of the family after the housewife has arranged to place a basket with the ration mentioned above (grain, oil cake or cotton seed) to feed the animal if it is available. Men do not take so much interest in the milch animals but leave this to the women, who are very particular and careful to try to make some profit out of the milk output.

We are of opinion that some sort of education and training at least in the rudiments of dairy management should be imparted to the women. Considerable economic gain may be anticipated, although it is a subsidiary business. Milch

animals are taken to Nallas, rivers or wells for drinking water twice a day, once at midday and again in the evening. The herd boy does this. A milch animal can hardly give the same quantity of milk uniformly throughout the year. The quantity varies and goes on diminishing after the first four or five months. Nearly half of the milk is left to the calf for sucking for four or five months and thereafter a smaller proportion. By that time the calf is ready to graze. A male calf is allowed more milk than a heifer, because it is to become a working bullock. A milch animal continues to yield the same quantity of milk continuously for three or four months. For the next three or four months the quantity is reduced and so on. A cow may give on an average two Seers of milk a day for the first three or four months, and about $\frac{3}{4}$ Seer for the remaining two to four months. Here there are not many she-buffaloes and no sufficient data is available; but it appears that a she-buffalo gives on an average three to five Seers of milk daily for the first four to five months, $2\frac{1}{2}$ to four Seers for the next four to five months and $1\frac{1}{2}$ to three Seers thereafter.

The cultivators here do not send milk for sale to other villages, nor do they purchase milk from other villages. A small quantity of milk is daily sold by the villagers to other residents here, such as the railway staff, the school staff, etc. About 150 to 175 Seers of milk are sold monthly at Annas 4 per Seer; the annual sale may be computed at 1500-2000 Seers realising Rs. 400 to 500 a year. The sale proceeds of ghee or butter may amount to Rs. 125 a year. Ghee is sold at Rs. 2 to $2\frac{1}{2}$ per Seer. The sale proceeds are sometimes utilized for the purchase of oil cake, cotton seed and Chuni for feeding the milch animals.

The milk yield of sheep and goats is insignificant. The milk of goats is consumed by the owner and his children. A goat gives $\frac{1}{4}$ to 1 Seer of milk for one month on an average,

and for the next month $\frac{1}{2}$ to $\frac{3}{4}$ Seer and in rare cases $\frac{1}{2}$ Seer for the rest of the period. A goat has two kids, if not three, at a time and half of the milk or more is left for them.

THE METHOD OF MAKING BUTTER

Any surplus quantity of milk available is boiled in an earthen pot generally until cream appears on its surface. The whole of the cream is separated from the milk and is poured into a small earthen pot or pots with sufficient quantity of buttermilk to turn it into curds. The following morning at, say, 9 or 10 a. m., the house wife empties all the different pots of curds into a large earthen pot and adds a quantity of cold water nearly double of the quantity of curds. In this earthen pot a wooden churning paddle is turned by means of a small piece of rope (मंजरें) by the housewife, and she works up the butter by hand. During the operation of churning a small layer of butter appears and gathers on the surface of the mixture churned in the earthen pot; the housewife separates and removes the quantity of butter from the buttermilk contained in the pot.

A summary of the cost of the utensils used is given:—

	Annas
(1) A large earthen pot for boiling	2
(2) Three or four small pots for curdling	4
(3) A big earthen pot for churning	4
(4) A churn (wooden)	8
(5) A pole (Babul)	4
(6) A small piece of rope (the churn-rope)	2
	1-8-0

This is the whole churning apparatus in use here. No modern machines or utensils are used. A full set of them is very costly and they could not be mended or repaired locally.

The housewife has to labour at the churn from half an hour to an hour to get butter. It may be stated that a complete separation of the butter from the other constituents of the milk and curds is never accomplished by this process of churning. No salt is used for the preservation of butter.

Buttermilk is consumed raw or as Kadhi* (कढ़ी) by the members of the household. Any surplus is given to servants and others at times as a favour. It serves as a porridge. In towns the milkwomen offer buttermilk for sale. At times, here in the village, it is sold at half an Anna a Seer. A quantity of fresh buttermilk is taken as a digestive drink by adults. Its use is medically recommended.

The cultivators here are ignorant of the process of cheese-making, and they do not know what cheese is like and what it is used for.

The preparation of खवा, which is made by boiling milk and drying it and thus turning it into a solid mass, is not ordinarily carried on here either by the cultivator or the sweetmeat seller.

खीर and बासुंदी are other Indian preparations of milk and these are considered as delicacies. A quantity of milk is boiled in a pan, and while boiling it is stirred with a ladle till it solidifies. Khir is a mixture of boiled milk and rice or sago (in small quantity) to which sugar is added. Basundi is nothing but boiled milk solidified to a higher degree with a mixture of sugar, cardamom (powdered) and a few raisins (dried grapes).

THE SUPPLY OF MILK

It would be worth while for the literate cultivators, at least, to keep records of milk produce (paragraph 206 on page

* Kadhi is a dish of a quantity of pulse-flour, etc. mixed and boiled in buttermilk.

236 of the Report of the Royal Agriculture Commission). There is no record of the yield of milk of the animals here. We have based our calculation on such general information as we could obtain. In the Deccan most of the cows are poor and poorly fed. Their milking capacity varies greatly, but is always indifferent. The milking capacity of the cow is mainly dependent on (1) nutritious feed including concentrates even when it is dry, (2) stall feeding, (3) care and punctuality of (in the provision of) drinking water and washing, (4) guarding against infestation of ticks and fleas, (5) crossing by good stud bulls, (6) clean stabling. Generally cows give milk for eight to ten months or more at one lactation. The milk supply here is relatively plentiful for four months (August to November) if the S. W. Monsoon rains are copious and grass is abundant. For the rest of the period it may be described as moderate or low (December to April), because green grass is not so freely available, and only a few cows are fed on green Jowari stalks and green Harali or Kunda. From observation and inquiry it may be taken that about one-third of the total number of the cows and she-buffaloes are giving milk at one time. According to the latest census of 1934-35 the number of animals returned were as follows:—

ANIMALS	MILCH	DRY	TOTAL
(1) Cows	125	250	375
(2) She-buffaloes	17	34	51
(3) Goats	200	54	254
(4) Sheep	Uncertain	—	130

The ratio of milch and dry animals (cows and she-buffaloes) works out at 1 : 2.

The lactation is taken as under:—

- (1) A cow — 8 to 10 months.
- (2) A she-buffalo — 8 to 10 months or more.
- (3) A goat — 2 to 3 months.

A cow gives milk on an average at one Seer per day for the first four months of lactation, and next six months at an average of $\frac{1}{2}$ Seer a day i. e. $120 + 90 = 210$ Seers (420 lbs.). A she-buffalo gives on an average three Seers of milk per diem for four months, and for the remaining six months a daily average of two Seers i. e. $360 + 360 = 720$ Seers (1440 lbs.).

A goat gives on an average half a Seer a day for three months. The total yield of milk in the village during the course of a year worked out on this basis may be summarised as follows:—

(1) Cows' milk	Seers 26,250
(2) She-buffaloes' milk	„ 12,240
(3) Goats' milk	„ 12,000
(4) Milk of all milch animals at a daily average of twenty to thirty Seers for three months (May to July)	„ <u>2,300</u>
Total for the year	52,790

It is rightly said that the goat is the poor man's cow. She supplies fresh milk to his children. The feeding charges are very light. In a village like Sarola they may be one Anna a day per goat on an average. Babui pods are procurable in the hot months even for the asking. In this village most of the goats are owned by the Marathas (Kadus), so the children of the labourers and the scheduled classes may have to do without milk for many a day. The quantity of ewes' milk is insignificant and is mostly consumed by the lambs and the herdsmen's dogs.

The Muslims have forty goats and thirteen sheep in addition to seven cows. So they are better off than the depressed classes. We wanted to satisfy ourselves that the output of milk was approximate or correct. Most of the books on economy are silent on the point. The average cow in the Madras Presidency cannot be estimated to produce much more than forty gallons of milk per annum for human consumption, nor the average she-buffalo more than about

double that quantity. (Page 231 of Economic Studies of Some South Indian Villages, Vol. I, by Professor G. Slater, M. A., D. SC., University of Madras.)

The quantity of milk per cow calculated by us tallies with that mentioned in the report which reads: "Five years selection has resulted in raising the annual average yield from 438 lbs. per cow in a herd of one hundred animals to 1330 lbs. per cow in a herd of ninety-three; both figures of yield are in addition to the supply for calf which is estimated at about 450 lbs." (Vide paragraph 92 on page 217 of the Report of the Royal Commission on Agriculture.)

It is conclusively shown by authorities on the subject that with good feed and care the milking yield of the indigenous cow can be very much increased. The cow, like her owner, the cultivator, is commonly not well nourished which accounts for the poor breed of cattle. The dietary is admittedly very deficient in nutritive value in both cases, although their food may be not insufficient, nay, even excessive in quantity. It is said that malnutrition has not only affected the milk supply but has contributed gradually and imperceptibly to the deterioration of the breed of cattle during the last century. Old and intelligent farmers confirm this. What is the remedy under the circumstances? It is a vital question from the national point of view. The local cultivators are unable to suggest any satisfactory answer. The Royal Commission on Agriculture have come to a definite conclusion that as the number of bullocks maintained by the cultivators is far in excess of the required strength, it is time to eliminate superfluous animals and to concentrate attention on quality and nutritive value of cattle food rather than on quantity. Full work must be exacted from the remaining bullocks. In present circumstances it would involve no extra cost, if care is taken to arrive at a proper readjustment gradually. It is an admitted fact that improvement in the breed of cattle, specially cows,

will and must be accompanied by (1) increase of milk supply, (2) better nutrition of cattle and human beings, (3) good health to all concerned, (4) increase in agricultural produce, (5) more milk for babies and children, (6) lactation for a longer period, (7) greater regularity in the calving of cows. We stress the point that an all-round improvement can be secured through good feeding and good management.

We have arrived at 52,790 Seers of milk for the whole of a normal year. The population here is 1,519 and the average milk per individual per year works out at 34.7 Seers. It is needless to calculate the daily quota per individual. It is simply ludicrously inadequate.

The custom of tea drinking has grown up in the village, and it is anticipated that the demand for milk may go on increasing gradually. Rural visitors to the city of Ahmednagar for sale of their commodities do not fail to resort to tea shops. Even village women of the depressed classes indulge in tea. The extent to which the village folks now resort to tea shops instead of the Grog shops in the city is very noticeable. It is an encouraging sign of the times and furnishes an additional reason for improving the supply of milk.

CHAPTER 5

VILLAGE ARRANGEMENT

THE SUPPLY OF DRINKING WATER

The village draws its supply of water for drinking and domestic purposes from wells sunk in the village site. There are now twenty-three wells which are used by the cultivators and others. One large well or Barav just on the border of the village site was constructed by the Local Board. It was a step-well, but the passage is now being blocked up, and so no access can be had to the water by the steps. This is done mainly to prevent the spread of guinea worm. The Local Board have put up Rahatas (wheels for drawing water) at the top. In the morning when there is a rush of women at the mouth of the well to fetch water, some of them have to wait for their turn, as there are only three Rahatas. Besides this well there are twenty-two private wells (Adas) बाढ in the village site, situated at different points. They are owned by private persons, and villagers in their immediate neighbourhood resort to them according to their convenience. No objections are made by the owners to this common use. Of the twenty-two wells, four are solely and exclusively used by the members of the four different depressed castes—Mahars, Mangs, Chambhars and Vadars.

Excluding a well which is situated on the premises of the Mahomedan Darga, the remaining seventeen wells supply water to the rest of the Hindu population of the village; nine of them are within the walled enclosures of some residence, and their water is used only by the owners themselves. They supply water to the families of Brahmins (4), Marvadis (2),

Maratha (1), Kumbhar (1) and Sutar (1). Water in all these wells is potable and sufficient in time of normal rainfall. The Nalla runs hard by, and when it is flowing its water is used by some of the villagers and members of the depressed classes. In days of drought there is a dearth of water for drinking and domestic purposes. Private persons arrange to deepen the wells (Adas) in their possession in order to increase the water supply. From a sanitary point of view, as all these wells are draw-wells, there is no danger of contamination of the water, but the surroundings are usually muddy and are filthy. This is unhygienic and unhealthy, and stone pavements around all these wells and drains to carry off water are required, since in their present condition they are a nuisance to the villagers who reside in their neighbourhood or who have occasion to use the wells or the lanes near by.

The cultivators spend most of the day time in their fields and gardens and they manage to get water from wells in the jungle. The village cattle are generally taken for watering to the wells in the gardens where the Mota are working; so both men and cattle have plenty of water throughout the year unless the rainfall is deficient.

For the comfort and convenience of the women folk it is very desirable that stone pavements and gutters and Rahatas should be provided for all of them. The convenience and saving of time and labour would more than repay the cost.

The construction of a new Ada (draw-well) costs Rs. 300 to 400. Stones and mortar are used here for the private wells which are all circular with a diameter of three to four feet. When once a well is sunk and built, it lasts for more than a generation without any outlay except some labour to clean it of silt at long intervals. This may be a day's work for two labourers costing about eight Annas.

CATTLE POUND

No cattle pound exists in the village under the Cattle Trespass Act 1 of 1871. Fortunately for the village, we hold, none is necessary, as the railway line crosses the western portion which is all along fenced with wire on both sides, and cattle are naturally prevented from straying into adjoining lands. Added to this wire fencing on either side, the line runs parallel to B Class Forest lands on both sides which are open to free grazing of the cattle. So the chances for the cattle to stray are minimized. The nearest cattle pound is at Ghospuri, a distance of two miles from the village site. No one will ever, in ordinary cases, take the trouble to drive cattle for being impounded at Ghospuri. So far so good. It has a moral as far as the rural life is concerned. Wilful grazing in standing crops is not so common here as to cause ill feeling among the parties concerned. We are glad to be able to record that in Sarola there is no trace of the violent ill feeling and the family and faction feuds to which this gives rise in so many Indian villages. The railway line has divided the area of the village into two parts, one part consists of three-fourths area of the village and the other one-fourth area. The banks of the Nallas in the village provide plenty of ground for cattle to stand and graze. Thus it is that impoundings are almost nil. This is an economic advantage and the feelings and relations of the farmers among themselves are friendly and sympathetic.

THE VILLAGE ADMINISTRATION

General or revenue administration is based on the District, Taluka, Mahal and village. It is in charge of the Collector and District Magistrate of the whole district, with three assistants or deputies and sub-divisional magistrates, one in charge of the head quarters, and two of sub-divisions of the district, and Mamlatdars and magistrates and Mghalkaris,

who are also magistrates in charge of (9) Talukas and (3) Mahals each with an Awal Karkun or head clerk who is also a subordinate magistrate.

The work of maintaining village accounts and records which was formerly done by the hereditary accountant or Kulkarni of each village remunerated by Inam land, supplemented by a cash allowance or cash, is now mainly entrusted to Talathis, clerks on the collector's regular establishment, who are in charge of one to five villages. The work of these is supervised by an Awal Karkun and a circle inspector here. The whole of the Kulkarni Watan (Annas 16) has not, in Sarola, as yet been commuted. One share of Annas two remains still to be settled; so a Watandar Kulkarni is still appointed for five years in his own turn. Sarola is one of the 121 villages in the Nagar Taluka.

The work of the special departments—Education, Forest, Public Works, Postal, Medical, Vaccination, Agriculture, Veterinary, the Civil Courts and that of the Local Board is organised mainly on the basis of areas made up of districts and Talukas as units.

The administrative affairs of the village are continuously controlled by the Namlatdar and his staff, who are supervised by the Collector and Sub-divisional Officer. Officers or subordinates of other departments only visit the village occasionally when need arises.

The routine concerns of the village are looked after by the Patils or headmen, one of whom, the police Patil, is responsible for police matters and has charge of the cattle pound and vital statistics, the other, the revenue Patil, being responsible for the collection of revenue, everything to do with survey settlement, and the maintenance of the village records, and general administration.

The office of Patil is hereditary. Here the revenue Patilki Watan or right to serve as revenue Patil, hold the hereditary

Patil's service land, if any, and receive the settled cash remuneration belongs to the Dhamanes, the police Patil Watan to the Kadus, both Maratha families.

In each case, according to the custom of the Watan, the representative Watandar (or head of the family) or a deputy nominated by him is ordinarily appointed to officiate for a period of ten years. At the close of the period the same officiator may be re-appointed for a further period, if fit and willing, or another officiator may be nominated. Here both patils are appointed for life. The revenue Patil is assisted in his work by the Watandar Mahars, who act as his messengers and servants in his official work, in calling villagers to the Chavadi or meeting house, carrying messages, carrying the village records and papers, taking remittances of revenue to the Taluka treasury and so on.

The Mahar families which have the right of service own Inam or revenue-free land granted to them for this service, and they provide three officiators each year in rotation according to the custom of the Watan which is recorded in the Watan register.

The police Patil has two Jagiyas (village watchmen) or village police, who are Bhils, to assist him. They are paid in cash Rs. 10 each annually. It is their duty to patrol the village and the village lands, keep an eye on Government lands, common lands and crops, report new arrivals and suspects, and generally carry out police duties.

The police Patil is responsible for keeping his village free of crime, detecting and arresting any offenders or fugitives, reporting suspicious deaths or accidents and criminal offences to the district police.

The duties of the Patils are multifarious and their powers and responsibilities as local representatives of Government extensive; but luckily in a quiet peaceable village like Sarola, the exercise of most of these is rarely called for. Still, from the influence and prestige which their status gives them, they

form the keystone of the whole traditional system of order and administration in the village. They are both the representatives of Government to the village and the leaders of the community in its dealings with Government and its officers.

The following statement gives some details of the Patil, Kulkarni and Mahar Watans

Particulars of Watan	Patil	Kulkarni	Mahar	Jagiya	
No. of Takshmis	2	1	4		
No. of representative Watandars	2	1	16	2	
No. of officiators	2	1	10 *2	2	*Veskar
Period of service	Life	5 years	annual		
Annual cash remuneration		Rs. 113			
Revenue Patil 'Rs.	37-4				
Police Patil „	37-4				
2 Watchmen @ Rs. 10 each annually Rs.				20	

Of the hereditary Watandars, the Mahar alone holds Hadola land as Inam for service which is separately referred to under Mahars.

In addition a petty cash allowance is annually disbursed from the sub-treasury to the revenue Patil for the village deities.

The land revenue is one of the main foundations of Indian finance and it is realised from villages. For fiscal and statistical purposes every village has to maintain written records of all its concerns. For many centuries the Kulkarnis or hereditary accountants used to maintain all the official records of the village. Now the village statistical and account records

are in charge of the Patils and Talathis, while they are current. When they are closed, they are sent to the Taluka record room. All sorts of documents and papers are there classified and systematised under Government orders.

Previously the village accountant was appointed from the Kulkarni Watan Takshims (eight shares of Annas two each) for a period of five years in consonance with the customary rotation of service recorded in the Watan register. The officiator was paid remuneration in cash from the sub-treasury annually. No Inam land was attached to the Watan. With the advent of the Talathi system in the second decade of the current century, the Watan was partially commuted, i. e., one share of Annas two remains to be settled.

The village officers are bound to furnish the cultivators with any information they require regarding their holdings and accounts. Now-a-days great advantage is taken of the right to obtain certified written extracts or copies from the village and Taluka records, and the people do not depend so much on oral information given to them by the village officers. With the diffusion of knowledge and education the ryots are well up in the matter of the correctness of the boundary lines of their fields and the tree-growth on them.

The position of the Mahars in Sarola is unusual. In most villages the Mahars not only do Government work for which they hold Mahar Inam lands, but also do all sorts of miscellaneous services for the cultivators for which they are given Baluta in the form of a share of grain at harvest and also baked bread daily. But in Sarola, as noted elsewhere, owing to quarrels, this village service is taken now from the Mangs, and the Mahars depend entirely on their lands and on their earnings as independent labourers.

No Panchayat has yet been established in the village, either under the old or new Act, and no co-operative society has been established.

From the facts mentioned in the section on indebtedness it seems clear that the system of private borrowing and lending works fairly satisfactorily and that such indebtedness as there is, is not felt as an intolerable burden. Co-operative methods are, therefore, likely to be adopted only when recognised as, on the whole, an advantageous improvement on or supplement to the existing system, rather than as a drastic remedy for a state of things which is strongly resented.

With regard to Panchayats, the village is healthy, fairly prosperous, united and well organised on the old traditional system and markedly free from sectional or faction quarrels and jealousies.

The villagers do not feel the necessity for a new form of organisation, and they are strongly averse to the levy of such new rates as may be required for its maintenance. As in the case of redistribution of land and co-operation, it is probable that they will gradually be convinced of the desirability of positive changes and improvements in conditions and of the value of such an institution as the Panchayat for helping to bring them about.

The village has no stable Gram Panchayat as such for all times and occasions, but the leaders in the village form themselves into a Panchayat on such occasions as the celebration of the Birth Day of Shri Krishna (Gokulashtami) or the Fair of the Moslem Saint. Thus the choice of the Panchas for such affairs is democratic and there is general unanimity on the issues for decision.

BALUTEDARS AND THEIR PERQUISITES

In a rural village in the Deccan, there are hereditary village servants useful to the community of the cultivators to whom they are serviceable in their own crafts and occupation in connection with agricultural operations. They are called

Balutedars (बलुतेदार). In this village the cultivator gives wages in kind to seven Balutedars only. We have classified them below in order of their importance and utility and the degree in which they are called on from time to time to render service to the peasants, giving also the rates at which they receive Baluta. Generally the rates are regulated in proportion to the number of the bullocks the cultivator keeps for the working of his land and wells:—

Class	No. of bullocks			
	8 to 12	4 to 6	2 to 3	
1 (The carpenter) (The Chambhar)	72 seers do	36 seers do	24 seers do	
2 (Barber)*				
3 (Blacksmith) (The Mang)	24 seers do	12 seers do	8 seers do	$\frac{1}{3}$ rd of class 1
4 (The Mulani) (The Taniboli)	18 seers do	9 seers do	6 seers do	$\frac{1}{4}$ th of class 1

Thus to a first class Balutedar a cultivator who has maintained from 8 to 12 bullocks is required to give 72 Seers (by measure) of grain of Jowari, Bajri, wheat, gram, Tur and other cereals in proportion or to hand over as many sheaves of Jowari, Bajri, wheat, etc. and bundles of crops harvested as will produce 72 Seers in all. Should the

* The barber gets twelve Seers of Jowari or Bajri grain per male member of the cultivator's family. He also gets a small quantity of any crops such as wheat, gram, Tur, etc. which the cultivator has harvested. Instead of grain, he gets so many sheaves of jowari or Bajri as will produce the required quantity of grain. Some cultivators here take service from barbers of other villages who are paid in cash or who are given Baluta as specified above.

cultivator have grown any vegetables, he gives some of them for the Balutedar's domestic consumption. Remuneration in kind is paid to the other minor Balutedars on the same system. All the above Balutedars, except the carpenter, also get food (बादणें) from the cultivator on the occasion of marriages and other festivities in his family. The whole system is accepted and amicably maintained by all parties concerned on the basis of common interest and mutual good will and understanding.

CHAPTER 6

SOCIAL LIFE

VITAL STATISTICS

We have tried to collect the figures of births and deaths from 1894 to 1936. We were unable to find the records for 1899, those for 1894 and 1931 are incomplete, and figures of cases and deaths from epidemic diseases are only available from 1901.

We have grouped figures according to the ten year periods between census years, 1891-1901 to 1931-1941, and taken totals and annual averages for these periods. For facility of reference the vital statistical statement is given on page 230.

Without information as to age groups, marriages (for which there is no system of record) and minor epidemics, it is not possible to analyse or interpret the figures satisfactorily.

Apart from this the figures may not be very accurate especially in the earlier years. The village records of births and deaths and cases of and deaths from certain epidemic diseases are maintained by the village police Patil or headman and the village accountant (hereditary Kulkarni or stipendiary Government Talathi), who obtain information about births and deaths by local inquiry with the help of the village menials (Muhars or Mangs) and watchmen (Jagtyas) and then ascertain details by questioning the relatives and other villagers. Notification by relatives and neighbours to the village officers as registrars is not yet legally enforced.

YEARS	BIRTHS			DEATHS			
	Boys	Girls	Total	Babies*	Males	Females	Total
1851	†	†	†	†	†	†	†
1892	†	†	†	†	†	†	†
1893	†	†	†	†	†	†	†
1894	†	†	†	†	†	†	31
1895	55	34	89	†	27	28	55
1896	36	42	78	†	20	17	37
1897	26	33	59	16	50	38	88
1898	24	31	55	9	12	15	27
1899	†	†	†	†	†	†	†
1900	29	32	61	27	48	39	87
	170	156	326	52	157	137	325
1901	27	30	57	9	14	22	36
1902	40	30	70	23	26	28	54
1903	23	28	51	24	76	112	188 p
1904	32	16	48	6	25	14	39
1905	29	30	59	18	24	19	43
1906	37	26	63	19	24	34	58
1907	26	30	56	14	30	11	41
1908	40	32	72	9	11	13	24
1909	20	32	52	15	15	26	41
1910	35	35	71	12	15	31	46
	310	289	599	149	260	310	570
1911	23	17	40	7	18	13	31 p
1912	35	31	66	14	24	37	61 c
1913	26	17	43	16	33	27	60 s
1914	32	40	72	7	13	13	26
1915	18	30	48	3	13	9	22
1916	29	23	52	5	13	15	28 c
1917	24	21	45	7	67	76	143 p
1918	16	20	36	9	54	47	101 i
1919	19	19	38	7	40	38	73 c
1920	16	17	33	6	12	13	25
	243	235	478	81	286	290	576
1921	20	14	34	8	21	15	36
1922	26	10	36	14	21	20	41
1923	29	27	56	9	16	16	32
1924	23	26	49	6	16	10	26
1925	19	26	45	4	19	12	31
1926	24	25	49	3	14	17	31
1927	17	23	40	8	24	19	41
1928	33	37	70	17	14	27	46
1929	29	38	67	11	19	17	36
1930	38	33	71	13	25	25	50
	266	259	525	93	192	178	370
1931	†	†	†	†	†	†	50
1932	35	34	69	10	21	15	36
1933	35	45	80	14	14	16	30
1934	25	45	70	11	21	24	45
1935	48	38	86	15	24	22	46
1936	41	39	80	7	13	8	21
	184	201	385	53	93	55	228

* Babies and children died within twelve months of birth.

Census 1881.....1373
Do 1891.....1329

† Figures are not available

Census 1901.....1573

Plague broke out on 29-8-03. Deaths 128.
Last case on 21-12-03.

Census 1911.....1432

Plague. Deaths 6.
Cholera on 2-8-12. Deaths 15.
Smallpox broke out on 13-2-13. Deaths 7.

Cholera appeared on 4-8-16. Deaths 9.
Plague broke out on 23-6-17. Mortality 97
Influenza was declared on 2-10-18. Deaths 66.
Cholera broke out on 17-7-19 and subsided
on 22-8-19. Deaths 16.

Census 1921.....1360

Census 1931.....1519

† 7 still births. § Smallpox. Death 1.

SUMMARY OF VITAL STATISTICS FOR TEN YEAR PERIODS

Ten years	Population	Average	Increase	Decrease	Births minus Deaths	Deaths minus Births
1891	1329	1451	+244			
1901	1573					
1911	1432	1502		- 141	+ 29	
1921	1360	1396		- 72		- 98
1931	1519	1440	+ 159		+ 155	
1936	1744	1631	+225		+ 200 + 225*	

	1895-1900		1901-10		1911-20		1921-30		1931-36	
	†	¶	¶	¶	¶	¶	¶	¶	¶	
Births Total	175		599	478	525	385				
Deaths Total	202	38.5	570	576	370	178				235*
„ epidemics	†	44.5	128	215						1*
„ Other	†		442	361	370	178				234*
Over 12 months	150		421	495	277	120				
Under 12 „	52		149	81	93	58			14.6	
									7.1	

Percentages	1895-1900	1901-10	1911-20	1921-30	1931-36
Deaths under 12 months	¶	¶	¶	¶	¶
Total deaths	26	26	14	25	34
Deaths under 12 months					
Total Births	29	25	17	18	15
Deaths under 12 months					
Deaths other than from Epidemic diseases	†	39	21	25	34

* Including totals for 1931.

† 1897, 1898 & 1900 only for which statistics are available.

¶ In these columns equivalent rate per thousand per annum for the years included is given.

‡ Figures not available.

The most important facts which emerge may be noted:—

- (1) Average birth rate from 1900 to 1936 was about 38.6 per thousand;
- (2) Crude death rate was from 44.5 to 23.3 average 33;
- (3) Death rate from causes other than epidemics 29 to 23.3 „ 26;
- (4) Deaths over 12 months 35.5 to 15.8 „ 25.3;
 „ under 12 months 10 to 57 „ 7.4;
- (5) Percentage of deaths under 12 months to total deaths 22.4
 „ to total births 29 to 15 „ 19.6

The apparent improvement in this last figure is marked. The figures for the five ten-year-periods from 1890-1900 to 1930-1936 being 29, 25, 17, 18, and 15, although the rate 150 per 1000 is still very high.

GENERAL HEALTH OF THE VILLAGE *

Of the periods and decades we have noticed, the second decade (1911-1920) of the present century was full of calamities and misfortunes for the residents here. That misfortunes never come single is a irite saying. There were outbreaks of plague, cholera, influenza and small-pox in quick succession and repeatedly in addition to ordinary diseases. The details of deaths from epidemic diseases are as follows:—

Year	Plague	Cholera	Influenza	Small-pox
1911	6			
1912		15		
1913				7
1916		9		
1917	97			
1918			66	
1919		51		

* A reference is invited to the statistical record on page 230.

It is necessary to draw attention to the years in which conditions were abnormal:—

		Decade
(1) Famine years	{ 1898-99	} 1890-1900
	{ 1899-00	
	{ 1905-06	1901-1910
	{ 1912-13	} 1911-1920
	{ 1918-19	
	{ 1920-21	1921-1930
	{ 1936-37	1931-1940
(2) Epidemics	{ 1903 Plague	} 1901-1910
	{ 1911 Plague	
	{ 1912 Cholera	} 1911-1920
	{ 1913 Small-pox	
	{ 1916 Cholera	
	{ 1917 Plague	
	{ 1918 Influenza	
{ 1919 Cholera		
(3) Good season cycles	{ 1902-1905	} 1900-1910
	{ 1906-1910	
	{ 1913-1917	1911-1920
	{ 1922-1928	1921-1930
	{ 1931-1936	1931-1940

It was in 1896 that the Bubonic Plague first appeared in India, but the village fortunately remained immune for about half a dozen years, and it was in 1903 that it first broke out in a virulent form with 123 victims. Government have issued special instructions for checking the disease when it prevails. Thousands upon thousands of persons are now annually inoculated in India for its prevention either by State medical officers or by private practitioners. By this means widespread epidemics with the resulting economic disorganisation in rural areas are now prevented.

Cholera visited the village thrice. It broke out either during the last week of July or the first fortnight of August, when the first rains were scanty and water for drinking was either polluted or was not available in full quantity. So it is for the inhabitants to take the greatest precautions to safeguard their supply of drinking water. It should be borne in mind that unless there are heavy monsoon rains just at the commencement of the rainy season and thereby everything accumulated is entirely washed off and cleaned, there is apprehension of cholera. It is for the villagers *en bloc* to keep the village site clean in every respect. Any accumulation of dirt, dust, dung and rubbish is the greatest evil during the wet months. Sources of water supply may be permangnated in order that pure water may be available for drinking and culinary purposes at least. A small quantity of permangnate of potash is available in Taluka centres. As a preventive measure, it is worthwhile that the residents should get themselves inoculated; it is harmless.

For the sake of humanity, and for the health, comfort and safety of the ryots Government have ruled that as soon as cholera breaks out in any rural area, hamlet or hut, the Mamlatdar of the Taluka (the highest revenue officer) should pay an immediate visit to the affected place accompanied by a medical officer, and take the most care of the patients and devise measures to check the spread of the disease. Insistence on the observance of regulations laid down by Government is strictly followed: the greatest good of the greatest number. At times, cases of extreme distress are detected, when the Mamlatdar, if he has any funds available, pays a small sum in money to provide the patient with diet and clothing as a relief. It is said that cholera follows in the immediate wake of famine.

It is the simplest and easiest thing to banish small-pox from the village. Babies and children must be got vaccinated

as early as possible within three or four months of their birth. At the outbreak of small-pox, a vaccinator is at once deputed to the infected locality to vaccinate the unprotected children. The village is free from either malaria or guinea worm.

The prevalence of any of the epidemic diseases in the rural area is an economic loss to the whole of the population concerned. It disorganises the normal routine of the cultivators *in toto*.

The Great World War (1913-18) was the most important event of the decade, when prices, not only of staple commodities but of all goods, ruled very high.

1918-19 was also a famine year in the Deccan. Staple grains were not available in sufficient quantities, and Burma rice was imported into India in considerable quantities to supplement the local stocks of grain. Prices of rice and other articles were controlled by the State. India is remarkable as a country where surplus grain in millions of maunds is every year stocked and is available to meet her demand in case of an emergency; but this forecast failed. Why? Because the cultivation of commercial crops has ousted the staple food crops the area under which is greatly curtailed. Fodder was all exhausted. Government arranged to transport grass and hay from state forests, but the railway freight and other charges were almost beyond the purse of the common cultivator who could not help to keep up his small live stock and had to take Tagai from Government to buy a fresh pair of bullocks afterwards.

The annual average rate of births and deaths works out respectively at 57.6 and 49.9 for the whole series of years. No accurate and correct normal rate can be deduced. With the increase of population the rate varies.

Throughout the whole period of forty-one years the births predominate except during one decennial period (1911-20)

when deaths show excess over births. We try to analyse them as follows:—

Period	No. of births	No. of deaths	+ Plus-Minus
1894—1900	326 + 56	294 + 31	+ 57 births
1901—1910	599	510	+ 89 do
1911—1920	478	576	- 98 deaths
1921—1930	525	370	+ 155 births
1931—1935	305 + 75	157 + 30	+ 193 do

We have already noticed the reason why the deaths outnumbered births during 1911—1920.

It is a curious co-incident that the census figures of 1921 and 1931 are nearly equal to those arrived at by adding plus and minus figures in the last column:—

Census	Population	- deaths	+ Births	Total	
1911	1432	- 98		1334	1360
1931	1360		+ 155	1515	1519

It may be inferred that there is neither net emigration nor immigration here; the difference is very small.

The excellent health of the villagers is by all means an economic asset.

LONGEVITY

The statement of authorities on vital statistics that the average expectation of life in India is 24 as against 50 in England may come as a surprise to many people in this country, and it is to a certain extent misleading, though there are no means to get the statement verified. The infant mortality in India is greater than in England, and it is supposed that this explains the difference. The infant mortality may

affect the average but not to such an extent. We arranged to take a census of the residents in the village who were sixty or more on 6th November 1928. The result is set forth in the following tables which give the numbers in each caste for each ten year-age-group from 60 to 100. The actual age of each individual could only be estimated and not verified from the birth registers. Probably in most cases it is greatly overestimated, but for purposes of comparison the figures are of interest.

Castes	No.		
	Males	Females	Total
1 Brahmin	-	1	1
2 Jain (Marwadis)	3	2	5
3 Lingayats	1	-	1
4 Marathas	22	17	39
5 Malis	3	-	3
6 Lohar	1	-	1
7 Dhargar	1	1	2
8 Barber	1	-	1
9 Chambhar	-	1	1
10 Muslims	6	3	9
	38	25	63

Nos. 1 to 3 are vegetarians and the rest are non-vegetarians, though a small community, the Marwadis predominate.

The disparity in the number of males and females of and above 60 is very striking when we find that the total number is almost equal.

MALES

Castes	60-70	70-80	80-90	90-100	Over 100	Total
	1	2	3	4	5	
Marathas, etc.	15	7	4	2	-	28
Lingayats	-	-	-	-	1	1
Jains	-	2	-	1	-	3
Mahomedans	1	2	2	-	1	6
Total	16	11	6	3	2	38

FEMALES

Castes	60-70	70-80	80-90	90-100	Over 100	Total
	1	2	3	4	5	
Marathas	12	1	2	2	-	17
Brahmin	-	1	-	-	-	1
Jains	1	1	-	-	-	2
Dhangar	1	-	-	-	-	1
Mahomedans	3	-	-	-	-	3
Chambhar	1	-	-	-	-	1
Total	18	3	2	2	-	25
Grand Total	34	14	8	5	2	63

It will be seen that all the castes have contributed their quota except the village Mahats who have nobody surviving

after sixty years of age. Why is this so, is not easy to explain. The Mahar population is ninety-three (males forty-three and females fifty). These sixty-three individuals are old and decrepit and most of them are unfit for active field labour or even in most cases for light work. Some of them are crippled, some have defective sight, some are hard of hearing and some are invalid in one way or other. The women stay at home in the day time during the absence of the members of the family on their lands and do some domestic work.

Some of the old men try to go out to their fields and sit under the shade watching for a few hours of the day and return home before sundown.

In the evening some of these old folks attend the temples of Shri Radha Krishna, Maruti or Mahadev and bow down and worship in their own way the presiding Deity. Some of them are present at the Bhajan parties and at the reading of the Puranas when these are held in any of the temples.

Most of these old residents are healthy and sound, though weak or crippled through old age. No case of any specific disease is noticeable among them.

No special or extra diet is provided for them, but they take the same kind of food as the other members of the household.

It is noticeable that these old people are more poorly dressed than the younger members of the family, and seldom seem to be wearing new clothes. They perhaps maintain the habits of earlier times when the standard of dress was lower than it is now, and when the resources of the family are restricted, naturally the dress of the older people who move out very little is one of the items to be economised.

FOOD

The cultivators of the village are mostly descendants of the Marathas of the Deccan. Some of them are proud of their family surnames such as that of the ancient aristocratic Maratha family of the Kales. They are not vegetarians but use flesh only occasionally and rarely. Amongst the Marathas there is no restriction as to the drinking of alcohol. Their daily and ordinary food is very simple and made out of the produce of their own fields. Bajri and Jowari are their staple grains for food. During the busy seasons they take food three times a day. The food is frugal and not very substantial. The chief items are:—Bajri or Jowar flour, Tur Dal or any other pulses (Math, Moog, gram, etc.). A small quantity of chilly powder, a pinch of powder of turmeric, a quantity of salt, onions, garlic, a few drops of Kardi oil go to make this simple fare more palatable. Ghee in very small quantities is used on rare and auspicious days. Sugar and Gul are reserved for special days, or for festivities. Wheaten bread and rice are used as food, but only on the festival days of the year. A visitor or a guest is given similar food. The cultivators' women folk prepare enough food daily in the morning for the members of the family with a small margin, so that they can give bread or pieces of bread to the Gav-Mahar or Mahar on duty (not as alms), village beggars and wandering visitors. They have a dog to feed in most cases. They observe some days in the year as fasts in accordance with their religious tenets or vows. In some families of peasants food is prepared twice, in the morning and the evening. There are no different courses—and in some families milk is given to children with food in the morning, if there is a milch cow or buffalo or goat. Milk is not now as freely available for drinking as formerly. The daily ration of food for a man is on an average staple grain (Bajri or Jowari) $\frac{2}{3}$ of a Seer and pulses (Tur, Math, gram.)

The articles of food they ordinarily use are:—

- | | |
|-----------------------|--|
| (1) Wheat | (15) Vegetables |
| (2) Jowari | (16) Ghee |
| (3) Bajri | (17) Milk |
| (4) Tur-Dal | (18) Sugar |
| (5) Gram Dal | (19) Cocoanut, Copra |
| (6) Rice | (20) Tamarind |
| (7) Moog, Math pulses | (21) Condiments and spices. |
| (8) Salt | (22) Sesamum seed, linseed,
rapeseed, ground-nut seed,
mustard seed. |
| (9) Chillies | (23) Tea |
| (10) Onions | (24) Asafoetida (हिंग) |
| (11) Garlic | (25) अमसूल (dried rind of fruit) |
| (12) Turmeric | |
| (13) Kardi oil | |
| (14) Gul or jagree | |

The daily average cost of food may vary from family to family and it would not be accurate unless there are schedules for the families concerned.

DRESS, CLOTHES AND GARMENTS

It is very rarely that the cultivator has the luck to possess and wear silk, embroidered or other clothes or garments of any value. In very few cases silken Sadis, Paithanis with lace borders and laced ends (Pader) and Pitambars (silk-woven) are seen. Women as a rule wear coloured Sadis called Bands or Lugadees of rough texture and Cholis with decorative borders. A Band for daily wear measures 20 to 24 feet in length and $3\frac{1}{2}$ to $4\frac{1}{2}$ feet in breadth, viz., 14 to 16 cubits and 2 to $2\frac{1}{2}$ cubits. The words Band and Choli may be translated into English as mantle and bodice. Ordinarily a woman is lucky to have two Bands and four Cholis to wear year in and year out. The women here do not wear different clothes for the different seasons and occasions such as summer, autumn, evening dress or costumes like the western woman,

and they have no stocks or hoards of clothing. Whatever clothing and apparel they possess are for constant wear. They keep their garments clean by washing them daily themselves. They change their garments once daily. They have no need of a washerman or a washerwoman. No expense is incurred for washing or tailoring the year round. Among Hindu women, as a whole, the dress consists of three portions only, never more, though they may have two only. These are a skirt, a bodice and a mantle; but the women here have two only, viz., a mantle and a bodice. In most of India dress is cheap, simple and durable. Shoes are not, in general, worn, though rough slippers of leather called Wahana or Chapals (sandals) are used for going to and returning from the fields or gardens. We would like to quote a reference to the female dress from a book edited by Otto Rothfield, Esquire, F. R. G. S., I. C. S. (retired) called "Women of India" which runs as follows:—

"Pleasing is the contrast of Indian mantle, gracefully draped over head and shoulders and falling in vertical folds to the feet and of the gaily stitched and fitting lodice of the Hindu ladies."

In short, the apparel of the peasant women consists of two garments only. They are cheap and last for the whole year round without any variety and with no fear of any change of fashion. A girl of five to ten years of age wears a bodice and a kind of skirt made out of a single coloured checked cloth. These are called a Choli and a Parkar. Children's clothes are relatively dear and school girls' frocks cost as much as their mothers'.

The man also wears very simple garments made of cotton cloth. He wears a turban on his head, either coloured or white. He has a Kudta or a Bandi to cover his body (a sort of shirt). He wears a Pancha round his loins reaching

his knees. Now-a-days one may find coats used by some of the cultivators. He also uses a blanket called Ghongadi. These are the only four items of men's dress. Bandi, Kudta or shirt, coat, turban and Dhoti or Pancha complete his whole suit or dress.

The price of men's and women's garments or clothing may vary according to their length and the quality and texture of the cloth, but not very much. The following may be taken as a summary of the requirements of the cultivator for a year:—

FOR A MAN

- 1 Turban at Rs. 2 to 5;
- 2 Dhotis or Panchas at Rs. 2½;
- 2 Coarse Bandis or Kudatas at Re. 1 to 1½ each (shirt);
- 1 Coat of cloth at Rs. 2 to 3;
- 1 Pair of shoes of leather at Rs. 3 to 4;*
- 1 Ghongadi at Rs. 5 to 7;
- 1 Pasodi (cotton blanket) at Rs. 3 to 4.

The total cost of the whole outfit for a man may amount to Rs. 18 to 24 a year.

FOR A WOMAN

- 2 Bandas (coarse Sadis) or Lugadees at Rs. 3½ to 6 each;
- 4 Cholis at Annas 12 to Rs. 2 each (bodice);
- 1 Pair of Vahanas of leather at Annas 12 to Re. 1;
- 1 Blanket (local) at Rs. 2 to 3;
- 1 Pasodi at Rs. 3 to 4;
- Glass bangles Re. 1 to 2 (four times).

The total annual cost of the whole may thus amount to Rs. 20 to 30.

It may be noted that the cultivator and his wife can hardly get these cheap and simple garments annually. The women at least find it necessary to get the old bits of their torn Bands stitched and sewed together to make a full length Band which they can use for some purposes. We

* It is a heavy thing lasting for more than two years. The pair weighs more than 2½ Seers.

cannot help remarking that a peasant woman is very fond of wearing a Choli (bodice) made out of a Khan (खण) with a silken border, intertwined with flowers or the like, costing more than Rs. 2½.

Generally most of the householders have two to three children, and they are required to provide them with garments for wear (they may be coarse) and with beds, etc. Their garments may cost Rs. 7 to 10 and beds Rs. 3 to 5. But the poor cultivators can rarely afford to buy these annually and their children often go without sufficient clothing.

KIT, FURNITURE AND UTENSILS

It may be noted that the cultivator has no furniture of the kind familiar in western countries, such as chairs, tables, stools, benches, trunks, cupboards, wardrobes, mirrors, pictures, carpets, easy chairs, sofas, pianos, gramophones, sewing machines and so forth. These things are luxuries far beyond his resources. His house is conspicuously bare of these articles of furniture. He feels no need for any of them. His standard of living is very simple and poor. He has the habit of sitting on the floor. His ordinary household furnishings are very simple. He has one or two cots (Khat, Baj or Charpai) made of a frame of common or Raywal wood on four legs fashioned by the village carpenter, with a net or web of rope stretched over it. Rope sufficient for one cot costs Annas 12 to Rupee 1. It is the business of the village Mahar or Mang to twist or weave the cot for a small payment of Annas 2 to 4, or, in kind, in the form of two rounds of Bajri or Jowari bread such as is consumed by the cultivators. Now we may be able to find one or two deal wood boxes at his house. A great many cultivators, of late, go to Bombay for labour and find it convenient to use steel trunks. So many of them possess such small cheap steel trunks. He may have one or two local woollen blankets called Ghongadis.

A Ghongadi may cost anything from Rs. 3 to 6. He may have one or two Pasodis or sheets made of rough cotton spun and woven by hand, made of coarse yarn less than ten counts. His women-folk generally use one or two blankets called चवाळे or घोंगडी (Ghongadi) and make a sort of patch-work quilt or cover called a Godhadi (गोधडी) from old bits of cloth patched together and stitched in rows. It may cost from Rs. 2 to 4. Pillows are rare luxuries. Pieces of gunny bags are sewn together to serve as floor coverings or carpets. Though the cultivator produces cotton, he has seldom any cushions or Gadis (गाडी) for his own use.

