

REPORT ON THE MARKETING OF WHEAT IN INDIA (ABD. ED.)

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Marketing Series No. 4.



AGRICULTURAL MARKETING IN INDIA.

**Report on the
MARKETING OF WHEAT
IN INDIA**

(Abridged Edition)

PUBLISHED BY THE MANAGER OF PUBLICATIONS, DELHI.

PRINTED AT THE LATIFI PRESS, DELHI.

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FOREWORD.

This short report tries to give some idea of the facts to be found in the larger report on the marketing of wheat in India which has already been published.

It is hoped that it may give persons engaged in agricultural work a wider outlook on the daily business of the mundis and get them to take a more vital interest in better marketing.

The report should make useful reading in the villages and schools of all the wheat growing districts throughout India. A careful study of even this short report should help all concerned with the prosperity of agriculture in this country to play some part in making the machinery of distribution more efficient and in getting better prices for the producer.

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TABLE OF CONTENTS.

	Page.
Introduction	iii
Chapter I—Supply	1
Chapter II—Utilisation and demand	13
Chapter III—Wholesale prices	21
Chapter IV—Preparation for market	39
Chapter V—Assembling	44
Chapter VI—Classification, grading and standardisation	51
Chapter VII—Conservation	59
Chapter VIII—Handling and transportation	65
Chapter IX—Wholesale distribution	70
Chapter X—Processing and distribution of wheat products	80
Chapter XI—Seed	91
Chapter XII—Weights and measures and units of sale	94
Final Chapter—General conclusions and recommendations	98

INTRODUCTION.

This is the beginning of a series of marketing surveys as recommended by the Royal Commission on Agriculture in India. Further reports will issue shortly dealing with other important products such as rice, linseed, groundnuts, tobacco, fruits, milk, eggs, hides and skins, livestock, etc., and with special surveys in regard to Markets and Fairs and Co-operative Trading. The work of marketing investigation began in 1935 and has since then been carried on throughout the whole of India—both provinces and States. The present report is the first fruit of these All-India investigations and attempts to show as concisely and clearly as possible the essential facts regarding the marketing of Indian wheat, with the ultimate object of obtaining better prices for the cultivators.

Obviously in any attempt to raise growers' prices there is a limiting factor, namely, the price consumers are prepared to pay. This is especially so in India where millions of consumers—including growers themselves—readily switch over from wheat to barley or gram in some districts and to rice, millets or maize in others if the price of wheat is relatively high.

In countries which are largely dependent on imported food grains and where the people are, by custom, incapable of changing over from a wheat diet if it is possible, by restricting imports, to put the local producers in a quasi-monopolistic position to command higher prices. Such a course is obviously impossible in India. If the wheat grower here is to obtain a higher price it can only be done by getting for him a larger share of the price which the consumer pays. This involves a reduction in the costs of distribution which can only be effected by *making the machinery of distribution more efficient*. The main function of this report therefore is to provide a basis for constructive action by assembling in a systematic way a sufficient body of accurate information on the subject.

To collect and sort all the essential facts regarding wheat production, distribution and consumption throughout the whole Indian sub-continent has been no light task. At many points the fundamental statistics were found to be lacking or doubtful in their accuracy. At other commonly accepted points were found to be at variance with facts. Much new ground had to be broken especially in the study of