The equipment of the cultivator's household in the matter of utensils is poor, simple and plain like the standard of living which it serves. Needless to say he has no silver ware, such as cups, basins, spoons, vases etc. He has in many cases copper, brass or iron pots to carry water from the well or other source of water supply. They are Ghagar, Handa, Gund, Tapela and Haud. Their costs vary according to the metal of which they are made, the current prices of the different metals and the weight of the pots. An ordinary man may have the following in his household:—

- 1 Ghagar (copper or iron) घागर
- 1 Handa („ „ brass) हंडा
- 1 Tapela („ „ „) तपेले
- 1 Tava (griddle) of iron (Annas 12 to Re. 1) for baking bread and cakes. तवा
- 2 to 5 Paratis (a circular and edged dish of brass) according to the number of members of the family. परात
- 1 to 3 Bhagunas of different sizes (brass). भगुणे-बहुगुणे
- 1 to 2 Palis - a ladle (1 iron and 1 brass). पळी
- 1 Kadhai (a frying pan) (iron or copper). कढई
- 1 Kathavat (wooden bowl) (Annas 12 to Re. 1). काथवट
- 1 Chatu (wooden ladle) (Annas 2). चाटू
- 1 Gangala or bucket (iron or brass). गंगाले, बादजी

- 2 to 5 Thalīs or plates (made of bell metal or brass). थाले
 2 to 7 Vatis (or cups) of bell metal or of brass. वाटी
 2 to 4 Tapelyas (brass) of sizes. तपेल्या
 1 Vili (iron) for cutting vegetables. विळी.

STONE

- (1) A grinding mill (जातें) Re. 1 to 2
 (2) A slab for bruising (पाटा) „ 1
 (3) A Varvanta (muller) (वरवंटा) As. 3
 (4) A mortar (उखळ) „ 12 to Re. 1

WOODEN

- (5) A long pestle (नुसळ) „ 12
 (6) A cradle (पाळणा) Rs. 2 to 3
 (7) A small plank or board on
 which to sit at meals (two)
 (पाटा) or (पिढे) „ 1-8
 (8) A churning staff or handle (रवी) As. 12 to Re. 1
 (9) An iron bucket for drawing
 water (पोहरा) „ 8 to 12
 (10) A clumsy iron lamp for Kardi
 oil or a tin lamp for kerosene oil „ 1 to 2
 (11) One rope (Aloe fibre) (सोल-रवीदोर) „ 8

The value of the whole lot of articles may vary from Rs. 30 to 60 according to the metal, size, weight and workmanship. Every housewife has her choice. We have made an attempt to give English equivalents of the several things. They are not quite identical but may serve to give an idea of their respective uses. In most households earthen pots and Chatties are used for carrying water and for cooking purposes. These pots and Chatties are made by the village potters in the village. They grind up the earth very fine and prepare the clay by pounding it, making it wet and mixing the mud with a sprinkling of straw.

In many houses there are old arrangements for light during the hours of night, viz. lamp stands of copper and iron of different sizes. Kardi or castor oil was formerly most commonly used; but now, owing to high prices, Kardi, castor or ground-nut oil is very little used. Tin Chimanies (चिमनिया), kerosene lamps with round solid wicks costing one to two Annas, foreign lamps with globes costing As. 8 to 12 and stable lanterns at Re. 1½ to 2 are in common use.

Table lamps with properly designed burners which are used in shops and in large towns are hardly ever to be seen in the villagers' houses. This makes it impossible for the people to do much reading or fine work of any kind after dark.

ORNAMENTS AND TRINKETS

As a class the cultivators have no valuable or artistic jewellery. Most of the women folk wear silver ornaments as a custom. The cultivator of better standing and status in the rural area has to have gold and silver ornaments to be worn by his wife and the other female members of his family if he can afford it.

A list of ornaments and trinkets is annexed. We shall name the full set of ornaments usually worn by a woman. There are ear rings and ear ornaments of gold in pairs (Bugadya, Karnaphul, Kudya and Balya) which are attached by piercing the upper and lower parts of either ear. A wide circular nose ring of gold with pearls is possessed by the wife of the peasant as an auspicious sign. Round her neck are worn necklaces (Mangal-Sutra, Vajratik, Putalya, Jalicha-Mani and Chitang) of gold. A silver ornament called Sari adorns her neck and a portion of her chest. Silver armlets in pairs called Dandoiyas, Tolabandyas or Velas are put on firmly round the arms above the elbows. Then there are wristlets (Gothas) and bangles made of silver worn round both the wrists. Silver or gold rings grace the fingers.

On both the ankles are put Kadolis and below them Sakhalis made of silver. A pair of Virodyas and a pair of Jodavis made of silver (sorts of rings) are worn on the ends of the toes of both the feet. Some of the ornaments are worn not only as an adornment but essentially as distinctive and symbolic marks of austerity (Saubhagya) and ceremonial purity (Mangal-Sutra, Nath, Putalya and Jodvi). This custom has acquired religious significance.

A boy wears round his neck a silver ornament called Sari. A pair of silver bracelets called Kadis (rings) is worn round either of the wrists. A silver Kardora is wound round the waist tightly. A small boy puts a silver ornament called Toda on his ankles.

The shape and to some extent even the colour of dress and the design and manner of wearing jewellery are among them distinctive marks of social rank and ceremonial purity, in a word, of caste, which are guarded jealously as if almost sacred.

LIST OF ORNAMENTS OF FEMALES AND GIRLS

GOLD	Value Rs	SILVER	Value Rs.
नथ (Nose ring)*	10	तोडे जोड (Ankle chains)*	75
पुतळघाची माळ (Pendent)*	35	वाळे जोड (Ankle-wire rings)*	10
दजरीक (Neck ornament)*	20	घागन्या (Variety of anklets)	12
जाळीचा मणी (Bead)*	3	तोळबद्धा-वेळाजोड (Armlets)*	12
बगड्या जोड (Ear ornament)*	7	गोठ जोड (Wristlets)*	4
बाळघा जोडी (Ear rings)*	3	मुदी (Ring)*	1
कुडघा ,, (,, ,,)*	12	जोडवी जोड (Toe rings)*	2
चितांग (Neck band)	100	मासोळघा जोड (do)*	2
मणी-मंगळसूत्र		रणजोडवी जोड (do)*	2
(Wedding string)*	4		
भांगठी (Ring)	18		
मोहोर (Ring with Mohar)	48		
गोफ (Pendent)	350		
सरी (Neck ring)	100		

* These are common.

LIST OF ORNAMENTS OF MEN AND BOYS

GOLD	Value Rs.	SILVER	Value Rs.
कडी (Wristlets)	100	कडी जोड (Wristlets)*	13
गोफ (Pendent)	350	साखळचा जोड	
भिकवाळी (Ear ring with pearls)*	30	(Ankle chains)*	25
आंगठी (Ring)	40	करदोरा (Twist for the loins)*	5
बाळचा (Ear rings)*	10	सरी (Neck ring)*	2
सरी (Neck ring)	00	मुडी (Ring)*	1

Every household does not generally possess all these noted in the list. The value given in Rupees is for the plainest or simplest and commonest type. Those who can afford it can invest any money they like.

MARRIAGE AMONG THE MARATHAS

The Hindus have recognised eight forms of marriage from the earliest period of the Pauranic time. Now all of these forms have become obsolete except the two known as (1) Brahma and (2) Gandharv गंधर्व (Re-marriage of a widow) which have undergone many changes. Like the western folk among the Hindus, marriage is not considered a personal affair, but is treated as a sacrament binding on both parties throughout their whole life. The traditional conception is that it is eternal. It is not a civil contract which can be terminated at the will of either party concerned. It is a traditional custom that the couple formally should go through the ceremony at an early age; because the bride is virtually brought up and bred up in the family of her husband's parents that she may get herself fully associated with and accustomed to the manners, traits, customs, etc. of the said family. It is a school for the formation of her character and a sort of apprenticeship to full membership of the family. The word, marriage, is, at that stage, a misnomer, and it does not connote the western idea

* These are common.

and sense that as soon as the ceremony is over and the nuptial cakes are broken, the western couple enter on their married life. No; the nominal Hindu couple (the boy and the girl) are bred up almost together, and the bride has the opportunity to get herself trained and educated under the directorship, perhaps the dictatorship of her mother-in-law and her husband's sisters, if any. It may surprise a foreigner, if it is added, that the couple is not even on speaking terms, even privately. There is no occasion for them to meet during this period. Each may watch and observe the other silently; get fully acquainted in that way. It is a period of probation for the girl. The wedding ceremony has only recognised the boy and the girl as the future husband and wife. The foreigner's notion of a Hindu marriage of a young girl and young boy is quite wrong from the standpoint he takes. We have tried to give a correct and unbiased idea of the Hindu so called marriage. The ceremony, though taken in early life, is a sort of betrothal sanctified and solemnized and announced to the public at large. In the modern term it is a sort of registration. So the ties of marriage are tightened as the years roll on and as the parties grow up. Divorce as such is unknown to the Hindu women; the scriptures prohibit it; custom rigidly bans it; it is absolutely rejected. Polyandry is unknown here; polygamy is customary here and practised in some cases. Monogamy is not the rule as in Christian countries, though the Hindu scriptures recommend and commend it. A vow to have only one wife is applauded in the Hindu communities. A second wife is, in many cases, taken for the purpose of progeny, if the first wife is barren or has lost hopes of any offspring. In many cases the consent of the senior wife is obtained and given freely for the taking of a second wife. The parties are interested to have the succession and lineage continued and perpetuated specially by the birth of a son who is required to perpetuate the family and to

offer oblations to the deceased ancestors. The idea is sacred and spiritual. A foreigner may ridicule it or condemn it; but we are not sitting in judgment here. If we are the Aryans coming from the same stock residing in the neighbourhood of the Caucasus Mountains in the South of Russia, or according to the other theory in the Arctic regions in the pre-glacial period, before we departed either to the West or the East the Aryans had one common idea. A great body of testimony has been accumulated that in all civilised nations it has been acknowledged that the Aryans who migrated to the East have taken to and followed the rites, customs, duties, etc. intact in their new and adopted homes either in India or elsewhere. To the western mind the old customs may appear to be crude and primitive; but which of them is preferable is a difficult question. The fact is that the custom and idea go back to remote times.

'Love laughs at locksmiths' is a familiar adage for the Europeans, but for the Hindus—particularly the Marathas—it has little meaning. Among the Marathas romantic marriages are unknown.

NO COURTSHIP

To the boys and girls here the practice of courting prevailing in civilised countries is unknown. Among the cultivators here marriages take place in girlhood and boyhood at very early ages, though at present the ages of boys and girls are raised to fifteen and ten respectively. In towns and cities among the high caste Hindus, the ages are by force of custom and by following the western methods extended from eighteen to twenty-four years and fifteen to eighteen years. The villager takes a long time to follow and imitate his city cousins. Ages for the marriage ceremonies have been much improved, and it is believed that more rapid progress is possible in the near future. An enactment is now passed to penalize any marriage that takes place before the standard ages or legal ages.

In the Hindu scheme there is the dislike of babies (girls) and it is usually deemed a heavy and unwelcome cash liability. The son is often preferred to the daughter. Why is it so ? We have explained it fully in the last paragraph.

PARENTS' RESPONSIBILITY

It is no doubt a tedious, wasteful and anxious task for the parents to seek and choose a bridegroom for their daughter when she is likely to attain the age of puberty. The Marathas are very keen as to (1) the lineage, (2) the pure caste, (3) the respectable family, (4) the landed property, (5) good connections and relations and (6) the bridegroom's education, age and other qualifications. To the parents of the bridegroom these considerations are far more important and essential. Each tries to get a suitable match equal in all respects. A fair girl who is well educated and has a knowledge of domestic duties stands a sure chance of success in a well-to-do family. Finally the astronomical positions of the ruling stars at the nativity of the bridegroom and the bride are taken into account. Approving these conditions the parents on both sides come to the terms of settlement which may be divided into sections or groups:—

(1) Salankrit Kanyadan (सालंकृत कन्यादान) with or without a dowry; (2) Dowry to the bridegroom; (3) Each party's willingness and readiness to bear the expenses falling to his side; (4) Bridegroom's parents to meet all the expenses for both the sides and (5) Satelote साटेलोटे, a system of exchanges. The terms Salankrit Kanyadan and Satelote need explanation. Salankrit Kanyadan means a solemn gift of the daughter decked with ornaments and clad in clothes and garments of brocade and silk. The parent of the bride undertakes to give her in marriage in a spirit of charity or gift wearing auspicious gold and silver ornaments of the wedding free. The central idea connotes that it is the highest religious sense of duty to give a gift or alms of the daughter. To the Hindu mind it is a blissful act of charity.

Satelote means an exchange of brides. A, B and C have each of them a son and a daughter as well. They are kinsfolk or distant relations of different Gotra. A's daughter is given in marriage to C's son and B's daughter is wedded to A's son or *vice versa*. The parties arrive at such a compromise of exchanges, and the marriage expenses are borne by the parties concerned according to their terms of agreement. At times A and B make exchanges of their sons and daughters, but such cases are very rare. In exceptional cases of poor people the system of Satelote (exchanges) is resorted to.

It is a tradition or custom that the parents of the bridegroom and the bride undertake to supply the things to the bride and bridegroom respectively as follows:—

BRIDEGROOM'S PARENTS

(A) ORNAMENTS TO THE BRIDE	Rs.	(B) GARMENTS TO THE BRIDE	Rs.
Five golden Putāiyas	35	Three or four Sadis with one of silk lace borders for ceremonial wear	
A pair of Todas (silver anklets)	70	(3 × 5 = 15, 1 × 15 = 15)	30
A nose ring of pearls	25	Four bodices including one of brocade or silk	5
A Mani-Magal-Sutra (gold beads to be strung and worn round the neck)	7		35
A pair of Virūḍya and Jodvis (silver toe rings)	3	A pair of leather shoes	1-8
	140	(C) PRESENTS OF CLOTHES	Rs.
		One Sadi to bride's mother	5
		One Sadi to her sister	4
		One extra	3
			12
		Grand Total	Rs. 188-8-0

BRIDE'S PARENTS

(A) GARMENTS TO THE BRIDEGROOM	Rs.	(B) PRESENTS OF CLOTHES	Rs.
One or two turbans, Rumals, etc. (head-gear)	6	^ Sadi to each:— grooms' mother	6
One coat or more	6	" sisters	6
A pair of Dhoties silken bordered	8	" others	3
A pair of Uparue (lace bordered)	8	Six bodices	5
A pair of shoes silk ornamented	2		—
A gold ring if available	30		—
	<u>60</u>		<u>20</u>
		Grand Total Rs.	80

These can always be curtailed as the parties choose. Generally most of the items mentioned above are supplied at a small cost as they like and the money value may be much less than that mentioned. The parties can dispense with any of the above items.

It may be worthwhile to narrate how marriage ceremonies among the cultivators take place and how funds are made available. Among the poorer sections of the community a parent is ready to give his or her daughter in marriage on some such conditions as the following:—

- (1) A cash payment of Rs. 25 to 50 or more;
- (2) Delivery of a quantity of wheat, two hundred to three hundred Seers or more, at eight Seers per Rupee Rs. 25 to 35;
- (3) A gift of a number of Sadis, perhaps about 6, at Rs. 3 to 5 each, i. e., Rs. 20 to 25.

These are ordinarily the minimum conditions, but the items may be increased or decreased by mutual agreement between the parties. The things are supposed to be given to the bride's parents to help him or her to carry out such marriage solemnities as are imposed on the bride's side. Thus it is that the bridegroom's parent has to undergo a tedious ordeal to supply the wants of the other side. Adding to the payments he makes, he has to incur expenses on his side and for the giving of feasts to the castefolk and others, to supply clothing for wear and to make ornaments, etc. for his prospective daughter-in-law. The whole of the cost, in the long run, falls on the bridegroom's parents; the bride is free from any money liability. This practice prevails except in the case of well off cultivators who are ready to incur the expenses which fall to their respective share or side. In the case of well-to-do Maratha families the practice of giving a dowry with the bride obtains.

We have mentioned the minimum terms, and it may be of interest if some indication is given of the maximum terms.

- (1) A cash payment of Rs. 200 to 300 to meet minor items;
- (2) One thousand Seers of wheat at Rs. 125;
- (3) A gift of 12 Sadis at Rs. 35 to 45.

We have shown that ordinarily the whole of the marriage expenses ultimately fall on the bridegroom's family and that these may amount to about Rs. 250.

Among the Marathas of higher class the form of the marriage ceremony is exactly like that which prevails in the Brahmin community. The ordinary Marathas cannot afford to have their marriage ceremonies performed according to the Vedic rites. The Marathas consider themselves to be Kshatriyas and if they are initiated in the thread-ceremony, they are Dwijas (twice-born); so they are entitled to have the marriage ceremonies performed amidst the chantings of the hymns of the Vedas; and they perform the Homa (Vedic fire) ceremony.

The poor cultivators conform to the Pauranic ritual. Formerly the ceremony was always performed by Brahmin priests; but since the advent of the Satyashodhak Sabha (a Maratha association or institution for religious and social purposes), Maratha youths have been trained and initiated to solemnize marriage and other ceremonies instead of the Brahmin priests. A Maratha youth officiates as a priest in many cases among the Maratha cultivators, though not in all, as a Brahmin priest is still preferred by many. Two small pamphlets in Marathi on marriage ceremonial have been compiled and printed for the use of the community. They are:—

(1) GHARACIA PUROHIT (घरचा पुरोहित) priced Annas 4; dedicated to the late His Highness Maharaj Shahu Chhatrapati of Kolhapur;

(2) SWAYAMWAR PUROHIT (स्वयंवर पुरोहित) priced Annas 12; printed by Krishnaji Karkaji Chaudhari of Karajgaon (Berar).

There are some more books compiled with the object of training Maratha youths in the duties of priests; but we could not obtain any of them. The ceremonies are performed on the same lines as those performed by the Brahmin priests.

Among the Marathas inter-caste marriages are unknown; they are not even contracted between the members of different sections of communities who dine and drink at the same table, not even as a special case between members of particular groups, such as Marathas and Malis. The marriage tie is rigidly confined to the single section or community, even a marriage between Marathas of pure and mixed descent. In short, the idea of mixed marriages is foreign or repugnant to the Maratha mind. But mixed marriages among the cultivators of poor parentage are not so unusual. As in other spheres of life, education and wealth are passports and are likely to overcome the traditional objection to mixed marriages among the cultivators. As the Hindu marriages take place

after due and full publicity and in the presence of relatives, guests and the whole of the village—men, women and children, village officers, shop-keepers, Savkars, Kumbhars, Dhangars, Mahars etc.; no record is kept and none is ever required.

The principal items which go to make up the whole marriage ceremony are:—

1 वाङ्निश्चय, वागदान, साखर पुडा, कुंकु लावणे. 2 टिळा. 3 मंडप-प्रतिष्ठा 4 गडंगनेर 5 सीमातपूजन. 6 देवप्रतिष्ठा. 7 बधूगृहगमन. 8 हळद. 9 मधुपर्क. 10 लग्नविधि, होम, वगैरे.* 11 परस्पर निरीक्षण 12 सूत्रवेष्टन. 13 कंकणबधन. 14 लाजाहोम. 15 पाणीग्रहण. 16 अग्नि-प्रदक्षिणा. 17 अश्माशोहण. 18 सप्तपदी. 19 फळ 20 कन्यादान. 21 शालहोडा. 22 पायघड्या. 23 वरात 24 बधूगृहप्रवेश. 25 ध्वजदर्शन. 26 चुममुख 27 लक्ष्मीपूजन.

It is, no doubt, a long list. The ceremonials of Hindu marriage are not as simple as the Christian marriage, where, after the engagement is publicly announced, the attendance of the bride and bridegroom at the Church and the presence of the Clergy along with the bride, bridegroom and their parents and friends complete the whole social ceremonial. The religious ceremony, the giving of the bride, the signing of the register by the parties and a short sermon bring up the whole ceremony to a close in an hour or so. The bridal party repairs to the home of the bride where the bride's cake is broken and perhaps a meal or some refreshment is provided for the guests, and then the newly married pair set out for their new home. This one formal ceremony initiates the stage of complete separation between parents and their sons and daughters.

In the case of Hindus, first the betrothal ceremony formally takes place, when the father or guardian of the girl offers the hand of his daughter to the bridegroom whose father similarly accepts the offer and in token he gives her garments and ornaments to wear and articles to be put into her lap (Oti),

* The wedding ceremony and celebrations, the most important item

The bridegroom has to spend about Rs. 5 on this, plus the price of the ornaments i. e. Rs. 10 to 25 in all. A feast is at times arranged by the bride's parent to honour the bridegroom's parent and guests.

AUSPICIOUS MONTHS AND DAYS FOR THE WEDDING CEREMONY

As in the case of other Hindus, the ceremonies and solemnisation of the marriages among the Marathas do not take place in every month of the year, but are restricted to certain months, viz., (1) Vaishakh वैशाख, (2) Jyeshtha ज्येष्ठ, (3) Margashirsha मार्गशीर्ष, (4) Magh माघ, (5) Falgun फाल्गुन, according to the Maharashtra Calendar.

Again no ceremony can actually be performed on any day one chooses and likes, but the days (Tithis तिथी) are specially scheduled for the purpose as auspicious and noted and mentioned in the annual almanacs. Generally some particular moment and hour of the morning or evening (Muhurta मुहूर्त) is held religiously convenient and suitable.

Most of the Marathas are farmers and are very busy with field or other agricultural operations in the last three of these months. They, therefore, find it most convenient and advantageous to solemnise marriages in the months of Vaishakh and Jyeshtha, when a large majority are free from work and have enough and to spare of their agricultural produce, e. g., the wheat, gram, Tur, Kardi oil, Jowari and even perhaps Jagri which are required for a marriage feast, or have sufficient funds from the sale of their year's crops to purchase all that is needed. When it is found to be impossible to arrange the marriage ceremony for the auspicious month or day, some of the cultivators, if they are in hurry for the solemnisation, can repair to the Deity at one of the holy places:—

- (1) Giri,
- (2) Kumbhaj,
- (3) Kopargaon Bet,

and go through the wedding ceremonies and rituals there in the temples and in front of the Deity at any time.

Then follows the Tila which means that the bridegroom is finally accepted, and he is presented with a new dress and a turban (costing Rs. 5) by the bride's parent. For the reception of the guests, etc. arriving for the marriage a Mandap or a Pandal is put up, and it is on an auspicious day that the first post is fixed.

MANDAP OR PANDAL AND THE CEREMONY

As the day of the wedding ceremony approaches, a Mandap or a Pandal (a temporary structure of wooden or bamboo poles and rafters covered with straw, leaves and branches, corrugated iron sheets, sacking or cloth—whatever may be available and within the family's means) is put up at the residence of the bride's parents where the actual marriage ceremony is to be performed. The Pandal is spacious enough to accommodate the assemblage of the villagers, guests and other visitors. A small piece of ground in the Pandal is set apart for the construction of a Bohale (a raised platform made of raw bricks with a back) according to the measurement of the bride's paces. It is decorated and the back is raised tapering at the top, and on each side rows of baked earthen jars, Gaurihar (गौरीहार), are set out and arranged one upon another. The Bohale is used as an altar for the wedding fire (Hom) to be worshipped and kept burning by the newly married couple. The surface of the ground in the Pandal is made smooth and even and is spread with carpets, Galichas (cotton sheets or rugs) and such other coverings as are procurable for the use of the assembled visitors. Females are separately accommodated. Cadanganer is the next stage at which a feast is arranged for the near relatives who do not take food during the period of the Devaka as a religious observance. Its object is to ask the blessings of the family Deity to ward off evils and evil spirits. We come then to the

Devaka Sthapan (देवक स्थापन) when the presence and favour of the presiding Deity of the family throughout the wedding ceremony is invoked. The Simant Pujana means that either the party of the bridegroom or that of the bride, whichever comes from another village, is received at the bounds of the village with full hospitality, the party is taken to the village in procession with musicians and band playing, etc., until the bridal party reaches the village precincts and the Maruti temple. Here the bridegroom gets new clothing, head-gear, etc. from the bride's parent. Then follows the Halad (turmeric ceremony) which involves the anointing of the bride with perfumes, etc. mixed with turmeric powder before she takes her bath.

HALAD CEREMONY

It is the custom among the Marathas that some days before the day fixed for the marriage ceremony, or even just some hours before it, the girl who is to be married has to go through the ceremony of Halad, which consists of the bride being anointed with scents and wet turmeric powder by married women (Suvashni सुवासणी) and being made to take a long bath of hot water supplied by them. During the ceremony tomtoms (drums) and music are played. As soon as the bath is over, the bride is smeared with Kunku and turmeric and clad in special garments and she wears a Bashing (बाशिंग) on her forehead. A portion of the turmeric powder and anointment (remainder) (उरुटी हलद) is sent to the bridegroom who is likewise anointed and made to take his bath at his own residence, at the hands and with the help of wives with music playing. Then he is clothed and wears a Bashing on his forehead. The assembled wives are given Halad and Kunku before they do any other work. Just before the moment of the actual ceremony the bridegroom is taken from his place in procession, on a mare or horse with a band of musicians playing in front, to the Pandal where the party of the bridegroom is

received by the bride's people and the groom is carried to the Bohale (बोहलें) and made to sit on a wooden board, Pat (पाट) or Chauranga (चौरंग) and the bride is taken in arms clad in her wedding attire to the Bohale and made to stand face to face with the groom standing. The priests in charge arrange to throw and hold a shawl or some other fine piece of cloth as a screen between the bride and bridegroom and commence to chant Mangal-Ashtakas (verses, etc.) with a loud and sonorous voice, and at the end of each conclude with the words Savdhan (सावधान). With these words, showers of Akshata (अक्षता), Jowari seed coloured yellow with wet turmeric powder, are cast at the pair e. g. in recognition of the fact that the parties are now being united as husband and wife. So one Mangal-Ashtaka after another is chanted and at its conclusion the casting of Jowari seed at the couple goes on from all sides of the assembled party. The chanting of verses continues until the auspicious moment, when the final showers of Jowari are made from all sides and the screen or curtain is drawn up or aside in token that the wedding ceremony is complete, and the gathering clap their hands. The band of musicians in attendance play their tunes in harmony to mark the happy event. A distribution of Fansupari (Attar, Gulab and flowers, if available) to the gathering proceeds on behalf of the bride and bridegroom in honour of the solemnization of the wedding. This is the central idea of the Hindu marriage, with the view to give wide publicity that the parties have been wedded and tied together as future husband and wife. The Hindus have no registers of marriages and no regular records. But all is this a proclamation about the marriage. After the distribution of the Fansupari the visitors disperse making greetings to the parents of the bride and bridegroom. Women assembled to witness the marriage ceremony are given Halad and Kunku with Fansupari and coconuts if available.

कन्यादान AND सुनमुख

Later on the other items of the ceremony referred to are rapidly gone through, sometimes some of them may even be omitted. If agreed to by the parties and if possible in the small hours of the following morning the ritual of Kanyadan (कन्यादान) is solemnly performed by the parents of the bride in the presence of kinsfolk, relatives and guests. The bride then is admitted as a member of the groom's family which is known as Zal (झाल). Some gifts and presents are exchanged.

Then a procession is arranged in which the newly married couple is taken in a conveyance or on horseback with a band of musicians playing and with a display of fire works, if available, followed by men and women to the groom's quarters. The last items of ceremonies, viz. Sun-Mukh (सुनमुख) and Lakshmi-Pujan (लक्ष्मीपूजन) are performed at the bride-groom's house in the presence of the guests and relatives. The Goddess Laxmi represented by an image made out of kneaded wheat flour is worshipped. Then all rites, rituals and ceremonies are over.

At the convenience and desire of the parties these final ceremonies (कन्यादान, लक्ष्मीपूजन) may be put off for three nights. The intervening days are spent in feasts given alternately by the parties.

A FEAST

A marriage feast among the Marathas commonly consists of:—

(1) Telachya or Purya (small wheat flour cakes rolled and fried in boiling Kardi oil in a fry-pan (iron) called Kadhai (कढई), (2) Cooked rice, (3) Varan (वरण) of Tur pulse (a kind of porridge boiled and stirred in hot water, (4) Alanvada (small bits or pieces of gram pulse flour kneaded and thickened and dried in the sun) boiled in water with salt, spices and Kardi oil, (5) Gulavani (गुलवणी) (small bits of Jagri boiled in water), (6) Ghee, (7) Any vegetable, if available.

Either of the parties make it a point to entertain their relatives, guests and friends in the company of the newly married couple. The parents on either side are at liberty to provide more expensive foods and dainties such as Ladus, Lapsi, Shira, etc. if they please. Such cases are rare here, but in exceptional cases the parties vie with each other in lavishness.

Most of the Maratha residents here including men, women and children and their guests are invited to the feast. Factions frequently mar such occasions elsewhere, but we gather that here in the village cordial harmony prevails. Food for the feast is prepared by men and women working together from early morning. On these occasions every kind of assistance, even the fetching of water for drinking, etc. is readily, cheerfully rendered by the kinsfolk without expectation of any recompense. Cooking pots and utensils are brought on loan from those who possess them and care is taken to return them washed and cleaned. Here there is not, as in some villages, a stock of big pots and utensils necessary for such feasts kept by the village Panchas who let them on hire. This is a very convenient system. Once these things have been purchased, if they are carefully stored, they may continue to be useful for generations. The charges levied for hire may be utilised to repair and replace worn out utensils.

Towards evening the whole of the food is ready for being served. Those who are invited flock to the marriage Pandal to partake of the food, bringing their own metal pots, plates, trays, cups, saucers, etc. When arrangements for seating the guests have been made, the men take upon themselves the duty of distribution. Generally all males take precedence at the feast and females follow them. The number of invitations depends on the circumstances and condition of the host. But it may be taken that sufficient food will have to be provided for about a hundred people at least, men women and children, the cost of which would be as follows:—

DETAILS OF FEAST EXPENSES

		Rs.		Rs.
Wheat	65 to 70 Seers	8-0	Chillies	0- 6
Rice	12 ,,	2-0	Mustard seed and	
Tur pulse	8 ,,	1-0	Hing (हिंग)	0- 4
Gram pulse	8 ,,	1-6	Turmeric powder	0- 2
Jagri	8 ,,	1-0	Grinding charges	0-10
Kardi oil	6 ,,	2-0	Fuel six maunds	2- 0
Ghee		1-0	Vegetables	1- 0
Salt		0-8		-----
				Total 21- 4

A PROTEST

By the by the leading Marathas here protest that their marriage expenses are neither excessive nor exorbitant; that every Maratha incurs expenses in view of his status and social position and that he cuts his coat according to his cloth; that charges for food and diet are necessary by reason of the large collection or group of the Marathas. However, the poor families are excused the provision of grand feasts. The solemnization of a marriage is the one and only great occasion in the life of a married couple—say, fifty to sixty years. Suppose Rs. 500 is the expenditure for the marriage for the life of fifty years, Rs. 10 work out as an annual outlay. The Hindus, say the leaders, enjoy the celestial bliss in their system of marriage. Even the poorest families among the Marathas can solemnize the marriage without very great expense, say, for Rs. 100 to 200. The idea of the marriage implies the continuation of the line of descent which is held religiously sacrosanct. It is deemed holy to provide men with food and it is an act of charity.

MATERNITY AND THE VILLAGE DAI

The majority of population of the village is homogeneous and is of the warrior caste known as the Marathas. In

accordance with the old custom the Marathas who have some relationship with the leading and foremost families in the Maratha Raj observe purdah to a certain extent. The word must puzzle a westerner. Is it mysterious? No, it is a system of secluding married women in a four-walled house, introduced, it is said, by the Mahomedan invaders. The women are not to be looked or gazed at by any person other than their sons, brothers and fathers, and they have no communication or intercourse with any other men. At the time of the Mahomedan regime the Hindus copied it and adopted it in their families. The Hindus considered it as a mark of social prestige. But with the disappearance of the Maratha Raj and the downfall of the Mahomedan rule this (medieval) custom or use had almost died away in the Deccan villages with the advent of the British regime and customs of the West. The Christian Missionaries played an important part and the Christian converts, specially women who tried to imitate their western sisters, gave a final blow to the purdah system. We have noticed during our study for more than a year that no seclusion of women is maintained here. But child marriages are very common, according to the old Hindu ideal, though the age of the girl has been, of late, raised a little. Girls in India become mothers earlier than their sisters in the West. Generally the Hindu girl bears children at sixteen. The scientists assert that it is due to the tropical climate. The first child delivery is very trying and creates anxiety for both the husband and the wife and their parents. In most cases both of them are very young, scarcely out of their teens. They have little worldly experience. Both of them are, as a rule, illiterate. Their judgment is immature and unsound. The husband has practically no knowledge of the difficulties and distresses of a woman's maternity and its dangers. The husband's mother, though experienced, has not always the full confidence of her son's

wife, and is looked upon through reverence and awe as sacrosanct, and so the (girl) wife manages to proceed for the first delivery to the house of her parents some time before delivery. Her mother takes care of her health and watches her day and night. From the moment of her daughter's arrival she is busy collecting things for the hour. With her poor resources, she manages to get the things ready:—

- (1) A Charpai (चाप) (the wooden frame of a bed);
- (2) She has to get it woven and twisted with rope of hemp fibre;
- (3) A woollen local blanket, if available, two pieces or more;
- (4) An earthen pot for lighting and keeping a fire or hearth near the cot;
- (5) A list of indigenuous medicines; with money she purchases the items of the medicines in a grocer's shop, if available, or gets them from shops in the nearest village;
- (6) Cow-dung cakes make much smoke and give a lot of trouble to the sick and the baby; she procures a sufficient quantity of charcoal;
- (7) If she has no pieces of gunny bags or old blankets, she gets them on loan to make them into a curtain or screen for the use and comfort of the baby and its mother;
- (8) She secures on loan a big metal pot, if she has none in her household, for boiling water for bath of the baby and its mother, also to supply the mother with hot water to drink;
- (9) A Kudal (कुदळ) (pickaxe) for digging a Nhani (नहणी) (a space for bath) near the spot on which the wooden cot lies; a wooden board is left on the Nhani; if it is not available a flat slab of stone is kept for use as a stool;
- (10) She engages the services of her Dai, if she is available, or some other known Dai;

(11) She gets a room ready for the accommodation of the baby and its mother for ten days; ordinarily it is a dingy and dark room with no sufficient ventilation:

(12) A wooden cradle with a long and strong rope to hang or suspend from the roof:

The improvement in the rural Dais' status and their organization is an economic gain to all our ryots. The cultivator's wife is a good assistant to her mate in all field work. When she is confined the work falling to her share suffers. Field operations must be punctually undertaken and performed, else the crops fail to yield expected results. The days of convalescence for a cultivator's wife are generally few and limited to three weeks at the most, unless utmost care is taken in the pro-natal days. What is needed is a good nourishing diet and full rest to the patient. What we want to secure is the physical well-being and comfort for the agricultural population, if possible with the aid of an economical organization.

Picture to yourself a cultivator's family with five members (a husband and wife, two children and an old mother). The old woman can hardly contribute much labour; of the children one may be useful as a cow-boy; the other is a girl of five years old. The operations performed by the wife have almost come to a stand. It may be worthwhile to stress the point that the occasional loss is a dead loss to the cultivator.

In some advanced Maratha families the woman in child-bed is given a dose of brandy or whisky as a stimulant. She is anointed with a few drops of brandy before she takes her daily bath.

THE DAI'S WAGE OR FEE

A Dai's wages depend on the difficulty of the case and the pains she takes. If the woman has an easy child-birth, as is usually the case, the Dai earns as follows:—

(1) If she is engaged for the occasion *once* she is given:-

(A) If a daughter is born, $2\frac{1}{2}$ Seers of Bajri and $1\frac{1}{2}$ Annas for the cutting of cord and Annas 4 (bangles). She takes her food on fifth and twelfth days at the house of her patient.

(B) If a son is born, 5 Seers of wheat and Annas five for cord-cutting and Annas 4 (bangles) and a Khen (खण). She takes her food on fifth and twelfth days at the house of the patient.

(2) If she is engaged for the first fifteen days of convalescence of the woman, she is paid Rs. 6 in cash, besides she takes her food daily for the period.

As soon as the woman is delivered of a child without any trouble, all the wives (Suvashnis) assembled in the house have their Otis (ओटिया) supplied with a handful of grain and pieces of cocoanut as an auspicious thing. They are given the customary Halad-Kunku. On the fifth day of the child-birth the woman in child-bed has to perform the worship of the goddess Satvai (सटवाई) in order to invoke her blessings on the new baby and its mother. The Dai is also fed in the evening with food along with the woman in child-bed who keeps fast for the day. It is the evening time that is observed as very propitious for this worship. The Goddess is called Satvai and it is supposed to control the child's destiny, and it is said that the future of the child is recorded by the goddess on that day; so all the writing materials are left ready at the place near the child's cot with other articles. We do not want to ridicule or deride the idea which has been current for so many centuries; but what we want to suggest is its economic side. It may be regarded as mere superstition by the orthodox, but the peasant woman observes it faithfully. For the first twelve days the food of the woman is very poor and it consists of Bajri Kanyas (meal of Bajri) for the first five days and thereafter a piece of bread of Bajri

with Kardi oil (one sixteenth part of a Seer a day) for the rest of the days. It is said that for the first twelve days no substantial diet is allowed, because the digestive power of the woman has become very weak. We are not concerned to say if they follow a right or wrong course; but the women folk are too conservative to adopt any western method. The child is allowed to suck its mother from the third day. After bath on the first day the baby is given a few drops of castor oil followed after an interval of one hour, a few drops of honey and drops of cow's milk. Our readers will be surprised if they are informed that a small dose of opium is administered to the baby even from the fifth day of its birth. What a cruel custom it is! Is it economic? No is the emphatic reply. How can the practice be stopped? It is not a simple proposition for solution. As at present situated compulsory primary education among the rural masses for the children of both the sexes is the effective remedy; the scheme of compulsory education has been postponed *sine die* for lack of funds.

For the first ten days none of the members of the household are allowed to come into actual and personal contact with the baby and its patient mother. Both are considered as unclean though they are daily anointed, washed, rubbed and warmed. So she and her baby are let alone. The woman takes no part or share in her ordinary domestic duties. The Hindus have made a rigid regulation that nobody should touch her and her baby except the Dai, and if any one does, a bath is necessary as a purification. It is observed as a period of contamination. It is meant as a period of rest. Is it superstitious? It is an ancient ritual enjoined by the Hindu Shastras. It is a custom handed down from generation to generation. The Bible recognizes the custom. (St. Luke-II, 22).

Miss Mayo has, in her "Mother India," made great capital of the contamination and pollution as superstitious, and has tried to hold the Hindus to obloquy, in vain. As a rule

delivery is always normal, and abnormal cases are very rare and may be beyond the skill of the untrained Dais. But in cases of emergency, where no medical help is available, the Dai would not sit idle with folded hands and call Jupiter to her help. She tries her best to relieve the patient and God helps her.

To return: On the twelfth day the woman in child-bed is again required to perform worship by going out of the house, just near the precincts of the village. With this ceremony the woman is at liberty to attend to her ordinary business, if she wants to, and is able. It must be borne in mind that she is still convalescent and it may take some weeks before she recoups her health and regains her former vigour. After 1½ months or more, her husband or his parents arrange to take her with the baby to their village home. The husband gets the following things ready:—

	Rs.
(1) A silver Sari (neck ornament for the baby)	1-4-0
(2) A pair of Vales (anklets)	1-4-0
(3) A pair of silver wristlets (Bindaiya)	1-4-0
(4) A Sadi for the lady with a Khan or bodice	7-4-0
(5) A Sadi for the lady's mother with a Khan	7-4-0
(6) Some auspicious things for the woman in child-bed.	0-8-0

Provided with these articles a party of two of the husband's household proceed to the wife's village with a conveyance. On arrival the things are duly presented to the women-folk there before they are put on by the persons concerned. The mother with her baby is driven to her home to the village of her husband or his parents with new bangles on her wrists. Her mother gives her new Sadi and bodice to put on. The baby is supplied with tiny garments.

We must note that in very poor families most of the items, save item No. 6, are dispensed with. But it happens rarely in spite of the circumstances of the parties concerned. It sometimes happens that all the articles are procured, but at nominal cost. It is a mutual and social relationship and the ordinary convention and customs are followed.

The ceremony of naming the newly born child is performed according to the convenience of the parties concerned. It is generally celebrated on the twelfth day of the baby's birth. Either it is performed in the place of the birth of the child or in its father's house on some other convenient day. The ceremony takes place in the evening when a large number of women (generally married women) are collected; they put the baby in a cradle hung in a cosy room with soft and new clothes and trinkets; they rock the cradle (पाठना) to and fro; they sing songs of the famous Pauranic Rama. They call the baby the name chosen by the husband's parents, etc. Then a small quantity of sugar and cooked gram and wheat (घृगन्या) are distributed to all who are in attendance to solemnise the ceremony of naming. Betel nut leaves and betel nuts (cracked) are also distributed to all present. When a name is to be given, the women invited for the ceremony bring with them presents of cloth and small trinkets for the baby and Khans for its mother. It is a common rule for the observance of all. Such presents may cost in the least Re. 1-4-0 or the cost may be curtailed to a few Annas if the donor is very poor.

On the day when the ceremony of giving name takes place, the father of the baby or its grand-parents arrange to give a feast in celebration to all of his or their relatives, friends and others. It is quite optional to give a feast and to invite as many persons as one pleases. We have cases here in which no actual or regular ceremony is held to celebrate the giving of the name; but the casual calling by the parents of the child of a particular name is considered as settling the name of the child.

The mortality among children within one year of their birth is excessive in the mofussil rural villages for obvious reasons: (1) The pregnant women here are from the peasant class; (2) As a class the Deccan peasant is proverbially poor;

(3) Their food is not so nutritious as to fully sustain two lives—woman's and baby's; (4) The peasant woman is heavily burdened with household cares, anxieties and field work which is arduous and tells on her health; (5) She has no sort of recreation or diversion; (6) She is illiterate and is ignorant of what is taking place in other places or in the world; (7) The male population is partly illiterate; (8) They have no incentive for social advancement; (9) They are very conservative; (10) Conspicuous absence of any scientific or medical institution in their locality.

To sum up:—There is here no ante-natal clinic. Whether it is required is a point for the villagers' consideration. The villagers whom we consulted are not in favour. Though they admit that small ills appear at the initial stage of pregnancy and that they must be checked and remedy sought for them through experts, they are doubtful. They plead that in rural areas pregnant women get more than sufficient exercise, get fresh air and light, get potable water to drink, and think that no good can come from any ante-natal clinic; that small ills are removed and the patient is made free or cured by their ordinary medicines in their homes. What they plead and urge is that the expectant mother does not get diet, e.g. milk, ghee, honey, wheat, pulses, etc. in proportionate quantities to maintain her in a sound state of health—herself and her baby.

They contend that their method is very simple, easy, very cheap and calculated to give their women-folk comfort and health; that the doctor's bills will deprive them of what little they can procure. Relief in the shape of diet is essential. A sound body is the key.

According to their calculation a case of delivery of a woman costs them Rs. twenty-five to fifty depending on the circumstances of the woman in child-bed.

The question of the dietary of the pregnant woman all through bristles with difficulties specially in the case of poor

women. Roughly 50 % of the women here seem to be below normal health and fitness.

The system followed here is the old traditional one, but it must not be inferred that the inhabitants are against any western method. They are fully aware that the western method is scientific and hygienic and conduces to the health of the woman and her baby at all stages. But medical advice and aid in emergent cases are not at hand and are very costly, and the means of the cultivator are very limited. Generally he has no savings to fall back upon. In many cases the cultivator has only to meet the bare expenses as noted, but in exceptional cases (which are few and far between) he needs to run into debt. In lean years it is considered as a calamity if any woman is on the eve of delivery. However, we may emphasise that delivery cases of exceptional difficulty are rare, one or two during the course of a couple of years or more. We have no data to work out any percentage.

Many pregnant women from rural areas now take advantage of maternity institutions started in towns and cities by charitable persons. Though the fees and charges are moderate, the cultivator finds it hard to pay a bill of even Rs. 10 to 25 for the first ten days.

Diffusion of knowledge and education in rural areas may go a long way towards improving the standard of living, coupled with the money earning capacity.

We have dealt with the subject in detail that the reader may be able to understand the economic aspect of the question in all stages and in all families. The labour of the cultivator and his wife are their main economic assets in the long run. They must do without a large portion of her earnings when she is delivered of a child and confined to bed. In most families of the peasants the earnings of the couple taken together are barely sufficient to make both ends meet.

EDUCATION

A primary school was started in the village in the sixties of the last century, 7th September 1868. It has been in existence for nearly three quarters of a century. The progress made by the school has been very slow. We were able to procure the following information:—

Year	No. of boys		Receipts	Expenditure (annual)	
	On the roll	Present		Teachers' pay	Stationery
April					
1919	50.6	32.6	12	324	18
1920	54.4	38.1	15	336	18
1921	54.7	45 .	18	336	18
1922	52.9	43.6	17	660	18
1923	52.9	39.8	20	660	18
1924	53.1	44.9	22	360	18
1925	73.7	58.5	35	912	18
1926	81.7	65.6	46	1032	18
1927	76.5	60.2	11	924	18
1928	101	78		1224	24
1929	113	86		1752	24
1930	125	83		1860	24
1931	103	84		2004	24
1932	126	95		2100	18
1933	123	99		1884	21
1934	115	84		1872	21
1935	110	86		1896	21
1936	111	100		1920	21
1937	102	95		2172	21
1938	117	100			

The school has been maintained for all these long years out of public funds. As all the old papers and registers are periodically destroyed, we could only obtain statistical information for the last nineteen years. However, these details may be sufficient for the purpose of giving a general idea of the spread of education in the village.

The statement gives information of the number of boys on the roll attending the school on 1st April of the years referred to. The other portion of it gives the receipts and

expenditure for the said period. With the introduction of the system of free education the fees were abolished. In addition to the cost mentioned the Local Board has to bear the burden of the annual Pension Fund contribution at eleven per cent of the teachers' pay and cost of repairs and prizes. The Board has undertaken to bear the cost of the Bias class attached to the school here, and also the cost for tools and implements for the same. Before the abolition of fees the boys of cultivators used to pay less fees than those of other boys.

Now no fees are realised, and the school receipts are nil. Cost of its maintenance has gone up of late years. It is nearly more than $\frac{2}{3}$ of the village land revenue. For a population of 1500 souls a sum of Rs. 2500 is spent annually. Within the last decade the cost of the teachers' pay, etc. has increased from Rs. 1000 to 2500, and it works out in the ratio of 2:5. Let us look to the number of boys attending the school during the period. It is from sixty to one hundred, that is to say the rise is 3:5. Many boys from other villages attend the higher standards. So the attendance is in an inverse ratio. A perusal of the statement is not encouraging. Though there has been an increase in the number of literates here and in the neighbouring villages, the cost is not commensurate with the number of boys in attendance. Has the District School Board, Ahmednagar noted the disparity and with what result? This state of things has continued for past years and it deserves consideration.

A short retrospect is necessary. The period to be covered is, no doubt, a long one, nearly three quarters of a century; but it was not eventful. It was one of the abnormal protracted infancy of the village school. It was marked as a period in which the masses of the cultivators were apathetic and listless as far as their education was concerned. The cultivators had, from time to time, urged for, the redress of

their grievances and improvement in matters of education, and the main grounds pleaded are:—

(1) The education imparted in the rural schools was upto the Marathi IV standard (or even less in some schools) the passing of which was not held sufficient as the qualification for the public service.

(2) Some boys who left the school after going through the said course satisfactorily had to forget as years rolled on, what they had learnt during the course of five to seven years, as there were no facilities in the villages for further progress or for keeping up their knowledge.

(3) They had no occasion to make use of what they had been taught in the schools in any of their agricultural operations.

(4) Some of the boys, after leaving the school, became unaccustomed to the toil and endurance and hard labour of the field, and it was thus that they became drones or idlers. In some cases the cultivator was ordinarily not so well-off as to maintain them.

(5) Most of them took a long time to be trained in all branches of agriculture. They had to learn everything *ab initio* after a comparatively advanced age.

(6) Most of the rural schools were one teacher schools. One teacher had the charge and responsibility of managing five different classes (Infant to IV standard class) with a small number of pupils. So their studies were not so very studious or progressive.

These and some other causes have, it is said, culminated in the failure of education in the rural schools.

It is for the rural boys who have recently left the school as literates and are now on the threshold of their career in this world to make the best of the situation. They are endowed with good talents and have a very bright prospect

which their predecessors had not the good fortune to have. Everybody in India, whether an Indian or an American or a European or of any foreign nation is interested in the welfare of the Bharatvarsha.

During the pre-Reform days (1919), the Educational Department made changes from time to time in the system of primary education, at times late in the day. Government of India were also pleased to make a special grant for education of the masses, but it is to be regretted that the line of demarcation laid down by Government and taken by the cultivators differed

After the Reforms of 1919 the Government of Bombay, with the help of Ministers, passed the Primary Education Act (Bombay IV of 1923) for free and compulsory elementary education. It had, no doubt, good effect. Here the school was teaching upto IV (Marathi) standard until 1924. when V standard was added in 1924 and VI and VII standards were introduced in 1925 and 1926 respectively. Thus by 1926 the school here was a full primary education school. We need not go into the details of the working; but it can safely be stated that the school had to its credit pupils, both boys and girls, who had passed the Vernacular Final Examination. Some of them have now been serving in the Educational Department. There are others who have had no opportunity to add to their knowledge in the village. So it may be noted that during the last decade good progress has been made.

With the Provincial Autonomy in 1937, the popular Ministers devised ways and means to improve in rural areas the primary education. An amending Primary Education Act has been lately passed (XII of 1938).

Writers on economic books have pressed and expressed often and often that in the rural areas farm diaries, family budgets or accounts are not maintained. It hampers the comparative study. It is better that some steps may be taken

to comply with the wishes of the economists. These items may form a part of the curriculum of the rural schools.

Boys in the school are given physical exercise. Drill, etc. are taught to the pupils at intervals and in batches. Modern games and sports are not so much practised here. Even Indian games such as Khokho (खोखो), Atyapatya (आटपापाटपा), are occasionally played. Gymnasium has been practised by the boys. The Local Board have supplied the following things for the use of the school:—

Twenty-four pairs of Legims (लेजिम), eight Jodyas (जोड्या), ten dumb-bells, one iron bar, one Malkhamb (मलखंब) and forty-eight Lathyas (लाठ्या) (staves). Boys have wrestling matches among themselves. Drawing is taught in school hours as a subject of school curriculum. The subject of nature study is a new addition, but there is no room on the school premises for a small flower garden. Music is not particularly liked by the cultivator and he can spare no time for it.

BIAS SCHOOL

Inaugurated by the District Local Board, Ahmednagar a class was started here for imparting education solely in agriculture and purely for the propagation of the industry, on the lines of the Bias schools, conducted by the Agriculture Department in the rural areas. A class for the beginners was formed on 11th July 1928 for the boys of V and higher standards. The head master took responsibility to give them tuition in three courses:—

- (1) Agriculture, (2) Carpentry and (3) Weaving.

It is a new idea for the farmers here to have the good fortune of having a plot of land for the training of their boys in their own industry at the very door of their houses.

We do not wish to criticize. What we like to press is that the farm may be worked efficiently. An area of forty-one Gunthas of farm is barely sufficient for twenty-six boys now under training (1937-38). Why so many boys attend the

class is obvious. It is an agricultural village, even boys of Marvadis, Brahmmins, Lingayats, etc. are receiving training. It shows how the wind blows. Farming is a national industry of India and is the main stay of the large majority of the population. It follows that training in farming may be adopted even in preference to the whole course of the secondary education, specially in cases of farmers' children. We encourage the cultivator to make strenuous efforts to increase the produce of his farm and we are bound to give him a helping hand.

The Local Board have supplied for the use of the school the tools and implements, etc. which are detailed:—

CARPENTRY	IRON SMITHY
(1) Saw (करजल)	(1) Bellows (पंखा)
(2) Chisel (किंकर)	(2) Anvil (धरुण)
(3) Adze (वाकस)	(3) Hammer (घण)
(4) Axe (कुन्हाड)	(4) Pincers (सांडस)
(5) Carpenter's plane (रंघा)	(5) Punch (पोगर)
(6) A kind of chisel (पटाशी)	(6) Chisel (छन्नी)
(7) Auger (सामता)	(7) Hammer small (हातोडा)
(8) Gimlet (गिरमिट)	
(9) Stone and Strap (दिवाणें)	
	WEAVING
	(1) Loom (wheel) (रहाट)

In addition to these, the articles noted are also supplied:—pickaxe, iron basket, sheaves, hand hoe, rake and scraper.

We are glad to note that these are more than sufficient for the daily routine. Carpentry and smithy are associated with the agricultural tools and implements. But each and every boy cannot be expected to be proficient in either, but a smattering knowledge of them is welcome and may be useful in emergencies and light accidental breakages.

The dhurrie or carpet weaving is taught here. It is a question if it suits as a home industry for the village and if it commands market. There is ordinarily no sale for such carpets here, nor are they so much used by the villagers. Let us have the weaving of Panchas (पंचा) or Dhotis (धोतर) or any other coarse cloth and so on; and if it is not possible, let the pupils be taught to make yarn or thread from cotton with simple, cheap and easy indigenous tools and machines.

It is often and often suggested that for the training of boys in agricultural subjects, they may be allowed to stay and study in the school class, for, say, three hours either in the morning or in the afternoon, and spend the remaining hours of the day in their gardens or fields in following their routine agricultural functions and pursuits and making experiments of what they have been taught in the school. It has the double advantage, viz:—(1) putting in actual practice and (2) gaining experience of what they have learnt in the class. The idea seems reasonable and feasible. It is not possible to refer to the whole scheme here, but if it works well, it would be possible to reduce some of the school staff with a longer course and term.

It is expected that it will be necessary to find work for the sons of the farmers in the near future, if they are not now given impetus and succour at this stage to improve their farm produce.

Today we are confronted with the unemployment problem of graduates and others, and, we are afraid, we may have to deal with the same problem with regard to the farmers' children.

THE VILLAGE POST OFFICE

There is here a branch post office under the management of one of the teachers of the Marathi school who receives a small allowance of Rs. 6 per month for the charge.

He is assisted by a servant on Rs. 18 per month, who carries the mail bags to Sarola railway station once in the early morning and brings the incoming mail bags from the postal (railway) sorter of letters, etc. for the village and other neighbouring villages. The mail peon also serves as a postman for the villages of Khadaki, Khandala, Astagaon, Babburdi-bend and Sarola railway station as well. Excepting Sarola and the Sarola railway station premises which are daily served the other villages are served in rotation, viz. Astagaon one day and the remaining villages the next day, and so on during the course of a week. The annual cost of the branch post office comes to Rs. 288, articles of contingency being provided by the head post office at Ahmednagar. No house rent is paid, as the postal business is done in the school building. The branch post office here transacts the following business :

- (1) Money orders;
- (2) Registered letters;
- (3) The V. P. P. articles;
- (4) The savings bank;
- (5) Ordinary letters and cards.

The insured articles are not accepted here.

The Postal Department arranges to reckon the annual income by taking a six-monthly census of the business in the months of February and August. We wanted to make an estimate of the probable income and cost of the office and assess the economic value and ascertain the convenience to the rural population with the help of these statistics. The Postal Department refused (on the score of the labour and cost involved in the collection of the figures) to supply the naked and bare figures according to the periodical census for inclusion and study. It is a new idea to consider the economic value of the service and utility which have not yet been examined or touched upon in any of the books on Indian economics. It is simply a

surmise to fix the volume of business in terms of Rupees. It may be concluded that the post office has so far worked at a profit.

There appear to be postal savings bank accounts here; the depositors may be mostly from the cultivating classes. It is gratifying to note that we have cases of the poor villagers practising thrift.

The number of depositors and the total amount of deposits outstanding on the first day of April (financial) would have thrown a flood of light on the economic side of the villages, but for want of statistics. The millionaires of the Reserve Bank of India realise interest at 3 per cent per annum on their deposited amount; whereas the rural depositors from the poor farming classes are only able to get interest at 2 per cent per annum. Interest in both cases is a charge on the Central revenue. It is an anomaly. Is it not a grievance of the rural depositors? It is no question whether the cost is a direct or indirect charge. The economic fact remains that the farmers get interest at a rate lower than that of the magnates and wealthy citizens. It is for the reader to form his own judgment.

We have no statistics, but we can press that owing to the increase in postage rates of letters and cards the volume of business tends to decrease. It may not be reliable to base the net increase or decrease in postage revenue from an isolated case. It may be noted that the Postal Department is one of the commercial departments. The rural agricultural classes, including labourers, are very poor, and the saving of one or two pice is important to them. The cheapest postage at least for a single card and a single letter is very desirable, if the habit of communication by post in rural areas is to be increased and developed. Labourers in the United Kingdom get daily wages at four-fold or more of those of the field labourers in India, while the lowest postage is on almost

the same level for both the classes of His Majesty's subjects is obviously inequitable. It is the half truth if the present postage on a card or letter continues.

The utilisation of the services of school teachers is obviously economic, and efficiency can be obtained and maintained easily. It follows that it may lead to the lowering of the postage, so that even labourers can make use of postal facilities more than at present. We may venture to hint that now it is time to reorganise and evolve.

THE INDIAN TERRITORIAL FORCE

It is of interest to note that the village has two members of the new Indian Territorial Force. They are:—

- 1 Sepoy Baburao Kashinath Sase,
- 2 Sepoy Narayan Krishnaji Kale.

Except for a short period in the year the sepoy of the Territorial Force can stay at home in their own villages and follow their ordinary avocation. As at present arranged the annual training is held at Belgaum of the Bombay Presidency, and the sepoy goes there in the month of February and are in camp for one month (March) and during their stay they are given the training:—

- (1) Drill,
- (2) Rifle exercise.
- (3) Shooting.
- (4) Physical training,
- (5) Study of standing orders.

The sepoy goes to Belgaum at Government expense and they get Bhatta or travelling allowance. For their stay at Belgaum for the whole period their mess charges are met at Government cost and in addition each sepoy receives an allowance of Rs. 16 a month. He gets a uniform and a rifle when he is undergoing the course at Belgaum. Both of the

sepoys from here are Marathas by caste and they can read and write Marathi. Baburao is a Talathi and Narayan a cultivator.

From the neighbouring village of Ghospuri two Brahmuns are sepoys in the Indian Territorial Force.

GOVERNMENT SERVANTS AND PENSIONERS

Of certain permanent resident families here some members are or have been in the service of Government elsewhere. The following list gives the necessary details:—

IN SERVICE NOT RESIDENT IN SAROLA

No.	Designation	Caste	Monthly Pay	Remarks
CIVIL				
1	2 Talathis	Brahmin	80	at Rs. 40 each
2	2 Police Constables	Mali	50	{ 1 at Rs. 30 1 at Rs. 20
3	{ 1 Jail Jamadar	"	45	at Rs. 30 each
	{ 1 " Naik	"	30	
4	2 Jail Naiks	Maratha	60	
5	1 Postman	Mahomedan	18	
MILITARY				
6	1 Naik	Maratha	40	at Rs. 20 each
7	2 Sepoys	"	40	
LOCAL BOARDS				
8	2 Teachers	Maratha	70	at Rs. 35 each
9	2 "	"	50	at Rs. 25 each
10	1 Teacher	"	15	
11	1 "	Mahomedan	25	
12	1 "	Mahar (Harijan)	15	
Total			538	
Annual „ Rs.			6,456	

CIVIL AND MILITARY PENSIONERS (RESIDENT IN SAROLA)

No.	Designation	Caste	Monthly Payment	Remarks
CIVIL				
13	1 Sub-Registrar	Maratha	90-8	
14	1 Police Jamadar	"	22	
15	1 Postman	Mahomedan	15	
MILITARY				
16	1 Subhedar	Maratha	(65)55+10*	* Jungi Inam
17	1 "	"	(65)60+ 5*	
18	1 Sepoy	"	6	
Total			263-8	
Annual Rs.			3,162	
Grand Total			9,618	

Thus Rs. 3,162 per year comes into the village in the form of pensions, and members of resident families elsewhere have an income of Rs. 6,456 per year.

Except Nos. 15 and 18 the remaining persons own arable land in their own names or in the names of their kinsfolk. During the absence of Government servants their lands are either cultivated by their relatives or let out on rental. The pensioners manage their own lands.

The term Jungi Inam (जंगी इनाम) may be explained. The sum represents monthly payment in cash from the Government treasury for three generations including the present recipients. Government of India were pleased to grant these Inams in consideration of the men having taken active part in the Great War. In addition to the cash payments, both Subhedars were granted land on the non-transferable tenure free of any occupancy price for cultivation in other villages in the District.

LITIGATION

There is no statistical information available as to the extent or importance of litigation in the village. Any attempt to collect data is a hopeless task. The Deccan villages are not heavily involved in either civil or criminal litigation. It is true that at times the cultivator has recourse to the revenue courts when a dispute arises with regard to his land, well or crops; but the revenue courts give him speedy, cheap and quick decisions.

Cases of cattle theft and simple hurt and assault are few and far between. In most cases of this nature a compromise is brought about by the villagers themselves to maintain smooth relationships with each other.

Savkars and money-lenders sometimes drag the peasant into the civil courts for the recovery of their old debts. These cases linger on from year to year with postponement after postponement. The bill of costs goes on increasing. We have here in the Deccan a special law in consequence of the riots passed by the Imperial Government, called the Deccan Agriculturists' Relief Act (XVII of 1879). The salient and important provisions of the Act safeguard the interests of the peasants concerned. There were several amendments from time to time in order to give greater facilities and protection to the cultivator, but our expectations were not fully realised. In the long run the cultivator, in extreme cases, has had his ancestral land or parcels of land sold. The sale is conducted by public auction through the Mamlatdar of the Taluka in order that the cultivator may not suffer monetary loss and there may be fair play for the cultivator as well as his Savkar.

OPIUM

The consumption of opium is generally condemned as a vice, and yet most of the babies here are given small doses of opium by their mothers. Generally children are given

opium till they are three years old; but they do get it even after in a few cases in which the child is given to screaming and crying, so as to disturb the sleep of others at night. We took an enumeration in July of babies under three who were dosed with opium. The result of our inquiry is interesting and it is noted below:—

Caste	No. of children under 3 years				Weekly cost
	Boys	Girls	Total	No. of Consumers	
Maratha	25	36	61	46	Rs. As. 5—12
Mali	3	4	7	7	0—14
Brahmin	3	1	4	2	0— 3
Marwadi	0	2	2	1	0— 2
Lingayat	1	0	1	1	0— 2
Carpenter	1	0	1	0	0— 0
Barber	0	2	2	2	0— 4
Teli	1	0	1	1	0— 2
Sonar	0	1	1	0	0— 0
Chambhar	2	1	3	3	0— 6
Bhil	1	1	2	2	0— 4
Mahomedan	7	4	11	8	1— 0
Mahar	3	7	10	6	0—12
Lohar	0	0	0	0	0— 0
Ramoshi	0	0	0	0	0— 0
Native Christian	1	0	1	0	0— 0
Total	48	59	107	79	9—13

Most of the women spend Annas two a week on opium, some Annas three and others Annas four a week. There is of course no record. So we have adopted, to err on the safe side, a general rate of Annas two a week per child.

The total population of both boys and girls under three years is 107, to 79 of whom opium is given daily; a few take it once, some twice and some thrice a day. Twice is the common practice, once in the morning and once at night. A dose of opium given to a child varies. In some cases a dose is as small as a grain of Bajri, in some cases it is as big as a Jowari seed or even a Tur grain. 73.8 is the percentage of the opium eaters here i. e. three-fourths of the children are drugged by their well-meaning mothers without any real benefit or gain, notwithstanding the fact that the health of small babies is thereby much impaired. Do the mothers love their babies? Yes, of course. But they just follow the old habit of centuries. The children are made feeble and weak and probably some succumb to illness. Opium is a narcotic and its use for consumption in a hot country like India brings on stupor in addition to that drowsiness which is brought about by the heat of the sun. It is sometimes claimed that opium keeps off cold or diarrhoea; but on the whole, from the point of view of health, it is undoubtedly injurious, and infants must be kept free from the drug. In this village twenty-eight children (26.1 per cent) do not eat opium and their health is as good as or still better than that of the others. It is for the mothers to learn how to feed and otherwise to take care of the children in all other respects. They can and must imitate the mothers of abstainers. Their duty is to get rid of the evil habit once for all.

Now again, the use of opium involves the parents in an extra outlay at Rs. 40 a month, which works out at Rs. 480 per annum or in round figures to the tune of Rs. 500, which

is not a small sum for a village which pays annually to Government the land revenue assessment of Rs. 2850, i. e. nearly one-fifth, which is mainly paid by parents who give their children opium. So one-fifth of the profit or savings is sacrificed in an evil way. Can these people find no better use for their money? With the money so saved, it would be better to purchase a herd of twenty to twenty-five cows annually for the village and to supplement the present quantity of milk for the children and their mothers. We do not wish nor do we expect that such a change is possible in a short period. But it would be possible to buy five cows during the course of one season and so on. From the Vedic times the Hindu scriptures have held the cows' milk as nectar or ambrosia.

The next thing for us to ascertain is, if there are here any adults—either male or female—addicted to opium. The use of opium by adults is severely condemned by public opinion, and any one who is known to indulge in the vice is a marked man; so naturally we were unable to get any accurate information. The surreptitious use of the drug by an adult ruins his reputation. Fortunately their number is very insignificant. It is a vice; but it is believed that with substantial and nourishing diet, adult consumers can keep in sound and robust health. Otherwise they become emaciated and lean, and lose, by and by, the little energy and vitality they had. In these days of stress and strain adequate and nutritious food is not so easily procurable. The habit of taking the drug is ruinous, both economically and morally.

VILLAGE VICES AND FAILINGS

In some of the Deccan villages there exist some or other of these vices and evils. We may enumerate them, but it may be noted that they are not attributed to particular individuals in this village. We have, in relation to other matters, tried to indicate how far they adversely affect the

social and economic life of the village. In many cases they cause economic loss or injury, either to the individual or family, to the caste or to the whole village community, without distinction of caste or creed.

We propose merely to enumerate the sources or causes of trouble in the village which have been brought to our notice:—

- (1) Drinking;
- (2) Opium, Ganja, Bhang and Charas;
- (3) Chewing and smoking of tobacco;
- (4) Keeping of Kolati or other mistresses;
- (5) Tamashas and dances;
- (6) Gambling;
- (7) Factions;
- (8) Vexatious litigation;
- (9) Improper or unwise use of the power of excommunication;
- (10) Illicit grazing and cattle impounding;
- (11) Wilful damaging or destruction of implements, cattle or crops;
- (12) Arson;
- (13) Inter-caste quarrels at caste feasts, etc.;
- (14) Quarrels as to social precedence on the occasion of Dasara, Holi and Pola holidays and processions of rival deities in the village;
- (15) Petty thefts and pilfering;
- (16) Belief in witchcraft or sorcery;
- (17) Quackery;
- (18) Superstition, especially belief in, and fear of, goblins and half goblins;
- (19) Gypsy fortune-telling;

No doubt there may be many more. We have referred to these to indicate that there is plenty of scope for reform and improvement in village life in other spheres than those with which we have mainly concerned ourselves—those of economics and general social organisation.

THE STANDARD OF LIVING

It will be useful if the description of the condition of an ordinary cultivator in the Deccan given by the Deccan Agriculturists' Riots Commission in 1876 is mentioned here. The Commissioners say in paragraph 53 of their report (page 37):—

“ Enough has been said in a previous chapter of this report to show that we are dealing with a region of a very low standard of productiveness and with a poor population. The estate of an ordinary Kunbi ryot, exclusive of his land and produce has been estimated by competent authority to be little more than Rs. 200 in selling value. It will be somewhat as follows:—

	Rs.
Live Stock	125
Implements and Utensils	20
House	50
Miscellaneous	20
Total.....	215 ”

As the village of Sarola Kasar was, along with the surrounding villages, concerned in the riots, the Commissioners made personal enquiries after visits to those places. Their observations on the economic condition of these villages are of great interest and may throw much light on the present state of things in the village.

THE OLD STANDARD OF LIVING

Before describing things as they are today, a word must be said of the past. About fifty years ago a cultivator and his family lived on cakes of the flour of Bajri or Jowarí baked and eaten with porridge or curry flavoured with onion, garlic, chillies, salt, coriander, etc. Buttermilk was then available in many families. Dress too was simple. A man wore a Langoti (लंगोटी) 7' x 3' of coarse cloth round his loins or a pair of short breeches, coarse, reaching to the knees, with a tie of silken Kardora (करदोरा) and had a short scarf over his

shoulder. A white or coloured turban of small dimensions and a pair of heavy native shoes completed the everyday dress of the majority of the men. A Barabandi (बाराबंदी) came into fashion afterwards and was followed later by a Kurta (a shirt). In the ordinary house mud-walls were built in an oblong form and Khanas (खण) or posts of Raywal timber supporting rafters of milk bush plant, as roofs, were put up along all four walls on the inside leaving an open space as a courtyard in the middle. A portion of the construction was set apart for cooking purposes and for rooms for the members of the household. Another portion was used as a stable for the cattle and a third portion was utilised as a barn or granary or for the bins or jars for the storage of grain, etc. A secluded corner was screened off as a bath-room for the use of the women folk.

The Kunbi women wore a short cotton Sadi (fourteen cubits long) of rough texture without any Kasota* (कासोटा). Sadis were then manufactured of coloured yarn, but as fast aniline dyes (German colours) were not then available, the Sadis soon became faded and their warps and wefts shrank easily. Fast colours were not so common then. A short bodice made of pieces of coarse coloured cloth cut and sewn together covered the chest and back.

The dingy hut about 15 × 10 feet, the roof thatched with Bajri or wheat straw, with dwarf mud walls on four sides and a doorway in one of the walls, which was common then, is now rarely seen. It was a poor man's hut such as a Ramoshi, now-a-days, may use as a temporary dwelling.

During the last generation many changes—social, moral, religious and economic have taken place. The old order of things has been greatly modified or altogether abandoned.

* The hem of the Sadi tucked behind into her waist band.

Many articles formerly in common use in the villages have been discarded or replaced. Many things have gone out of fashion. Many new articles have been brought into use and home-made articles have been banished from the ordinary homestead. A mere list of articles which are no longer in use is interesting and suggestive:—

- (1) Earthen pots, pans, vessels for cooking, boiling and carrying water;
- (2) Shikekai (pods used like soap for washing);
- (3) Rithe (soap-nut);
- (4) Coloured glass bangles (indigenous or Indian made);
- (5) Kardi oil extracted and prepared by women folk;
- (6) Brass lamp stands (rushlights) and iron lamps (cruises) for burning sweet oil;
- (7) Clumsy ladles made out of pieces of wood (चाटू);
- (8) Grinding stones and hand mills;
- (9) Old earthen Chilims (tobacco pipes);
- (10) Old four-sided or four-cornered glass lanterns for use with Kardi or cocoa-nut oil.

The Deccan Agriculturists' Riots Commission on enquiry found that the cultivators here were deeply in debt. The indebtedness of the village to various Savkars amounted to Rs. 20,000. It must, at the same time, be borne in mind that money then had more than double its present purchasing power. The village boasted no great natural resources or advantages. To a great extent the prosperity of Sarola is due to one fortunate circumstance. But for the railway line running through the lands of the village it would have remained largely grazing ground for the pasturage of the cattle or a grass reserve for the Remount Depot, just like the neighbouring village of Ghospuri. The opening of the Dhond-Manmad railway line (a State railway) in 1878 marked the beginning of more prosperous days for the village. Many of the villagers found work on the railway line or in

the railway station in some capacity or other, and thus their earnings were augmented, and they began to be able to lay by some money.

THE PRESENT STANDARD OF LIVING

Let us glance at the rise in the rural standard of living that has taken place during the last thirty or forty years. The subject is of importance, since when a standard of living has been stabilised for centuries, a rapid rise is likely to have far reaching effects. New dominant forces are awakened and the competitive factor comes into play. Below a certain standard of living men tend to be inarticulate, but once they rise above this point, they not only feel their grievances but assert their rights. The history of Germany and France contains more than one warning of this. For instance, the German Peasants' War of 1524 took place, not in the North and East where the peasants were little better than serfs, but in the West and South where they were accustomed to well-being and where their holdings were thick on the ground. In the Punjab in 1923 we had a hint of a similar possibility in the Sikh Babbar Akali movement. ("The Punjab Peasant" by Mr. Darling, I. C. S., 1925, page 156.)

The dress of a cultivator now consists of a turban, Rumal, Gandhi cap or ordinary cap, Dhoti (a piece of white cloth $8 \times 2\frac{1}{2}$ cubits long wrapped round the waist and drawn up between the legs), a pair of country shoes, slippers or boots. A short coat or jacket either of coloured or white cloth is worn. The man who can afford it wears a shirt and a jacket as well as the undergarment. Well-to-do cultivators may use garments half cotton and half wool for choice. These garments are all sewn with the sewing machines which are to be seen in every village. All garments are, in most cases, sent to the washerman at intervals, but if the cultivator is poor he has to do his own washing with a piece of soap. Gandhi caps specially or other caps of coloured woollen or

cotton cloth are much in evidence, but no hats are worn here. Lace bordered and coloured turbans are often met with. Fancy buttons manufactured out of horn, bone, etc. are procurable in great variety. Most of the men are smokers of Bidis (बिड़ी) which can easily be carried in the pocket of the coat with a match box. A considerable trade in Bidis has developed.

The woman of a cultivator's family will ordinarily have Sadis (16 by 2½ cubits) fast coloured and woven by Indian weavers with Japanese silk borders of real or artificial silk, two or three bodices with silk borders well cut and sewn on the Singer's sewing machine fastened either with buttons or small hooks. Most of the women formerly used to cut and make their own bodices. These garments are so arranged and cut that the silk borders are displayed to the greatest advantage. It is in their small world the fashion of the day. Coloured chintz (चिन्ट) and white Patalas (पताल) with printed borders manufactured in England are often worn, because they are finer and lighter than Indian fabrics. Unlike their western sisters, the Hindu women use no bonnets or hats. They wear no headgear. Instead of wearing men's cast off shoes, as they actually used to do, women folk here now wear simple and cheap leather sandals outside the homestead throughout the year. A pair costs about As. 10 to 15.

In England wheaten bread was adopted as a staple food two hundred years ago; in the Punjab too wheat, of late, has become the staple food. Here wheat and rice are more in use now than formerly. But on the other hand milk has become scarcer than it was some years ago. Milch cattle are poor and poorly fed. Goats' milk is widely used by all. Jagri is less used than formerly, but the consumption of sugar is increasing steadily. Sweets are more in use than formerly. Tea has reached every corner of the village and is drunk once or twice a day by many, probably by a large majority. Pulses, chiefly Tur and gram, are extensively consumed as they

form a part of the staple diet. Ghee is not so readily available. Kardi oil (safflower seed oil) is edible and is much used in seasoned food and also for frying food and meat.

Among the Hindus there are both vegetarians and non-vegetarians. Vegetarian ascetics think that less they eat the healthier they will be; but this is certainly not the case with those who have to live by their hands. Agricultural operations require hard labour and toil, and men or labourers perforce eat more than those who do no manual work. "The more exacting the labour, the ampler the diet," is a golden rule for all climates and people. India is no exception, and it must not be forgotten that as the heat of the day is more oppressive, the labourer requires more food and vegetables. It must be stressed that if a higher standard of work is to be maintained, as agricultural progress demands, more and better food should be available. Not only that more food should be consumed, but also the diet should be improved in variety and quality. Fruit and vegetables are grown in various gardens here. Oranges were hardly known forty or fifty years ago. In this village oranges are now grown and the best are sent for sale to Bombay or other centres; but the inferior sorts are consumed locally. Oranges however are mainly a purely commercial crop. The system of disposal in Bombay brings home strikingly the advantages of quick railway transport. Oranges plucked in the afternoon in Sarola gardens can be sent by the night train and sold the following morning sound and fresh in the Crawford Market. Most of the cultivators here have their own wells, and most of these afford a sufficient supply of water for irrigation in years of normal rainfall, when ordinary vegetables are also plentiful. Sufficient could easily be grown for domestic consumption also. Oranges find a good market in Bombay, not only from Sarola but from many neighbouring villages. On the 31st March, 1928, a number of small orange fruit parcels in bamboo baskets

from villages were awaiting on the railway platform here, to be despatched to Bombay by the 9 o'clock night train. Naturally consumption of oranges in the villages is limited to inferior fruit.

HOUSING

Housing comes after food. In Sarola we now see some double storied houses, built solidly in stone and mortar with fine teak timber posts, beams and other wood work. Such houses stand on high stone platforms with an Ota or verandah in front. High compound walls, as tall as the second story and built of dressed stones in lime and mortar and plastered, are equally noticeable. A casual visitor to the village is tempted to enquire, who are the owners of these. In most villages the obvious answer would be the money lenders or Banias. But now, as often as not in this village, such a house belongs to a cultivator or a Mahomedan. Very recently a Marwadi here constructed a house with steel girders and in stone, chunam and mortar. All the wood work, the posts, beams, boards and planks were of first class teak well finished and polished. Iron chains, hinges, hooks, brackets, nails, screws, bolts, rings, etc. were of the latest available type. One of the cultivators here has made a farmhouse in his garden, roofed entirely with corrugated iron sheets and enclosed with dressed stone walls. Small posts and rafters are used to support the corrugated iron sheets. A further development—one of the cultivators has built here on his land a farmhouse in stone and lime masonry roofed with Mangalore tiles. Corrugated iron sheets are freely used in many cases. They are preferred because they are durable and lessen the risk of fire. An iron roof is not leaky in the rainy season. It cannot be so easily removed as grass or straw thatch. In spite of the greater cost, it is very convenient, and this marks a change in the mentality of the cultivator. He is not ignorant that the iron sheets are a foreign commodity. More windows and other openings for

light and sunshine are to be seen. Very few of the old type of pitch dark rooms with no provision at all for light are to be found, and they may be opened up before long. The cultivator and his family are out in their fields or gardens during the day, and they have little occasion to notice any need for light and sunshine in their houses. In recently built houses no accommodation is made for the stabling of cattle, and they are provided for separately outside. This change in custom gives greater comfort to the inmates of the houses and it conduces to their health in the long run.

Even a casual student of economy can easily perceive that during the last thirty or forty years a rise in the standard of living in one way or the other has been in evidence in rural India in general and particularly in the village which we have been studying. The rise has not been automatic, abrupt or uniform but a slow process made up of innumerable small adjustments and changes, because the rural population is too conservative to adopt innovations until their value and usefulness has been fully brought home to them. To give a complete account of new articles brought into fashion and use today is beyond the scope of these notes. Apart from the fact that the mere recounting of names cannot be expected to give any idea of a considerable number of things in use in the sphere of our daily activities, still we give a short list of articles now in general use in the village.

To those accustomed to the lavish material equipment of the West, the list may seem merely dull or ridiculous. In an Indian village like Sarola, it gives a double picture—of what the people did without until recent years, and of what even now to them represents a relatively higher standard of comfortable living.

(1) Copper pots, utensils, vessels, pans, cups, Lotas, ladles ;

- (2) Brass pots, utensils, pans, water vessels, jugs ;
- (3) Aluminium cooking pots, utensils, dishes, spoons, plates, trays ;
- (4) Iron pots, vessels, buckets, baskets, trunks, locks, keys, nails, iron ploughs, wheels, pulleys, pipes, wires, sheets ;
- (5) Steel razors, scissors, knives, saws, awls, needles, pins ;
- (6) Cycle accessories such as tyres, pumps, tools, bags, bells, pedals, rubber shoes, canvas boots, brushes, tin cases ;
- (7) Caps, buttons, hooks, stoves, hurricane lanterns, pencils, pens, nibs, looking glasses, globes, paper and stationery, chimneys, glass bangles (multi-coloured), matches, twine, thread, soap, sugar, spirits, candles, spectacles, glass bottles, tea, coffee, Japanese toys, umbrellas, kerosene oil, petrol, salts, Singer's sewing machines, combs, rings, grinding machines, oil engines and pumps for drawing water for irrigation from wells ;
- (8) Cotton piece goods, yarn, checks, shirtings, hosiery ;
- (9) China ware, cups, saucers, vases, jars ;
- (10) Medicines, pills, tablets, powders, specific medicines for fever, ague, etc., preparations like vaseline.

Now cycles have become so common that they can be seen in most villages and hamlets ; but in this village only a dozen are to be found. Why is this ? The village site is not well laid out and it is without any good streets or lanes. There is no made road leading to the village gate ; nor are there any good well surfaced paths leading to the gardens and fields in the village. The railway station is within a mile of the village and a journey by rail is easier than by cycle. A motor service has lately been started.

From the foregoing, it is abundantly clear that there has been during the last 40 years a rise in the standard of living among the cultivators. It has undergone a change for the

better, a phenomenal change. We do not deny that the village lies within the zone of the Deccan constantly liable to famine or scarcity, that there is only one good year in every three or four. Dr. Harold H. Mann, ex-Director of Agriculture, Bombay came to the same conclusion that in a group of ten years, the Deccan village found three seasons normal, three medium and the rest either bad or of scarcity.

Since the Great War (1913-18) there has been a great rise in the prices of all commodities and agricultural produce. Who is benefited by the rise? All the gains were duly earned by the producers. The rise in prices was more than 20 per cent in many cases. During the war some things which were very cheap at ordinary times sold at exorbitant prices. All the belligerent nations in Europe were, during the seven or eight years, so unsettled as to be unable to carry on the ordinary pursuit of agriculture and make their soil yield the usual crops; not only that, but they were forced to buy their supplies of bare necessities from other countries, such as India, Japan, America, Australia, etc. During the progress of the war, India was supplying food grains, clothing, jute, rice, coal to the different theatres of war in Palestine, Asia Minor, Turkey, Africa, France, etc. Even she was enabled to send her sons to all these foreign lands to serve the British Empire, and she in return received remittances of money therefrom. There were men on active military service from this village.

During the war, immediately after the war and for long after the war, labour has been very dear. Since the armistice in 1919 during eight years the pre-war rates of wages have not yet been reached and nobody knows if ever the pre-war rates will again prevail. Like other industries which were handicapped by the excessive cost of production, the agricultural industry suffered. So the cost of agricultural produce naturally increased. But the labour cost or increased cost enter very little

into the account of an ordinary cultivator whose holdings are small and who himself works on the land assisted by his women folk and his sons. Practically the small holder gains in the long run in the matter of high labour cost. All these factors play an important part and tend to increase his gains. Sarola grows no cotton and so did not share in the abnormal profits reaped by the villages in the cotton tracts when prices were high. It was during this period of high prices that the assessment of land revenue on the agricultural lands here was revised and raised. The revised rates were introduced from 1920 and they rose from Rs. 2,324 to 2,734, so that Rs. 410 have been paid annually in excess of the previous amount. In addition the cultivators were subjected yearly to the levy of a cess of about Rs. 85 for compulsory primary education under the Primary Education Act, 1923.

It may be urged that the change in the circumstances of some four or five families does not imply that all classes of families in the village are much improved in all respects, that these families alone do not make up the whole village and that some of our generalisations refer to conditions among the more well-to-do cultivators. First we must note that we have been tracing the situation for forty years or so and have been dealing with the last two generations. Take for instance the houses in the village built within the last forty years or so. Compare them or any of them with the thatched and mud walled hovels still existing in the village; old houses with the roof covered with rough and coarse rafters of milk-bush plants. We may count forty houses built in stone and mortar with poles and beams and posts well fashioned either of teak wood or Nimb wood. "Rome was not built in a day." Is this no improvement? Is this not to be considered a rise in the standard of living? That the present houses are more comfortable and convenient than those which they have superseded is a visible proof.

The garments and apparel now worn by men, women and children are better and more costly than those of the type and fashion worn and discarded during the previous forty years. The new garments are more durable and comfortable than the old.

The people generally now wear more clothes than they used to. The fashion of covering a part of the body only is gone for good. Even the members of the depressed classes have assumed a better style of dress than the old traditional one. We have made a brief reference to what clothes were in use formerly and what are in use now. The women and children of the village Mahars were half nude. Clothing was as simple and as scanty as possible. A man or a woman rarely had a change of clothes. We have all our textile mills in India turning out cloth for the use of the people. In addition we get cloth imported from England, Japan and America. The consumption of cloth and yarns is considerable. The improvement in clothing is universal, right down to the poorest of the masses. The only distinction is that the garments may be of fine thread or of coarse thread or of superfine thread. Silk, half silk and half woollen garments are in evidence anywhere and everywhere. It does not matter whether the silk is real or artificial. We have all these tastes and they are gratified. It must be admitted that cases of half nude men or women are still observed, but they are rare exceptions.

Even if a change for the better is admitted, it may be contended that it is not an all-round uniform change, but that it is for the few. One uniform type for all can never be the rule. Taste, fashion and social position, costs involved and the like are the factors to be borne in mind, which determine the use.

The question is if anybody has fallen to a lower standard. No is the emphatic reply; but there are certain circumstances which may tend to diminish the standard of living.

The causes that will lead to the lowering of the standard are as follows:—

(1) An increased population without any corresponding area of uncultivated land to depend upon;

(2) An abnormal and sudden fall in the prices of agricultural produce;

(a) There must be no relaxation in the development of industry and improvement of agricultural methods;

(b) If there is surplus population it must migrate to seek labour elsewhere;

(c) If the population engaged in agriculture on the same area of land continues to increase, the land must be made to produce more by improvement in the variety of crops grown, the quality and yield of each crop and the methods of cultivation.

Now in 1937 the prices of agricultural commodities have fallen even lower than before the Great War, but the standard of living of the villagers has not undergone any change for the worse. With the fall of prices of field produce, most of the prices of other goods such as cotton fabrics (Japanese), iron articles, metals and so on have gone down also.

The general gradual fall in the money prices of all goods and the fall in the gold value of currency naturally gave a double profit to the cultivators whose savings were embodied in gold ornaments and trinkets.

HAPPY HOMES AND HYGIENIC STREETS AND SURROUNDINGS

It is a practice in vogue in most villages of the Deccan that before daybreak or soon after sunrise, the housewife or some woman of the household makes it a point to sweep and clean the ground floor of the house, rooms, apartments, stables, court yard, Tulshi Vrindavan (तुळशी वृंदावन), doorways and outside of residential houses, a portion of the street in front

of the doorway; she goes on to sprinkle water mixed with cowdung over the whole of the courtyard and the last four places mentioned above, and in this way the dust nuisance is checked and minimised. Thus a portion of the public street or road passing by the building along its outer wall is kept clean. It is noticeable that as a result of this custom the whole of the village streets and roads are kept clean and smooth without any outlay. This laudable custom still persists and is scrupulously adhered to in many households. A Rangoli* (रंगोळी) is drawn as a symbol having religious significance on the swept and clean surface of the ground immediately in front of the doorway and near the Tulshi plant. These are treated as religious observances. The Bhagvat VII. 11. 26 runs:—

संमार्जनोपलेपाभ्यां गृहमंडलवर्तनैः ।


स्वयं च मंडिता नित्यं परिमृष्टपरिच्छदा ॥

The essential goodness and value of the rural life may be either socially, morally or economically realised. Unfortunately there are no such salutary customs and traditions with regard to most of the other household and village arrangements for maintaining order and cleanliness. Conditions beyond the strip adjoining the individual owner's doorway seem to be nobody's business. Social custom and religious sanction deal only with the family and its dwelling, not with the community and the village.

Let us, however, refer to the principal kinds of nuisances that have now crept in gradually and almost universally in the Deccan and Khandesh villages and in their immediate environment.

The measures which are required to improve condition in the village as a whole may be summarised as follows:—

(1) Stoppage of the practice of allowing dung heaps to be scattered promiscuously;

* Figure of  Swastika or of plants, leaves, etc.

(2) Or on a piece of the village site and arranging to store such rubbish and manure in pits at a distance from the residential part of the village site;

(3) The provision of masonry, earth or wicker ware receptacles for the storage of rubbish, ashes, refuse, remains of animal feed in the owner's garden lands, etc.;

(4) Stopping the use of village streets or corners for answering call of nature overnight;

(5) To arrange to carry off bath and domestic water through a drain and not allow it to run over the street; allowing it to soak into the ground adjoining houses is unhygienic and injurious to health in the long run;

(6) Punctual removal of sweepings, rubbish, etc. from houses;

(7) The enclosure of vacant plots of ground covered over with prickly pear, which is almost destroyed by the cochineal insects and incidentally to ascertain the ownership and responsibility for the condition of such plots;

(8) To fill in and level all pits, holes and trenches so that storm water may not stand there;

(9) To avoid making excavations in which dirt and water may accumulate;

(10) To remove grass or other vegetation from the mud-taps of houses;

(11) To eradicate all rank vegetation grown during the rainy season from open places or spaces and the sides of streets at the time of the Divali holidays;

(12) To divert storm or rain water running on the streets to the road-side gutters by joint arrangement of the owners of the houses;

(13) To drain off water accumulating round public wells so as to avoid its running on the street.

These precautions and remedies are very easy, simple and cheap. The personal attention and interest of the owner is needed. There are no objections on religious grounds.

With regard to privy and latrine arrangements it can only be said that in the greater number of villages, there are no proper arrangements of any kind, and that in consequence in all but the smallest villages conditions are intolerably insanitary and inconvenient. The question of the most satisfactory practicable system is one that must be settled separately for each village in consideration of its size and situation and surroundings, the nature of the soil and climate and weather conditions, and the habits and prejudices of the people; but it is certain that a satisfactory system can always be devised to suit local conditions.

MOTOR SERVICE

Recently a regular motor service has been started between Ahmednagar and Sarola.

The motor bus, with fifteen seats, runs daily from Sarola to Ahmednagar (14 to 15 miles) and back serving the villages of Sarola, Astagaon, Ghospuri, Khadki, Khandala and Arangaon.

The road as far as Khadki (about three miles) is a rough country track over hard Murum. There it joins the main Dhond-Nagar road.

From Sarola the journey takes an hour, and the fare charged is 4 Annas.

On the Ahmednagar weekly Bazar day, Tuesday, the bus makes two trips.

The situation is characteristic of the present stage of development of the road system.

Although Sarola is a large village, it has hitherto had no proper made feeder road to join the main road, because it is served by the railway; but the demand for the motor transport facilities has led to the running of motor vehicles three to

There is generally no arrangement in the household for the dogs to quench their thirst; they repair to rivers, streams or wells for obtaining water.

It is asserted that when dogs are solely and exclusively fed on milk they retain a keener sense of smell. This is the reason why the herdsmen keep their dogs on milk exclusively. They can afford to supply enough milk either of goats or sheep.

CHAPTER 7

ECONOMICS

LAND REVENUE

In India there are two main types of settlement of land revenue; permanent and temporary. In the Bombay Presidency in which Sarola is situated, the settlement is of the latter type. Further it is Ryotwari. The assessment is fixed on the individual field, not on the village as a whole or on the village community or on the whole estate of a Zamindar or Landowner.

The system is extremely complicated, but it is based on the principle that the relative productive power of all the fields of a Taluka is fixed once for all by examination of the physical characteristics of different parts of the field, constitution, nature and depth of soil, admixtures of sand, gravel and lime, configuration and slope of the surface, as these are known to affect productivity under the local climatic conditions and type of agriculture. Within each village allowances are made for special advantages from water resources and from distance from the village site from which the fields have to be worked.

The relative productive capacities per acre are expressed in terms of an Anna scale. If the best normal land is 16 Annas, then land half as productive will be 8 Annas, quarter as productive 4 Annas and so on. The unit for settlement of actual assessment is the Taluka containing perhaps 50 to 200 villages. Within the Taluka separate tracts or groups of villages are selected in which the general economic conditions

as regards systems of agriculture, backwardness of population, communications, marketing facilities, climate, etc. are fairly homogeneous.

For each such tract "maximum rates" are fixed. These are the actual rates for standard land rated at 16 Annas and the actual assessment per acre for each field is the standard rate multiplied by the classification in Annas divided by 16, e. g., the assessment of a field classed as 5 Annas will be $\frac{5}{16}$ of the standard rate.

In making a settlement, the method is by trial and error. Different rates are tried for the different groups and the results of applying them, on the assessment of individual fields, villages and groups ascertained and compared with the assessment for the individual fields and the totals for the villages, groups and Taluka under the existing settlement.

Every sort of change in conditions has to be considered: change in the general level of prices, in the relative levels of prices of different crops, in the proportions of different crops grown, in communications and marketing facilities as affecting local prices and costs and so on, and evidence of any inequity in the current assessment indicated by levels of rents and sales, leaving of land uncultivated, etc. Further there are limits to the extent by which the rate of assessment can be increased for any field or for larger units fixed as a matter of policy.

The classifications of different types of land, e. g., rice, dry crop and irrigated land are separate with different maximum rates

Thus although the relation between the assessable values of all fields within each class in each village is permanently fixed by the original survey classification, there is unlimited scope for varying actual levels of rates through the application of different standard rates for the types of land in each group and by changing the groups. Thus in effect it is possible to

have different rates for each village. The result of successive settlements, each modified in the light of the working of the previous settlement, is that by now the adjustment of assessment between fields within the limitations imposed by the original soil classification on the basis of capacity to pay is probably on the whole very equitable.

Sarola was brought under classification in the fifties of the last century and assessed under this system for the first time. The assessment has been revised twice after the lapse of the guarantee for thirty years, in 1884 and again in 1920 (although it was due for revision in 1915) to bring it into line with the other villages of the Nagar Taluka to which Sarola had meantime been transferred from Parner. On both occasions the assessment was raised mainly on account of the gradual rise in the level of prices. We give the result from the survey and settlement reports.

Year	Land	Area in acres	Assessment in Rs.
Original Survey 1851-52	Dry Garden	3302	1232
		159	452
		<u>3461</u>	<u>1684</u>
Revision 1884	Dry Garden	3540	1830
		294	494
		<u>3834</u>	<u>2324</u>
2nd Revision 1920	Dry Garden	3534	2227
		294	507
		<u>3828</u>	<u>2734</u>

The maximum rates and average rates per acre for the whole village are (dry crop):—

	Rates Maximum Standard Rs.	Average assessment per acre	
		All fields	Dry crop fields only
Original Survey	1- 4- 0	0- 7- 9	0- 6- 0
First Revision	1- 3- 7	0- 9- 3	0- 8- 6
Second Revision	1-12-0	0-12-2	0-10-0

Thus there has been an increase in the assessment of the village from Rs. 1,684 to Rs. 2,734, i. e., by about 62 per cent in seventy years. Between the last revisions there is an increase from Rs. 2,324 to Rs. 2,734 of Rs. 410 or about 17 per cent in thirty-five years.

In addition to the land revenue the cultivators pay Local Fund Cess of one Anna in the Rupee and an additional cess of one Anna in the Rupee for financing compulsory primary education, i. e., two Annas in all. This makes a total payment of rates for the village of about Rs. 342.

With the present population the payment of land revenue amounts to about Rs. 1-11 a head and of Local Fund Cess to about As. 3-2 pies per head.

ANNEWARI OF CROPS

The outturn of crops here has been calculated and expressed in Annas = 16 per Rupee. The bumper crops are classed as (1) more than 12 Annas, (2) normal as 12 Annas and (3) less than twelve Annas according to the proportion of the outturn to normal. The recorded Annewaris for the years for which the figures are available are as follows:—

Year	Annewari of crops	
	Kharif	Rabi
1908-16	...	Not available
1916-17	...	10 Annas
1917-18	...	"
1918-19	...	Not available
1919-20	...	8 to 12 As.
1920-22	...	Not available
1922-23	...	8 to 12 As.
1923-24	...	6 to 8 As.
1924-25	...	8 to 12 As.
1925-26	...	8 to 12 As.
1926-27	...	4 As. & under
1927-28	...	8 to 12 As.
1928-29	6 to 8 As.	6 to 8 As.
1929-30	6 Annas	8 Annas
1930-31	8 "	11 "
1931-32	6 to 8 As.	6 to 8 As.
1932-33	"	8½ Annas
1933-34	...	6 to 8 As.
1934-35	6 to 8 As	"
1935-36	"	"

These estimates are the result of the personal judgment of local officers, the standard being their idea of a normal good crop of 12 Annas. As there can be no such definite concrete standard which can be specified or measured or checked, the figures cannot be accepted as a correct absolute measure of the relation of each year's crop to an accepted normal. They are of value, however, as indicating the variation in output from year to year.

During the seventeen years, if these figures were accepted, there has not been a single year in which the cultivator was able to raise a bumper crop, i. e., more than 12 Annas, which is termed normal. For how many years were the crops normal, i. e., Annas 12? It appears that the crop Annewari varied from 8 to 12 Annas for five years. The mean of 8 to 12 Annewari is Annas 10. On this basis it follows that the

cultivator had had no normal crops during the long period of seventeen years. It may be said that though the crops were never abnormally deficient except in the year 1926-27, they could not be described as very good according to any standards of more favourably situated countries. There were no remissions of land revenue, and suspensions were granted once only in 1926-27. It would have been logical if the method of calculation of Anrewati laid down in Government Resolution, Revenue Department, No. 7392 of 1911 referred to at page 106 of the Land Revenue Rules 1921 had been followed.

It would appear that according to the scale of appraisal developed in practice the actual normal—what the cultivators are entitled to expect in a year of average rainfall—has been the 8 to 12 or 10 Anna crop, not the 12 Anna crop.

INDEBTEDNESS

From the report of the Deccan Agricultural Riots Commission in the seventies of the last century, it appears that the whole village of Sarola was then indebted to money lenders to the extent of about Rs. 20,000.

In 1929 we made inquiries in the village and examined the Record of Rights (in which all debts secured on land are entered) and ascertained that the debt due by the villagers on landed security amounted to about Rs. 8,000 in addition to Rs. 2,467 of Government advances (Tagai) which was all repaid with interest within the next three years, i. e., by 1931. We learned that the local shopkeepers had debts due to them amounting to about Rs. 3,000 in all. At that time, therefore, the total debt due was about Rs. 15,000, or taking the population of the village in round figures as 1500, about Rs. 10 per head or Rs. 50 per family. It must be remembered that quite a large proportion of this lending is between the cultivators themselves, so that the total

is not a burden on the village as a whole. Very few individuals have debts exceeding Rs. 500, and the average total lies between Rs. 50 and Rs. 300.

Some of the cultivators do business as money lenders. With regard to savings, many have deposits in the postal savings bank, instead of keeping all their savings in the form of hoarded cash or ornaments as they used to do. We could not, of course, obtain any information as to the extent of these postal deposits as the records are confidential.

It can safely be asserted that the burden of debt in Sarola is neither excessive nor very burdensome.

Debt is incurred as a rule to meet unusual heavy expenditure on marriages and ceremonies or for expenses of maintenance and cultivation after a year or cycle of years of *crop failure or scarcity*.

A thorough examination of the position as regards indebtedness would have required a much more exhaustive inquiry and analysis of documents and transactions than we were prepared to carry out: but summaries of the statistics immediately available from records may be of interest as showing the scale of transactions of different kinds in the village. Most deeds relating to land passed by agriculturists require to be registered and after registration extracts are sent by the sub-registrar to the village for embodiment of the details in the village Record of Rights. All oral agreements or documents affecting land, whether registered compulsorily or voluntarily or not, must be noted in the Record of Rights.

We have taken out a summary of transactions for the last decade (1927-1936) dividing the documents into three classes:—

- I Sale of land;
- II Usufructuary mortgages;
- III Simple mortgages.

Year	No. of deeds *			Total sum involved under			Total
	I	II	III	I	II	III	
1927	4	4	4	3850	700	799	5349
1928	6	12	0	5035	4150	0	9185
1929	9	5	3	3681	1800	850	6331
1930	8	6	4	3767	1000	1390	6157
1931	3	3	1	852	1300	40000	42152
1932	8	8	3	6360	1675	575	8610
1933	7	3	1	2785	840	99	3724
1934	4	6	4	965	975	1400	3340
1935	6	2	0	2825	450	0	3275
1936	11	3	9	6273	1450	3773	11496
Total	66	53	29	36393	14340	48886	99619

Leases for a period with premium or rent paid in advance are not included, as they are very few and the amounts are inconsiderable.

With regard to these it may be said that in many cases the sales are really sales with leases to the seller and with an unwritten agreement to sell back—virtually mortgages without possession.

Further, within the period, many of the transactions may be sales or resales of the same land. Partial and intervening repayments (or in instalments) of debts find no place in the Record of Rights. A full analysis of the position could only be made after examination of all the transactions individually.

In 1931 there is one quite abnormal transaction, a simple mortgage for Rs. 40,000. Omitting this it will be seen that the

* Total number of deeds 148.

annual total of

Sales varies from Rs. 852 to Rs. 6360 average 3640;
 Usufructuary mortgages from Rs. 450 to Rs. 4150 average 1434;
 Simple mortgages from Rs. 99 to Rs. 3773 average 859;
 All documents from Rs. 3275 to Rs. 11496 average 5962;
 Mortgage only 2324.

The annual amount of land revenue is about Rs. 2500 and the annual rental value of the whole lands of the village could safely be put at about Rs. 10,000.

With regard to the recovery of debts contracted by agriculturists, it may be worth noting that during the last decade, agriculturists' land was sold outright only (under civil courts' decrees) in the cases noted below:—

Date of sale	S. No.	Area	Assessment	Amount of sale price Rs.
		A, G.	R. as p	
15-6-28	*	6-7	8-9-4	1800
„ „ 28	*	96-24	70-6-7	1975
2-7-28	463/7	1-25	2-1-0	400
15-10-31	135	1-25	1-6-0	102
26-3-34	263/7	1-27	2-1-0	75-9

This means that while the average amount borrowed annually was Rs. 2,322, the average value of land sold in recovery proceedings was Rs. 435, and that in the last eight years it only amounted to about Rs. 60 per year. In other words the amount of debt recovered by the sale of cultivators' land was negligible.

THE DECCAN AGRICULTURISTS' RELIEF ACT

The cultivators in some villages in the Districts of Poona and Ahmednagar were very heavily in debt and the amount

*There are several survey numbers and several pieces, so they are omitted.

of debts in a large majority of cases was beyond the power and resources of the cultivator to pay so as to free him from the clutches of the money lenders, who usually belonged to the Pania class. It is said that some of the money lenders harassed the Kuubi (कुुबी) debtors against whom there were civil courts' decrees for execution. Some of the reckless cultivators were so much embarrassed that they had a regular campaign against the money lenders, demanding back the bonds, mortgages and other deeds relating to their lands. In order to get the deeds back the cultivators terrorised their Savkars. On gaining the possession of title deeds, etc. the cultivators in some cases destroyed them. But this crusade against the money lenders was in full swing simultaneously in many of the Deccan villages; thus there were agrarian riots in some villages in 1874 arising out of economic causes. The riot had very little political significance. During the pre-British days what was then known as Mirasi tenure land was not ordinarily transferred to any other family. For all practical purposes such land was deemed inalienable. It appears in some cases the Mirasdars (मिरासदार) were dispossessed of their land which passed to strangers in compliance with the law then in force. The Mirasdars did not like the change of the long prevailing custom. The riots were originated by the cultivators who had an economic grievance. It may be noted in passing that the Bombay Land Revenue Code, 1879 had not then been passed. The Government of India then appointed a Commission to investigate the whole matter.

During the course of enquiry the Commissioners visited many villages, inspected some of the scenes and examined a large number of witnesses from the cultivators' classes, the Savkars and a host of Government officials, such as the revenue officers, survey officers, judicial officers, sub-judges and so on. The Commission submitted their report to the Chief Secretary to Government of Bombay in 1875.

With the approval of the Imperial Legislative Council the Deccan Agriculturists' Relief Act XVII of 1879 was passed for the cultivators in four districts of the Bombay Presidency—Ahmednagar, Poona, Sholapur and Satara. Some provisions of the Act were extended to other districts in the Presidency from time to time. The Act has always been in force here in this village. It is a special enactment to guard and preserve the cultivators' interests in their lands; it is full of concessions made in favour of the peasantry. In order to grant relief to the indebted agriculturists, provisions are made which modify and limit rights under the ordinary law. We do not wish to tire our readers with the details of the Act; but it may serve a good purpose if we summarise briefly the broad features of the Act:—

(1) The term "agriculturist" is very exhaustively defined in the Act and it includes even an agricultural labourer; the words, "earns his livelihood wholly or principally by agriculture," are very important and widen the scope of the Act and have far reaching effect as far as the agriculturist is concerned. Most of the present day small and fragmented holders come under the said definition; but even big land-holders can take advantages of it, when they can definitely prove that they earn their livelihood principally by agriculture, i. e., a big land-holder with some money lending business, though liable to the levy of Income Tax, can be brought within the purview of the definition, if it be proved that his income from agriculture was more than his income from other sources. It is very liberal, though such typical cases are few and far between. The number of economic land-holders in the Deccan is very limited and out of proportion to the small and fragmented land-holders;

(2) Save petty cases, jurisdiction is provided by law for the subordinate judges of the first class, i. e., an experienced and higher grade judge is to try the agriculturists' suits;

(3) An agriculturist is permitted to adduce oral evidence or agreement, notwithstanding the provisions of section 92 of the Indian Evidence Act, 1872, a very important concession;

(4) The court is bound to make a thorough investigation into the history of the transaction between the parties;

(5) An agriculturist may seek a redemption of the mortgaged property or a foreclosure as well, on favourable terms;

(6) In case of decree for redemption, foreclosure or sale, the court shall direct that the amount of the decree shall be paid in instalments;

(7) Arrest and imprisonment of an agriculturist in execution of a decree for money is abolished;

(8) Immoveable property belonging to an agriculturist is exempted from attachment and sale in execution of a decree, unless it is specifically mortgaged for the repayment of the debt to which such decree relates;

(9) The Collector is empowered to set aside a sale of immoveable property belonging to an agriculturist, if he considers the price bid at the auction sale is inadequate.

(10) Courts on the lines of those of the *judges de paix* in France and Switzerland were suggested for establishment; courts of village Munsiffs may be constituted within two miles of the site for the adjudication of the claims when the subject matter of the suit does not exceed Rs. 25 and which is against an agriculturist; it is necessary to provide a cheap, easily accessible means of obtaining ready justice in petty cases without keeping the cultivator away from his land;

(11) Instruments executed by an agriculturist are invalid unless executed and registered by the sub-registrar whether they may be for payment of money or charge upon any property;

(12) In the four districts of the Deccan—Ahmednagar, Poona, Satara and Sholapur which for the most part lie within the recurring famine zone, the cultivators never really get their heads above water and get no breathing space in which

to save money from their scanty produce, sufficient to make payments to the money lender, in discharge of his debt, and if the period of limitation is short, the situation is accentuated; the Savkar must hurry up to file a suit. So to minimise the debtor's hardship, the ordinary period of limitation has been extended so that recovery may await the occurrence of good seasons. This is very important and convenient for the agriculturist and the money lender as well. The Deccan Riots Commission had recommended this deviation from the ordinary law of limitation;

(13) The co-operative credit societies registered under the Co-operative Credit Societies Act are exempt from the provisions of the Deccan Agriculturists' Relief Act;

(14) The money lender to whom any agriculturist makes any payment of money in liquidation of his debt is bound legally, at the time of such payment, to tender to such agriculturist, whether he demands the same or not, on pain of a criminal prosecution, a written receipt for such payment.

These provisions are very excellent but they remain a dead letter. The money lenders avoid or evade the passing of any receipt for the payment made and the cultivator can seldom be expected to come forward to lodge a complaint against his Savkar and so incur his displeasure; the provisions are, no doubt, excellent in intention but they are simply ignored by the money lenders. The object of the law is frustrated and it is disobeyed with impunity. The only way to ensure that there would be at least some possibility of the provision being invoked would be to make the offence cognizable by the Police but bailable.

In addition to these provisions, the Government have been pleased to make more concessions in favour of the agriculturists:—

(a) Power is delegated to the Collector to execute decrees against the immoveable property of agriculturist.

- (b) Concessions have been made in the form of reductions and remission of stamp duties and remission of court fees.

The original Act was an experimental measure, and as it has been in force for nearly half a century and its working was shown to be defective, it has undergone changes from time to time. Amendments, modifications and repeals have been made by more than twelve supplementary enactments by the Legislature of the Supreme Government as well as the Provincial Government.

It was enacted by Government with a view to ameliorate the condition of the cultivators, but they have not been able to reap the full benefit, partly on account of their own ignorance and lack of education. It is for the educated agriculturists to try to find out the latent defects of the Act and suggest remedies. It is for them to remove difficulties and make the Act more and more useful. The possibility of evasion by chicanery and trickery on the part of some of the money lenders to defeat the provision of the Act must be met by immediate amendments to make such evasions impossible.

In practice all the possible short-comings of an enactment can never be foreseen, and the process of amendment, whenever they become evident, which should be immediate and continuous, is nearly always too long delayed. The precarious rainfall in the four districts of the Deccan, specially in the area liable to constant famine, is the principal reason why the full advantage of the special provisions of the Act does not accrue to the agriculturist, as it ought to, in the ordinary circumstances or course of events or as contemplated by the framers of the Act and by the Deccan Riots Commission as well. Some of the money lenders of the agriculturist class are very astute and well educated and have considerable legal acumen, and are quite able to take advantage of the subtlest intricacies of the law. Every point of law of doubtful or ambiguous

interpretation is taken in appeal to the High Court and an authoritative ruling or pronouncement obtained from the highest court in the land for the guidance of the lower courts. No less than five hundred rulings have been reported in the Law Reports. Money lenders are, of course, much superior in acumen to the ordinary cultivator of the Deccan. Still to their credit they have fought well to make the best use of the enactment specially meant for their protection. Money lender versus Cultivator is an unequal match. Education versus Illiteracy in every respect, and the victory is sure to be on the side of the stronger (because knowledge is power), in spite of the concessions granted by the Act coupled with the good offices of the presiding judge in favour of the agriculturist. The sub-judge is helpless when the agriculturist is unable to place his case and its legal bearings before him, and when he is also incapable of meeting the points raised by the plaintiff and bringing out the weaknesses of his case. In the village some cultivator debtors now complain that their interests were not logically and intelligently pressed at the hearing and some lost their case for default on the broad assumption that the Savkar (plaintiff) had a better case and the debtor (defendant) had a bad case.

The Act has been in operation for nearly half a century and out of curiosity one is tempted to ask if the agriculturists have thereby, in any way, benefited. We need not remind the readers that the Deccan cultivator has a pyramid of woes, real or imaginary, and the Act did not prove a panacea for all the ills from which India has been suffering along with the Maharashtrians. It was not a magician's wand and it was not expected to afford relief in each and every case. No one can claim that the Act worked a marvellous change. No, far from it; nobody dreamt of such a metamorphosis. It is an admitted fact that the Act has saved a large number of the agriculturists from being expropriated from their hereditary

lands for the discharge of their debts. This result must be appreciated and applauded. The effects that are produced by the Act are:—

(1) The sale of agriculturists' land was so much restricted and hedged about, with so many terms, that a sale, pure and simple, outright, by the civil courts' officers, has become a myth;

(2) Accounts of the money lenders are examined and scrutinised by the civil courts instead of the public auditors, very minutely, because the debtor being illiterate, is unable to suggest flaws in them; the court is enabled to examine the history of the debt and to make out an account of money actually due;

(3) Sale proceedings of immoveable properties are invariably held by the Mamlatdars of Talukas and not by the civil courts' Bailiffs;

(4) Whenever a decree is passed, the debtor is required to pay the decreed amount in instalments which are fixed in view of his capacity;

(5) Exorbitant rates of interest, 24 to 36 per cent (and more) are banished for ever, whenever the courts have to settle them in pursuance of their duty;

(6) The extension of the period of limitation granted to agriculturists has facilitated repayment, when lean years intervene, though it tends to curtail the resources of the cultivator over a longer time.

(7) Fictitious valuations of land are entirely stopped as the debtor has an option to challenge the prices if incorrect;

(8) The expropriation of land is to a large extent discouraged;

(9) In many cases the cultivator in the long run has been freed from the money lender's clutches. The number of debtors has comparatively fallen;

(10) Prudent cultivators hesitate to fall into the Savkars' snares, i. e., to agree to their terms, in opposition of the sacrosanct provisions of the Act;

(11) Nominal conveyances of land have been on the increase owing to the ignorance and improvidence of the peasantry, instead of simple mortgages or usufructuary mortgages; to all intents and purposes, such sales are nothing but usufructuary mortgages, though not so legally recognised;

(12) The execution of simple money bonds is now ruled out of court by the money lenders;

(13) It is said that the amount of consideration in deeds passed by the cultivator is stated in excess of the real amount, simply to hold in check the debtor to the true sum, so that if the debtor defaults, the suit would be for the whole sum plus interest mentioned in the deed; (cf. last subparagraph of paragraph 353 (page 419) of the Report of the Royal Agricultural Commission);

(14) An intrinsic security for credit based on the land of the agriculturist has never been taken into account by the money lenders, though the value of land has increased gradually.

We wanted to investigate some of the cases of agriculturists from here, who were litigants in the civil courts, but it was not possible to procure full and reliable information. Even copies of judgments or orders were not available. No statistics are forthcoming.

A Savkar is sure to levy a deduction (मनोवती) at Rs. 5 per cent on the amount advanced in addition to the cost of registration, etc. of the document to meet the cost of the probable litigation, if the debtor fails to pay as stipulated. In short, the cultivator must consider himself lucky if he receives a sum or hard cash of Rupees ninety in every case of a document of Rs. 100; (cf. the case of a man who wants to

borrow Rs. 50 referred to at page 157 of "Economic Studies of Some South Indian Villages", by Prof. Gilbert Slater.)

To a very large extent the Act has been successful, despite the fact that the money lenders were all up in arms against it.

The execution of a nominal sale deed in favour of Savkars is the order of the day, and the debtor remains in actual possession of the mortgaged land as a tenant or lessee and pays rent and interest in discharge of his debt; so the sale deed is virtually a usufructuary mortgage and the principles of redemption can be conveniently applied.

MARKETS, BAZAR AND FAIRS

No regular daily bazar is held here. In the village there are shops for the sale of commodities. All sorts of shops are patronised by the villagers. Ordinary and common articles for every day use are available here. A statement is subjoined showing the number of shops and the stuff in which they deal.

(1) 2 Grocers.	(7) 1 Shroff.
(2) 3 Sellers of betel-nut leaves, tobacco and Bidis.	(8) 1 Gold-smith.
(3) 1 Sweet-meat seller.	(9) 2 Tailors.
(4) 1 Cloth seller.	(10) 3 Carpenters.
(5) 1 Grain seller.	(11) 1 Iron-smith.
(6) 1 Oil-man.	(12) 2 Potters.
	(13) 1 Fruit seller.

The local dealers here make purchases of groceries, cloth, salt, iron, sugar, Jagri, kerosene oil, metal pots and vessels, etc. from the dealers and shopkeepers at Ahmednagar.

Grain of all sorts is the produce of the land here. In normal years the village has its own supplies of food. The cattle and other animals in the village have to depend on fodder, grass and grain grown in the village. In short the village is self-sufficient in respect of all these commodities.

BAZAR AND FAIR

Here there is an annual fair held in honour of a Mahomedan Fakir known as Nirgunshaha Avaliya on the 5th of the bright half of the month of Chaitra, just outside the village gate near the Local Fund well, in front of the mosque. No information is available as to the date when the fair was inaugurated. This year the date fell on Monday (26th March, 1928) which the Hindus observe as a sacred day and no animal sacrifice in pursuance of a vow is religiously performed; so the fair was postponed to the following day, Tuesday (27th March 1928), when the villagers were permitted to sacrifice he-goats, kids and sheep. The slaughtering was conducted by the village Mulana who has the sole right to do so here. The details of animals offered for slaughter are:—

- | | |
|-------------------------------|----|
| (1) Number of he-goats killed | 75 |
| (2) Number of sheep killed | 50 |

valued at about Rs. 200 to 250.

Most of the animals slaughtered were offered by the local cultivators, generally in fulfilment of vows made by the women-folk. The night was spent in feasting.

Ahmednagar dealers visit the village on the occasion of the annual fair, bringing sheep and goats for sale. Butchers too go round the houses of farmers and at the same time buy the raw skins. The usual prices are:—

- | | |
|----------------------|------------|
| (1) For a goat-skin | Rs. 1 — 1½ |
| (2) For a sheep-skin | As. 4 — 8. |

At night after 10 p m. there were groups of visitors and villagers roaming here and there until five Tamashas (तमाशा) were ready with preparations for exhibiting their shows. The rest of the night was spent in witnessing Tamashas. There was a display of country fire-works near the mosque and many persons were attracted to it.

On the grounds, there were a number of booths and stalls as below:-

Confectioners	12	Joharis (sellers of brass and	
Tea	3	copper tinkets, etc.)	10
Betel-nut leaves	6	Tailors (petty)	3
Fruit	1	"Ottaris"	4
Flower shops	6	Toys (Japanese and others)	2
"Yamapuri" (pictures etc.)	1	Khanvala (खणवाला) (cloth	
Picture	1	for bodice)	1
Phonograph	1	Cloth	4
Bangles	4	Coppersmith	1

Most of the stall keepers were from Ahmednagar. All the shops were crowded with customers. Peasant women and their children were seen everywhere making purchases. The shops of bangle sellers, tailors, Ottaris, Joharies, toy dealers were thronged with women folk. Confectioners were supplying various sweets suited to the tastes and fancies of their customers. Three of the confectioners were making and preparing fresh Jilabies (जिलबी) and seemed to be doing very well. It is not easy to estimate the earnings of each of the shop here. None, it appears, kept any accounts but we can make an approximate estimate of their sales:-

	Rs.
(1) Three confectioners	100 150
(2) The rest of the confectioners	50 - 90
(3) Tea	10 15
(4) Joharis and Ottaris	5 10
(5) Bangles	5 - 10
(6) Tailors	3 - 5
(7) Cloth	50 - 100
(8) Khanvala	10 - 25
(9) Coppersmith	200 400

The whole of the purchases may have amounted to Rs. 1500 to 1750

The fair was attended by 3,000 to 3,500 persons (men women and children) who were mainly drawn from the neighbouring villages, viz, Ghospuri, Astagaon, Akolner, Khadki, Khandala, Babhurdi Bend, Arangaon, Supa, Hanga, Parner, Updhup, Rayatala, Valvana, Kamargaon, Chas and Ahmednagar. Athletes, gymnastics and wrestlers attend the fair from places as far as in Poona, Sholapur, Nasik and Ahmednagar districts. Amateurs, lovers of sport and others visit the fair to witness the feats and tricks displayed by the wrestlers. Most of them are in groups of associates and companies. The village cultivators arrange for their meals free and in hospitality. Some companies are sent to take their food with one individual and some go to another cultivator to have their meals, and in this way most of the visitors are entertained by village Marathas. Ahmednagar contributed about one thousand visitors, mostly shopkeepers and wrestlers. There were seen many conveyances near the scene:-

- (1) Three motor lorries and cars;
- (2) Thirteen horse Tongas;
- (3) Twenty-seven country carts;
- (4) Twenty-nine bicycles;
- (5) Twenty-five riding ponies.

The five parties (Tamashas—troupes of players) were given gifts (Bidagi) in the morning of the 28th till noon. In the afternoon there were wrestling matches between wrestlers from villages far and near. The matches took place and the successful wrestlers were given an Inam (prizes) by the Panchas in the shape of a turban, a Dhoti, a silver Kada (wristlet) or cash. The wrestling matches were continued till sunset when the men from other villages departed. About 125 wrestling matches took place in the afternoon.

A committee of the village Panchas is annually formed. It looks after the organization of the fair and the collection

Some of the visitors drew water for drinking from a pool in the bed of a Nalla which runs hard by the grounds of the Fair. There was a rush of visitors from 9 a. m. to 12 noon on the 28th. A very large crowd of spectators was in attendance and awaiting at the wrestling pit which is so large that it might be called an amphitheatre. It is a place in close proximity to the mosque and is enclosed by walls on all the four sides, but the inside is provided with sloping seats in stone and earth rising one above the other (like a flight of steps). A seat can hold 50 spectators and in the centre of the amphitheatre there is an arena for the combatants. The arena is strewn with sand and red earth. It is open but shaded by trees. It is like a miniature classic amphitheatre. What purpose does the annual fair serve? It gives an opportunity for recreation to the cultivators here as well as those from other villages. The days are spent in enjoyment and amusement by the villagers who have just been able to spare some hours from their toil and labour. Wrestling is the favourite sport here. They have no other kind of sports here, either Indian or Western, except the different matches and combats between the wrestlers residing here and there in the surrounding villages and specially those from Ahmednagar. The visitors from Ahmednagar had had to pay railway fares for the journey and back at As. 4 per trip. This would bring in a revenue of Rs. 300 to 400 (which is a moderate estimate) to the Railway Company from the sale proceeds of railway tickets.

The various shops here were patronised by the women folk who make it a point to supply certain of their domestic wants at this fair.

- (1) Bangles for the year;
- (2) Choice garments for their small children and babies;
- (3) Jewels and small showy trinkets, glass beads, etc. for themselves and their babies and children;

- (4) Pieces of bodice cloth of their personal choice;
- (5) Sweets for the whole of the household;
- (6) Metal pots and vessels for domestic use.

The current year (1928) was a good one. The crops were good, the annual season was at an end. The cultivator is only able to make or show savings annually at this season of the year particularly. He has a breathing space just now. Some of the visitors were entertained by the residents as their guests.

To sum up the finances of the fair in a few figures:-

	Rs.
Expenditure on railway fares amounted to	400
Hire of motors	175
Tongas, carts, etc.	125
Shop-keepers' sales	2000-2500
The popular subscription	350
The animals slaughtered	200-250

The wrestling matches commenced after 1 p. m. in the afternoon, and there had been more than 125 wrestling matches by the time the sun went down. Such a monotonous programme for more than five hours becomes rather wearisome. It might be modified to include other sports, games, etc. for the recreation of those assembled. We know that in recent years other Indian sports and Western sports have become popular and attract crowds of eager spectators. Some of the following might be tried:-

INDIAN	WESTERN
(1) Atya-Patya	(1) Hockey
(2) Khokho	(2) Foot-Ball
(3) Chendu (Ball)	(3) Races
(4) Viti-Damtoo	(4) Boxing
(5) Lezin, etc.	

In short, there might be sports for all tastes. School boys might have part of the programme allotted to them and be given an opportunity to compete in such sports. It is

an agricultural village and the fair is attended by farmers, so even matches among the cultivators in agricultural operations such as ploughing, harrowing and drilling may be welcome. Other objects may be added. What we want to stress is that progressive exercises may be adopted. New ideas must be infused in the new blood. The scope for sports may be so enlarged that many varieties should be introduced and different competitions may be available. Can the Panch committee find no scope for girls and women attending the fair? They may be allowed to devise and manage their sports on a very small scale at the beginning. It will rest with the leaders to adapt themselves to the changes that are introduced. Even school boys from the neighbouring schools may be invited to take part in the sports here. Of course the traditional attraction of the fair is wrestling and nothing else; but it is a question, whether the occasion should not be taken advantage of to develop interest in the newer sports which were unknown when the fair was established.

It is gratifying to note that all the visitors from other villages were supplied with food gratis by the villagers. This is the Hindu hospitality shown to guests arriving at one's home. When the farmers make common cause, they are sure to be successful. Unity is the watch word in such undertakings.

The fair is held in honour of a Mahomedan Peer, but the whole organization is run by the Hindus. The Mahomedans here number 152. Most of the arrangements are made and carried out by the Hindus themselves, and almost the whole of the subscription is paid by the Hindus. The subscription paid by the Moslems amounts to about Rs. 25 to 30. On the whole the fair has continued in existence for many years, from year to year through the good offices of the Hindus. Should they refuse to take part in the fair, the Mahomedans may, perhaps, with the help of their co-religionists from other places outside, be able to pull through sluggishly for a year

or two. So it is the bounden duty of the Mahomedan residents here to preserve the unity of the Hindus and Mahomedans loyally.

WEEKLY BAZAR

No weekly Bazar is held here. The residents deem it a necessity in these days when prices of all commodities, specially primary and agricultural, fluctuate from day to day. Broadcasting programmes are even now used for announcing the daily prices ruling in centres of trade, e. g., Bombay. The weekly Bazars are attended by outside traders, dealers, etc. With their goods for sale they tend to control and regulate the rates and prices demanded and charged by the local dealers, traders and shop-keepers. It is on economic grounds that the villagers feel the want of a weekly market. None has yet been started.

Hawkers, bangle sellers, drapers, coppersmiths and other sundry dealers visit the village off and on. They attract customers on their own terms. Generally the women folks are their customers.

THE POLA FESTIVAL

Unlike Ahmednagar city and the surrounding villages where the Pola festival is annually held on the Amavasya (अमावास्या) of the month of Shravan (the last day of the black half of the month) Sarola observes the Amavasya of the month of Bhadrapada as a festival in honour of the work cattle their wealth. Both localities hold their Pola celebrations during the latter part of the rainy season. We made an attempt to ascertain why the festival is celebrated on different days in villages so near each other, but no satisfactory and plausible explanation was forthcoming; only that Sarola and the neighbouring villages have been observing the festival in conformity with the custom of the Poona district from a very long time. On this day, the cultivator abstains from taking any work from any of his bullocks, whether it

be emergent or otherwise, or whether it may cause him loss or damage. In short, the cultivator's bullocks have a holiday on this day. From early morning each of the cultivator takes extra pains and care to get all his bullocks, cows and calves washed, combed and cleaned. He manages to have the horns and nails trimmed, pared and made smooth and polished. The hair of the bullock's tail is clipped and combed, leaving only a tuft at the end. He takes the greatest delight in decorating the horns of his bullocks and cows with different paints such as Geru (गेरू), Hingol (हिंगोल), Gulabi (गुलाबी) and other colours, etc. and also with small bits of gold or silver leaf (Begad बंगड). He gets tassels, Gondes (गोंडे) made either of Chavar* (चवर) or coloured silk, coloured yarn and coloured wool to suspend from their horns. Palas trees (पलस) are not found in the village; but their roots are got from the villages on the borders of H. E. H. the Nizam's dominions. Around their necks are put on strings of various colours of glass beads—small and middling; also chains of copper and brass hang from their necks; bells, small and big, of bell-metal are woven together either on leather straps or threads or hemp strings and they are put round their necks. Brass Shembis (शेंबी a cap for the horn) are made and fixed at the ends of the bullocks' horns. Thus the decorations are made in different ways and in different methods according to the taste and the resources of the owner.

At about noon the cultivator has his bullocks wedded† (as they term it) and sees them named; cakes or bread made of Bajri flour are broken into crumbs and mixed together with a quantity of Kardi oil and Jagri and the mixture called Malida (मलिदा) forms the food of the bullocks for the noon. It is treated as a dainty. Some cultivators make their bullocks swallow a quantity of Kardi oil.

* Roots of Palas tree specially made into fibres.

† It is a queer practice in vogue.

Late in the afternoon, the bullocks in the village are collected near the temple of Shri Maruti in charge of the owner or his servants, fully adorned some with Bashings (though in exceptional cases) which are made of frames of split bamboo pasted over with coloured papers and set with small bits of mica or pieces of glass. They are gaily decked with silk or other garments of value. The whole of the area in the neighbourhood of the temple is alive with groups of bullocks of different owners and presents a picturesque sight. It is more than an annual exhibition of cattle in the village in the modern sense. The whole of the village bring their cattle here, and at dusk they are taken in procession through the village. In Sarola the officiating Patils (Kadus and Dhamne) have the hereditary right to take a pair of bullocks at the head and in advance of all the other village cattle which follow the leading pairs in any order they like, but precedence is recognized and allowed to the pairs of the Patils. The pair of the Kadus Patil leads on the right and the Dhamne Patil's on the left. So the two pairs of bullocks are formed up in this fashion before the actual procession starts.

Before they leave the temple, each bullock is presented to God Maruti and made to bow down, and then it joins the procession; none but the Patils have any customary right of precedence and others can follow the lead in any order they choose. As soon as the procession passes through the village gate they are dispersed and taken in a sort of parade to their own place by their respective routes with bands, tom-tom and musicians playing, with trumpets and horns blowing under torch lights or Kitson lamps. On arrival at their destination, the housewife or any other Suvashna (married woman) in the house comes forward to the door with a tray, together with things such as Nirvanjan (निर्वजन) lighted, Halad and Kunku and Akshata and offers the bullocks water, Kunku, Halad, and Akshata and applies a nose-ring or other golden ornament

to the forehead of the bullocks and takes round or moves the Niranjan in a circle in front of the bullocks in a wave offering. A set of mud or earthen images or pictures of bullocks (five in number and a cow) are worshipped in every household and special cakes (Puran Polyas पुरणपोली) are first given to the bullocks before anybody can partake of them. The owner or a member of the family observes a fast for the whole day, and after feeding the bullocks the adult male members of the cultivator's family assemble together at the dinner table, and if there be any interesting incidents and episodes during the course of the day, they are narrated by the member who witnessed them. The Pola dinner is the occasion for discussing everything pertaining to bullocks and cows, old and new, in the village.

We would like to detail the expenses a cultivator incurs in the celebration of the Pola festival. It is true that some items of the expenses are annually recurring, while others are non-recurring. Most of the things are purchased once for all by the cultivator:—

(1) Brass or copper small bells (घाटी, घाट्या. पुगरे, घुंगरमाळा)	Rs. 2 to 3
(2) Chains, anklets (साकळ्या, नोडे)	„ 1
(3) Copper cups for the horns (शेंब्या)	As. 0 to 8
(4) Glass beads of colours and different shapes and sizes	„ 6
(5) Cloth Covers (कुली)	Rs. 2 to 5
(6) मोहरक्या	As. 6
(7) Leather (मुथळ)	„ 12
(8) Tiny bells (घाटी)	Rs. $\frac{1}{2}$ to 1 $\frac{1}{2}$
(9) String neck-chains (सर)	As. 4

No fresh cost is yearly incurred except to re-place the lost, missing and broken bells, chains, Shenbis, beads, covers, etc.

What amount of any of these things are necessary, depends on the condition of the cultivator and the stock of cattle he keeps; but it is ascertained that at least two pairs of the things are required for use. Most of the things are serviceable on many other occasions.

An ordinary cultivator needs to spend Rs. 2 to 5 on the Pola festival, besides the items referred to above. A poor cultivator may manage to be frugal and limit his expenses say to Rs. 1½ or so much as he can afford at the time.

At this festival the cultivator's wife has to distribute food to village Mahars, harbers, Kolis, washermen, servants (private) engaged on yearly or monthly contracts, beggars, mendicants, Fakirs, Gosavis and Bairagis, Guravas, potters and Chambhars, and also to several village deities.

So she has a lot of food to provide, and prepares extra food in addition to the quantity she needs for household consumption. The distribution of food as detailed above is not restricted to the same quantity and to the same people: it varies, but its money value must be fixed at Anna 1 to 2 or less. Even a poor peasant manages to distribute food in small quantities. Some of the village servants are hereditary Watandars and receive food on such occasions as the Pola in the shape of perquisites due for their services. In this village no Mahar Watandar is permitted to do private service for any of the ryots and he receives no perquisites, but as the -Mauas do his work instead, it is they who get the share of food and such perquisites in kind.

One would like to know how the Pola festival was performed in olden days, say a century ago. We were unable to find any account of it; but for the last five decades we had accounts from individuals still living. The British rule has given peace and order for the last century, and the festival can now be celebrated with carefree rejoicing. Every one feels

himself secure with all his live-stock. Things and ornaments etc. referred to for the decoration of the bullocks are now more easily and cheaply procurable than two or three decades ago. Every year some new innovation appears in the village. So we think that the festival has undergone no material change or alteration. But it is observed and widely performed. Village quarrels as to precedence are settled. The spirit of the Pola festival as observed by the cultivator is unfamiliar to the Westerners.

THE HINDU HOLIDAYS, ETC.

The Hindu, specially the Maratha, observes the annual ceremonies and daily worship of his titular or family deity in such fashion as appeals to him in accordance with his faith. In addition to the worship of the family deities most of the Marathas here daily worship one of the following common deities in the public temples or places:—

- (1) God Maruti (Monkey God);
- (2) God Mahadev;
- (3) Radha Krishna.

Auspicious days and festivals in a year are devoted to the worship of these deities in public places, in addition to the family deities. We may explain the word worship (पूजा) as it is used by the Hindus. An individual prayer or a public prayer in a church or a mosque offered by the Christians or Mahomedans does not connote the full significance of the Hindu cult of worship. The Hindu must never touch an image of his chosen deity without taking a bath in the morning either with hot or cold water according to the status and circumstances of the devotee and without having put on freshly washed and dried clothes, generally a Dhoti round his loins and an upper garment. Both males and females observe the same sort of rule. Before proceeding to the worship the Hindu provides himself with the necessary ritual materials:—

- (1) A quantity of fresh water in a pot;
- (2) A small quantity of sandal wood paste;
- (3) Flowers, leaves of the Bel (बेल) tree, leaves of the Tulshi plant (तुळस) and Durva (दुर्वा);
- (4) Turmeric powder and Kunku (red powder);
- (5) A handful of rice called Akshata (अक्षता);
- (6) A bit of camphor and an incense stick with a match box;
- (7) Betel nuts, pieces of cocoanut and betel nut leaves;
- (8) A Niranjana or a tiny metal lamp with a cotton wick dipped in a quantity of ghee;
- (9) A small quantity of a mixture (पचामृत) of milk, curds, honey, sugar and ghee in a copper or brass saucer (चाटी).

Most of these articles are essential for ordinary worship on occasions of importance. They may cost Annas 3 to 5, but if a cultivator cannot afford this for any occasion he curtails the list.

Here the Maratha generally observes annually most of the following holidays or days of festivities or days for fasts and devotion, etc.:-

- (1) चैत्र.... (a) वर्षे प्रतिपदा (New Year), (b) रामनवमी, (c) हनुमानजयन्ति द. १५;
- (2) वैशाख...अक्षयतृतीया (A day in honour of the departed ancestors of the family);
- (3) ज्येष्ठ....वदशीर्णमा (The wife observes it to propitiate God Yam to grant long life to her husband);
- (4) आषाढ...वृषदासी (A fast);
- (5) श्रावण... (a) नारदश्रीर्णमा, (b) जन्माष्टमी (Anniversary of the birth of Krishna);
- (6) भाद्रपद... (a) गणेश चतुर्थी द. * (Worship of God Ganesh), (b) शिवरात्रि;

- (7) आश्विन.दसरा (In reverence of Goddess Devi);
- (8) कार्तिक..(a) दिवाळी (Worship of Goddess Laxmi), (b) एकादशी (fast);
- (9) मार्गशीर्ष.चंपापट्टी (In reverense of God मन्हार म्हाळसा);
- (10) पौष.... मकरसंक्रांत (The wife observes this holiday);
- (11) माघ.... महाशिवरात्र (Forthc worship of God Shiva, fast);
- (12) फाल्गुन..शिमगा (Holi) Hindu bonfire;

Along with other Hindus, the Marathas here observe these holidays and festivals traditionally as a religious duty and an occasion for a feast. We need not name the articles of food, as they vary and it may not be of interest. We may describe the sort of food they consume on such days as rich from their own point of view. The non-Hindus do not take part in these holidays directly, but some of their women folk and children are impressed and tend to imitate their Hindu neighbours to a certain extent. The use of flesh is banned on these festival days, and even the Marathas abstain from the use of meat, though they are at liberty to eat it at other times. Before partaking of the food prepared for the occasion the members of the family always offer some portion to the deity of the family as a sacrament. When a holiday comes round the family has to incur extra expense. The items of food and dietary are various and are used by different families in different forms; so it is no easy thing to calculate the additional expense. We may put it down at Annas 2 to 4 per diem per member of the family. Some persons purchase new clothes for these holidays. The new produce of the Kharif and the Rabi crops of the season is ready at the time of the Dasara and Divali and the Shimga holidays respectively. The additional annual expenses for the celebration of these holidays may be reckoned at from Rs. 20 to 50 according to the circumstances of the family, at a moderate estimate. It is true that

poverty may reduce the cost in many cases. We have not taken into account any outlay on account of new clothes, which may increase the bill. As economists, we cannot ignore even such small extra expenses.

HOME INDUSTRIES

The following is a list of the crafts or home industries carried on in Sarola:-

- (1) Carpentry and smithwork (Sutar and Lohar);
- (2) Shoemaking and other leatherwork (Chambhar);
- (3) Pottery (Kumbhar);
- (4) Ropemaking (Mang);
- (5) Weaving of woollen blankets or Ghongdya (Dhangar);
- (6) Goldsmith and silversmith's work (Sonar);
- (7) Masonwork (Maistri or Gavandi);
- (8) Tailoring (Shimpi);
- (9) Kardi oil crushing (Teli);
- (10) Making of Bidis (cigarettes rolled in leaves instead of paper);
- (11) Earthwork (Vadar);
- (12) Flour milling.

The products of these cottage industries are almost entirely for local consumption. All are carried on in a more or less primitive way. Raw materials are for the most part locally available. The few things which are not are brought from Ahmednagar Bazar. Most of the tools and appliances used are of traditional indigenous type, but some are imported. The goods turned out are also of simple traditional type and character, plain, cheap and durable. The craftsmen live very simply and poorly. Their work shows little sign of artistic ability, but they have a faculty for imitation which might be trained and developed. The villagers inherit many of the qualities required for success in cottage crafts, industry, manual skill, imitative faculty,

patience, perseverance, self-independence and confidence, but illiteracy is a great obstacle to their development. We have had a school here for nearly three quarters of a century, but experience shows that it is essential to take the boys and girls beyond the three R's and give them some education and training in their own crafts or in the crafts for which they show signs of aptitude.

POULTRY

Very little attention has been given to poultry keeping in Sarola, and there appears to be great scope for its development.

The great majority of the people have no objection to the consumption of poultry or eggs as food on religious or social grounds; the only castes which have such objections being the Brahmins, Jains and Lingayats who are few in number.

The following statement shows the small extent to which fowls are kept in the village:—

(1)	Marathas	(5 families)	38
(2)	Other Hindus	(4 families)	37
(3)	Depressed classes	(7 families)	46
(4)	Christians	(2 families)	28
(5)	Mahomedans	(3 families)	22

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The fowls are of the ordinary barn door variety; no care is taken with regard to breeding, and no new varieties have been introduced.

Hens fetch 12 Annas to 1 Rupee, eggs 3 to 4 Annas a dozen in the Ahmednagar market, the prices varying according to the season.

The general advantages to be derived from the keeping of poultry in the villages have often been set forth by

Government officers and others interested in its development. It can be made remunerative, and it provides an auxiliary food supply of special value, whereas in Sarola the supply of milk and milk products is far from adequate, especially at certain seasons.

The villagers are quite alive to the possible advantages of poultry farming, but our inquiries show that they are reluctant to go in for it, for various reasons: -

(1) The Maratha cultivators have a feeling that it is traditionally an occupation followed by the lowest social classes:—Bhils, Ramoshis, Mahars and wandering tribes and that it is degrading to them to take it up;

The feeling is a very natural one in an old stably organised society, where every class has its customary function and occupation; but in rapidly changing conditions, now such questions have to be settled on their merits and not by a simple adherence to traditional customs and relationships.

The Mahomedans are not so strongly bound by custom and yet they have been equally backward in this matter.

(2) In the conditions existing in a crowded village site like Sarola, it is difficult to look after hens, small chickens and eggs and protect them from vultures, dogs, cats, rats, etc., keep them in clean and healthy conditions and avoid loss by malicious damage or theft;

(3) The provision of proper accommodation in the way of coops and runs in a suitable locality is beyond the means of the ordinary small cultivator or labourer who would, on other grounds, be the most likely to go in for poultry keeping;

(4) It is difficult for a beginner to obtain the necessary training and information as to general care, feeding, diseases and so on;

(5) Fowls are delicate and require to be carefully looked after, and the marketing of fowls and eggs is more difficult than that of things like grain and other crops;

(6) It is difficult for a beginner who knows nothing of the business to find out under what conditions it can be made remunerative; because, admittedly, poultry keeping often is an unsuccessful and unremunerative experiment;

(7) The time and attention required may interfere with his main occupation.

Even on the basis of experience within the village, however, there seems to be plenty of room for development, since a few of the villagers have found it profitable to keep a fair number - one Mahar (20), a native Christian (20), Chambhar (20), Dhangar (15). There seems to be no reason why their example should not be followed by some of the Maratha labourer families, especially if they avail themselves of the expert advice and assistance of the specialist officers of the Agricultural Department.

CHAPTER 8

POPULATION

CASTES AND CREEDS

With the co-operation of the people of the village, without whose constant help we would not have been able to make much progress in our study, we made a detailed enquiry as to the circumstances of each household. We think a general idea of the structure of the village community will best be given by the two summary statements which follow. These have been compiled from the detailed records of the results of our enquiries.

In the first, the population is classified primarily according to caste, for each caste by occupation, and under each sub head the number of adults and dependants, and the ratio of dependants to adults is given in the remarks column.

In the second, the primary classification is by occupation, then by caste, and for each sub-group the number of males and females is given.

These summaries are based on the enumeration of the village population which we made in 1928. The Imperial or General Census took place in 1931. but we are unable to get particulars from the published records regarding castes, creeds, professions, etc, for a single village.

The total of our enumeration (1286) is less than that of the census of 1921 (1360) and much less than that of 1931 (1531) Still we think it included almost the whole of the permanent population.

I. SUMMARY OF POPULATION BY CASTE (DEPENDANTS) 349

Castes	Occupatin	Adults	Depen- dants	Total	Remarks
MARATHIA	(a) Agriculturists	403	154	557	
	(b) Wage earners etc.	70	21	91	
	(c) Public service (Ry. etc)	15	4	19	
		488	179	667	36.6
MALI	(a) Agriculturists	25	14	39	Includes 3 mason
	(b) Wage earners & (c) Mason	18	12	30	
		43	26	69	55
BRAHMIN	(a) Agriculturists	10	0	10	
	(h) Public service	10	12	22	
	(c) Trade (Tailor)	2	1	3	
		22	13	35	50
JAINS (Marwadi)	(a) Agriculturists	9	3	12	
	(b) Wage earners	1	1	2	
	(c) Trade (Shopkeepers)	14	7	21	
		24	11	35	45.8
LINGAYAT	(a) Agriculturists	4	4	8	
	(b) Wage earners	5	0	5	
	(c) Trade	4	3	7	
		13	7	20	53.8
OTHER HINDUS Crafts	Carpenters	11	6	17	
	Sonars	2	4	6	
	Barbers	11	6	17	
	Ironsmiths	3	2	5	
	Teli (Oilman)	2	3	5	* Includes 1 beggar
	Shepherds	*27	32	*59	
	Potters	6	3	9	
	Vadars (earth worker)	5	12	17	
	Thakars	2	0	2	
	Bhills (labourer)	6	4	10	
Ramoshi ..	4	1	5		
		79	73	152	
DEPRESSED HARIJANS MAHARS	(a) Agriculturists & labourers	50	43	93	
	(b) Service	2	4	6	
	(c) Beggar	1	2	3	
		53	49	102	92.4
MANGS SHOE-MAKERS HOLARS	Wage earners (labourer)	7	1	8	
	Crafts	11	10	21	
	Labour	17	4	21	
		35	15	50	42.8
CHRISTAINS MAHOMEDANS	(Railway service)	4	3	7	
	(a) Agriculturists	38	41	79	
	(b) Wage earners (Labourers)	12	6	18	
	(c) Public Service	6	3	9	
	(d) Trade (Shopkeepers)				
	Confectioner	2	0	2	† Includes 1 seller
	Tamboli & (Fruit seller)	8	8	16	
	Tailor	4	2	6	
	Sandmas	7	5	12	
	Motordriver	2	2	4	
	Contractor	2	0	2	
	Fakir (religious mendicants)	3	1	4	
			84	68	152
	Grand Total	845	441	1286	52.3

350 II. SUMMARY OF POPULATION (BY OCCUPATION AND SEX)

Occupation	Castes	Male	Female	Total
Agriculturists	Matlhas	265	292	557
	Mali	16	23	39
	Kumbhar	2	7	9
	Jain	6	5	11
	Lingayat	5	3	8
	Brahmins	5	5	10
	Mahomedans	38	11	49
		377	377	754
Wage earners & labourers	Matlhas & Kumbhar	50	41	91
	Mali	15	9	24
	Jain	1	1	2
	Lingayat	2	3	5
	Karavshi	3	2	5
	Bhils	5	5	10
	Mahomedans	10	8	18
		96	69	165
Traders etc	Jain (Oswal)	12	9	21
	Lingayat	3	4	7
	Mahomedans	1	1	2
		16	14	30
Public Service	Government	10	11	21
	Local Boards	8	6	14
	Railway	17	18	35
	Depressed	2	4	6
		37	39	76
Crafts	Sonar	4	2	6
	Sutar	14	5	19
	Lohar	3	2	5
	Barber	10	7	17
	Teli	2	3	5
	Dhanger	23	26	49
	Wadar	11	6	17
	67	51	118	
Petty shop keepers	Tailor	2	1	3
	Mahomedan	1	2	3
	Mason	2	1	3
Tamboli	8	7	15	
(Petrol leaves, seller)	Do	0	1	1
	Do	7	5	12
	Do	2	2	4
	Do	2	3	5
	Do	27	23	50
	Do	44	52	96
Depressed classes	Mahar	4	1	5
	Chambhar	10	11	21
	Holar	10	11	21
		24	23	47
? including 3 beggars		68	78	146
		636	650	1286
	Grand Total	636	650	1286

Different castes, classes and religions are found in the village. A large majority of the residents are cultivators and wage earners, among whom the Marathas predominate.

Shopkeepers, money-lenders, dealers, craftsmen and Government, Local Board and Railway servants are represented here as in all Deccan villages. The Mahomedans include both agriculturists and wage earners. In addition some of them follow other occupations and avocations of which they have a monopoly.

All boys under twelve and girls under ten have been treated as dependants; but it may be noted that some of them help their parents in tending and watching their cattle. Owing to the recent introduction of compulsory education, most of them attend school.

The ratio of dependants to adults works out at 52.1 per cent for the whole of the village. But the proportion in the case of the Mahar community is very high, viz., 92.4 per cent. We are inclined to believe that in their case the general impression that the birth rate is higher among the poor than among the wealthier classes is confirmed. The same reason may account for the high proportion of dependants among Mahomedans i. e. 80.9 per cent.

In the case of the Marathas, on the other hand, the ratio is very low, viz., 36.6 per cent. The numbers in the case of other classes are too insignificant to admit of any sound conclusion being drawn from the figures.

No clear cut distinction can be made between agriculturists and labourers (wage earners) because some of the residents follow both occupations for example, Mahars.

Labourers and wage earners are drawn from all classes and their numbers are as under:—

Adults	Dependants	Total
137	47	184

Mahars.

There are beggars and mendicants residing permanently in the village, but their total number is less than a dozen.

Casual beggars who occasionally visit the village find no place in our summary; but wandering tribes and bands of mendicants, who are an unmitigated nuisance when they encamp here or in one of the neighbouring villages, must be considered to constitute a very unwelcome addition to the village society.

A few landowners, having both garden and dry land, require labourers to work on their farms. In addition to day labourers they employ servants on monthly or yearly wages from Rs. 6 to 9 or Rs. 60 to 125 respectively according to the capacity of the labourer or servant. The rates of wages fluctuate with the ruling prices of Jowari and other staple food grains. We have included such servants under 'Wage earners.' Their number is not constant or steady, but depends on the season of the year and the condition of crops. Their labour is more efficient than that of daily wage earners, as they take more interest in their work and have a greater sense of responsibility.

With regard to the second table, it may be noted that in the case of agriculturists and the depressed classes there are about 10 per cent more females than males. The numbers for families depending on public service are equal, while in other classes the males exceed females by about 10 per cent.

BRAHMINS

In this village there are five families of Brahmmins known as Konkanasthās and Deshasthās. Of the section of the Deshasthās there are four families who belong to the Rig-veda Shakha (branch). All of them claim descent from a common stock. They have always been officiating Kulkarnis (village accountants) and hereditary religious priests (उपाध्ये) here. Now the Kulkarni Vatan is partially commuted for service,

and a Talathi, a Government nominee, officiates when the turn of the hereditary Kulkarni comes round and he holds office for five years. The officiating Kulkarni is paid annually Rs. 117 as remuneration from the Government Treasury. A commutation allowance is under the rules calculated and paid annually as compensation for loss of the right to serve. Some of the Deshastha Brahmins in the rural areas are still rather orthodox and conservative, though a majority of them have taken to new ideas and practices. They have been a literate class for many generations. It is necessary for a priest to recite Mantras (मंत्र—verses) from sacred scriptures for the rites and ceremonies of the Munj (मुंज—Thread Ceremony) and marriage and others. Some of them can keep accounts and write shopkeepers' accounts. They were the village writers or scribes before the introduction of the British system of education. Some of the members of the Deshastha families learn English. Brahmins here observe all the Hindu holidays, fasts and festivities, etc. throughout the year which adds to their expenses. They have to perform the anniversary ceremonies of deaths and births in the family, at which they give feasts and gifts. The most important ceremonies which they perform are (1) Munj (Thread Ceremony) of a son at eight to ten years of age at a cost of Rs. 25 and more, (2) the marriage of a son or daughter at Rs. 200 or more according to the condition of the parties. The bride and bridegroom are mostly chosen direct by their respective parents or guardians. Their ages range from 15 to 16 and 19 to 22 respectively. The traditional religious observances and usages of the family are followed at these ceremonies. Gifts of ornaments, trinkets, clothes, etc. are given to the new couple by their respective fathers-in-law. Generally a wedding of the Brahmin here is a very elaborate and complicated matter; a lot of preliminary things are taken into account and compared, mainly Shakha (branch), Gotra and horoscopes of the proposed

match (शाखा, गोद, जन्मपत्रिका). Rites and rituals follow each other in a sequence, and they are too many to find place in this economic book.

Funeral obsequies of the deceased member of a family are intricate and last for several days till the 14th day of death, and entail the family in an expense of Rs. 25 and more. Feasts (Shradhas -श्राद्ध) and gifts in cash, and in kind, etc. are given in charity in reverence to the mains of the family.

The members of the family here invite their own family priests to chant sacred and scriptural verses at ceremonies of importance and pay them a fee, etc. in cash or in kind or both. Generally the priests' services are essential. Some of the family priests keep a record of the births and deaths of the members of the family they serve.

In normal circumstances the standard of living of a Brahmin family here is much higher than that of a well-to-do Maratha, or at least more costly.

A table follows giving details of the Brahmin families and their property:--

	Agri.	Public-Service	Crafts	Total
No. of families	4	...	1	5
Members of families	10	22	3	35
Area of land in acres	140			140
Bullocks	12			12
Cows	5			5
Calves	5			5
Carts	2			2
Ploughs	3			3
Drills	2			2
Hoes	4			4
Value of houses	3,900	2,500	500	6,900
No. " "	4	1	1	6

We have not here taken into account Brahmins who, being public servants and only temporarily residents, have no immovable property in Sarola, though they have been included in the total population of the village and some other statements elsewhere. Of the four families of Brahmins engaged in agriculture two have their own bullocks and implements of husbandry. The others give out their land on rent in cash or kind. Produce of agriculture is uncertain owing to the vagaries of the monsoon: but a normal year may give crops valued at Rs. 500 to 1200. It is said that the cultivation of the Brahmins by hired labour or with cursory supervision is not successful, unless the owner himself takes part in the carrying out of the agricultural operations.

THE MARWADI (JAIN)

The Marwadis here are followers of Jainism which has two sections known as Shvetambar and Digambar (श्वेतांबर-दिगांबर). The members of the faith here belong to the former sect and their principal tenet is अहिंसा परमो धर्मः (No killing is the best duty or Dharma). There have been twenty-four तीर्थन्करान् (saints, sages or prophets) who had laid down precepts and rules for the adherents. In this village they have no shrine, public or sectional, with the image of Shri Parasnath (श्रीपारसनाथ), because the members of the community are too few to go to the expense of the construction of a shrine and the daily worship of the deity. The Jainas have some days set apart for religious observances and fasts. They have a system of Yati (यती), etc., as the Christians have the system of monks and nuns. Their so called monks and nuns are required to be initiated. They are versed in their sacred books.

Among the Marwadis marriages are performed within their various sects. They have their priests and rites and rituals. The preliminaries of a wedding are of a long duration

and continue for weeks together before the actual ceremony. The marriage is a costly burden, though much depends on the state and opulence of the parties concerned. It is no exaggeration to estimate the wedding expenses at Rs. 3,000 at least for the bridegroom or his parents. The amount of dowry depends on the wealth of the parties.

Ornaments--gold, silver, pearls and other jewellery--are essential. Garments of brocade, silk and wool for the couple are also required. The ornaments and garments worn for the occasion are valuable and gaudy, and may cost at least Rs. 2,000 to 4,000. Their feasts are sumptuous in their own way and taste.

The Jains bury their dead bodies and have to incur large expenses on the funeral ceremonies and feasts and gifts and charities. The expenditure is not conventionally fixed but depends on the status and wealth of the family.

The Marwadis came originally from Marwad, but now they have settled here and become citizens of the Deccan. They own houses, gardens, fields and orchards here in this village. They are shopkeepers, money-lenders and dealers in commodities. Most of them are proficient in mental arithmetic and are literate. They keep rough accounts or notes. To a certain extent they are farmers and manage their lands very well. They are vegetarians and their ordinary food is better than that of the Marathas and others. They can afford to use daily milk and ghee and wear better clothings than other villagers. They are very good business men. Their annual earnings are by local standards high, but not so high as to render them liable to Income Tax--Rs. 1000 a year.

Some details of the Marwadis' households and possessions are given below: . .

Males 19, Females 16, Total 35; Houses (4) 7,500; Land -
Bullocks 8, Cows 15, She-buffaloes 2, Calves 18, carts 2;
Annual income Rs. 3,000.

The Marwadi dealers have debts. They have invested a capital of Rs. 3,700 to 4,500 in their business as they assert. They have also income from their agriculture and orchards.

THE MARATHIAS

The Marathas are a Hindu race now numbering about twenty millions which inhabits a large tract in the centre of the Indian Peninsula known as the Maharashtra.

It stretches from the River Nerbada in the North to the South of the Bombay Presidency and from the West coast districts of Thana, Kolaba and Ratnagiri to the Maratha Wada of Hyderabad State in the East.

It includes the central part of the Bombay Presidency, part of Berar and the Central Provinces, Kolhapur, part of the Nizam's Dominions and many minor States.

In ordinary parlance the Marathas in the rural areas are known as Kunbis, as they form the great majority of the Kunbis or cultivators. The term is not in this region applied to cultivators of other castes or classes.

Sarola is fairly near to the centre of this area and is a typical Maratha village. Much of the detailed description of the life of our village which we have given is a description of the life of the Marathas.

From time immemorial they have been tillers of the soil and herdsmen, keeping cattle, sheep and goats.

They also bred a race of small hardy ponies for riding before the days of roads and wheeled vehicles.

It was with the help of these which gave their armies extraordinary mobility, that as lancers or mounted infantry, they carried their military power all over India.

With the extension of roads and still more recently with the advent of railways and motors, the use of ponies has rapidly declined and very few are now kept or bred.

In most of the villages in the Deccan the leaders or headmen of the villages came from the principal Maratha families and were designated Patils. Here, too, both the Revenue and Police Patil families are Marathas.

Living in a poor country with a harsh and precarious climate they are a hardy, vigorous, self-reliant and independent people with a peculiar capacity for enduring hardship and standing up to difficulties and misfortunes.

Living in small village communities, in unsettled conditions, with no strong or permanent central Government, they had to look after their own defence and assert their own rights, and were often involved in local fighting and drawn into war. Hence they were warriors as well as peasants.

In olden days in most cases the villages were surrounded by high walls, bastions and fortified gateways, usually built of earth and stone. The traces of such defences are still visible in Sarola.

Some of the Patils had miniature fortresses or Gadhis as a protection and final refuge in times of emergency for themselves and their fellow villagers.

As a race they had the experience between the days of Shivaji and the collapse of the Maratha Confederacy of developing into a united nation which, through military success, became the dominant political power in India.

There are some families here which appear to have contributed their quota to the rank and file of the armies of the Maratha Kingdom and Confederacy during the period of its rise to power and supremacy, but we have found no records with regard to this.

There are reminders of the past history of the country in Sarola in the form of the Darga (दरगा) dating from the time of the Mahomedan Kingdom, and the temple of Mahadev which was built by one of the Peshvas.

The people also say that Sarola used to be used as a camping place by the Maratha armies on their way to the North.

After the advent of the British Raj the Marathas had not the same scope for military activity as they had enjoyed previously, although Maratha Regiments have always been maintained by the British Government. Four Marathas from Sarola took part in the Great War, and there are at present four or five Marathas in these Regiments and the Territorial Force, so that the tradition of military service has not been lost.

They still keep up the traditional interest in physical culture and have their village gymnasia and wrestling pits, the principal forms of training being free gymnastics, exercise on the Mal-Khamb or pillar, weight lifting and throwing, sword and staff play, dancing Lezim, games like Atyapatya and Khokho and most important of all, wrestling. This is reflected in the readiness and keenness with which the children in school take to physical training, organised games and scouting.

Although they have no scruples about the eating of meat, they are in practice for the most part vegetarians.

The great majority could not, in any case, afford meat, and so it does not form part of their regular diet.

Their wrestlers and athletes (Pehlwan-पहिलवान) train mainly on milk.

Similarly, although there is no prohibition against intoxicating liquor or drugs in this region among the Marathas, there is little drinking or drug taking, and there are very few habitual drunkards or drug addicts.

Since the decline of their political and military power they have devoted their entire energies to their work as cultivators, and to peaceful development of their lands and villages.

The nature and extent of these changes we have described elsewhere, in husbandry, in the extension of irrigation and especially of fruit growing, in the improvement of houses.

Till recently the Marathas were for the most part cultivators and soldiers and nothing else and essentially villagers.

They left the crafts, trade, finance and the professions to others. They were almost entirely illiterate and in the formal sense uneducated.

The opening of the avenues of education, the public services and professions, new outlets in the cities and towns, in factories, trade and industry to all has given them a new outlook, and the realisation of their political power in the last twenty years both in Provincial and Central Governments has made them eager to take every advantage of these opportunities for the exercise of their activity, energy and ability in other spheres, while the pressure of increasing population on the land makes other outlets essential to them.

From their history as a race of peasantry and soldiers, living in villages largely self-sufficient and independent, not much affected directly by the central powers or states, and largely dependent on their own resources and energies for defence, they have developed a very definite temperament and character.

They are democratic and retained that characteristic even at the height of their political power.

They are accustomed to co-operation, organisation and agreement by compromise for common ends and purposes and are essentially realistic and practical in their outlook. That outlook has in the past often been limited, often narrow and individualistic.

As it is gradually widened by education, by experience and by contact with the outside world, it may be hoped with some confidence that they will be able to make as effective use as ever of their powers and qualities under these new conditions.

THE SUTARS (CARPENTERS)

Here there are three families which belong to the sub-caste called Panchal (पंचाल), the other is known as Lad (लाड)

of the Sutars. As in all Deccan villages the carpenters here follow the most important and essential village craft, i. e., the manufacture of all implements of agriculture, their mending and repairs, etc. Every cultivator requires the services of one of the carpenters occasionally almost the whole year around. The Sutar belongs to a separate sub-caste and this has ensured the possession of hereditary skill and craft secrets and the training of apprentices: not that the present age of machinery and spread of technical training has in any way tended to weaken the importance of the carpenter save in the case of the iron ploughs. It is he who makes all sorts of implements, and he is a member of a trade guild and a mutual benefit society. The Indian implements are, for the most part, made of wood—simple, cheap, easily portable and are of one type for a village or a group of villages. Parts of the implements of one village can be adjusted and fitted to the implements of another neighbouring village. The Royal Commission on Agriculture have the following encomium in this respect:—

“Agricultural implements in India are, on the whole, well adapted to local conditions.” (Paragraph: 105 on page 107 of the report of the Royal Commission on Agriculture, 1928).

Thus the carpenters in India have a pride in their work and their craft which is fully justified. There are few schools for the regular training of carpenters; most of them are trained in their homes by working with and watching their fathers or other relatives from early childhood. Every village of importance in the Deccan has one or more carpenters, and their families work among the peasants and supply them with implements or parts to replace those broken or lost. The implements referred to elsewhere are all manufactured by the Sutars here.

Since the advent of the British Raj most rural domestic handicrafts and industries have gradually declined, and finished articles of foreign make have taken the place of their products;

but the Indian carpenter still holds up his head. The inroads of foreign machines and machinery--polished, fine, durable have not superseded the Indian made implements, though some additional foreign implements are brought into use as a novelty and experiment, such as iron ploughs, chaff-cutters, etc.

The Royal Commission on Agriculture have recommended as follows:

" The agricultural Departments would do well to consider the possibilities of mass production of the wooden parts of such implements." (Page 108 of the Report).

The recommendation is very welcome to the cultivator who is required, on occasions, to stop his actual agricultural operation abruptly when any implement or part is broken, cracked or in any way has become unserviceable, and to run to the village Sutar either to get the part mended or replaced; he has to postpone his operation for some days, pending the repair of the implement; but the system of mass production may obviate such delays which are at present unavoidable, if the things are procurable on the spot in the village immediately.

The carpenter uses the following instruments and tools:--

	ENGLISH MAKE	Rs.		INDIAN MAKE	Rs.
1	वाकम (An adze)	3-4-0	1	कुन्हाड (an axe)	4-0-0
2	किकरे (a chisel)	0-5-0	2	भाना (a pair of bellows)	25/- to 40/-
3	करवण (a saw)	2/- to 5/-	3	घण (a sledge hammer)	5 0-0
4	नामना (an auger)	0 8-0	4	हतोडा (a big hammer)	2 0-0
5	गिरमिद (Boring tool)	2 8-0	5	संडिस (pincers)	1 0 0
6	रथा (a carpenter's plane)	2-0 0	6	फुकणी (a blow pipe)	0-12-0
7	पटाणी (a chisel)	1-1-0	7	मेरण (an anvil)	15-0 0
8	धाँवर (a plier)	1-0-0	8	खमन्याचें खोंड (planer)	0-8 0
9	सुग्था (a square)	1-12-0	9	गोलचीचें खोंड "	0 8-0
10	हामोरी (a hammer)	1-0-0	10	खनावणी (gauge)	0-4-0
11	स्कूचानी (a screw driver)	0-2-0			

Ordinarily a carpenter needs a large number of tools and implements. When they are purchased once for all and from time to time the cost is met ungrudgingly without incurring debt. Purchases of new ones continue from time to time and as they are wanted. At times he possesses spare tools and implements and has sets of tools of the same kind of different sizes.

Some of the carpenters also work in iron, i. e., they make iron parts for the plough, harrows, drills, etc., in which case they have a smithy with the necessary tools. It is estimated that an ordinary carpenter needs to invest a sum of Rs. 150 to 200 in tools and implements.

For their services to the cultivator the Sutars get Baluta at the rate specified under the head Balutedars. The Sutars have work to do for different families, and one family of Sutars serves the same family of cultivators loyally for generations. Their co-operation is very laudable.

The Sutars are vegetarians and do not take food either from the Brahmins or the Marathas, i. e., they do not follow the system of inter-dining. They are abstainers from alcoholic drinks.

The Sutars get the thread ceremony of their boys performed by the ordinary Brahmin priests. A thread ceremony costs Rs. 15 or more. Marriages among them are also solemnized by the Brahmin priests. The Sutars seem to be very thrifty and can have a marriage performed at a minimum cost of Rs. 200, spending more if the parties choose to do so. Generally or at least in many cases the father of the bride receives four Lugadees or Sads and two maunds of wheat or more for the celebration of the marriage. It is said that in some cases he spends not a pie from his own pocket. This is according to the mutual agreement of the parties concerned. The father of the bridegroom gets nothing. The bridegroom supplies the bride with the following:--

- (1) 2 Sadies at Rs. 8 or more;
- (2) 1 Paithani (पैठणी silken Sadi with lace borders) at Rs. 30 or more;
- (3) 4 to 5 Khanas of Cholis (चोळीचे वण bodices) at As. 12 to Rs. 12.
- (4) 1 Sadi for the bride's mother at Rs. 7 or more;
- (5) 1 turban at Rs. 5 or more to the bride's father or a Ruwal (रुवाल) as is now done.

The bridegroom gets the following at the time of the wedding either from his father-in-law or at his own expense.-

- (1) 1 turban at Rs. 5 to 10 or more;
- (2) A pair of Dhotees (धोतर) at Rs. 3 to 6 or more;
- (3) 1 Uparane (उपरणे) at Rs. 2 to 5 or more;
- (4) 1 coat at Rs. 5 to 15 or more;
- (5) A pair of leather chaps with silk borders (चर्मि जोडा) at Rs. 2 to 2½;
- (6) 1 turban at Rs. 5 or more to the bridegroom's father or a Ruwal.

Each party gives one feast to the community as a wedding feast. Girls are wedded ordinarily at the ages of eight to twelve years, but in many cases the bride's age exceeds twelve years. Of late, the ages of the bride and groom are fixed by law at fifteen and eighteen respectively. The customs of the Maratha marriages are adopted. Other ceremonies are performed at the choice of the members of the community.

The Sutaras burn the bodies of their dead, unless they are of children of five or under, in which case they are buried. Formal funeral obsequies are held in the case of both male and female adults. The Brahmin priest officiates at such obsequies on the 10th, 12th, 13th and 14th day of death. The last

two days are also devoted to a feast given to the members of the community in honour of the deceased. For all the funeral rites the Brahmin priest receives a monetary gift of Rs. 3 or more and also receives gifts of clothes, pots, etc.

The young boys of the Sutar families attend the Marathi primary school, and having studied IV standard, they leave the school and assist their fathers in carpentry, and so learn the use of tools and get an initiation in carpentry.

A boy has to work under the guidance of his father or some relative to learn the business. As the hereditary occupation he picks up all the methods of mending and repairing. A period of three years for such an apprenticeship or tuition is not deemed sufficient.

The three families of the Sutar consist of:—

Males	Females	Boys	Total	Cattle		
				Milch Cow	Calf	She Buffalo
6	5	6	17	2	4	1

The income of these families ranges from Rs. 200 to 500. Their aggregate income may amount to Rs. 1000 to 1200 a year. Average income *per capita* may be Rs. 70. Each of the family has a house of its own in the village valued at Rs. 200. One family has agricultural property.

The Sutar get Daluta from the cultivators whom they serve.

LOHAR

Unlike some villages in the Deccan, where one man does both carpentry and smithwork, the shops of the carpenter and blacksmith here are separate, and two different families and castes are engaged. The carpenter does all the agricultural implements of (Babul) wood, save such parts as get into contact with the soil (i. e. in breaking up). With regard to the wooden parts, the Royal Commission on Agriculture says:—

"Agricultural implements in India are, on the whole, well adapted to local conditions. They are within the capacity of the draught oxen, comparatively inexpensive, light and portable, easily made, and, what is perhaps of even greater importance, easily repaired, and they are constructed of materials which can be readily obtained." (Page 107 paragraph 105 of the Report). The other parts are made of iron by the village blacksmith (Lohar). The cultivator has to arrange to supply the smith with sufficient iron, in bar form, to forge the part he is in need of. The parts which the Lohar makes may be usefully noted:—

- (1) Plough....a share (फाळ) and ring (वसू);
- (2) Harrow...a blade (पाम) and rings (वसू);
- (3) Seed-drill....a fan (फारोळें) and (चाडदोर iron wire).

A sort of iron chain (चाडदोर) is made to get in working operation and it is tied together with ropes:

- (4) Hoe... 2 गोल्हे;

(5) A large circular iron ring (फडे) with four bars to be fixed in the centre of the leather plot and axles (चाक दाडा-भागी) for the wheel and roller respectively.

(6) The end of the whip handle is fitted with an iron point or gad which is used to remove grass, weeds, etc. from the dam or share fixed to (जानोली Janoli) or body of the plough.

For making these iron parts of the implements the Lohar gets his Baluta from the cultivators annually at a certain rate. The family of the only Lohar here has the following members:

Males	Female	Boy	Girl	Total
2	1	1	1	5

The family has no homestead of its own, no land or fields in the village and no cattle except four goats. For any work done for the ryots other than agricultural, the Lohar is paid in cash or in kind. His income for the year may amount to Rs. 300.

He is a Hindu and follows Hindu customs, manners and religious duties, etc. No thread ceremony is necessary among the Lohars. Their marriage and funeral ceremonies are practically the same as those of the Marathas. No large expenditure is incurred in either case.

In agricultural operations his services are constantly requisitioned; for nobody knows when an iron part of the implement would be broken or become unservicable. The Royal Commission on Agriculture have recommended "to consider the possibilities of mass production of the wooden parts of such implements," (Page 108 paragraph 105 of the Report), but the mass production of the iron parts is even more essential, for in the villages iron is not so readily available. Delays and procrastination are naturally met with in addition to the inevitable loss of time. Iron is bought from Ahmednagar at different rates (varying from 2 to 8 Seers per Rupee) according to the quality required.

The Lohars are not vegetarians, they can eat flesh: they have no objection to the drinking of alcoholic liquor.

The Lohar makes use of the following tools and instruments.

	Cost Rs.
(1) Bellows 4 feet (भाता)	25 to 100
(a) Handle (भास्याची नूठ)	3 to 3½
(b) Bellows frame (wood) (भास्याची चौकट)	1½
(c) (Bamboo) Pulling lever or pole (काठी)	As. 12
(d) Chains 2 for भाता	Rs. 1
(2) Sledge hammer (धण)	5 to 10

(3) Anvil (ऐरण)	25 to 75
(4) Tong's (चिमटा)	1
(5) Pincers (सांडस)	1 to 1½
(6) Smaller anvil (संदन)	15 to 40
(7) Small hammer (हातोडा)	1¼ to 2
(8) Chisel (छनी)	As. 8
(9) Chisel (पीगण)	,, 8

When the Lohar also does the work of the carpenter or Sutar, he uses the same tools and implements as the Sutar.

There is no regular system of training for the Lohar boy who picks up what he can in assisting his elders.

Besides the parts of agricultural implements the Lohar makes many things of iron for domestic use, such as:—

(1) Flat ladle for turning over cakes (Ulathne उलथणे), (2) Ladle (Pali पळी), (3) Culinary ladle with perforation (Zara झारा), (4) Weeding hook (Khurpe खुरपे), (5) Scythe or sickle (Vila विला), (6) Bill hook (Koyata कौयता), (7) Pincers (सांडस), (8) Crow-bar (गहार), (9) Pick (कुदळ), (10) Shovel (गवडे), (11) Cart tyre's (गाडीच्या चांवा), (12) Rings or hub-bands (गाडीच्या विड्या), (13) Axle or axle-tree (गाडीचा आख), (14) Nail (गाडीची कुणी), (15) (कोंडे), (16) Hinges (विजागच्या), Chains (कड्या), etc.

These things are made of different sizes and their prices vary. The cultivators have to purchase these from the blacksmith.

THE VILLAGE POTTER (KUMBHAR)

The Kumbhar is of the most firmly established elements of Deccan rural life. He has certain duties to perform for the members of the village communities and wants to supply. The Kumbhar's services, though now only needed at intervals in household affairs, were constantly required in pre-British days and they were in almost daily demand. The Kumbhar used to make a lot of earthen pots, vessels, chattis, jugs, vases, cups, basins, plates,

Khuja (खुजा), Kolambis (कोळंबे), Paral (परळ), Madakis (मडके), Gadgees (गाडगे), Ranjan (रणजण), Deras (डेर), Ghagars (घागर), small, big, medium and of sizes for the use of the cultivating classes. Every one had and has to depend on the potter for a pot or vessel or a jug to carry or store water, to boil, fry or roast food, to heat water, to keep supplies of water for drinking and other domestic purposes. Earthen pots were used or are used also for the storage of grain, chillies, salt, seed, Jagri and flour, for the boiling of milk and for churning. It follows that the services of the Kumbhar are and were essential for supplying the necessities of village life. But the British Rule gave a long peace and internal order. Inland communications increased rapidly and became so much more safe, easy and prompt that trade and commerce spread in the interior and even to the most distant villages in the hills, and metal utensils of foreign make of many kinds came into fashion and replaced some of the earthen ware manufactured by the Kumbhars. The kind of unglazed earthen ware which they make is very brittle and liable to constant breakages, and this causes great inconvenience to the cultivator. The metal substitutes of foreign manufacture were, therefore, very welcome and soon found favour with the women folk of the masses. They were or are dearer than earthen ones, but they lasted longer. However, the peasant women still make use of earthen wares largely for purposes of cooking, boiling, storage of water, etc. It may be mentioned that in the whole range of the peasant's household utensils, even at the present day, we usually find only the following metal or wooden vessels in use:-

- (1) An iron pan or griddle (तवा);
- (2) A Kathvat (काथवट wooden plate for kneading flour for making of cakes);
- (3) A Chatu (चाटू wooden ladle);
- (4) A bamboo Fankani (फुंकणी a blow pipe);

- (5) A Thala (थाला plate) of bell metal;
- (6) A saucer (पाळे, वाडगा Vati or Vadga) made either of wood or piece of stone;
- (7) A Pata Varvanta (पाटावरवंटा the slab and the muller of stone);
- (8) A wooden paddle (Ravi रवी or churning handle);

All the rest of the utensils in use in the cook-room of the cultivator are provided by the Kumbhar, so he is still a very important person in the village society. Metal pots and vessels of various sizes and capacities are annually imported from foreign countries into India and some are manufactured locally in India. It is a hot and thirsty country, and earthen chatties, etc. are greatly in demand in the hot season. Locally made earthen ware is rather coarse and clumsy and China and Japanese wares (such as saucers, pans, cups, jugs, plates, etc.) have largely replaced local pottery. As a class, the potters are very backward in educational matters and no improvement in their methods has been achieved even in the present age of science and machinery.

In most of the rural villages in the Deccan, the Kumbhars are hereditary manufacturers and suppliers of earthen wares for which the ryots give them *Baluta*. In this village they are not solely employed on their potters' work, but are also good and successful cultivators.

On the occasion of marriages and other ceremonies among the cultivators earthen vessels of sorts are needed and they are bought from the potters here or from other villages for cash payment. Should the local potter choose to supply these wares, he receives a gift in addition to the cash payment. The two families of potters settled here two generations ago. The following statement gives particulars of the families and their property:—

Males	Females	Girls	Houses	Value of houses	Bullocks	Cows
2	4	3	2	1600	6	2

One of them holds twenty-nine acres and thirty gunthas of agricultural land here assessed at Rs. 21-3-0 and the other has lands in Ghospuri.

SONAR

Of the few families engaged here in the ordinary village crafts, i. e. goldsmith, carpenter, blacksmith and barber, the family of the one goldsmith is, under the circumstances, well off, because its members manage (1) a grocery shop, (2) a goldsmith's shop and (3), a farm. The family belongs to a sub-section of Sonars called Lad (लड) who not only do not contract inter-caste marriages with any of the other sections, but do not even interdine with them; so socially they are quite distinct.

No Munj (thread ceremony) takes place among them. Marriages are solemnised by the Brahmin priests of the village according to the Pauranik rites. Expenses incurred on the occasion of marriages are not excessive or extravagant. The coat is cut very strictly according to the cloth. The Sonars are thrifty and shrewd. Young girls (eight to twelve years old) are nearly always wedded. Now, in exceptional cases, girls await their marriage even until after they attain puberty. The custom of early marriage, though not completely effaced, has been getting weaker and weaker. All-round advancement in social customs accounts for these changes. If the nuptial parties are well-to-do the gifts to the bride include ornaments and jewellery together with brocade and silk clothes, and the bridegroom too gets in return gold ornaments and silk garments from his father-in-law. The minimum cost

of an ordinary marriage comes to Rs. 300. The parties are at liberty to spend more or less if they like. Remarriage of widows is allowed among them without any restriction of the age of the widow, whether she be a virgin or not. She can even take children of her former husband to her new household if her new husband is willing and ready to maintain them. A remarriage is not expensive, and unions may cost Rs. 100 or more.

The Sonars here are flesh eaters and they drink liquor when and if they can afford, but on religious grounds these are banned on holidays and fasts. Funeral rites are not very elaborate. The dead bodies are either buried or cremated if the family can afford to pay the cost of cremation. Children are generally buried without any ceremony. Feasts are given in honour of the dead (majors) to the caste men on the 13th and 14th day of the date of death. The death of a wife (Suvashna) is considered as auspicious and pious. If well disposed, gifts of clothing, of small pots, a pair of leather shoes, etc. are distributed to Brahmin priests. Funeral expenses altogether, from the first day of death to the fourteenth day, come to Rs. 30 at the lowest, but depend on the circumstances of the family of the deceased.

The goldsmith in the Deccan villages had a specially lucrative business some scores of years ago, for the farmers' women folk who are their customers are believed to be simple or simpletons. The Sonar is as astute as the Bania and at times is more than a match for him. In petty village squabbles he is often an adviser of the cultivator. Trinkets of silver are ordinarily prepared for the use of babies and children. Gold is at times used. Renewals, mendings and reconversions are constantly required. So the cost of manufacture goes on increasing each time. The price of silver always fluctuates greatly, and from wear and tear the ornaments of the women and children are always depreciating in value. Pure gold is

given to the Sonar and a trinket of alloy is received in return. Now gaudy inlaid ornaments are coming into fashion in place of those of solid silver and gold and thereby the intrinsic value of the precious metal is depreciated.

Students of economy treat the manufacture of gold and silver ornament as investment, but in the long run, it brings no interest or benefit, but, more often than not, is ruinous as an investment, because wear and tear, the cost of manufacture, the impurity of the metal (ornament), all go to depreciate the original value of the metal enormously. Ornaments of silver when sold will often fetch fifty per cent less than their cost price and gold ornaments up to twenty-five per cent less than their cost price. If the ornament be a soldered one or made of an alloy of gold the depreciation is likely to be even greater. A farmer's wife is fond of small gold beads of different sizes and shapes made up into necklaces or other ornaments that are worn around the neck, which are full of small bits of lac and are soldered. Solid or massive gold or silver ornaments involve a large investment, but these small trinkets are prepared at little cost and can be purchased out of small savings. In any case it is a dead loss to the cultivator and his small and hard-earned savings are thus wasted.

We have not taken into account other ornaments such as (1) a golden nose-ring, (2) a gold Sari, neck ornament, (3) gold Patalyas, (4) gold bangles, (5) gold beads put on around the neck, necklace, (6) Karna-Fule (ear ornaments, gold), (7) rings, (8) Murkyas, (9) silver wristlets (Goth), etc. The cost of the whole set of ornaments may be about Rs. 1500, at a very reasonable estimate. Investment in ornaments and jewellery by the whole village may amount to from Rs. 12,000 to 15,000. Interest on this might come to Rs. 600 to 750 annually.

It is difficult for one who has not lived in India to realise the part played by jewellery in Indian life. "In India,"

says Professor V. G. Kale, Poona, "Jewellery has been the average person's bank which yields no interest." ("Indian Economics," p. 105, by Prof. V. G. Kale, M. A., Poona).

Persons of affluence and those who have enough and to spare may manufacture jewellery for the use of their women and children. Thus they allow a portion of their riches to lie idle. It is also supposed that the social standing of a lady of rank is determined by her jewels, but in urban areas such a belief is now very much weakened and the economic loss involved is fully realised. In the rural areas even the peasant women folk take the same pride in their ornaments. The social system in rural areas is democratic. We see that all of the Marathas with few exceptions take their food together, mix freely with each other, and stand on an equal level.

We cannot but refer to an episode related by M. L. Darling, Esq., I. C. S., of the Punjab, at page 63 of "The Punjab in Prosperity and Debt."

"An impecunious Rajput came back from the War with money in his pocket; he bought a gold necklace and bangle for his wife. A year later came the drought, and the necklace and the bangle had to be pawned at half the price. The wily moneylender, too, made a condition of redemption that it must be done within the year. The drought continued, and the time of redemption passed, and half the original price of the jewellery was lost."

A few women of the depressed classes wear some or all of the following ornaments:—

- (1) Gold Putalys (पुनळपा)
- (2) Gold Vajratiba (वज्रटीक)
- (3) Silver Tolbandya or Velas (वेळा).

Ordinarily Mahomedan women here wear most of these ornaments, and in addition silver anklets (Tode) of 100 to

150 Tolas in weight. Ear-rings and trinkets are profusely worn.

For the making of the ornaments, the goldsmith charges the following rates:—

- (1) Gold Putalyas Annas 4 per Tola.
- (2) Gold Vajratik Rupee one per Tola.
- (3) Silver ornaments (Tode and Vela) Anna one per Tola.
- (4) Other gold and silver ornaments such as Saris (neck ornament), Kade, rings, etc. are made at contract or stipulated rates. The city of Ahmednagar is within easy reach. The cultivators make purchases there.

The Sonar uses the following tools and instruments:—

	Rs.	As.
A hammer (हातोडा)	3	
A pair of tongs (of sizes) (चिमटा)		4 to 8
An iron blow-pipe (फुंकणी)	$\frac{1}{4}$	
A touch-stone (कसोट्टी)	$\frac{1}{2}$ to 1	
A stone Kundi (a basin कुंडी) for holding water	$1\frac{1}{2}$	
Weights (वजन) $\frac{1}{4}$, $\frac{1}{2}$, 1 Tola	3	
A pair of scales (of sizes) (कांटा)	$1\frac{1}{4}$ to $2\frac{1}{2}$	
A tool for grasping (सांडस tongs or pliers)	2	
A wooden board or iron sheet with holes of different sizes (जत्रपळी) to draw out wire		4
Moulds of images of gods (छाप ठसे)	2	
Nail plier (नांबूर)	$1\frac{1}{2}$	
An anvil (ऐरण)	2 to 5 or more	
A crucible (मूस) T per Tola		1
Baked earthen Kundi (कुंडी) or receptacle to contain fire, 4		1

These are held in store of different shapes and sizes.

Chemicals and other materials used:—

- | | |
|--|---|
| (1) Borax powder (सवागी) | (7) Blue vitrol or copper sulphate (मोदचूद) |
| (2) Tamarind (चिच) | (8) Salt Ammoniac (नवसागर) |
| (3) Charcoal (कोळसे) | (9) Salt-petre, potash-nitrate (सोरा) |
| (4) Oehre or red chalk (काव-गेरू) | (10) Nitric acid (तेजाब) |
| (5) Kardi oil or sweet oil (कर्डी तेल) | (11) Small bits of lac |
| (6) Zinc (जस्त) and silver | |

The Sonar's family here consists of six members:—(1) The Sonar himself, (2) his wife, (3) three sons and (4) one daughter.

After a course of primary education for some years the boy is placed in the shop of a Sonar in Ahmednagar, usually of his own sub-sect to be trained in the business for a period of one or two years, and as the shop-keeper is either a relation or a caste man, the boy is fed and clothed in remuneration. There is no regular school for training in such crafts. If the apprentice or candidate is sufficiently clever he obtains proficiency in making ornaments, silver or gold, within a period of two or three years, when he returns to his village and carries on the business in his father's shop.

The Sonar's property in the village:—

- (1) One survey No. 7 Acre 21 Gunthas. Rs. 2 6 3.
- (2) A good house valued at Rs. 300.
- (3) One cow and a calf and five hens.

His annual income:—

(1) Goldsmith's business Rs. 250, (2) Agriculture Rs. 25, (3) Grocery shop Rs. 125; Total Rs. 400; average income Rs. 66 *per capita*. It is very natural for the Sonars to grumble or murmur that their business has been declining from year to year. There are actions and reactions in the market. Imitation trinkets and ornaments are sold in the market, and

they are not only better made, gaudy, well polished, but at the same time very cheap. Ornaments of nineteen carat gold are thrown into the shade by German-made trinkets. They cannot readily be distinguished. Imitation or manufactured or what are called "cultured" pearls appear superior to natural ones. These trinkets and ornaments have been coming into fashion now-a-days in towns and in cities among people of the upper classes, and rural women folk follow suit. The villagers gave us specific instances. They are even replacing wedding ornaments, which were treated as sacrosanct. We are led to believe that it is due either to economic causes or to the fashion of the day or to both. There is no remedy. We are inclined to think that the circumstances and conditions in rural areas here are in vivid contrast to those depicted in the Punjab by Mr. Darling.

LINGAYAT VANIS

The Lingayats are one of the dissident sects of Hinduism. They are Hindus, but are exclusively the devotees of God SHIVA, one of the triad of the Hindu mythology. The worship of SHIVA is a type of phallicism and is also performed by almost all Hindus of all classes and sects along with that of their own other Deities; but the worship of Shiva or Mahadev is the sole cult of the Lingayats. Curiously enough, a babe of five days old, male or female, is invested with a tiny image of Shiva (a phallic symbol known as Ling-Dharana लिंग-धारणा) by the Jangam or priest of the Lingayats. This tiny image is concealed in a knotted piece of silken cloth which is suspended from the neck of the newly born babe. The priest receives a small gift for the initiation, which varies according to the status of the babe's parents. Annas four is the minimum. The babe is also smeared with "Vibhuti" (विभूति — a preparation made of ashes). In other respects the customs and traditions of the Marathas are followed to a large extent at the time of birth. They have a spiritual teacher called the

"Mathadhipati" (मठाधिपति) who gives them a Mantra (scriptural words) to be repeated by all, men and females alike, even by the adolescents—boy or girl—every day at the worship of the Lingam taken out of the small case of silver or gold or from the cover of silken cloth. The Mantra is repeated mentally as many times as they wish. The case is always worn on the person, day and night. A member of the Lingayat family smears his or her forehead with the tips of his fingers with Vibhuti in straight lines and horizontally not perpendicularly (≡) after the morning purification or ablution, and before he or she puts his or her hand to any other routine work. The marriages are contracted only with members of their own sect. The re-marriage of widows is sanctioned. Some families among them are very wealthy and have given themselves to commerce and trade. Here they are not so well off. The celebration of marriages is a costly affair depending on the condition of the parties involving dowries, gifts, presents or ornaments, valuable clothes and cash. The expenses for either side may be Rs. 300 or more and feasts are given to the relations. Rs. 35 or more may be taken as the cost per 100 guests. Even after the marriage they have some occasions during the course of the year to recall the celebration of it. It is necessary for each side to incur some expense. Burial of the dead is the invariable custom. Cremation is entirely prohibited. It seems a tradition among the Lingayats to set the dead body leaning against a wall cross-legged in the sitting posture and dressed in ordinary wearing clothes. A kind of bamboo frame is prepared, or if not available, the body is carried in a big piece of cloth swung on the shoulders of the mourners to the grave-yard where a grave is kept ready dug. The grave is a deep one in order that the body may be set up in the same sitting posture. After consigning the body the wearing clothes are taken off except the loin cloth, and the Lingam (लिंग) is placed

in the palm of its hand. Leaves of the Bel tree are strewn over the grave and some verses are recited and the Jangam blows his conch shell. The Lingayats keep no mourning (सुतक) for the deceased. Some of the graves are honoured with a masonry tomb in memory of the departed individual. The custom of untouchability (स्पर्शस्पर्श) is absent among them.

For religious ceremonies and observances the Lingayats never employ a Brahmin priest but only their own Jangam. In the Deccan the Lingayats keep all or some of the Hindu holidays. In the month of Shravan they resort to the temple of Mahadev built here by the Peshva. In this village their food, clothes, ornaments and standard of living do not differ very much from those of the local Marathas. Their income is limited. The Marathas and Lingayats live here in full amity with each other. The following table gives some particulars of their families and property:—

Number	Agriculture	Wage earners	Trades	Total
Families	2	3	1	6
Members	8	5	7	20
Bullocks	2			2
Cows		4		4
Calves		2		2
Plough	1			1
Drill	1			1
Hoe	1			1
House value in Rs.	150			150
No.	(1)			(1)

One family holds land, one family keeps a grocer's shop. The annual earnings of these families may be estimated in a normal season at Rs. 1200 to 1500.

It may be noted that the Lingayats are literate, shrewd and good shop-keepers. Their co-religionists in other places are often rich and carry on lucrative businesses as traders.

DHANGARS (SHEPHERDS)

An in other Deccan villages the community here is almost as self-contained as it was in pre-British days. With the single exception of salt the villages produced all their needs. The village community maintained itself by an interchange of services and not by making money as townspeople did. When cotton cloth was not so plentifully available as now, the Dhangars have always been the weavers of blankets, of course, coarse and rough out of the wool shorn from local flocks of sheep, to supply the peasants with coverings to keep off rain and cold. By profession the Dhangars have been both tenders of sheep and weavers of woollen blankets for many centuries past.

In this village nine families of Dhangars have lived from generation to generation. Their total numbers as now taken (1-7-1928) are as follows:—

Males	Females	Boys	Girls	Total
13	17	10	4	49

They are all Hatkar (हटकर) Dhangars. Out of thirteen males three are literate; a moderate percentage no doubt, but it is essential at least to keep written notes of their dealings in their goods. None of the females is literate. Five families possess ancestral houses of their own on the village site. Four of the houses are commodious and convenient for their purposes. One of the families holds agricultural land as well,

and the cultivation is carried on by members of the family. This family keeps and manages to tend a flock of sheep and goats (110 and 10). In addition they work at looms for weaving woollen fabrics for local consumption. Of the nine families seven manage to work nine looms among themselves from the raw wool or fleece to the finished fabric ready for sale or for transportation elsewhere. Save one family of a widow (she lives on public charity) all of the Dhangars have taken to the weaving of woollen fabrics such as Chavalis (चवाळे), Ghongadis (घोंगडी), Asanas (आसन), etc., etc. The women folk of the Dhangars are fully occupied throughout the year day in and day out with work such as the cleaning of the raw wool, spinning it, making a sort of size out of tamarind seed, twisting yarn to be sized for warp and woof and so on.

The women first sort the wool. Here they use only the raw wool of the local sheep, as throughout the Presidency of Bombay it is not a good class of wool which is produced here; the staple is generally coarse and short and the fleece full of coarse hairs. In a coarse blanket the presence of hair is advantageous, but in cloth it is a great defect. Cashmere wool is very fine. The best Indian wool comes from Rajputana, Marwar and Kathiawar. Even wool grown on the border of the Sholapur district and the Jat state is finer than the wool produced here and in the neighbourhood. None of the wool grown in India approaches Australian wool in point of quality. The Khandesh and Deccan wool is generally black, whilst the Sind and Gujarat wool is white; these are the prevailing colours. It is the women folk who usually both sort and clean the wool. Cleaning is performed either by the Pinjari (पिंजारी) or the women. He uses a bow (Kaman) and with a thick handle or club puts the bow (which is suspended from a peg in the wall) in operation and the cleaned wool is separated. The purpose of this operation is somewhat

analogous to that of ginning in the cotton industry, and it corresponds to a very limited extent to that of carding in an English mill. A Pinjari earns Annas two a day per Seer of wool which he cleans of dust, etc. After it is fully cleaned the Dhangar woman proceeds to spin the wool into yarn. A wooden Rahat (रहाट-Machine, or spinning wheel) is used. It is a simple machine prepared by the village carpenter costing Rs. 1-1½. The spindle (Chat चार) is turned by a cord or a piece of string passing over a roughly shaped driving wheel, which is turned by hand. The spinner takes in her left hand a quantity of raw wool which she attaches to the point of the spindle by a short length of yarn previously spun or roughly twisted in her hand for the purpose. Then as she begins to turn the wheel, she slowly withdraws the handful of wool away from the spindle as far as she conveniently can. There is now a length of perhaps two feet of quivering twisting yarn between the spinner's hand and the point of the spindle. As soon as this is sufficiently spun, the operator's arm relaxes and the yarn is allowed to coil itself on the still turning spindle. Then the hand containing the unspun wool is again withdrawn and the operation recommences. A wheel lasts for two or three years. A woman attending to all her domestic work is able to spin yarn from half a Seer of wool. Thus the yarn is spun and wound in a way which has been made familiar to everybody by Mahatma Gandhi's Charka (spinning wheel) and its operation.

There is another way of spinning. Shepherds employ their leisure in spinning whilst they tend their flocks of sheep in the jungle. The instrument is very simple and can easily be carried about: it is so small and light. It consists of a small thin circular disc about two inches in diameter, generally made of a piece of flat tile or red stone (Kurund कुरंद) with a pointed wooden spindle about six inches long. The spindle is carefully fitted in the centre of the disc, and at

right angles to its surface. A short length of the yarn is wound on the spindle, beginning at the end inserted in the disc and running upto the point, where it is tied with a simple loop knot. The end of this length of yarn is then connected with a length of wool drawn out to the requisite fineness from the handful which the shepherd holds and just sufficiently twisted to enable it to bear the weight of the instrument. Then raising his right thigh into a horizontal position and holding the instrument suspended by the wool in his left hand so that it is on a level with his thigh, he presses the axis with the palm of his right hand against his thigh and rolls it rapidly along. The instrument, being released, continues spinning and the length of wool up to the point where it is held in the shepherd's left hand is twisted into yarn. This is then wound on the spindle and secured at the end.

VADARS

There are two families of Vadars who are Hindus. They are a strongly built and hardy race of men, who came originally from the Carnatic (Telangan తెలంగాణ) in Southern India. The two families consist of five adults and nine dependents. They are (माती-बहार) earth workers as opposed to the section of the caste who work in stone. They are employed on the building of earthen dams and embankments, the digging of wells and house foundations and other odd earth work. They also carry grain, sand, earth, etc. on their donkeys for hire. They work on the railway on contract terms or by piece or gang work. They get sufficient work in Sarola and neighbouring villages. They have settled in the village and have built houses of their own of sound construction valued at Rs. 200. Their total average annual income may amount to Rs. 325 or say Rs. 40 *per capita*. It is very gratifying to note that they had six bullocks of their own according to the last census of 1934-35.

They keep asses or donkeys for letting them on hire or working themselves. The census figures were as follows:—

Donkeys	
1915—16	29
1919—20	12
1920	17
1924—25	22
1929—30	12
1934—35	23

A donkey may fetch Rs. 30 to 40. At this rate their total value would be about Rs. 800.

An ass is a docile hard working animal and is very cheap to maintain. It can be let loose after work to search for its feed when it roams about the village precincts to find refuse of Kadbi, grass, etc. thrown away by the women folk of the cultivators. The owner has at times to take them to the river. hard by, for water. The donkeys are, therefore, for the most part fed free. When they are fully engaged their owners have to feed them on at a cost of two to four Annas a day. The donkeys here are of a poor type. They are not as large as those we find in Poona.

The Vadars keep pigs for their meat. They roam about the village in search of food and they are rural scavengers. The Vadars are non-vegetarians, but do not use beef. Their ordinary food is just like that of the labourer, Rs. 3 to 4 are the food charges for a man monthly. But they eat more. They have no restrictions about alcoholic drinks. They take food thrice a day.

A system of regular marriage is observed. They have Panchas who approve and solemnise their marriages. It is a very simple ceremony. A feast to their caste men is welcome. Simple garments for bridegroom are obtained for the wedding. A marriage costs them from Rs. 100 to 200 according to the condition of the parties concerned.

Widows are allowed to re-marry with the consent of the Panchas.

The Vadars either bury or cremate the bodies of their dead. No special funeral obsequies are performed. The members of the deceased entertain their caste fellows with feasts on the thirteenth and the fourteenth day after the death. A feast costs Rs. 25 to 50 in proportion to the number of persons present.

The men wear the same garments as ordinary agricultural labourers.

The Vadar woman wears only a single Sadi (साडी) (Ekavastra एकवस्त्रा) and leaves her chest and back uncovered without any bodice or other close fitting garment. The end of her Sadi is used as a veil or cover for her head. This fashion has been in vogue for generations.

MANGS

The ryots and the Watandar Mahars here had a quarrel among themselves some years ago. The former refused to take private service from the latter in consequence; but for the performance of the work and duties in connection with agriculture, they engaged Mangs, and for their services gave them Baluta instead of the Mahars. The Mangs make ropes—small, large, medium—for the cultivators free (either from hemp fibre or aloe fibre supplied by them) and remove the carcasses of their dead cattle. The skin of the carcasses is returned to the owner who pays the Mang in kind, generally Jowari grain at 8 to 12 Seers per hide for the labour involved in flaying. The cultivator gives him food on the occasion of festivities and marriages. The following figures give some particulars of the two families of Mangs and of their property:—

Maies	Females	Boys	Total	Houses	Cost Rs.	Earnings Rs.
3	4	1	8	2	400	400-500

None of them have any field in the village. All are illiterate. One has some goats and fowls. He is in debt to the extent of Rs. 100. The annual income per head works out at Rs. 57, so that they are better off than some of the Maratha labourers.

Marriages among Mangs are contracted within the caste. Rs. 50 to 100 may be taken as marriage expenses. Re-marriage of widows also takes place. Inter-caste marriages are unknown. Inter dining is banned. The dead of all ages are buried. No special obsequies are performed.

The Mangs are non-vegetarians, they eat beef; they have no restrictions as to drink.

The Mangs have adopted rope-making as their main occupation. They make ropes from aloe fibre. They buy aloe plants standing in the hedges of the cultivators' fields. They purchase the right of cutting or lopping off the leaves of the plant, leaving the tender leaves or young shoots, say to the height of one foot, untouched. They either make a contract with the owner to give him half of the fibre and retain the other half for their labour, or they pay him an agreed sum outright in cash. The terms are settled after negotiations between the parties, not according to any fixed customary rates. The leaves are chopped off with a scythe or other sharp instrument, and then are collected together and are cut or torn lengthwise, and the pieces so separated are made up into bundles and allowed to soak and rot in pools of water, for about a week or more. After they are fully decomposed, they are taken out of the pools and beaten with a wooden mallet or handle to render them so pliable as to allow the fibres being completely separated. The fibres are washed clean and exposed to the sun when they assume a bright and shining white colour. The extraction of fibre from the aloe plant can only be undertaken in the fair season.

ROPE-MAKING

When the fibre has been prepared smooth and ready, the manufacture of ropes is undertaken. The process is very simple and boys and girls can easily learn it. The appliances are very simple and cheap. Generally the bundle of fibre is taken to an open and unfrequented part of the village site. A woman takes a bunch of fibres and twists them into a piece of rope. A boy or a girl takes up the twisted part and goes on whirling it with a kind of small crank-shaped instrument called Kharadi (खराड़ी) and thereby strand after strand is twisted or added on, while the woman who is sitting at work at the other end goes on adding a few threads of fibre to it for being twisted and worked in as part of the rope. In this fashion the process of adding and twisting simultaneously goes on and on until the desired length of rope is completed. Two or three strands can be twisted together and a stronger and thicker rope or cord made. As the ropes, thus made, are not sufficiently even and smooth they are passed through round holes (of different sizes) made in a wooden board (2' x 3' x 6"). After the ropes have been drawn through these holes, they are firm and smooth and are rolled into bundles. The application of starch may give the rope a polished appearance.

There is plenty of scope for employment in rope-making. Labourers, cultivators, poor people—men women, boys and girls—can take to rope-making whenever they are off work or have leisure.

The rates of wages may vary according to the outturn the workers can produce. But the amount which can be earned daily can safely be put at four to six Annas. The worker has to provide himself only with the small spinning handle and have some Seers of fibre to work up. Plenty of aloe fibre is available everywhere. It is at present sold at 8 to 10 Seers the Rupee. Finished ropes are purchased in the market at 4 to 6 Seers per Rupee not only for local use but by the dealers for export to other places.

It is urged that ropes prepared and made by hand and hand-twisted are more durable than those made and manufactured by the method alluded to. The cultivator generally makes his own ropes in his spare time. He could easily make ropes for sale as well and add to his earnings.

As the utility of aloe as a hedge is fully appreciated it should be cultivated and cared for, as a crop. After planting it grows luxuriantly and spontaneously without any further labour. It requires only the cultivator's care and vigilance, although gaps in the hedge involve repair or fresh planting. A single row of aloe plants does not make a satisfactory hedge, but double, if not triple, rows are very effective. They would not occupy very much more space, and the cultivation of Ambadi or hemp as a mixed crop with Bajri (Kharif) crop could be dispensed with, to a large extent. The aloe crop can be cut and turned into fibre at any convenient time after it is a year or eighteen months old.

HOLARS

The Holars are Hindus and are included in the depressed classes. There are three families here consisting of:—

Males	Females	Boys	Girls	Total	Income	Annual average income
8	9	2	2	21	575	27.3

None of them has any property here. Neither homestead in village site, fields out of the village lands, live stock nor cattle. They have not even any fowls, with the exception of a few, owned by one family. They are day labourers. None of them is literate. They are very backward. Some of them are not efficient labourers. They find labour here or in the neighbouring villages. The men mend shoes for the cultivators. They are practically cobblers.

They eat meat but not beef. They have no objection to alcoholic drink. They get only coarse plain food without any luxuries. As regards their garments and wearing apparel these are usually very shabby and dirty. They are very poor and are clad almost in rags.

The villagers pity them and say that they have to live from hand to mouth. We are inclined to agree. We find that the standard of living of the Holars is the lowest of all here under present circumstances. What we have seen of them is that they have to work hard and occupy their working hours very strenuously and arduously and must attend to their labour punctually.

The plight of this hardworking and industrious class of people reduced to such a degraded standard of living must have our sympathy. The causes which have brought this about and the means by which their economic position might be improved call for special enquiry; but it is too complicated a matter for us to enter on.

Marriages and re-marriages of widows are performed among them within their own caste. For these a special form of ceremony is observed. A marriage may cost Rs. 50 to 100 or more according to the condition of the parties concerned.

Dead bodies are buried. No funeral obsequies are specially enjoined and followed. A feast in honour of the dead is given to the members of the caste and may involve the head of the family in an expenditure of from ten to a hundred Rupees.

THE CHAMBHAR

In India the Chambhar is a shoemaker as well as a cobbler. Apart from this, he is one of the village craftsmen and renders other services to the cultivators, specially to the gardeners. He makes Mots (leather bags) for drawing water from wells, leather ropes for ploughs, harrows, sowing drills, hoes, thongs for whips, etc.; but as now the prices of hide

and leather rule high, the cultivator has come to dispense with leather ropes and whips and as far as possible to make use of ropes of Ambadi or aloe instead, though they are not so lasting and durable as they are cheaper and easier to repair. The Chambhar is a village craftsman whose services are of value to the whole of the village population. It is his duty to mend the shoes and repair the leather sundries of the cultivator without any cash payment. He is always ready to assist the cultivator. He is at his beck and call as far as his field operations are concerned. He gets Baluta from the cultivators annually.

The Chambhar supplies new shoes (Deccan pattern) and other leather articles to the cultivator only on payment. The cultivator wears a heavy pair of shoes costing Rs. 2 to 3 which last for about two years, with oiling at long intervals. Lately some of the cultivators' boys have begun to make use of sandals as footwear. A pair of sandals costs Annas 10 to 14 and they are cheaper than the shoes, but not so durable. It is a matter of fashion. Canvas shoes with rubber soles made in Japan are obtainable in the market at a Rupee a pair which lasts at the most two to three months.

The Chambhar here makes use of the following tools and implements:—

IRON

- (1) रापी (Rapi) a knife for cutting hide As. 6.
- (2) आरी (An) or awl Rs. 1-4-0.
- (3) खुरपें (Khurpe) for smoothing the hide As. 1½.
- (4) हस्ती (Hasti) Brass Rs. 5-0-0.

Iron Rs. 2-0-0.

WOODEN

- (1) लाकडी पाळें or कुंडी (wooden or stone bowl) for holding castor oil.

STONE

(1) निशाण्या or शिळ. A kind of whet stone with which the leather worker has constantly to be sharpening his tools.

(2) कुंडी (Kundi). A stone basin for holding water.

Most of these things are procurable in the Ahmednagar market and are cheap and easy to handle.

The Chambhar can carry on tanning operations on a small scale. A large earthenware vessel, Kotambi (कोटंबी) specially prepared by the village potter and purchased for about Rs. 1½ to 5, is used for holding water, or instead of the vessel, a cistern or tank built of burnt bricks and mortar is sometimes used. A piece of raw hide is smeared with wet quicklime and allowed to remain steeped in water for about a fortnight. A mixture of the crushed bark of Tarwad plant and Babul tree is made, to which is added powdered Hirda (हिरडा myrobalan) and the whole mixture is left to be dissolved in the water contained in the earthen vessel or cistern for days. The hide is then taken out and hung up to dry. Generally the Chambhar manages to procure a small quantity of Tarwad (तरवड) and Babul bark from the cultivators free of charge for the asking. The Chambhar has to purchase dry fruit of myrobalan and a quantity of chunum.

For the cultivators' shoes the Chambhar has to use coloured leather and silk. He gets powder of red colour and a small bundle of inferior silk from the market. A village Chambhar will rarely keep ready-made shoes for lack of capital. He is not sure, they would fit the customer. He generally prepares them to order and after measurement. He is not always punctual.

The three households of the Chambhars comprise the following members:—

Adults		Boys	Girls	Total
Males	Females			
3	8	7	3	21

It is very gratifying to note, that of the children, three boys and one girl are attending the school. The boys have no regular training in the occupation of their forefathers, but they pick up daily what they can in assisting their fathers and copying them, and follow their traditional methods.

The three families hold agricultural land as well as house property, etc.

Families	Houses	Value Rs.	Land A.G.	Assess- ment Rs.	Cows	Goats	Calves	Bullocks	She Buffalo	Fowls
2	2	600	10-12	6	2	2	1	0	0	0
1	0	0	*	7	3	3	1	2	1	20

Their total annual income may amount to Rs. 800, and *per capita* income works out at Rs. 38-0-9. Their income and earnings are thus fairly good, but they have a large family of children.

The Chambhars are Hindus, but are treated as untouchables owing to their occupation. A marriage costs Rs. 100 and more. Re-marriages of widows are permitted

MAHARS

The Mahars are Hindus by religion. Some of their manners and customs are identical with those of their Hindu brethren. They generally worship the same deities as the Marathas, but besides they have some of their own. They observe all the Hindu holidays, each within his means. They venerate some of their saints such as Chokha Mela (चोखा मेळा). With regard to marriages they, to a large extent, follow the local Maratha customs. It is estimated that a marriage may cost about Rs. 50. Among them gifts of clothing and ornaments are customary according to the wishes and the condition of

* The land is situated at Koregaon.

the contracting parties. Marriage feasts may be given. Re-marriage of widows is common. Women wear garments of the the same style and pattern as those used by the Marathas; but generally they are not so costly.

The bodies of the dead are buried. Feasts are given in honour of the dead.

When the forefathers of the Mahars came to the village cannot be definitely determined; but it is certain that they must have been settled here for many centuries. In the old hierarchy of state employees and servants during the Mahomedan period, or even before that, the Mahars were the recognised village servants and menials. They are now recognised by the British Government as the hereditary Watandar officiators. In accordance with the prevailing custom of the pre-British Raj they are confirmed in the possession of a large tract of land here as Inam as remuneration for the service they render to Government. It is the traditional duty of the officiating Mahars to take remittances of village revenue to the sub-Treasury (Mamlatdar's Treasury) for credit and in return to bring an acknowledgment of the Treasury to the village officers for account purposes. This is still an important duty of the Mahars as far as the village administration is concerned. The idea of village banks was previously unknown and is yet unrealised.

In rural areas the Mahars are largely employed as labourers on agricultural operations, and thus they come into contact with other Hindu labourers, and in the course of their daily work they inevitably touch each other constantly and think nothing of it. More often than not the system of untouchability is not punctiliously observed. We cannot help referring to the system of reaping of the Jowari crop. Men and women are engaged to reap the Jowari, and it is the practice that the reapers must go on simultaneously in the same line of the crop together. They sing reaping songs

to stimulate the workers. The burthen of the song may be varied, but the unchanging traditional refrain is noteworthy. It runs " Bhale re Dada Bhal Kir Dada " (भल री दादा भल किर दादा) which may be explained, " Well done, brothers; do it well, brothers." As they are reaping in one and the same line or row of Jowari, they must unavoidably touch each other. When the group of labourers go off to take their midday or noon food in the jungle, the Mahars and the others sit apart in separate and distinct parties under the shade of the trees; but in the afternoon the gang of labourers fall in and recommence work together without any scruples as to untouchability. This is the common practice in the villages. No doubt, there are a few orthodox labourers who try to shun the Mahar labourers, but nobody takes any notice and it has no perceptible effect. In this village the " Harijan " communities have their own wells for the supply of water for domestic purposes, and the grievance of exclusion from a common water supply does not arise.

In addition to agriculture, some of the Mahars follow the following businesses:—

(1) They purchase Kadbi, grass, firewood in the village and in the neighbouring villages and cart them to Ahmednagar and sell at profitable prices.

(2) They collect Tarvad plants in the jungle, strip them of their bark and take it to the City for sale

The earnings fluctuate and average emoluments are hard to arrive at; but it may be estimated at Rs. 15 per month per family. In more than one case the earnings may be more than Rs. 300 a year. Of sixteen families of Mahars thirteen have their own houses and home property. One family of two members lives on alms and charity.

The following table gives details of the Mahars' property, etc.—

No. of Families	No. of members	Bullocks	Cows	Buffaloes	Calves	Sheep	Poultry	Cart	House Property	Estimated annual income
16	93	6	3	2	8	5	15	1	13 1350	2600

The Mahars hold Hadola land (service Inam) of which the details are given below:—

Survey No.	Area		Assessment		Judi			Balance with the alienee (Nuksan)		
	A.	G.	Rs.	As.	Rs.	As.	P.	Rs.	As.	P.
1	23	13	16	6	4	5	0	12	1	0
2	17	20	10	9	2	12	4	7	12	8
245	3	5	2	15	0	12	4	2	2	8
246	16	22	10	4	2	11	1	7	8	11
248	26	5	10	4	2	11	1	7	8	11
247	11	34	9	6	2	7	5	6	14	7
249	9	27	8	13	2	5	0	6	8	0
250	21	25	12	5	3	3	9	9	1	3
Total	129	31	80	14	21	4	0	59	10	0

MAHOMEDANS

There are many classes among the Mahomedans. Here there are Mahomedans of the classes known as Shaikhs and Sayad. They are non-vegetarians and eat beef; but liquor is prohibited. Their women folk observe Pardah in their homes but in most places many women work freely in their own fields and elsewhere outside. In place of the Brahmin's Munj, they have to perform a boy's circumcision ceremony usually at the age of 5 to 7. The Khalifa (खलिफा) who is invited to solemnise the ceremony receives a gift of from Rs. 5 to Rs. 25 or more. Marriages and circumcisions are not allowed during the month of Moharum. Marriages and re-marriages

of widows are permitted. Polygamy is allowed. The expenses of a marriage may amount to Rs. 200 or more according to the social condition of the parties. The Kazi also performs the marriage ceremony. A feast to the community is arranged. The Mahomedans observe fast for the whole month of Ramzan. They celebrate Moharum or the 'Tabuts' (ताबूत) and other Mahomedan fasts and festivals, and in connection with this have to incur some extra expenditure. The following table gives details of families and their property:-

No.	Agri- culture	Wage- earners	Crafts	Trades Shop- keepers	Public Service	Total
No. of families	10	5	9	1	1	26
No. of souls	79	18	44	2	9	152
Bullocks	22					22
Sheep	13	12	10		4	39
Goats	40					40
Cows	7	3	2			12
Calves	8	4		1		13
She-buffalo	1					1
Ponies	2	1				3
Dogs	3					3
Poultry	22					22
Cart	1					1
Carts (light)	3					3
Tongas	3					3
Ploughs	7					7
Iron Plough	1					1
Pabhars	8					8
Kuliyas	16					16
Kolpas	16					16
No. of houses	9	5	9	1	1	25
Value of .. Rs.	8200	350	7100	600	300	16550

The Muslim population (152) is about one-eighth of the total recorded at our special enumeration (1286). With one or two exceptions all own their houses. Two are valued at Rs. 5000 and Rs. 4500. The remaining twenty-three are of small value. About two-thirds of the population is directly dependent on

agriculture. They hold 293 Acres 13 Gunthas of land, that is about one-thirteenth of the whole arable land of the village (3900 Acres). They have only twenty-two bullocks. One family owns four pairs, one two, five have one pair and three have none. The number owned falls short of that required for the land.

Only one family in the village owns goats (40) and poultry (22). This is unusual.

Among those engaged in the village crafts they have the predominance, while the proportion of wage-earners is lower than for the village as a whole.

On the whole their economic condition compares very favourably with that of the other residents.

There is one mosque, and it and the Darga are well looked after. The community is united and untroubled by factions, and the condition of the buildings is very creditable to them.

CHAPTER 9

STATISTICS

LITERACY

Of the total population covered by our enumeration in 1928, about 1286, we found 151 to be literate including five females. The following statement giving the number of literate persons and percentage of literacy by castes may be of interest.

Caste	Males	Females	Total	Percentage
HINDUS				
(1) Marathas	63	1	64	9.5
(2) Brahmins	13	0	13	37.1
(3) Lingayats	2	0	2	
(4) Sonars	2	0	2	
(5) Tailors	2	0	2	
(6) Carpenter	1	0	1	
(7) Oilman	1	0	1	
(8) Dhangate	3	0	3	5.1
(9) Barbers	3	0	3	
(10) Kumbhar	1	0	1	
(11) Thakur	1	0	1	
Total	92	1	93	
(12) Jains Marwadis	15	0	15	22.8
(13) Mahomedans	32	4	36	23.6
(14) Native Christians	2	0	2	
SCHEDULED (DEPRESSED)				
(15) Mahars	5	0	5	4.9
	145	5	151	11.6

The figures of literacy which could be authoritatively procured are too old to be of any special interest or value now. During the half of the last decade it may be confidently affirmed that the school master is abroad. Literacy tends to increase every year. It may be expected that with the diffusion of knowledge a sense of curiosity, desire for knowledge, power of discrimination will be created among the educated youths of the Marathas. The simple routine of reading and writing alone counts for little in this age of competition.

As we expected we found no literates among any of these classes:—(1) Bhils, (2) Rafnoshis, (3) Mangs, (4) Holars, (5) Chambhars and (6) Vadars. Curiously enough the Malis have not a single literate person among them.

Most of the literates are able to read and write Marathi. Some of them have passed the Vernacular Final Examination (VII standard). The railway station staff and a few other persons know English. A few have passed the University Final Examination of the Bombay University.

The percentage of literates among Mahomedans is better than that of the other villagers here. The community, which is said to be the strict observer of Pardah (गोपनीयता), has the credit of having four of their females educated. The Marathas, who outnumber all other communities put together, have to show a poor percentage of literates.

The present system of collecting statistics regarding the number of literates in a village or group of villages is defective. It is once in a period of ten years (Decennial Census) that statistics of the educated are recorded, but these are not sufficient and full. They fall short of the present day requirements. When once the principle of compulsory elementary education is accepted, it is essential that the number of educated persons in any village may be readily and easily ascertained at any time of the year. The figures of the last

census being out of date are quite useless. We may stress the point that each and every school should have notes made annually as to the number of boys who had left the school as literates. This or any other method may enable the educationists to gauge the progress which education had made in the past years. We need press that any such arrangement may be useful for the purpose of watching the progress of education from year to year in villages or portions of the district. Any duty of this nature may be imposed on the District Administrative Officers. It is they who can shoulder the responsibility of supervision and control in their annual tours and camps. They are the officials to see if penalties under the Act can be enforced in the case of any defaulting village or groups of villages.

ACCOUNTS AND FARM JOURNALS ETC.

The money-lenders, shopkeepers, dealers, craftsmen and others who are literate and have business dealings keep regular accounts of daily receipts and disbursements or keep rough notes of their transactions from day to day.

None of the villagers keep any family accounts or farm journals. Some writers on rural economics have complained that in rural areas no accounts or family budgets or farm journals are available. We think their criticism is unreasonable; because we have not reached the stage or condition when we can invoke state aid for compulsion in matters of this sort, unless we have more than 50 per cent literacy. Village societies or organisations, if any, might see their way to have records kept by educated men in the village. It is a simple thing for them and for their own interests. We must note that some of the leading villagers have fully realised their position and its drawbacks. They are convinced that they have to depend too much on their memory and at times their long experience does not stand them in good stead in agricultural matters. We know our memory is short. Unless we have

recorded accounts of our farm operations we cannot have full satisfaction as to the correctness or mistakes, success or failure of the different farm operations. During the course of our inquiry some cultivators have asked us to suggest forms of:—

- (1) Daily accounts,
- (2) Family budgets,
- (3) Farm account or ledger,
- (4) Farm journals.

We have not come across any economic work dealing in detail with any of these subjects. It is, no doubt, very important from the point of view of the Deccan cultivators, but we cannot attempt to suggest detailed forms and methods. There ought to be a manual specially prepared and written for cultivators.

It would be dull reading even for a student of economics who is anxious to know the exact nature and importance of every transaction. Nevertheless we would insist upon the value of a simple written account of daily receipts and disbursements. It is to be noted that few of the day to day items of real expenditure or receipts are in the form of money transactions. A mere list of the sort of things which will affect the results of the year's working will indicate how difficult it would be to devise any systematic form of accounts in terms of money. But, at the start, accuracy and exact correctness are out of the question and something is better than nothing must be the goal. A broad outline which follows may be suggested and can be improved on experience:—

- (1) Daily ration and food for the members of the family;
- (2) Chuni for milch cattle; (3) The quantity of milk drawn;
- (4) Daily amount of fodder for the cattle; (5) Sale proceeds of milk, ghee, vegetable, etc.;
- (6) How long the Mot has worked; what area and crops have been irrigated;
- (7) What sort of

tillage was carried out and its area; (8) The details of ploughing; (9) Number of bullocks, labourers, men, women engaged for the day, etc.; (10) The rate of their wages; (11) Whether it was a rainy day. (12) Whether it was a holiday; (13) Which of the crops suffer for want of rain or by frost; (14) Sickness in the family; (15) Insect pest. rats, locusts, damages by herds of deer, swine, etc.; (16) Child birth and death; (17) Shop-keeper's accounts; (18) Arrival of guests; (19) Payment of Government revenue; (20) Daily wages of labourers engaged in sinking a well. (21) Cost of plantation of an aloe hedge; (22) Present given on the occasion of the marriage ceremony. So there are too multifarious objects and items to be mentioned in such a small compass. The question of what items it is worth recording and in what form is obviously a matter for experts with very special knowledge and experience, but we feel sure that some simple form of account record would be of good use and value even to the small cultivator. We have made it quite plain what the accounts should be like. At the end of the month, the account and the ledger should be closed and the balance struck monthly. An annual sheet can be easily drawn up to show whether the earnings of the year are profitable or deficient.

It might be a help in the general planning of the family budget for the year. Either the Diwali Holiday or Chaitra (New Year's Day) Padava (पद्मवा) may be found a convenient and suitable day for the beginning of the year.

We must emphasise the importance of a farm journal which would form a record of the cultivator's long and varied experience, as to the varieties of crops, their outturn, the labour involved, the care and the precaution taken, the reasonable distribution of the rainfall and its effects and particularly the merits and defects of the *modus operandi* he adopted. Such a record is expected to be a guide to the cultivator concerned and to all others.

This is all a matter for the literate cultivator. It is for him to tackle the subject, new as it is. It is expected that experience gained in this fashion might improve his status, happiness and wealth in the course of years.

To sum up:—To keep such a systematic account is very simple and cheap. In order to avoid intricacies and complexities of the real accounts we have ventured to make such general suggestions as can be simplified and made easy for the simple literate villager. Should he desire to adopt the correct procedure, there could be no objection to his following it. From his own experience he could reduce his record and accounts to the minimum which he found to be of use.

The Government of Bombay have a Bill No. VII of 1938 (Money Lenders' Act) on the legislative anvil, which, among other things, makes it compulsory for the money lenders to keep accounts. This will be an incentive to the more progressive cultivators to follow suit. It is good signs of the new reforms that a large number of rural cultivators are taking lively part in the administration in all spheres.

WELLS

The cultivator here is fully alive to the importance of the well in his land for the irrigation of his crops. It may be mentioned that during the latter half of the last century the cultivators set about to sink as many wells as possible over the whole of the arable lands of the village. They are very shrewd and no doubt consulted many a Panadya (पानड्या water diviner) and tried other devices to ascertain beforehand whether the selected site was likely to have an underground current of water. There are many deep pits dug here and there in the fields, which on enquiry we found to be trial excavations for wells. At least thirty-five such excavations are still visible, in addition to the eighty-nine wells in actual use. The expenditure fruitlessly incurred should fairly be charged to

the cost of the whole system of wells in the village which have been successful. There is no way of estimating it, but it might be on the scale of Rs. 100 to 200 per well for excavation and blasting rock or Rs. 4250 in all.

We were asked if the excavations made for sinking wells could be utilised in any manner; but we are afraid any expenditure incurred must just be written off. So far as we know there is no arteasian water supply in this area.

From the records that are now available we give the number of wells which were in existence at different times:—

Year	Number of wells
1904-05	{ 60 Pakka wells 2 Kaccha wells
1927-28	{ 66 Pakka wells 10 Kaccha wells
1932-33	{ 75 Pakka wells 4 Kaccha wells

We could get no satisfactory information as to when and at what cost most of the wells were constructed. Some of them were, no doubt, built out of Tagai loans from Government. Now all Tagai loans have been fully repaid with interest.

A glance at the village survey map (page 406) will show that most of the wells lie near the present village site to the South and West. It was thought desirable to try to ascertain how much water each of the wells contained and what area it could really irrigate adequately. Every well was visited and the depth of water in each was noted (1928-29). We were able to count eighty-nine wells in all with varying depths of water. Of these thirty-two wells had less than four feet of water, and

they were not, therefore, of much use for irrigation. Fifteen out of thirty-two wells were old and dilapidated and could only accumulate enough water to be of help during shortage of rain. The remaining nity-seven had from four to twenty feet of water. These may be classed according to the water they then contained:—

Depth of water in feet	4	5	6	7	8	15	18to20
No. of wells	13	19	5	1	15	1	3

It may be pointed out that four to five feet depth of water was of little real use for the irrigation of a crop of any value. The owners could make full use only of the remaining twenty-five wells. Even adding nineteen wells having five feet of water we may deduce that only forty-four wells were serviceable out of eighty-nine. To be the owner of a well gives a cultivator a certain standing. He is able to tide over any bad season and is envied by his less fortunate neighbours. Wells are not owned by the Marathas alone but by other cultivators also. A well is usually most profitable when worked by the owner himself. Most of the wells are held in shares and the water is drawn and used by the different sharers in rotation by weeks or otherwise as is found convenient. The details of ownership of wells by castes are:—

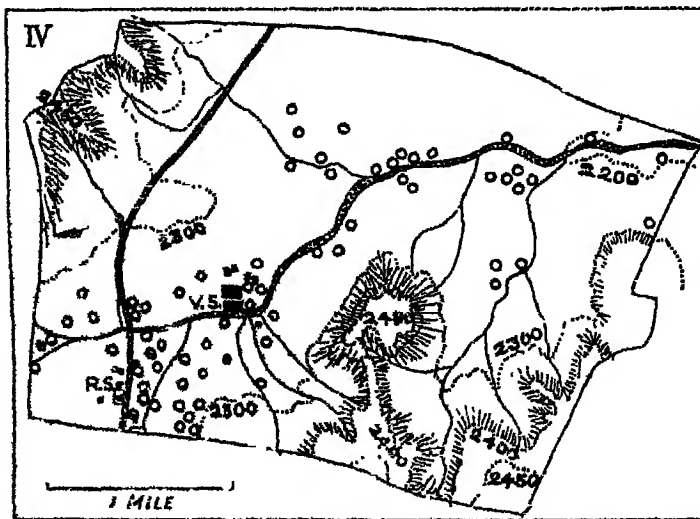
MARATHAS	NO. OF WELLS		NO. OF WELLS
(1) Kadus	17	(7) MALI	6
(2) Dhamane	19	(8) Brahmins	9
(3) Kale	10	(9) Marwadi	10
(4) Davale	1	(10) Musalman	12
(5) Dhore	3	(11) Kumbhar	<u>1</u>
(6) Nimbhore	1	Total	89

The cost of construction of a well depends on its depth and circumference and the materials that the cultivator can

afford to make use of. Rs. 300 to 1000 may be taken as the cost of a masonry well. To give a clear idea we may classify the existing wells according to their local valuation:-

Value in Rs. 300, 400, 500, 700, 1000 = Total Rs. 48,100
 No. of wells 15, 19, 20, 30, 5 = Total wells 89

Wells for irrigation are the backbone of agriculture, and in this area an adequate supply of water is always available unless the rainfall has been very deficient. A year or a succession of years of good rainfall raises the water level in the well which draws or absorbs water from the surrounding land. The extent to which the water supply in the individual well is affected by surface and underground conditions in the surrounding country is a very complicated subject.



The diagram shows the situation and location of irrigation wells in the jungle of the village.

The cultivator does not resort generally so much to wells when the rainfall for the period or the stage of the season (Kharif or Rabi) is adequate and seasonable for the

raising of the seasonal crop. In the rainy days when the rains are actually on, the crop beds in the gardens are often under a continuous sheet of water, and irrigation operations at the well are naturally suspended.

If it so happens that the cultivator has sown Bajri in his garden land as a dry rotation crop and the rain holds off for a week or so, say in August, he takes care to irrigate it to make sure of a good crop.

THE SOIL

Enough has been said of the Indian soil by the Royal Commission on Agriculture in their report, Chapter IV paragraph 71 et seq. It is well recognised that soil for agricultural purposes varies from field to field, not only that but from plot to plot and patch to patch. The soil in this village is not of a uniform texture, best, medium or the lowest. Neither it is uniformly level and even. In about the sixties of the last century the Survey Department of Government made a careful classification of the soil. To go into this in detail is beyond the scope of our study. It would be of no practical use to the cultivator. It may be noticed by any casual observer that the soil here is not what it is generally known as the black cotton soil such as is found in Khandesh or Gujrat. Broadly the soil here may be divided into the following types:—

(1) Patches of black soil of a few acres in the south and east of the village site on the banks of Nallas and on low levels;

(2) Medium soil along the railway line and some patches in the neighbourhood of the village site;

(3) The rest is what is called Murmad (मुरमाड decayed rock) poor soil capable only of growing grass and leguminous crops, such as Kultbi (horse-gram), Moog and Matakhi in small patches or areas;

(4) The slopes and declivities of the hills which produce no human food (crops) but grow scanty grass for the cattle to browse.

The level tops of some of the hills formerly included in the forest are now cultivated and are sown with crops. Admittedly the soil for the major portion of the village is poor but yields crops of Kulthi, etc., if and when the early rains are continuous, even if light. The hills are a sort of reservoir of rain water and serve to keep up the level of the water in the wells at least for some months, i. e. till the Jowari and other Rabi crops are matured. In short, the hills, it may be asserted, serve two purposes. viz:—to conserve water and produce crops or grass. The natural situation of the village is markedly favourable to the cultivators and tends to make up for the poor soil. Most of the Nallas which pass through the village land are useful. With a favourable S. W. monsoon, the chief essentials of agriculture are available.

We would suggest that an examination of conditions here as to configuration, nature of the soil should be made to ascertain whether, considering the nature of the rainfall, more extended use could not with advantage be made of the system of terracing and 'bundling' or 'taling' with stone or earth embankments which is so greatly developed in other parts of the Deccan to hold up water and silt and prevent the erosion of the land by storm water especially during heavy down-pours of rain.

The map on page 406 gives a bird's eye view of hills, wells, Nallas, contours, lands within the village limits. The Nalla which enters the village boundary from the S. W. corner and runs diagonally through the fields until it reaches the N. E. corner, is important in view of the soil on both of its banks. It is considered as the fertile soil in the village. It is hard to give the area in acres of the basin of this Nalla. The length of the Nalla is more than three miles and it is

simply a surmise to give the average breadth of the soil on both banks. Also the riverine stretch is fed by the under-current of the Nalla.

TEMPERATURE (F), 1935

AHMEDNAGAR

Month	Daily Maximum		Daily Minimum	
	Highest	Lowest	Highest	Lowest
January	87°	75°	61°	44°
February	99°	86°	65°	47°
March	99°	84°	69°	52°
April	103°	91°	76°	61°
May	106°	100°	76°	60°
June	107°	83°	76°	68°
July	91°	81°	73°	69°
August	89°	80°	72°	66°
September	89°	93°	70°	62°
October	88°	80°	71°	62°
November	88°	87°	58°	51°
December	87°	79°	62°	47°

Monthly highest maximum from 87° to 107°.

Monthly lowest maximum from 75° to 100°.

Monthly highest minimum from 58° to 76°.

Monthly lowest minimum from 44° to 69°.

The cultivator has to work at all manner of agricultural operations almost throughout the day except two hours (noon to 2 p. m.), when he spends his time either under the shade of a tree or in a thatched hut in his field or garden, eating his meal and looking after odd repairs or attending to his cattle. It follows that he must endure the maximum heat almost daily.

April, May and June, till the monsoon sets in, are the hottest months.

Taking the average of highest and lowest as representative, we may describe temperature condition as follows:—

AVERAGE

Month	Maximum (Day)	Minimum (Night)
January	81°	52°
February	about 92°	rising from 55° to 70°
March		
April		
May	about 100°	about 70°
June		
July	about 85° steady	falling from 72° to 66°
August		
September		
October		
November	83°	falling from 66° to 55°
December		
		55°

Thus the day temperature, which is at its lowest (81°) in January rises rapidly from the end of January, with a pause in March to about 105° at the end of May or the break of the monsoon. It then falls suddenly and remains much the same from June to December round about 84° to 85°. The average night temperature is at its lowest, about 55° in November, December and 52° in January. It then rises rapidly to about 70° in April and remains round about 72° to 66° till October, falling to 55° again in November.

In the hot and cold weather the difference between maximum and minimum temperature is about 25° to 30°, during the monsoon 15° to 20°.

A graph (fig. 2) gives temperature (Jan. 1937 to April 1938),

QUINQUENNIAL STATEMENT OF HOLDINGS (1937)

The statement is an important one as showing the extent of sub-division of land and the size and number of holdings here. The holders of land in the village are classed under three distinct groups A, B, and C according as the holder is:—

A:—Cultivating with his own hands, whether he employs additional labour to assist or not;

B:—Not cultivating personally but supervising hired labourers, even though sometimes he may take some part in some of the operations;

C:—Letting to tenants and receiving rent in any of the usual forms, i. e. as:—(1) Fixed amount in cash; (2) Fixed amount in kind; (3) Specified or defined amount of labour service; (4) Crop share.

+	CLASS A		CLASS B ⁺		CLASS C			
	No. of Khatadars	Area held		No. of Khatadars	Area held	No. of F. hatadars	Area held	
		Khalaka	Inam				Khalaka	Inam
		a. g.	a. g.		a. g.		a. g.	a. g.
1 Upto 5 acres (50)	23	68-31			23 (4)	40-30	21-25 (4)	
2 Over 5-15 (72)	45 (1)	420-15	11-18 (1)	2	17-22 (2)	217-4	22-21 (2)	
3 Over 15-25 (31)	21	396			8 (2)	155-10	36-6 (2)	
4 Over 25-100 (28)	20 (1)	873-30	40-38 (1)		6 (1)	185-34	23-13 (1)	
5 Over 100-500 (3)	3	429-25						
(184)	112 (2)	2188-21	52-16 (2)	2	17-22	59 (9)	599-38	103-25 (9)
Add area within Taluka of plural holdings Holder beyond the Taluka	37	907-18 1-3			7-5		83-9 31-8	
Total	221	3097-2	52-16 Inam		24-27		714-15	103-25
						Total area	3992-5	

* There is no Inam land in this class.

It is to be noted that as Khalsa (Government) and Inam land (of which the whole or part of the land revenue is alienated to private persons) are classified separately, the Khalsa and Inam portions of one person's holding are shown as two. This swells the number of Khatas (accounts) and also tends to put a larger number in the lower area classes. Secondly, only area is shown, so that there is no way of distinguishing between small valuable holdings of intensively cultivated garden lands and small holdings of almost valueless hill land. A similar classification based on assessment instead of area would in some ways give a truer picture. Thirdly, the holder or Khatedar may be the head of a large group or undivided family, so that a large holding may have to support a large number of people, a small holding only one person or family. Still certain general results of interest can be drawn from the figures as they stand.

About $\frac{1}{2}$ of the Khatedars owning $\frac{1}{10}$ of the land have holdings under five acres (average about three acres), most of which (without garden land) must be uneconomic. About $\frac{1}{3}$ owning about $\frac{1}{2}$ of the land have holdings between five acres and fifteen acres (average ten acres) most of which will still be uneconomic.

Summarising the table in round figures:—

$\frac{1}{10}$ of the land is Inam;

$\frac{2}{3}$ is cultivated entirely by the holders, $\frac{1}{3}$ partly or wholly by tenants;

Over $\frac{1}{2}$ of the Khatedars hold $\frac{1}{10}$ of the land, average 3 acres.

Over $\frac{1}{3}$ of the Khatedars hold $\frac{1}{2}$ of the land, average 10 acres.

Over $\frac{1}{3}$ of the Khatedars hold $\frac{1}{3}$ of the land, average 20 acres.

Over $\frac{1}{4}$ of the Khatedars hold $\frac{1}{3}$ of the land, average 40 acres.

Over $\frac{1}{10}$ of the Khatedars hold $\frac{1}{4}$ of the land, average 140 acres.

Taking 15 acres as an economic holding:—

$\frac{2}{3}$ have uneconomic holdings, average 7 acres;

$\frac{1}{3}$ have economic holdings, average 25 acres.

These figures are for holdings entirely within the village, but some holders have also land in other villages and these are, unfortunately, not included in the area classification. Thus about $\frac{1}{4}$ of the village land is occupied by holders who also have land elsewhere mostly in the adjacent villages.

Although the statement does not give a clear and full picture, it does give a general idea of the village as one of small holders mainly cultivating their own lands, some with their holdings not entirely confined to the limits of their own village.

With regard to the owners of holdings which are uneconomic, i. e. insufficient for the subsistence of them and their families, how do they maintain themselves?

They either:—

- (a) Let their lands and work as labourers;
- (b) Cultivate their lands and, when not engaged, work as labourers for others;
- (c) Cultivate their own lands and also additional land taken from others on rent; or
- (d) Combine these methods, when special circumstances make this convenient, e. g., a man may be able to get some of his plot taken on rent by others, and still have to cultivate part himself, or he may let one plot which is inconvenient for working and take up others adjoining his own land and so on.

SUB-DIVISION AND FRAGMENTATION OF LAND

There are 340 survey numbers in the village of which twelve are Government forest or reserved for other public or communal purposes. The remaining 328 are occupied by cultivators. They vary in size from 6 Gunthas to 31 Acres and 39 Gunthas. Out of these (in 1937) 161 whole numbers are in the occupation of single holders. The other 167 are divided up into 710 shares or sub-divisions which go down to as low as 1 Guntha in area, an exception.

The total number of separately occupied plots is thus 871 (be it noted that it is always subject to change) made up of 161 whole survey numbers and 710 sub-divisions of the remaining 167 numbers.

We do not think it necessary to enter on a full analysis of the system of sub-divisions and fragmentation, but we give some general figures and averages for the village as a whole.

Individual holdings may consist:—

(1) Entirely of whole survey numbers	13	
(2) Partly of whole survey numbers and partly of subdivisions	115	
(3) Entirely of sub-divisions	93	
	221	
Total	221	
The arable area of the village is	3992	Acres
No. of cultivated survey numbers	328	
Average area of a survey number	12'17	Acres
Number of holdings (Khatas)	221	
* Average area of a holding	18'06	Acres
* Number of separately occupied plots.	871	

(As given above 161 whole numbers, 710 sub-divisions of the remaining 167 numbers).

Average area of all separately occupied plots	4'5	Acres
Average number of plots in a holding	3'9	

Of the whole number of Khatedars (221) a majority have one or more shares in irrigated lands.

Although we do not make a full analysis of sub-divisions and fragmentation we give details of shares in survey number 34 as an example,

* These figures neglect portions of holdings in other villages, where a cultivator has land both in this and the adjoining villages. If these were included, the average would be slightly higher.

Survey No. 34 measuring 4 Acres and 2 Gunthas assessed at Rs. 7 irrigated by well-water is in the occupation of the Kales and is sub-divided into twenty-four parcels or plots among twelve branches of the family. The land is partitioned into plots of a few Gunthas, each paying a few Annas as assessment. It is an extreme instance but of a very characteristic type. Instead of mentioning the names of the present occupants (sharers), we designate the sharers A, B, C, etc.

The details follow:--

Sharer	Serial No. in records	Area	Assessment	Sharers and their No.	Gunthas	Assessment
A	1	12	0-7-6			
B	2	5	0-3-6			
C	3	7	0-4-6			
D	4	8	0-6-0	D.4	8	0-6-0
E	5a	7	0-4-6			
F	5b	2	0-1-0			
G	5	7	0-4-6			
E	7a	9	0-6-6			
F	7b	8	0-6-0	F.5b.7b	10	0-7-0
G	8	4	0-3-0	G 6'8	11	0-7-6
H	9	11	0-7-6			
A	10	3	0-2-6			
C	11	3	0-2-6	C. 3. 11	10	0-7-0
I	12	10	0-7-0			
B	13	3	0-2-6	B. 2. 13	8	0-6-0
A	14	4	0-3-0	A 1. 10. 14	19	0-13-0
J	15	10	0-7-0			
K	16	5	0-3-6			
L	17 .18a	14	0-9-6	L17. 18a	14	0-9-6
J	18b.19	7	0-4-6	J15.18b. 19	17	0-11-6
I	18c.20	7	0-4-6	I.12.18.c. 20	17	0-11-6
K	21	11	0-7-6	K. 15. 21	16	0-11-0
H	18d.22	4	0-3-0	H. 9. 18d. 22	15	0-10-6
E	23 .24	1	0-0-6	E. 5a, 7a, 23.24	17	0-11-6
12	24*	4'2	7-0-0	acers	4'2	Rs.7-0-0

* 29, if two plots recombined into one are counted as 2.

Some of the sharers have huts for habitation in the field either thatched, or covered with corrugated iron sheets. The plots (fragments) held by one sharer are not contiguous or adjoining but scattered and isolated even in the one field. Fresh sub-divisions go on increasing as 5 has been split up into 5a and 5b and so on; while others have been later combined like 18b and 19, 23 and 24.

Originally the whole survey number (S. No. 34 measuring 4 Acres and 2 Gunthas assessed at Rs. 7) was held from Government by one registered occupant. Since the development of the Records of Rights the actual occupant of any sub-division separately occupied is recognised by Government as a holder, so that the unit holding is now either the survey number or recognised sub-division of an original survey number.

We have already stated that in 167 survey numbers the total number of sub-divisions is 710. The following statement shows the manner in which they have been sub-divided:—

Survey numbers with	Number of survey Nos.	Total No. of sub-divisions
2 Sub-divisions	62	124
3 "	32	96
4 "	24	96
		} 316
5 "	17	85
6 "	7	42
7 "	5	35
8 "	4	32
		} 194
9 "	3	27
10 "	6	60
11 "	1	11
14 "	1	14
16 "	4	64
24 "	—	24
		} 200
Total	167	710

SUMMARY

Survey numbers with	Number of survey Nos.	Total No. of sub-divisions
2 to 4 Subdivisions	118	316
5 to 8 "	33	194
9 to 24 "	16	200
Total	167	710

Naturally the greatest number of sub-divisions and the smallest area of plots is for the most part found in the valuable irrigated numbers and even in some numbers in the immediate vicinity of the village site.

Sarola suffers, like most Deccan villages, from this excessive fragmentation of the land. We need only refer to the general bad effects of this system:—

(1) The plots of arable land are so small in some cases that even ploughing and other operations are not possible without a great deal of labour;

(2) They have no saleable value unless they are bought by the contiguous holder who offers a ludicrously small price;

(3) They are incapable of improvement;

(4) They can hardly be conserved as a grass reserve or a grazing ground, because the cattle of other sharers trespass and damage any grass, if it can be grown;

(5) Sharers of these holdings being kith and kin in many cases, they have jealousy among themselves and more often than not are not on good terms;

(6) The sharing and working of these small adjoining or scattered plots often owned by kinsmen, gives rise to endless jealousies, petty quarrels and disputes, even litigation;

(7) When a holding is very small, it is often left uncultivated, and deserted by the owner who goes elsewhere to seek work and the village officers find it difficult to recover land revenue, although in the long run, the owner may pay up rather than risk the forfeiture or sale of the land;

(8) Even the smallest holders usually wish to retain the land which gives them a status and makes them sharers in all common rights of land-holders in the village, often with the hope that they may in time be able to acquire more land in the village or that an exchange may eventually be profitable. It is deemed a sacrosanct heritage.

We may note that since we started our enquiry there have been instances of small parcels of land, not worth working separately, being purchased and added to adjoining sub-divisions by private arrangement. Such occasional adjustments can do little to solve the problem as a whole. Meanwhile we are afraid that the people are not ready to undertake a general re-arrangement of holdings amicably by voluntary agreement, nor is opinion ripe for the acceptance of any system of re-adjustment, compulsorily, by the legal enforcement of majority decision or absolute rules or laws regarding the minimum size of plots or prohibiting the sub-division of land among heirs.

It may be hoped that with increasing pressure on the land and power of controlling and improving production, with better education and training in co-operative methods, they will come to realise that it is safe and profitable deliberately to modify systems which have been embodied in age old customs developed out of the experience of political condition of uncertainty, insecurity and social and economic conditions which no longer exist, and in time a method of re-organising the distribution of land which they will agree to as desirable will be carried out with the help of suitable legislation. It would be useless to attempt to impose hurriedly from above a system of which they did not yet approve and equally ineffective merely to introduce a few minor changes which they might at once agree to.

It is after all their affair, and changes must be brought about gradually through education and persuasion and not by coercion. The farmer's attachment to his land is proverbial.⁷

RAINFALL

No rain gauge is maintained at Sarola, the nearest recording station being at Ahmednagar, twelve miles due north. The two places are similarly situated in relation to the neighbouring hills and at the same distance from the edge of the Ghats, so that although there are often extraordinary local differences in the day to day rainfall within a very short distance, the Ahmednagar figures can safely be taken as representing condition in Sarola also.

We have been able to obtain figures for the years 1897 to 1937, of which a statement follows (Pages 420 421).

The most striking fact is the great variation in quantity and distribution within the six months monsoon period from year to year. Rainfall conditions cannot, therefore, be described correctly in terms of simple averages, nor can it be said that there is a normal course of rainfall to which that of any year may be expected to conform.

It is necessary to know also the nature of the rainfall, its seasonal distribution and amount, the extent to which these vary, and how they affect the development of the different crops at various stages on different kinds of land.

Briefly, the rainfall of the year may be divided into three parts:—

(1) That due to the South West monsoon which falls from the break of the monsoon, between the end of May and the end of June until about the middle of August;

(2) That which comes with North-East monsoon, between the middle of August and the end of November or in exceptional years the beginning of December:

(3) The small amount of occasional rain which falls in the dry weather roughly from December to the break of the monsoon. The total of this only exceeded one inch in about one year in three and the maximum was about three or four

STATEMENT (TABLE I) RAINFALL

Year	Jan.	Feb	Mar.	April	May	June	July	Aug.	Sept	Oct.	Nov.
1	2	3	4	5	6	7	8	9	10	11	12
1897				'4	'3	1'5	1'5	1'	10'2	3'5	
1898				1	'3	2'7	2'7	'6	8'1	'3	
1899				1'2	'5	6'2	'4	'7	3'4	'1	
1900						6'2	5'2	2'7	3'8		
1901	1'1		'3	1'3	'1	7'8	1'2	1'5	2'3	1'7	4'
1902 †	'2				'3	3'1	3'7	1'7	1'7	1'4	2'2
1903 †					1'3	1'4	10'6	2'3	6'	5'2	
1904					'1	3	1'2	'8	7'3	2'7	
1905					'1	4	2'6	2'8	1'1	2'6	'4
1906 *	'4					7'4	1'8	8'5	1'2	'4	'2
1907			'1	1'9	'	3'1	5'4	3'9	2'0	'2	
1908 *			'2	'1	'1	3'1	1'6	2'5	13'	'9	'1
1909 *				'2	3'7	3'8	1'3	3'3	9'6	'7	
1910 †					'5	8'6	6'5	3'	12'8	2'4	3'6
1911	'1					2'2	10'	3'	5		1'6
1912				'3	'4	2	2'2	2'5		2'7	1'2
1913 *				'4	'4	10'2	6'1	1'7	2'8	1'8	
1914				'1	'5	7'9	1'6	2'3	5	'7	1'6
1915 †	'2		'9	'6	4'8	5'3	7'7	'8	11'	3'1	7'
1916 †				'2	1'9	4'1	16'7	2'1	12'8	7'6	1'3
1917 †		1'9	'1	'1	'2	4'1	1'2	5'9	9'5	5'6	1'9
1918	1'5		1'1		5'32	1'5	'7	'5	4'2	'8	
1919 *	'5		'1	'6	'6	4'9	2'6	'4	10'8	'5	1'3
1920	2'25			'7	'2	2'	'6	'8	5'4	'3	
1921	'2			'2		6'5	6'4	'1	4'7	'4	
1922 *	1'3	'1		1'9	1'7	5'4	1'2	'3	1'8	'4	8'7
1923	'2		1'3		'5	6'5	'7	8'2	'2	'2	
1924 *	'03		'1	'6	'1	4'2	1'2	4'4	9'1	1'4	'1
1925 "				'7	'4	4'4	1'2	4'6	6'3	'2	5'
1926	1'8			'3	'3	4'3	3'3	2'2	5'8		'9
1927 "		'4		'5	'1	7'4	2'9	'4	7'1	1'3	4'
1928 †			'4			10'1	2'8	6'8	9'7	5'1	
1929		'4		1'7	1'7	8'2	1'	'4	4'3	2'4	
1930						2'2	2'	3'3	7'2	3'2	'4
1931						10'4	2'	'9	'8	6'0	4'3
1932						7'1	4'5	3'3	4'7	6'4	'1
1933 †			'2		5'9	5'2	'8	4'6	17'4	2'2	'7
1934 †	'1				'6	7'3	5'4	7'2	8'2	'4	3'2
1935						4'8	3'7	7'6	2'9	5'3	
1936				'1	2'2	1'7	1'1	'4	3'9		3'
1937		'1		1		2	5'5	'3	9'7	4'9	
Average	'2	'1	'1	'4	'8	4'8	3'6	2'5	6'7	2'0	1'4
Range	0-2	0-2	0-1'3	0-3	0-6'4	5-10'4	5-16'7	1-7'9	0-17'4	0-7'6	0-8'7
Months of over 1"	5	1	2	6	9	40	37	26	29	21	16
Months of over 3"				1	4	30	16	14	31	10	8

* These nine years about average 21-24 inches. (Table II).

† These nine years of abnormal rainfall 31-46 inches. (Table III).

‡ Col. 15 shows the rainfall for the Kharif crop season.

§ Col. 16 shows the rainfall for the Rabi crop season.

(1897-1937) GRAPH FIGURE I.

Dec. 13	Total				Year 17	Notes ¶		
	Jan. to April 14	June to Aug. 15	Sept. to Nov 16			Failures of rains 18	19	20
1	4	3.9	13.6	18.23	Early			Total
	3	5.8	8.4	14.78				
	1.2	7.2	3.5	12.32				
2	2.7	14.1	3.6	17.85	II.	Late	Total	
	2	10.5	8.1	17.36				
		8.5	20.7	31.51				
2.4	4	14.3	11.2	33.48	II.	Late	Total	
	2	5	10.1	15.10				
		9.5	4.1	13.64				
2	4	17.7	1.8	22.20	H.	Late	Total	
	2	12.3	2.8	17.15				
		7.1	13.9	21.31				
2.7	3	8.3	10.3	22.47	H.	Late	Total	
		18.1	18.7	37.11				
		15.2	2.1	17.42				
2	3	6.8	3.9	11.26	H.	Late	Total	
		18	4.6	23.15				
		11.8	7.3	19.58				
2.7	1.7	13.8	21.2	37.91	H.	Late	Total	
	2	22.9	21.7	46.91				
		11.2	17	30.57				
1	1.5	2.7	5	14.59	Early	Late	Total	
	6	7.8	12.5	21.53				
	3	3.4	5.7	12.06				
5	3	13	5.1	18.40	Early	Late	Total	
	1.3	6.8	11	22.82				
	1.5	7.8	8.4	18.13				
1	6	9.8	11	21.08	Early	Late	Total	
		10	12.4	23.15				
		9.8	6.7	18.62				
2	8	10.7	12.3	23.74	H.	Late	Total	
	7	19.8	13.8	35.44				
	1	9.6	6.7	19.59				
1	2.1	7.5	10.7	18.27	H.	Late	Total	
		13.3	11.8	26.27				
		14.9	11.2	26.79				
7	2	10.6	20.3	37.88	H.	Late	Total	
	1	20.6	11.8	33.14				
		16.1	8.3	24.37				
3	1	3.3	6.9	12.39	Early	Late	Total	
	2	7.7	14.63	25.73				
2	7	10.9	10.1	22.82				
0-2.7	74	2.7-22.9	1.8-21.7	10.4-46.91				
3								

¶ In col. 18:—It is noted whether early or late rains failed (were below 5") or total was abnormally low (below 15-11"). Years in which rainfall was abnormally high (over 30") are marked H.

inches. No crops are dependent on it, although it may assist or damage standing crops, and may help to raise the water level in wells.

The break of the monsoon followed by fairly steady rain is normally expected about the second week of June.

Narali Purnima (नारळी पौर्णिमा Coconut Day), the festival of the full Moon of the month of Shravan (last day of bright half), is considered to mark the transition from the Kharif to the Rabi rains season. Ordinarily the greater part of the late rains falls during September.

With regard to the effect on crops the principal points to note are:—

(1) Kharif or rain crops cannot be sown until the ground has been sufficiently moistened by the first rains, and the moisture must be maintained while they are beginning to develop;

(2) Kharif crops whose period of growth is long (e.g. cotton) cannot safely be put down if the beginning of steady rain is late; because the time left till the normal end of the rainy season may be too short;

(3) If there is a long break in the rains especially with drying wind the crops may wither.

If the rain at the beginning of the monsoon turns out to be insufficient, the seed sown may die, and sowing of the same or different seed may have to be repeated, or Kharif crops may be allowed to go and the land reserved for Rabi.

For the Kharif crops the rainfall must be "timely, sufficient and well distributed;" for the Rabi, the total up to the sowing season must be adequate and rain is needed to keep the soil in suitable condition during and after sowing.

With regard to the value of day to day rainfall, for different fields, it may be noted that a good part of a heavy downpour of rain on sloping land or land already moistened or soaked by previous rain, simply runs off into the Nallas and

rivers. On the other hand very light rain falling on ground the upper part of which is dry may dry up at once on the surface.

Thus the value of any days rainfall or course of rainfall varies with configuration, soil, nature of crop and the stage at which it is, and the state of moisture in the soil due to the previous rainfall.

Hence round figures of total rainfall for the year or the Kharif or Rabi season do not necessarily give a correct idea as to whether it was favourable for particular crops or kinds of land and consequently for crops as a whole.

In a particular village in one year, Kharif crops might be good, Rabi poor, Bajri good, cotton poor, Bajri good on light lands, poor on heavy, early sown Jowari good, late sown poor or *vice versa* and so on.

Still there is in fact a certain regularity of distribution. The cultivators normally guess well as to the best time for sowing and the totals bear a fairly close relation to the effective rainfall. Keeping these considerations in mind the statistics in the four statements appended (Tables I to IV) indicate the conditions which the cultivators have to deal with.

The most striking features are:—

(1) Extreme variations in figures of total rainfall for the year and for each season, and the independence of the quantities contributed by the S. W. and N. E. monsoons. The early rains may be heavy and the late rains a failure or *vice versa*.

(2) The totals have varied in the last forty-one years as follows:—

(a) Total for year	11'26 to 46'9 inches
(b) June, July, August	
(Kharif season, early rains)	2'7 to 22'9 ,,
(c) September, October, November.	
(Rabi season, late rains)	1'8 to 21'7 ,,
(d) December to May (dry weather)	0 to 5'6 ,,

In the general statement (Table I) the following figures are given:—

Rainfall for each month. Totals (January to April), (June to August), (September to November), and whole year. (See Graph Fig. 1.)

In the second statement (Table II) the same figures are given for the nine years in which annual total rainfall was close to average (between 21 and 24 inches) to show the great differences in distribution between seasons and months even when the total is almost the same. (See also Graph Fig. 4.)

In statement (Table III corresponding Graph Fig. 3) the totals for year and for the early and late rains are ranged separately in order of magnitude instead of chronologically. From this statement and the graph it will be seen that there is no steady normal with occasional divergences above and below.

There is very little more chance of the total rainfall being about the average (22'8 inches) than of it being 16 or 19 or 26 and similarly little more chance of the early or late rains being about the average (about 10'93 or 10'12) than of being any other amount between 3 and 22 inches.

For annual rainfall the medium is	21'31	average	22'8
„ early	„	„	10'05
„ late	„	„	10'19
			10'91
			10'14

In the forty-one years the total annual rainfall was:—

Above 21'31 in twenty-one years;

Below 21'31 in twenty years;

Above 30 in nine years;

Below 15'21 in eight years;

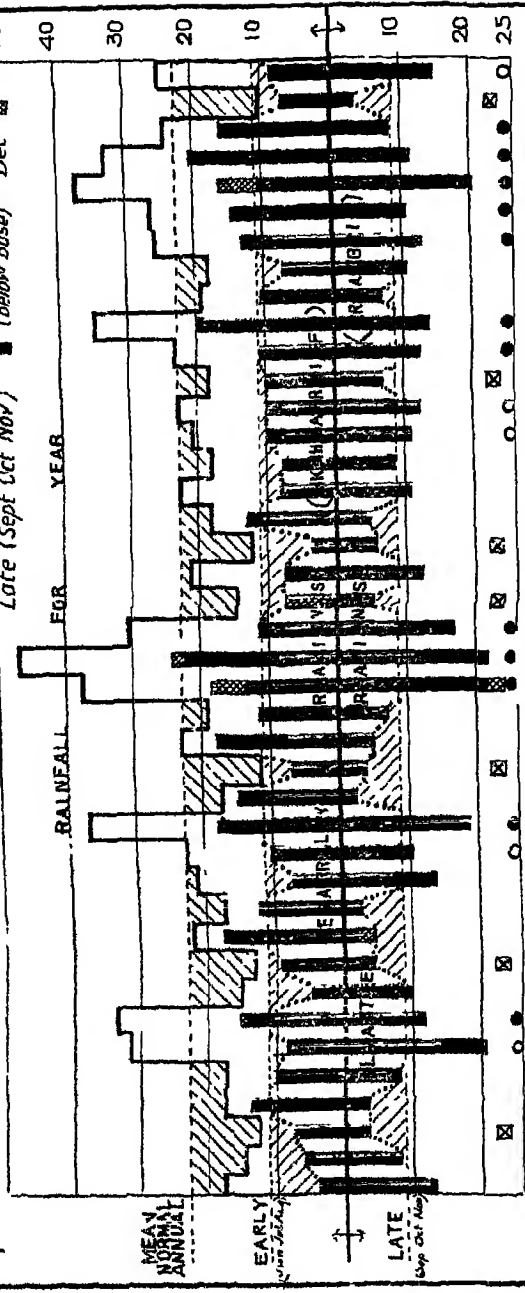
Between 17 and 27 in twenty-four years.

The highest rainfall was 46'91; the lowest 11'26.

If we take anything under 7½ inches (above three quarters of average) as inadequate for either early or late rains and similarly anything under six inches as failure, we find that:—

FIG 1

RAINFALL 1897-1937



1897 98 1900 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

FIG. 1

This corresponds to the general table of rainfall. (pages 420-421)

It shows year's rainfall by height above base line of the full line.

Early 'Kharif' rainfall (i. e. for June, July and August) by bars above base line.

Late 'Rabi' rainfall (i. e. for September, October and November) by bars measured downwards below the base line

Abnormal rain in May is shown by cross hatched extension upwards of the bars representing early rainfall, abnormal rainfall in December by similar cross hatched extension downwards of the bar representing late rainfall as they add to the effective rainfall of the Kharif or Rabi crop season.

The mean normal rainfall, for the year, for June, July and August and for September, October and November is shown by dotted lines.

The area between these lines and actuals where these are below normal, is in each case hatched, to draw attention to the amount of the deficiency below normal if any.

At the foot of the figure, 'bad' years in which both early and late rains were below normal are marked with a cross, 'good' years in which both were above normal with a dot and years in which one was slightly below normal but the other was normal or above, by a circle.

It will be seen that the bad years occur singly, the good years in groups

The intervals were as follows:—

Bad year	Interval	Good year	Interval
1898	7	1902-03	7
1905	7	1909-10	6½
1912	7	1915-16-17	11½
1918	7	1927-28	5½
1920		1931-35	
1926	10		
1936			

Early rains were below average in 21 years out of 41

Late " " " " " 15 " " " "

Both " " " " " 7 " " " "

Both were above average in 11 " " " "

Average total annual rainfall is about 22'5 inches

Mean " " " " " 21'5 "

Average early " " " " " 11' "

" Late " " " " " 9' "

Early rains were inadequate in 11 years with 6 failures						
Late	„	„	„	15	„	„ 10
Both	„	„	„	5	„	„ 1

While the rainfall for the year might be said to have failed in the nine years in which it was below 15"11.

With regard to the succession of good and bad years there seems in this period undoubtedly to be an alternation of groups of two to four years of higher rainfall and groups of two to four of lower rainfall in a cycle of six to seven years superimposed on a longer cycle of about fifteen to twenty years; but careful analysis over a much longer time would be necessary to detect any definite periodic regularity. (See also Graph Fig. 1.)

As it is, the cultivators have no means of forecasting whether they are to have a twelve-inch or a forty-inch rainfall, good or bad, early or late rains. or whether the monsoon will set in steadily in May or July. They have to be continuously gambling on prospects from May to September or even November, in a bad year.

Probably their weather sense and weather wisdom resulting from hundreds of years' experience and embodied in habits, customs, attentions to signs and tendencies enables them at least to assess probabilities as soundly as any meteorological theorist.

The statement (Table IV corresponding Graph Fig. 4) gives an analysis in terms of weekly rainfall for one year, 1937, in which the total was fairly close to average: but the distribution was in some respects (heavy rain in April and in December) quite unusual or abnormal. During the monsoon period within which the total was very nearly average, the characteristic difference between the distribution of rainfall in any single year and the distribution of 'average' rainfall of a large number of years is clearly shown.

In all the statements the approximate average for the forty-one years of the rainfall for each month and season and for the whole year has been given for reference. (See also Graph Fig. I.)

It may be said generally that any rainfall from twenty-four to thirty inches is ample for all purposes. Cattle have enough grazing and fodder, water is plentiful for both people and cattle.

A rainfall over 30 inches is often attended by some heavy flooding and consequent damage to crops, cattle and property: but we should not lose sight of the fact that a heavy downpour results in raising the water level in wells and other sources of supply. Likewise grass is kept green for a longer period.

Any shortage of rainfall below eighteen inches is likely to lead to scarcity of water for drinking and other purposes, as many sources run dry before the end of the hot weather. How far this could be relieved by the construction of small tanks for storage as in Gujrat under local conditions as regards configuration, soil and rainfall is a question for experts.

STATEMENT (TABLE II) AND GRAPH Fig. 4

Rainfall for nine years for which total was twenty-one to twenty-four inches.

	January	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	June, July, Aug.	Sep. Oct. Nov.	Total
Average	74	'62	4'54	3'57	3'55	5'65	1'96	1'41	'22	10'92	10'12	22'82	
1913	'0	'4	10'2	6'1	1'7	2'8	1'8	—	—	18'	4'7	23'15	
1906	'4	—	7'4	1'8	2'5	1'2	'4	'2	2'4	17'7	1'8	22'20	
1927	'7	'1	7'4	2'9	'4	7'1	1'3	4'0	—	10'7	12'3	23'74	
1909	'1	3'7	3'8	1'3	3'3	9'6	'7	—	—	8'3	10'3	22'47	
1919	'6	'6	4'9	2'6	'4	10'8	'5	1'3	'1	7'8	12'5	21'53	
1908	'3	'1	3'1	1'6	2'3	13'	'9	'1	—	7'1	13'9	21'31	
1924	3'3	1'7	5'4	1'3	'3	1'8	'4	8'7	—	6'8	11'	22'82	
1925	'0	'7	4'4	1'2	4'6	6'3	'2	6'	—	10'	12'4	23'15	
1924	'2	'1	4'18	1'2	4'4	9'1	1'4	'1	—	9'8	10'5	21'08	

STATEMENT (TABLE III) AND GRAPH FIG. 3

RAINFALL FOR 41 YEARS ARRANGED IN ORDER OF MAGNITUDE

Serial No.	Total per Year	Kharif Early June, July August	Rabi Late Sept. Oct. Nov.
1	46'91	22'88	21'74
2	37'91	20'61	21'18
3	37'88	19'75	20'66
4	37'11	18'06	20'33
5	35'44	17'99	18'72
6	33'48	17'69	16'98
7	33'14	16'09	14'79
8	31'51	15'19	14'63
9	30'57	14'87	13'91
10	26'79	11'25	13'64
11	26'27	14'07	12'52
12	25'73	13'80	12'40
13	24'37	13'28	12'29
14	23'71	12'98	11'81
15	23'15	12'33	11'79
16	23'15	11'76	11'23
17	22'82	11'20	11'21
18	22'47	10'65	11'05
19	22'20	10'64	10'97
20	21'53	10'52	10'71
Median 21	21'31	10'05	10'19
22	21'08	9'78	10'05
23	19'59	9'76	8'39
24	19'58	9'59	8'38
25	18'62	9'46	8'28
26	18'40	8'67	8'06
27	18'27	8'46	7'26
28	18'23	8'28	6'86
29	18'13	7'78	6'69
30	17'65	7'77	6'65
31	17'42	7'52	5'74
32	17'36	7'23	5'09
33	17'15	7'10	4'95
34	15'10	5'83	4'61
35	14'78	5'76	4'16
36	14'59	5'94	3'90
37	13'64	4'99	3'78
38	12'39	3'43	3'48
39	12'32	3'37	2'83
40	12'06	3'28	2'14
41	11'26	2'70	1'75
Average	22'82	10'91	10'14

NOTE:—The totals annual early and late are ranged independently in order of magnitude so that those on the same line do not refer to the same year.

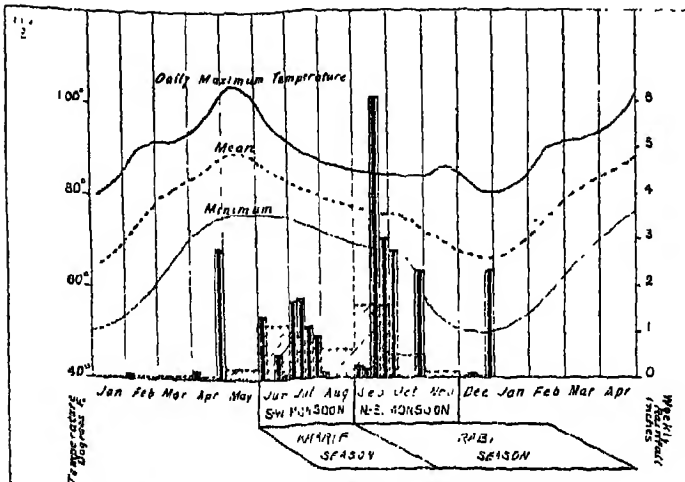
STATEMENT (TABLE IV)

ANALYSIS OF RAINFALL, 1937

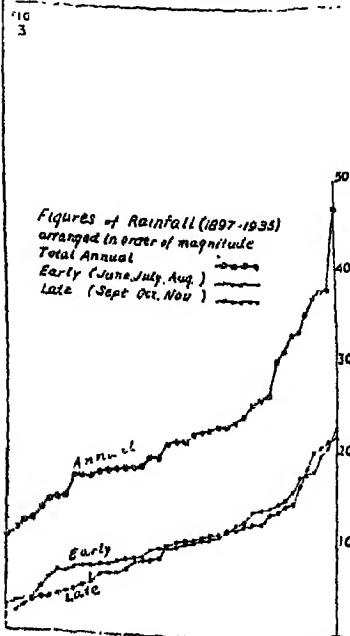
Month	Quarter				Total per month	Average of 41 years	Number of days in which rain fell				Total
	1st	2nd	3rd	4th			0- $\frac{1}{4}$ "	$\frac{1}{4}$ - $\frac{1}{2}$ "	$\frac{1}{2}$ -1"	Over 1"	
Jan.	—	—	—	—	—	'24	—	—	—	—	—
Feb.	'12	—	—	—	'12	'07	2	—	—	—	2
Mar.	—	—	—	—	—	'12	—	—	—	—	—
Apr.	'16	—	2'86	—	3'02	'39	3	—	—	1	4
May,	—	—	—	—	—	'83	—	—	—	—	—
June	1'40	—	'57	'07	2'04	4'84	7	2	1	—	10
July	1'65	1'78	1'14	'91	5'48	3'57	11	4	2	1	18
Aug.	'13	'05	'05	'02	'25	2'55	10	—	—	—	10
Sept.	'27	'21	6'16	3'07	9'71	6'65	9	5	3	2	19
Oct.	2.59	—	—	2'33	4'92	1'96	5	3	—	2	10
Nov.	—	—	—	—	—	1'41	0	—	—	—	—
Dec.	—	'01	—	'18	'19	'22	2	—	—	—	2
Total year					25'73	22'82	49	14	6	6	75
June, July, August					7'77	10'92	28	6	3	1	38
Sept., Oct., Nov.					14'63	10'12	14	8	3	4	29

Characteristics of year:—

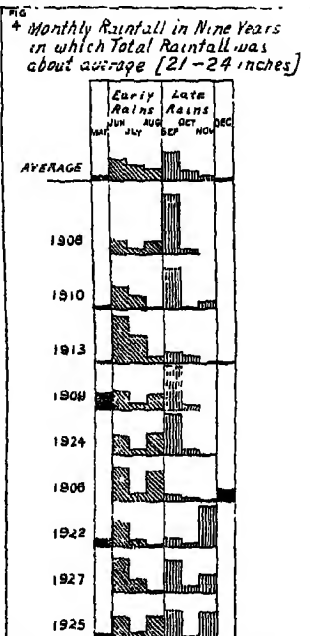
- (a) Rainfall in April and December quite abnormal;
- (b) Early rains lighter than average;
- (c) Late rains heavier than average.



Quarter monthly Rainfall (1937) and Mean Normal Monthly Temperature (Jan 1931 - Apr 1934).
 (Mean Normal Rainfall is shown cross hatched for comparison)



Figures of Rainfall (1897-1935) arranged in order of magnitude
 Total Annual
 Early (June, July, Aug.)
 Late (Sept, Oct, Nov)



Monthly Rainfall in Nine Years in which Total Rainfall was about average [21-24 inches]

FIG. 2

The rainfall for each quarter month is shown by triple line. The hatched area shows the official mean normal monthly rainfall distributed evenly over the four quarters of each month to give a general idea of the average distribution and to indicate how much the distribution of one year (1937) differs from the average.

In 1937 there was quite abnormal rain in April and December. If this is omitted, the total rainfall for the year was very nearly equal to normal.

The periods June, July, August and September, October, November correspond approximately to the S. W. monsoon and N. E. monsoon periods. The actual dates of the setting in and end of the rain due to each monsoon vary from year to year.

The rough temperature curves represent average condition, not actuals for 1937-38 and are included to indicate the relation of the crop and rainfall season periods to general temperature conditions throughout the year. Those do not vary very much from year to year.

The highest mean daily temperature is in May about 90° , the lowest in December-January about 65° .

The daily range of temperature is about 30° in the cold weather, 25° in the hot weather and 25° to 18° in the rains.

The areas marked 'Kharif Season' and 'Rabi Season' indicate the periods within which Kharif and Rabi crops are grown. According to seasonal conditions for the year and nature of the crops, the times of sowing of the Kharif crops may be any time from the beginning of June to the end of July, of reaping from September to the middle of November. So Rabi crops are sown from September to the middle of November and reaped between February and April.

FIG. 3

Figures of total, early and late rainfall ranged independently in order of magnitude.

The result could be very roughly described by saying that in these forty-one years, the total rainfall was equally likely to be equal to any multiple of two-fifths of an inch between 14 and 30 inches, with 5 inches added for good measure for every inch over 27 and one inch deducted for every inch below 17. The amounts are fairly evenly distributed for the 24 between 17 and 27 inches. The 8 below 17 inches are very low and the 9 above 27 inches very high.

Similarly the early except the 5 lowest and 6 highest are evenly distributed between 6 and 17 inches, the late except the 6 highest are evenly distributed between 3 and 14 inches.

FIG. 4

Monthly rainfall in nine years of about average total rainfall.

This shows how much distribution varies, although the total for the year is the same.

In two years 1913 and 1906 the late rains were a failure.

In 1922 the September and October rains failed, but there was heavy rain in December. In this year the July and August rains failed.

With regard to uniformities it will be seen that in the early rains the rainfall for June is nearly always the heaviest, and that either July or August rainfall is very low.

For the late rains, September rainfall is nearly always the heaviest. October is always small, November may be zero, slight or very high (as in the last three years 1922, 1925, 1927.)

Of course, rainfall for the calendar months is not a suitable unit for comparison or analysis, but with its help the general variations of distribution can be suggested.

CROP AREAS

The distribution of the available area between different crops in a village like Sarola varies greatly from year to year. In some lands either Kharif or Rabi crops can be sown, and in any year the choice is determined or limited by the nature of the rainfall, and is further limited through the necessity of rotating crops according to the crop raised on a particular field in the preceding year. Again the earliness or lateness, abundance or inadequacy of rain in either season affects the cultivator's decision as to which crop is likely to fare best or give the best output in comparison with the labour and cost of cultivation, and he is naturally influenced by prospects as to the level of prices of the different crops.

For this reason neither a statement of areas for one 'normal' year, nor a mathematical average over a number of years would give a full idea of actual conditions.

We have, therefore, considered it best to give statistics:—

(1) Of areas of the principal crops total fallow and total Bagait for the twenty-five years between 1897 and 1937 for which they are available, giving for each year also the Kharif, Rabi and total rainfall;

(2) Of areas of all crops Bagait and Jirait for two succeeding years 1935-36 which may be considered as normal and 1936-37 which was a 'famine year' with practically complete failure of the early rains and a record low total rainfall.

With these as a background, it is possible to give a general description of the limits within which the area of each crop varies, and to discuss the many factors and considerations which combine to determine how much will be sown in any year.

Out of a cultivable area of about 3990 Acres ordinarily fallow does not exceed 250 Acres except when there is famine

or the late rains have failed. The maximum was 1901 acres in 1911-12 when there were only about two inches of rain from September to November.

The years in which the figures of fallows exceeded 300 acres were:—

Years	Early rains inches	Late rains inches	acres of fallows	Remarks
1901-02	10'52	4'03	332	
1904-05	4'99	10'05	496	
1918-19	2'70	4'95	452	Famine
1919-20	7'78	12'52	347	Scarcity
1936-37	3'28	6'86	540	Famine

The total area of irrigated crops varies from about 250 to 550 acres of which 100 to 350 may be Jowari and Bajri to which well water has been given to supplement rain, and about 50 to 60 permanently under fruit orchards and flower gardens. This leaves from 3200 to 3700 acres of dry crops.

In normal years the two main crops Jowari and Bajri together account for about 3000 to 3200 acres.

They are complementary. When the early rains are favourable for Bajri, prices are favourable and rotation allows of it more Bajri is sown, and whatever is not sown with Bajri out of about 3000 to 3200 acres is sown with Jowari.

Taking Bajri first it will be seen that there are three types of season:—

BAJRI			
(1)	350 to 400	acres	12 years.
(2)	350 to 850	"	5 "
(3)	1000 to 1500	"	9 "

Correspondingly there are:—

JOWARI					
(1)	over	2700	acres	10	years
(2)	"	1950	"	7	"
(3)	"	1550	"	5	"
(4)	under	1550	"	3	"

The next most important crops are the Kharif leguminous crops, the total area of which runs from 16 to 410 acres.

The area of Rabi crops (wheat) ,, ,, 16 to 243 ,,

The area of gram (leguminous) ,, ,, 3 to 102 ,,

The area of Kardi oil seed ,, ,, 3 to 569 ,,

The period during which Kharif crops can be sown is very limited—about one month from about 7th June to 7th July. For their sowing and germination there must be sufficient rain in June and the first half of July. No amount of rain later will make up for a deficiency at this stage.

Cotton must be sown as early as possible; hence as soon as conditions are favourable the whole village sows at once. Rabi sowings on the other hand can be carried on for nearly two months, usually September and October and even on to the first week of November.

Apart from Bajri, almost all the Kharif dry crops are leguminous. All grow on light and poor soil with light rainfall, no cultivation except a light harrowing is necessary, and they are, with the exception of Tur, ready for harvesting within a short period (3 to 3½ months). No artificial irrigation is required, and as they do not grow high, the shade of their leaves tends to conserve the moisture in the soil. Harvesting is easy and cheap and is generally undertaken by members of the owner's family, so that no expenditure on hired labour is required. The roots, stems, leaves and seed are all of use for consumption either of men or cattle. The value of leguminous crops in maintaining or improving the condition of the soil is also a consideration. On the other

hand a leguminous crop cannot be grown on the same land in two successive years. Even if the rains are favourable no crop but Jowari is sown here after a leguminous crop.

A majority of the cultivators are holders of the so called Murmad (poor) soil, and in ordinary seasons most of them are at the end of their stocks of staple grain and fodder by the close of the hot weather, and naturally if the initial rains of the S. W. monsoon are favourable, they look to the leguminous crops to give them the easiest, most reliable and earliest, if not, perhaps, the highest return from their land.

There is another point with regard to the poorer soils. In a series of years they are generally harrowed and hardly ever ploughed. If the land is being held over to be sown with Jowari, its tillage is neglected and the soil being rather firm, not loose or soft, the rain tends to run off it without much soaking or percolation, as is natural, unless there are deep furrows made by the plough or harrow, and on this account the soil beneath is not brought into such good condition for subsequent working. So a good deal of the rainfall goes to waste unutilised.

The taking of the same leguminous crop in two successive years is looked on as a sin against good cultivation banned by the field deity. On account of this strong tradition, even with favourable and plentiful rain at the appropriate season, the cultivators are deterred from repeating the same leguminous crop a second time on any field.

With regard to the secondary Rabi crops the principal, wheat and gram, can only be grown profitably with the help of well water or with specially heavy and favourable late rains. Gram as a leguminous crop is advantageous to the soil on which it is grown, and in the case of wheat, the crop is cut instead of being uprooted and the stubble is ploughed in, which also tends to improve the condition of the soil.

The growing of Kardi probably depends largely on favourable seasonal conditions and the prospect of good prices compared with Jowari, since it is a money crop.

As affecting the areas of the minor crops it may be mentioned that some are grown as mixed crops with Jowari and Bajri, some separately and some in either way.

Thus the total area under a minor crop may be made up of an area which is a definite proportion of that part of the area of Bajri or Jowari with which it has been sown as a mixed crop and an area which has been sown independently. There is, therefore, a connection between the areas of the main and minor crops, but not a fixed proportion.

Some of the minor crops are not raised regularly year by year but only at intervals when the season happens to be favourable. Some are planted in tiny plots and some here and there in corners of gardens or near hedges or along the water channels. Some are mixed crops. The area occupied by such patches is, more often than not, only a few yards or a few rows in plots of irrigated survey numbers. These crops are:—cotton, rice, Sava Satu, Varai, Bhadli, castor, mustard, Karhale (niger seed), Ambadi (hemp), Rajgira, sugarcane and plantains, and the area covered by any of them was very small and has not been given in the statement. Under the rules, the crop records give general totals of unspecified root crops, oil seeds, food crops, fodder crops, orchards and vegetable crops, and the area of each being small is omitted.

The areas sown with tobacco, condiments and spices are given in the separate sections dealing with these crops.

Generally it must be remembered that in a village like Sarola where in most of the land either Kharif or Rabi crops can be grown, Kharif (a) can only be sown with any prospect of a decent crop if the early rains are adequate and timely, (b) will only be sown if it is necessary as part of a

rotation or if the cultivator thinks that he will get a good or fair crop or that the likelihood of a decent Kharif crop is as good as the chance of an average season for Rabi. When he has to make his decision, he has some idea of what the Kharif prospects are, absolutely none as to what the late rains are likely to be.

When the Rabi season comes, there is no choice. It is a question of Rabi crops or nothing, and so the farmer—unless the rains fail completely—sows Rabi on all the lands not already sown with Kharif. Even if the season is very poor it is better to sow and at least get a little fodder than to leave the land fallow.

With regard to the Rabi crops on irrigated land, it is incumbent on the holder to sow Jowari if the well has sufficient water. He is very careful to cultivate as much area of land as he can safely and surely irrigate. Thereby he is enabled to get Jowari grain and fodder. In the event of there being shortage of water for irrigation he can raise a fodder crop such as Kadval for the use of his bullocks. Should there be any plot of land under lucern, he would by all means try his best to keep the crop alive. Maize and Kadval crops are greatly cultivated. At such critical times the farmer takes the greatest precaution to preserve his cattle, notwithstanding the supply of Jowari for his family's consumption on the supposition that grain would be available at a higher price.

These are the general considerations which go to decide what areas will be sown with the different crops in different years.

It is impossible to analyse the statistics on this basis, but the general limits within which the total areas fluctuate are clearly enough indicated.

The limits of area of the principal crops for the fourteen years 1923-24 to 1936-37 for which continuous records are available are given below:—

Crop	Area in Acres			Approximate percentage of total area		
	Range		Average	Range		Average
	From	To		From	To	
Bajri	118	1356	600	3	34	15
Rala	1	115	6		3	
Mug	1	146	5		4	
Kulthi	1	189	45		5	1
Math	0	131	29		3	75
Tur	4	276	77		7	2
Jowari	402	3414	2760	1	8.5	69
Gram	4	102	32	10	2.5	
Wheat	16	243	112		6	28
Lucern	3	18.32	7		5	
Kadwal	0	16.4	3		4	
Maize	8	14.4	3.5		4	
Groundnut	1.31	13.20	9		3	
Sesamum	0.10	33.17	3		8	
Kardi	1	569	317		14	8
Linseed	0	25.15	1		6	
Fallow	86	1901	204	2	47	5
Bagait*	123	550	*	3	14	*
Total of main Crops:—						
Kharif	125	1736	781	3	42	19.5
Rabi	489	3685	3225	12	92	80.5
Total main Rabi (excluding famine years.)	1800	3685		45	92	

* As a basis of description was altered within this period no average is given.

BAGAIT AREAS

The land of the village is classified as follows:—

	Cultivable Area		Assessment	
	Acres	G.	Rs.	A. P.
Jirait (dry)	3695	7	2335	1 3
Bagait (irrigated)	295	35	506	11 9
Total	3991	2	2,841	13 0

These figures of area do not correctly represent present conditions, because, under the rules, land improved and brought under irrigation or under control of irrigation water after original settlement is not ordinarily assessed at the higher 'Bagait' assessment on revision, on the ground that improvements in land carried out by the occupants should not be made the ground for any increase of assessment.

Since the original survey some new wells have been sunk, others deepened or improved, so that the total irrigated area is now greater than the area originally treated as 'Bagait' area. Since 1929 more than half a dozen new wells have been built.

The variation from year to year in the irrigated area depends on two different factors:—

- (1) The supply of water available in the wells;
- (2) The extent to which it is necessary or profitable to supplement rainfall by watering from wells.

The first depends generally:—

- (a) On the amount, distribution and nature of the current year's rainfall;
- (b) On the cumulative effect on sub-soil water conditions or of the rainfall of a series of years;
- (c) On the situation of the individual well, such as near a river flowing the year around (riverines), on low levels with springs and underground currents from which it derives its supply. It is for the careful cultivators to see that springs or underground streams which feed their

wells do not become blocked or diverted on account of disuse. Generally it is neglected and the consequent loss goes on increasing gradually, of which the owner is unmindful.

As regards the second, it is so complicated that it cannot be summarised simply, but instances of the kind of considerations which arise may be given:—

(1) In a very good year or cycles of years Jowari may be abundant and likely to be cheap. In these conditions it may not be necessary or worthwhile to irrigate in order to get a small additional amount of Jowari or Kadbi;

(2) In a bad year when fodder is likely to be scarce and grain dear, it may be worthwhile even at great expense and trouble to give some water, if available to Bajri or Jowari;

(3) In a good year it may be possible, by adding irrigation water to the good rains, to grow some valuable crops like wheat or gram which could not usually be grown;

(4) We have seen in Khandesh that the growing of cotton crop (the money crop of the day) is universally preferred to any other irrigated crops which have comparatively low prices;

(5) *In all cases the extent to which an unusually abundant supply of well water can be utilised in a good year is limited by the fact that the manure supply is limited.*

With the extension of the orange cultivation which fetches a higher level of price, the use of the well water is imperative at all seasons—good, bad or medium. Not only that but it stimulates the grower to improve the water supply.

The non-user of the well water for irrigation for a year or for a series of years is verily detrimental to the interest of the holder. There are many drawbacks and disadvantages attendant on the non-user. We may name a few of them:—The well may get out of repair, may be damaged by the elements, the springs and under currents may be blocked or diverted, the ramp may lie level with the ground, the Tharola may be broken

and leaky and the permanent channels may be useless; and there are many other weak points if the well is not kept in use for all the times and in all seasons. The land which had been irrigated hereditarily may, in course of years, become a dry land, an irreparable loss, uneconomic.

After the general statement of crop-areas* the total area of Bagait crops in each year has been given.† The figures in the statement are for each crop e. g. Bajri or wheat and include both dry crop and Bagait. Unfortunately, the Bagait totals have not all been recorded on the same basis, as in some years the area of irrigated Bajri and Jowari—really rain crops grown with a little additional well water—has been included in the total of Bagait irrigation, in some cases it has not.

The ordinary relative importance of the different Bagait crops is, however, indicated in the detailed statement for 1935-36—a normal year.

From this it will be seen that the only crops of which substantial areas are grown under or with the help of irrigation are:—

	Kharif	<table border="0"> <tr><td> Bajri</td><td>55' 5</td></tr> <tr><td> Chillies</td><td>19' 8</td></tr> <tr><td> Lucern</td><td>13'39</td></tr> <tr><td> Maize</td><td>8'10</td></tr> </table>	Bajri	55' 5	Chillies	19' 8	Lucern	13'39	Maize	8'10	
Bajri	55' 5										
Chillies	19' 8										
Lucern	13'39										
Maize	8'10										
	Rabi	<table border="0"> <tr><td> Jowari</td><td>280'10</td></tr> <tr><td> Wheat</td><td>81'10</td></tr> <tr><td> Gram</td><td>16'28</td></tr> </table>	Jowari	280'10	Wheat	81'10	Gram	16'28			
Jowari	280'10										
Wheat	81'10										
Gram	16'28										
	Sugar-cane...	...	2.32								
	Fruit, Flowers and Betei Vines	...	52'22								
			<u>530' 4</u>								
	Others	9' 27								
	Total	<u>539'31</u>								
	Thus out of about 540 acres:—		APPROXIMATE %								
	Bajri and Jowari contribute 335'15	}	433'13 — 80'3% 80								
	Wheat and gram 97'38										
	Fruit Flower Orchards 52'22	}	74'22 — 13.8% 14								
	Sugar 2'32										
	Chillies 19' 8										
	Fodder (Lucern and Maize)		22' 9 — 4'1% 4								
	Others		9'27 — 1'8% 2								

* Pages 440 and 441.

† Column 24.

A COMPARATIVE STATEMENT OF CROPS AND RAINFALL 439

1935-36 & 1936-37

Kharif Season		1935-36		1936-37	
Rainfall	June	4'76	Adequate S. G.*	1'71	Insufficient S. G.*
	July	3'73	do	1'13	" G. M.†
	August	7'60	Adequate G. M.†	'44	"
	Total	16'09		3'28	
Crops		Jirait	Bagait	Jirait	Bagait
Class	Crop	Acres G.	Acres G.	Acres G.	Acres G.
Grain	Bajri	1081'32	55. 5		
	Moog	'38		1'13	
	Matl.	5'			
	Hulga	13'27			
	Tur	17' 5			
Oilseeds	Til	26			
	Ground nut		8'27		'10
Condiments	Chillies		19' 8		1'20
	Onions		'10		'32
Vegetables	Potatoes		'14		
	Sweet "		' 1		
	Brijjals		' 6		'11
Fodder	Lucern		13'39		10' 2
	Maize		8'10		' 8
	Kadvai		' 9		
Total		1119'8	166' 9	1'13	13' 3
Rabi Season Rainfall		Sept.	2'95 Adequate S. G.*	3'87 Adequate S. G.*	
		Oct.	5'34 do G. M.†	— Harmful break	
		Nov.		2'99 Inadequate G. M.†	
Total		8'29		6'86	
Grain	Jowari	2175'17	280'10	3264'	150'17
	Wheat		81'10	100'39	30'
	Gram		16'28	10	18'35
Oilseeds	Sfflower	37' 6		73'13	
	Linseed			1'10	
Sugar	Sugarcane		2'32		1'22
Tobacco	Tobacco	9'32		1' 8	
	Total	2222'15	381'	3450'30	200'34
Orchards	Oranges, Mo-sambiques		46'24		49'25
Fruit	Lemons		'37		1'37
	Guavas		2'		5'
	Popai		'30		1'20
	Pomegranates		' 8		
	Plantains		'10		' 8
	Total		50'29		58'10
Vines	Betal		1'18		'28
Flowers	Shevanti		'15		5'32
	Total		1'33		6'20
All Crops	Total	3341'23	539'31	3452'3	278'27
Whole year total cultivated area		...	3881'14		3730'30
Deduct twice cropped		...	- 39'19		- 7' 4
			3841'35		3723'26
Add fallow		...	147'35		265'33 + '11
Grand Total		...	3989'30		3989'30

* S. G. for sowing and germination.

† G. M. for growth and maturing.

Year	Rainfall			Kharif area						Rabi area		
	Kharif	Rabi	Total	Bajri	Rala	Leguminous				Jowari	Gram	Wheat
						Moog	Kulhi	Math	Tur			
1	2	3	4	5	6	7	8	9	10	11	12	13
1900-01	14	4	18	123	19	25	21			402	26	26
1901-02	11	4	17	1124	15	146	189		181	1603	7	40
1902-03	8	21	32									
1903-04	14	11	33									
1904-05	5	10	15	399	13		186		154	1757		129
1905-06	9	4	14									
1606-07	18	2	22									
1907-08	12	3	17									
1908-09	7	14	21									
1909 10	8	10	22	1025	45	2	67		275	1425	56	243
1910-11	18	19	37									
1911-12	15	2	17	543	44		103	61	125	1006	3	79
1912-13	7	4	11									
1913-14	18	5	23	1356	72	3	133	14	115	1599	6	126
1914-15	12	7	20	1046	54	1	126	80	121	1982	22	159
1915-16	14	21	38									
1916-17	23	22	47									
1917-18	11	17	31									
1918-19	3	5	15	469	7		8		52	2007	7	16
1919-20	8	13	22	1025	33	1	172	104	133	1950	32	55
1920-21	3	6	12	252	2		35	19	34	3033	4	38
1921-22	13	5	18	271	2		39	21	21	2843	5	45
1922-23	7	11	23									
1923-24	8	8	18	252	34	19	1			3033	35	38
1924-25	9	11	21	118		3	6	3	4	2985	8	111
1925-26	10	12	23	796	12		23		276	1662	102	110
1626-27	10	7	19	126	1	3	25		7	2971	8	97
1927-28	11	12	24	120	2	5	29	8	25	2945	12	130
1928-29	20	15	35	219	5	13	83	13	46	2774	44	111
1929-30	10	7	20	217	1	10	28	6	35	2733	7	127
1930-31	8	11	18	1456		1	31	131	27	1794	27	81
1931-32	13	12	25	1170	24		79	44	114	2000	20	115
1932-33	15	11	27	1059	2	1	111	67	153	2082	34	136
1933-34	11	20	38	319	1	6	42	32	95	2836	65	141
1934-35	21	12	33	813		1	131	54	117	2311	37	159
1935-36	16	8	24	1137		1		17	17	2456	17	81
1936-37	3	7	12			1				3414	29	131

Note—The statement gives areas sown with crops and there is no record of the area out of this which reached maturity or was reaped. The areas shown do not yield a uniform quantity and quality of grain or fodder or any other

PRINCIPAL CROPS FROM 1900 TO 1937

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Fodder area			Oil Seed area				Fallow	Area twice cropped	Total area minus twice cropped	Total area of Bagait crops
Lucern	Kadwal	Maize	Ground-nut	Sesamum	Kardi	Linseed				
14	15	16	17	18	19	20	21	22	23	24
4'18		14'4		26'16	35 162	'20	332	137'23	3990	195'29
	5'34	1'2	5'1	15'25	214	25'15	496	8'1	3990	182'17 711'18 420'36 321'1 392'30 469
18'32	4'13	1'32	2'12	25'8	280	2	126	59'20	3990	489'8 465'15
6'13	3'27		10'14	20'1	168	'21	1901	44'25	3990	313'38 293'29
'33		2'21 2'31	4'34 13'20	33'17 30'24	162 235		277 158	129'2 94	3990 3990	244'38 343'15 298'36
	12'38	6'14	1'25	17'25	149		452	4'3	3435	375'7
3'35		6'16	2'9	12'22	133	'11	348	49'17	3990	122'24
		1'37	4'19	'15	327	'39	217	11'24	3990	245'13
1'2	5'2	1'39	3'7	'10	331	1'2	222	9'23	3833	
1'4		11'38		'35	1	'39	220		3989	243'18
5'29	0'17	1	1'31	1'23	569		172	11'24	3989	233'28
	16'4	1'5	2'5				292	32'31	3989	445'31
6'6		1'20	1'31	1'20	568		190	70'8	4513	204'1
5'4		1	8'31	0'20	6		143	32'31	4513	257'39
0'3		2'8	4'20	1'12	563		119	42'31	3988	398'16
6'7		1'10	3'27	1'1	537	2'10	225	44'12	3988	405
10'13		'31	5'32	'12	247		156	16'18	3990	123'19
9'8		'37	6'29	'27	257		151	69'10	3989	135'18
8'15		'35	12'1	'33	148		187	62'37	3989	179'13
11'4	4'7	1'21	10'29	'15	232		211	54'7	3992	180'5
10'7	3'5		8'19	'21	281		86	51'7	3992	190'6
13'9	0'9	8'10	8'27	'26	37		148	39'19	3990	549'23
10.2		'8	'10		37	1.10	540		3881	279'5

produce. Any calculation of outturn by the rule of three based on formulæ or average standards is found to be very inaccurate and misleading.

PRICES AND FIELD WAGES

The prices of commodities of various kinds ruling in the Taluka town Bazar are, on or about the 20th of each month, recorded in a Price Register, maintained in each Taluka office in the Bombay Presidency.

In some Talukas prices are recorded also for other centres in the Taluka. Prices vary from day to day, especially as the prospects of the season change during the rains and about harvest time as the different crops come on to the market.

After the harvesting of the Kharif and Rabi crops there is always a tendency for prices to fall locally as supplies gradually increase; but this may not immediately affect prices ruling in the Taluka town Bazar. Kharif and Rabi crops are generally ready in the months of October-November and March-April respectively. Small quantities are usually kept ready for sale in advance of the main supply. According to traditional custom the cultivators make use of the grain of the new harvest in connection with certain Hindu festival celebrations. They, therefore, take care to have some, if only a small amount, of the crop required harvested and kept ready by the date of the festival. If the cultivator has more than is required for the use of his own household and can spare some for sale, it fetches a higher price than the main crop does later; because there is a good demand from non-agriculturists who also make use of the new crop in honour of the festival.

There are no separate price records for the village, but as Ahmednagar is the main market for Sarola produce the Nagar prices are most important for the village.

The prices of 22 commodities are recorded monthly.

To give some idea of the movements of prices we have prepared a statement (Table II) of the prices in April of each year for forty-one years (1897 to 1936) of six of the

most important articles of consumption, Jowari, Bajri, wheat, Tur, Jagri, Kadbi and wages of field labour, with figures of rainfall for the preceding year to draw attention to the relation of good and bad seasons to local grain prices and a figure representing wages in Seers of Jowari (Column 12).

Jowari and Bajri are the main crops of the village. They are also the staple food of the people. This is also true of the whole Deccan area. Outside of that area the principal crops and foods are rice and wheat. The supply of Bajri and Jowari varies greatly from year to year according to the nature of the monsoon; the demand is constant, as the people will not take other grain instead, except of necessity under famine conditions as in 1918; hence the price varies greatly. Further they are cheap grains and cost of carriage is great in proportion to their value, which gives rise to the possibility of great differences in price between different local markets in the Deccan area. Before communications were as well developed as they are now and before trade and credit were properly organised, this made even severe local famines possible, although there was a quite adequate supply of food stuffs in the country as a whole. The prices of commodities of which there is a world supply and market or even an all India supply and market like wheat, Tur, Jagri, sugar, etc. do not fluctuate so greatly.

The principal conditions which affect supply are seasonal conditions in the year and in a cycle of years, and epidemics and scarcity conditions as affecting labour supply and work cattle and the organisation of the agricultural and transport work of the countryside. The conditions which affect demand are mainly changes in the population which may vary fairly rapidly as a result of famine, scarcity and epidemic disease and recovery from their results in better times. Within the period 1897 to 1937 the population of Sarola has varied between 1200 and 1600

The case of fodder is a special one. The cost of carriage beyond a very short distance is prohibitive. The market is entirely local and in a year or cycle of years of fodder shortage famine prices are soon reached, while in very good years surplus Kadbi may be practically valueless.

As regards the importance of the prices of different commodities, in the budgets of the poorer classes expenditure on the staple grain, Jowari or Bajri, is by far the most important item, with minor food-stuffs like pulses, condiments and Jagri. After these come clothing and then perhaps miscellaneous household goods.

To the cultivator who has more than enough produce for his household, the price of food is immaterial.

To the labourer it is all important and his wages must change with the price of the food grains.

To the person with a more or less fixed money wage or salary, it is also all important.

The greatest difficulty for all is with regard to charges fixed in terms of money, of which the principal are:—

- (1) Land Revenue;
- (2) Rent;
- (3) Most important of all, payment of interest on debt and repayment of debt.

And they are felt most, when local conditions are worse than the average of those over the area which determines the level of prices, or when the general level of prices falls for reasons independent of local seasonal conditions (as after 1930).

Four statements have been prepared to show how prices vary.

- (1) A statement (Table I) giving the approximate prices for Jowari from 1820 to 1937, and of labour from 1870 to 1937;

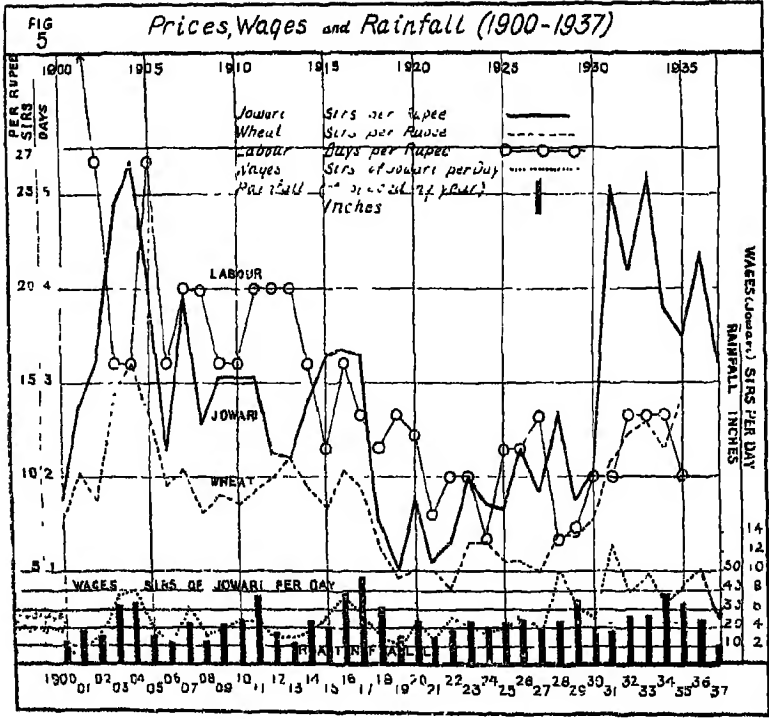


FIG. 5

The most striking features to be noticed are:—(1) The violent year to year fluctuations in Jowari price. (2) The considerable but much less extreme variations in wheat prices. (3) The similarity of general long period changes in prices of Jowari, wheat and labour. (4) The very great variations in the rates of wages expressed in terms of Jowari. (5) The remarkable correlation between wages in terms of Jowari and rainfall.

A dotted line has been drawn to show the average rainfall (about 22.5 inches). On the scale chosen this line also represents $4\frac{1}{2}$ seers of Jowari per day wages.

It can be seen by eye that the general mean level of wages in terms of Jowari was something like.

4	seers	from 1900 to 1913
$4\frac{1}{2}$	seers	from 1914 to 1917
$3\frac{1}{2}$	seers	from 1918 to 1921
$4\frac{1}{2}$	seers	from 1922 to 1927
7	seers	from 1928 to 1930
$8\frac{1}{2}$	seers	from 1931 to 1936

The great rise of 1928-29 was due to good seasons and demand for labour. The greater rise from 1930 is of course due to the world wide fall in grain prices, a continuous series of good local jowari harvests, with a slow readjustment of money wages to altered conditions.

As noted on the graph the rainfall shown against each year is the rainfall of the previous year. The prices or rates are for April of each year and the crops are the produce of the season and rainfall of the previous year. Thus e. g. the rainfall shown against 1929 is the rainfall of the calendar year 1928.

The labour curve represents days of labour per rupee (the inverse of price). The 'wages in terms of Jowar' is a 'price' curve for labour.

The rates for labour and wages are daily rates. What is of importance to the labourer is annual earnings.

In a good year work is plentiful, money wages are high food prices low. In a bad year, work is scarce, money wages are low and prices are high. The fluctuations in the labourer's annual real earnings are likely to be even more extreme than those indicated by the Jowari wages graph.

(2) A general statement (Table II) giving the prices of the most important commodities in April of each year for which figures are available and of labour and wages in terms of Jowari from 1897 to 1937; also rainfall with explanatory notes;

(3) A statement (Table III) giving the quarterly prices of Jowari, and labour for ten years (1926-36) to show seasonal variations;

(4) A statement (Table IV) showing the monthly prices of Jowari, Bajri, labour, bullocks and Kadbi in a famine year 1936.

With regard to the principal food grains, these statements show both the long period and short period variations clearly. The first shows a great rise in Jowari prices from about 1830 to 1870 and a gradual general rise from 1870-80 to 1910. The second shows the sudden rise in 1919-20 a distinct gradual fall to 1930 and then a very sudden fall in 1930-31.

TABLE I

Approximate level of prices of Jowari, 1820 to 1936 and field labour 1872 to 1936.

Period	Jowari Seers per Rupee.	Labour (field) wage per day in Annas
1820	20	
1830	60	
1840	44	
1850	44	
1860	35	
1870	16	3
1880	19	3
1890	18	4
1892-1902	15	2
1903-1907	20	4
1908-1912	14	4½
1913-1917	15½	5
1918-1922	6½	6½
1923-1930	10	8
1931-1935	22	6½

The prices of Jowari ruling between 1830 to 1850 will, it is expected, not occur again.

TABLE II PRICES RULING

Year	Rainfall	Jowari	Bajri	Wheat	Turdal	Jagri
1	2	3	4	5	6	7
1898	18	10'3	7'4	8'4	7'4	6
1899	15	15	17'4	11'4	8'5	5
1900	12	28	15'8	15	14'6	7'5
1901	18	8'8	8'7	7'3	7'4	5'8
1902	17	13'6	13'4	10'7	7'1	7
1903	32	16'2	15'3	8'7	10'1	7'3
1904	33	24'5	21'7	14'5	11'5	7'6
1905	15	26'6	23'2	15'9	13'5	7
†1906	14	20'1	15'4	13'2	11'1	5'2
1907	22	11'5	9'9	9'5	7'6	5'5
1908	17	19'6	17'4	10'2	9'1	6
1909	21	12'8	12'2	7'9	7'1	6
1910	22	15'1	14	8'9	7'7	6
1911	37	15'1	14	8'5	9'8	5
1912	17	15'1	14	14	14'4	5
†1913	11	11'3	10'1	9'9	10'5	5'5
1914	23	11	11'2	11'1	8'4	6
1915	20	14	12'4	9'6	7	5
1916	38	16'5	14	8'1	6'3	5'5
1917	47	16'8	12'2	10'1	8'3	4
1918	31	16'5	11'9	9'4	7'9	5'5
†1919	15	7'6	7	6'2	6'1	6
1920	22	4'8	4'4	4'7	3'2	3'5
†1921	12	8'9	7'1	4'7	2'9	2'8
1922	18	5'4	5'1	5'1	4'8	2'8
1923	23	6'4	5'7	4'1	4	2'8
1924	18	10	8'3	6'6	5'9	3'8
1925	22	8'5	7'8	6'4	5'8	4'3
1926	23	8'3	6'6	5'5	5'9	3'3
1927	19	11'6	8'1	5'5	5'9	4'8
1928	24	9'2	7'9	4'9	4'5	4'8
1929	35	13'4	11'5	7'1	5'5	4'8
1930	20	8'8	8'7	6'9	5'3	4
1931	18	16'1	8'7	7'6	4'6	4'8
1932	26	25'3	14'4	10'7	5'9	6
1933	27	21'	18'5	12'3	9'6	7'8
1934	38	26'1	17'1	12'9	10	6'8
1935	33	18'9	14'3	11'5	11'4	8
1936	24	17'6	14'8	14'2	9'7	6'3
†1937	12	21'8	17'5	13'3	10'5	8
1938	26					

† Famine or scarcity years.

IN THE MONTH OF APRIL

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Kadbi units of 10 lbs. per Rupee 8	Days of labour per Rupee 9	Kadbi price per 100 lbs. 10	Labour daily wages in annas 11	Labour daily wages in terms of seers of Jo wari 12
8	5'4	1- 4- 0	3	1'9
20	5'4	0- 8- 0	3	2'8
25	6'4	0- 6- 5	2'6	4'4
4'2	8	2- 6- 5	2	1'1
14'3	8	0-11- 2	2	1'7
8'4	5'4	1- 3- 2	3	3
12'5	3'2	0-12-10	5	7'6
12'5	3'2	0-12- 9	5	8'3
11'4	5'4	0-14- 0	3	3'8
4'2	5'4	2- 0- 5	3	2'2
7'5	3'2	1- 4- 8	5	6'2
4'7	4	2- 2- 1	4	3'2
12	4	0-13- 4	4	3'8
15	3'2	0-10- 8	5	4'7
15	3'2	0-10- 8	5	4'7
6	4	1-10- 5	4	2'8
6	4	1-10- 4	4	2'8
12	4	0-13- 4	4	3'5
9'6	3'2	1- 0- 8	5	5'2
15	2'4	0-10- 8	7	7'3
18'8	3'2	0- 8- 6	5	5'2
11'5	2'6	0-13-10	6	3
2'1	2'4	4-12- 0	7	2'1
12'3	2'6	0-13- 0	8	4'7
2'1	2'1	4-12-10	8	2'8
7'8	1'6	1- 4- 7	10	5
5'6	2	1-14- 0	8	4'3
7'8	2	1- 4- 6	8	3'7
5	2'4	1-10- 8	7	4'4
11	2'4	0-14- 8	7	5'3
3'8	2'6	2-10- 8	6	3'4
10	1'4	1- 0- 0	12	10'1
6	1'4	1-10- 9	11	6'1
4'5	2	2- 3- 8	8	5'1
13'5	2	0-11-11	6	12'7
8'3	2'6	1- 3- 4	6	7'9
10'8	2'6	0-14-10	6	9'8
9'8	2'6	1- 0- 4	6	6'8
7'6	2'6	1- 5- 0	6	6'7
15'7	2	0-10- 2	8	10'9

The figures in this Table are based on the figures in the Taluka Price Register and Rainfall Register but with the following changes:—

Column 2:—Rainfall against each year, the total rainfall for the “previous calendar year” is given, because the prices given are for April of each year and these are affected by conditions and rainfall in the “previous” cultivating season, e. g. the rainfall noted against 1919 is the rainfall of 1918. The figures in the Register are given in inches and cents. To simplify the statement they are given here only to the nearest inch—amounts under fifty cents being omitted and over fifty cents counted as one inch.

Columns 3 to 7:—Commodity prices.

In the register these are given in Seers and Chattaks (one-sixteenth of a Seer) purchasable for one Rupee (i. e. the inverse of price). Here to reduce the mass of figures and make the statement easier to follow they are expressed in Seers to one place of decimals.

Column 8—In the Price Register the price of 100 lbs. of Kadbi in Rupees, Annas and Pies is recorded. In column 8 the equivalent number of units of 10 lbs. purchasable for one Rupee is given to correspond to the Rupee rates in columns 3 to 7.

Column 9:—In the register, the daily wage in Annas of a field labourer or price of labour is recorded. Here in column 9 the equivalent in number of days labour purchasable for one Rupee is entered for the same reason as in the case of Kadbi.

Columns 10 (11):—In these columns the original price register figures of price of Kadbi and daily wages of labour in Annas are given for reference.

Columns 11 (12):—This gives the amount of Jowari in Seers purchasable at the current rate with one day's money wages.

The statement (Table II) shows how greatly prices vary from year to year according to the nature of the season and of cycles of good or bad seasons the statement (Table III) how much they vary even within the year, as the prospects of the monsoon change from June to November, and as the new crops come on to the market in October-November and March-April.

Generally the price of Jowari runs about from $\frac{3}{4}$ to $\frac{7}{8}$ of that of Bajri and in good years about $\frac{1}{2}$ that of wheat.

In years of local famine or scarcity, prices of Jowari and Bajri are nearly the same as the price of wheat (e. g. 1900, 1906, 1911, 1912-13, 1918-19, 1921, 1935).

The price of Tur runs from $1\frac{1}{2}$ to $2\frac{1}{2}$ times that of Jowari and does not fluctuate so greatly. The local supply of Tur pulse being limited is replenished from Northern India.

The recorded wages of labour have varied within the period 1901 to 1937 from 2 Annas to 12 Annas a day To indicate what these represented in terms of the labourer's main item of expenditure—Jowari, wages have also been expressed in terms of Seers of Jowari, which have varied from one Seer in the famine of 1900 to 10 Seers in 1933.

It appears that expressed thus, wages have always been 1 to 3 Seers in years of famine or scarcity, 3 to $4\frac{1}{2}$ in ordinary years, 6 to 10 in good or bumper years; but it appears that the general level has definitely risen since about 1922.

The very high rates for 1931 to 1935 in which the world slump in prices coincided with a series of very good seasons locally are quite exceptional.

In the single bad season money rates of wages seem to fall while prices rise, so that the labourer is badly hit both ways. In the single good season similarly he profits doubly. There are indications that in re-adjustment to gradual change of prices upward or downward the change in money wages lags a year or two behind the change in prices, so that the

labouring classes improve their position while prices are falling and lose while they are rising.

We have only pointed out a few striking facts as to price. It is quite impossible to go into any detailed examination of the effect of fluctuations of prices on the different classes, farmers, labourers, craftsmen. especially when the question is complicated by the inevitably great importance of credit, saving, borrowing and lending, where seasons are precarious and the produce of the annual harvest is so variable.

In bad years the cultivator can only live on his own savings from previous good years if any, or on borrowing on the prospect of good years to follow. Virtually his economy must be based not on each single year but on a cycle of years.

180 Grains = 1 Tola

80 Tolas = 1 Seer

7000 Grains = 1 Avoirdupois Pound (lb.)

1 Chattrak = About 2 ozs.

16 Chattraks = 1 Seer = 2.05 lbs.

40 Seers = 1 Maund = 82 lbs.

3 Pies = 1 Pice (Copper Coin)

4 Pice = 12 Pies = 1 Anna (Nickel Coin)

16 Annas = 1 Rupee (Silver Coin).

At present rate of exchange:—

1 Rupee = 15. 6d.

13½ Rupees = 1 £

1 Anna = about 1½ pence

TABLE III

Quarterly prices of Jowari in Seers per Rupee and labour in Annas per day—1926 to 1936.

Year	Jowari				Labour			
	January	April	July	October	January	April	July	Octo.
1926	9' 1	11'10	10' 3	10' 1	7	7	7	9
1927	9'14	9' 3	9'14	10' 9	6	6	6	6
1928	10' 9	13' 7	14' 8	11'10	6	12	12	8
1929	11' 4	8'13	9' 7	8'13	11	11	11	8
1930	8' 3	10' 2	12'10	15' 2	8	8	8	8
1931	20' 3	25' 4	28'12	25' 4	6	6	8	8
1932	21' 7	21' 0	18'14	20' 5				6
1933	23' 3	26' 2	26' 2	23' 9	6	6	6	6
1934	20' 5	18'14	18' 5	15'15	6	6	6	6
1935	15'15	17' 6	17' 6	20' 5	6	6	8	8
1936	19. 0	21'14	17' 2	13' 6	8	8	8	5
1937					4	4	4	

TABLE IV

Monthly prices of Jowari, Bajri, labour, bullocks and Kadbi (in Rs. per 100 lbs.) in 1936 (famine).

Month	Jowari	Bajri	Labour	*Plough Bullocks	Kadbi
January	19	16'10	8	30	0-10- 2
February	22'13	18' 8	8	28	1-11- 2
March	22'13	18' 8	8	28	0-10- 2
April	21'14	17' 9	8	28	0-10- 2
May	19'13	16'10	8	28	0-12-10
June	18'14	15'12	8	29	0-15- 2
July	17' 2	13'14	8	23'8	1- 0- 3
August	15'12	12' 8	5	20	1- 9- 7
September	13' 1	11' 2	5	15'8	2- 7- 7
October	13' 8	11' 2	5	15	2-14- 7
November	11'11	11' 2	4	12	3- 3- 2
December	14' 6	11' 9	4	18	1-14- 3

* The price of a bullock is for an average medium size bullock such as could be purchased by an ordinary ryot.

TO SUM UP

The effect of the great world depression from 1929 and Great Britain's departure from the gold standard in 1930 is clearly shown in the sudden fall of local prices from that time.

It may be noted that rates of wages did not fall to the same extent as prices of agricultural produce or as quickly. This is indicated by the figures in column 12 of Table II giving wages of labour expressed in terms of Seers of Jowari per day at the current rate. One consequence is that the big landholders engaged in agriculture carried on by means of hired labour cannot reap as good a profit as they used to do. On the other hand the small cultivators who work their land personally with their families are as well off as before. On the whole petty farmers and still more labourers are the economic gainers. They are contented for they can now aspire to and are achieving a higher standard of living. Fundamentally it is good that the outlook is changing for the better for the lower economic strata of rural society. The balance of condition is improved. Not only have the prices of raw commodities fallen, but even finished goods, such as cloth, iron and steel manufactures, metals, paper and a lot of foreign articles are cheaper, except gold which has gone up from Rs. 24 to 36 per Tola. Building materials are very cheap. Even for pearls and precious stones there is no demand. Big landholders are, no doubt, rather hard hit. Traders, merchants and other dealers have adjusted and re-organised their business in consonance with the prevailing rates and changed conditions. Liquid and ready cash is added to the resources of the people on account of the export of gold to the unprecedented and huge amount of about Rs. 320 crores which work out at about Rs. 10 per head of the Indian population of the last census of 1931.

Stability of prices of commodities over long periods have gone. Even the well-to-do cultivators withhold their stocks of

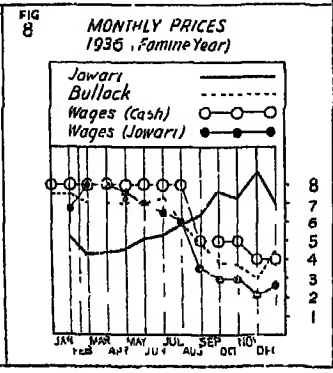
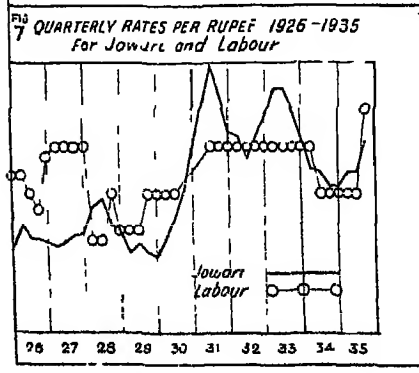
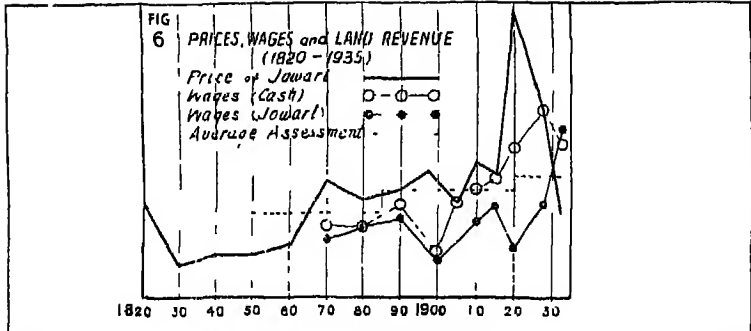


FIG. 6

This is little more than a diagram indicating or suggesting general relation and showing how greatly the general level of prices have changed.

Wages in terms of Jowari.--The general mean level changed only from about $3\frac{1}{2}$ Seers to $4\frac{1}{2}$ Seers between 1870 and 1928.

Assessment:--The amount shown is the average rate of assessment per Acre for the village.

The increase of assessment for the survey period 1885-1920 over that for 1850-1884 is roughly proportionate to the increase in the average price of Jowari over the two periods. But the assessment of 1850 was presumably fixed on the basis of the prices about the time of the settlement in 1884 and that was only about half of what turned out to be the average of Jowari prices throughout the settlement period.

The increase in 1920 was roughly proportionate to the increase in Jowari prices upto the period 1908 to 1916 just previous to the war time inflation.

FIG. 7

This gives quarterly Rupee rates for ten years to show how they vary within the year. It also shows the greater steadiness of money wage rates.

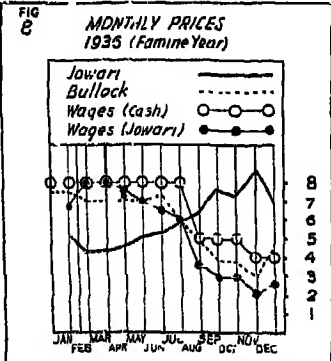
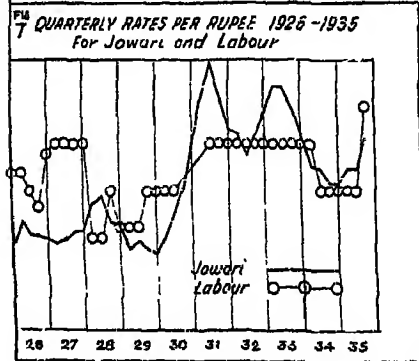
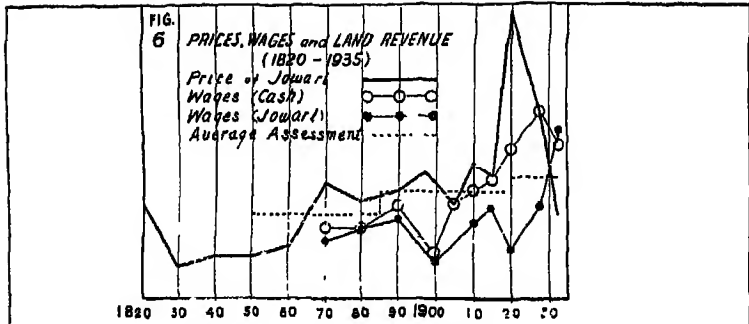


FIG. 8

This shows monthly prices (not rates per rupee) in a year of almost complete crop failure and local scarcity. The term 'Famine Year' in the heading of the graph is a mistake, since now-a-days what could rightly be described as 'famine' conditions do not arise as a result even of the complete failure of one year's crops.

Up to June the slight variations are normal. After June the results of the continued failure of both early and late rains become clear.

The only scale printed on the graph is that for daily wages in Annas. Using it as a measure, between June and November:—

- (a) The price of Jowari rose from 5 to $8\frac{1}{2}$ i. e. by 70 per cent
- (b) „ „ „ bullocks fell „ 8 to 4 „ „ 57 per cent
- (c) Wages in cash „ „ 8 to 4 „ „ 50 per cent
- (d) „ „ Jowari „ „ 7 to 2 „ „ 70 per cent.

Or taking June figures for each as one hundred by November:—

- (a) the price of Jowari rose to 175
- (b) „ „ „ bullocks fell to 43
- (c) Wages in cash „ 50
- „ Jowari „ 30

The slight recovery in December is probably due to a more normal final estimate of stocks, outside supplies and prospects and the usual seasonal increase of demand for labour and bullocks.

grain and stacks of Kadbi until prices have increased or have a tendency to increase. The introduction of motor transport which is cheap, speedy and available for long leads, puts them in a much stronger position for marketing, as they are able to hold their produce and dispose of it conveniently when and where they find they can do so most profitably.

FAMINE

Years or seasons of defective or inadequate rainfalls are classed according to the severity and intensity, as area of effectation into classes termed famine, drought, scarcity and so on. But we think any such differentiation marks the degree of intensity for the human beings and for the cattle as well. In the Deccan failure of both Kharif and Rabi rains spells ruin to the whole agricultural industry in the widest sense of the term. Timely rainfall for either Kharif or Rabi alone in sufficient quantities is the situation for some years. There are large acreages of land known as Rabi and the yield is more than that of the Kharif area. Some villages are solely Kharif or Rabi. Kharif sowings are made on rather poor soil and are undertaken with the advent of the first monsoon rains, if sufficient for sowing purposes. Sarola has both Kharif and Rabi lands of which the latter predominate. We need not try to enumerate the several bad seasons in the cycle of years, 1900 to 1937. We can say that this village has the natural advantage of having both sorts of land, so the cultivators here are better off than those having one or either of them. Rabi villages suffer most. Kharif villages can grow crops with a moderate fall of rain and it is noticeable that the first monsoon rains, June and July, seldom fail though they may prove inadequate at times. The period of Kharif is very short and less laborious. Tillage is simpler than the other. The produce of a whole Kharif village is smaller than that of a Rabi village with the same area of land. No money crop except

cotton can be grown to a large extent in any Kharif village. Wholly Rabi villages are mostly in need of late rainfall from, say, September onwards, and if they have plenty of first monsoon rain they can make no use of it except that there may be grass here and there. Should the late rains (September and October) fail and no crops of Rabi can be sown, the villagers have no alternative but to migrate, seeking relief elsewhere. So the pinch is greatly felt by the labouring population and the cultivators of small holdings. Cattle are the first sufferers. We have no full record as to the number of villagers who left the village by the end of August 1936; but we may estimate from local information that over fifty men left the village. As to the condition of cattle we may say that many were sold and a leading cultivator took two hundred heads to the Panjrapole at Poona.

THE PRESENT FAMINE POLICY OF GOVERNMENT

Never in the annals of history have any former rulers in India so fully tackled the question of famine relief in the Deccan districts. The occurrence of a famine or scarcity in a severe or moderate degree is beside the point; because there may be a small or a large number in need of relief in a small or a large area or in small out-of-the-way villages, but relief is necessary to those stricken with scarcity. It is an economic question and most of the writers are silent on the point. For the efficient administration of relief without distinction of caste or creed the British Government have passed a Famine Code. Not only that but the subject has become a Provincial one. In the annual budget a lump sum is always provided to meet the cost of possible famine charges, whether there be a famine or no famine. It is true that in many years the amount budgetted for remains unspent, but it is for the Ministers to have some sort of programme ready or even the work carried on as an ordinary work, tanks, small or large, big embankments across rivers or bunds

across fields to serve as storages of storm water. We are not in a position to make all kinds of suggestions; every tract of country or groups of villages may have its or their own wants or conveniences. In recent famines it has been found that in a bad famine staple grain is always very scarce and Government have had to make arrangements to import rice from Burma, wheat from Australia, maize from America, and so on. We know that it would simply be a dream to imagine that there would be a wide famine all over India simultaneously. It is a wrong conception or a vision. In all affected areas every kind of relief to every sort of individual in whatever state or condition he may be is available, e. g.:—

(1) Grain doles to the cripples, blind or infirm or cooked food in a poor house;

(2) Inferior village servants (menials) in cash;

(3) Petty Government servants in cash; grain compensation allowance;

(4) Wages to labourers on relief works, such as roads, tanks, embankments, etc.;

(5) Famine camps with huts for housing the labourers;

(6) Poor houses and kitchens for distribution of cooked food to infirm and old people and children;

(7) Cheap grain shops;

(8) Grass depots;

(9) Suspension of land revenue.

(10) Water grants for sinking new wells or other sources for supply of drinking water;

(11) Grants to weavers;

(12) Distribution of garments and Sadis to the poor;

(13) Free arrangements for the sick;

(14) Tagai loans to agriculturists;

(a) For sinking of new wells or tanks or for repairs to old sources of water for irrigation;

SUMMARY OF INFORMATION COLLECTED IN
SPECIAL ENQUIRY (1928)

Numbers	Agriculturists	Labourers & Wage Earners	Arts and Crafts	Trader & Shopkeepers	Public Servants	Depressed & Scheduled Classes	Total
POPULATION							
Families	123	54	21	7	16	24	245*
Persons	714	204	116	30	76	146	1286*
Persons per family	5.8	3.8	5.5	4.3	4.75	6.1	5.25
LIVESTOCK							
Bullocks	370		10	2		7	389
Cows	200	23	13	20	7	8	271
She Buffaloes	12		1	-	-	3	16
Total Milk cattle	212	23	14	20	7	11	287
Per family	1.7	4.3	65	2.8	44	44	1.16
Calves	198	18	11	19	-	3	249
Total Cattle	780	41	35	41	7	21	925
Sheep	149	87	44		9	12	301
Goats	239		210			-	494
Horses	6	1	-			-	7
Donkeys	-	-	18			-	18
Dogs	23	-		1			24
Poultry	38	3		23	61	46	171
AGRICULTURAL IMPLEMENTS							
Wooden ploughs	106						106
Iron ploughs	13						13
Fabhar (Drill)	115						115
Kulav (Harrow)	182						182
Kolpe (Hoe)	179						179
VEHICLES							
Carts	19						19
Riding carts	29			1			32
Tongas	43			3			46
HOUSES							
Number	114	43	14	5	2	17	195
Value	63030	14000	3960	8100	2800	2350	94260
Average Value	553	319	283	1620	1400	138	483

* Includes mendicants

Drinking Water Wells in Village Site 23.

Population (1937) about	1500		
Number of Houses (1928)	195	Families	245
Area of Village	4513	Acres	18 Gunthas
" " Village Site	11	"	26
" , Arable Land	3991	"	2
Total Irrigated (1937)	272	"	1
Under Fruit Trees	58	"	10
Number of Irrigation Wells	89		74 in use
Mango Trees	250		
Density of Population			
Whole Village Per Square Mile			213
Village Site Per Acre			128
Number of Houses Per Acre			16'4
Area Per Head of			
Arable Land			2'66 acres
Irrigated Land			'18
Under Fruit Trees			'04
Area of Whole Village per Head of Cattle			5'2
(Counting five Sheep or Goats as Equivalent to One Cow or Bullock)			
Area of Arable Land Per Pair of Bullocks			20'5
" " Irrigated Land Per Pair of Bullocks			1'4
Average Area of Land Irrigated Under Wells in Use			3'67

APPENDIX



A list of accessories to carts is given as stated on page 26.

(1) A long thick rope (Sole सोल) is used for tying together loads of grass, racks of Kadbi, sheaves of Jowari, Bajri, wheat, etc.; and it costs Rupee one;

(2) A small wooden pulley (Mani मणी) used for stretching and tightening together when carrying grass, etc.; it costs Annas 8;

(3) A pair of Jotes or Jupanies (जोते) prepared or made of hemp fibre after weaving; it costs Annas 4;

(4) A whip (Chabuk or Asud चाबुक) made either of fibre or pieces of leather; it costs Annas 8 to 12;

(5) A bamboo thick and hollow tube (Nala नळा) for holding oil for grease of wheels; it costs Annas 2.

(6) Two small wooden sticks with a triangular shaped point at one end to prop a cart from behind; it is made of wood or a branch of Bahul tree of V shaped is secured; it costs Annas 2;

(7) Two small wooden sticks fastened together at one end used to prop a cart and to keep stand or keep it in an erect position; it is called Shipai (शिपाई); it costs Annas 6;

(8) A Pinjani (पिंजणी) serves as a back shutter of the cart fixed at the bottom of the frame (साटी) and costs Annas 8;

(9) A wicker receptacle (झांजी) made either of stalks of Tur plants or of cotton or of other similar flexible plants, large and broad enough to fit in the whole of Sati of the cart costing Rs. 1½;

(10) When two pairs of bullocks are yoked to a cart, a double yoke (Shivlat शिवलट) made of wood in the shape of a frame in which the necks of bullocks are put in and attached with Jotes and Jupanis; it costs Rs. 1½.



Map V. This is based on the Village Map on a scale of eight inches to the mile. It is reduced to about one-third of this size. The figures of the survey numbers of the fields have been omitted for clearness, and two contour lines 2200 feet and 2300 feet added as well as figures showing the general levels of the village site and the tops of hills and ridges.

Circles of one mile and half a mile radius from the village site are shown so that distances to different parts of the village can be easily judged.

The map is an old one (1905). The only features changed since then are probably a number of new wells added and, of course, trees and possibly some new piece of made road.

As the map is intended only to give a general idea of the village lands, fields, hills, streams, roads and railway, and not for reference to specific details, these inaccuracies are not very important.

The village map shows only original survey numbers. It does not show subdivisions of these survey numbers which are now held and occupied separately. These are shown in a separate atlas of maps of subdivided survey numbers on a larger scale which is maintained in the village.

General:--About two-thirds of the total area of the village which is just over seven square miles lies between the 2200 and 2300 feet contours in the valley.

The main Nalla, the Sangam Doho Nadi falls about 100 feet in four miles, a fall of roughly one in 220.

In the valley area, the slope of the land seems to vary between above one in 30 and one in 100.

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CORRIGENDA

Page	Line	For	Read
2 (Preface)	13	specialy	specially
4	„ Last line	(II and IV)	(I and IV)
6	1	DFSCRIPTIVE	DESCRIPTIVE
6	13	Rama	Radha Krishna
8	23	Diety	Deity
12	7	Whear	Wheat
12	25	4	40
18	19	ennumeration	enumeration
22	5	PRIMARY	(1) PRIMARY
24	16	The first	The first two
37	21	stalked	stacked
38	Foot note	simultoneousiy	simultaneously
45	Table Rabi crops	6	6 Garlic
47	13	Nigh	Night
61	24	lible	liable
70	11	Khandehs	Khandesh
86	19	sent	cent
92	Last line	plane	plain
114	13	caster	castor
119	20	has	have
129	7	fleas	horse flies
131	6	maturer	matures
137	Penultimate line	profits	profit
183	7	any these	any of these
184	11	heads	head
207	18	sergregating	segregating
215	23	number	numbers

Page	Line	For	Read
233	Table under cholera last line	51	16
237	12	co-incident	co-incidence
262	29-30	all is this	all this is
276	14	nearly more	more
280	24	sheaves	sieves
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356	27	clothings	clothing
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381	18	sheep, as	sheep. As
421	Table columns—	17 19 20 12'32 17'85 Late Total 17'36 Late	17 19 20 13'32 Late Total 17'85 Late 17'36
423	30	46'9	46'91
424-25	Fig. 1. Third from bottom	Mean	Median
435	Table	1356	1456
439	Table	Betal	Betel
444-445	33 of Fig. 5	plentifull	plentiful
451	1	FAMINE PRICES USE	FAMINE PRICES RISE
452-53	13 of Fig. 6	1884	1850
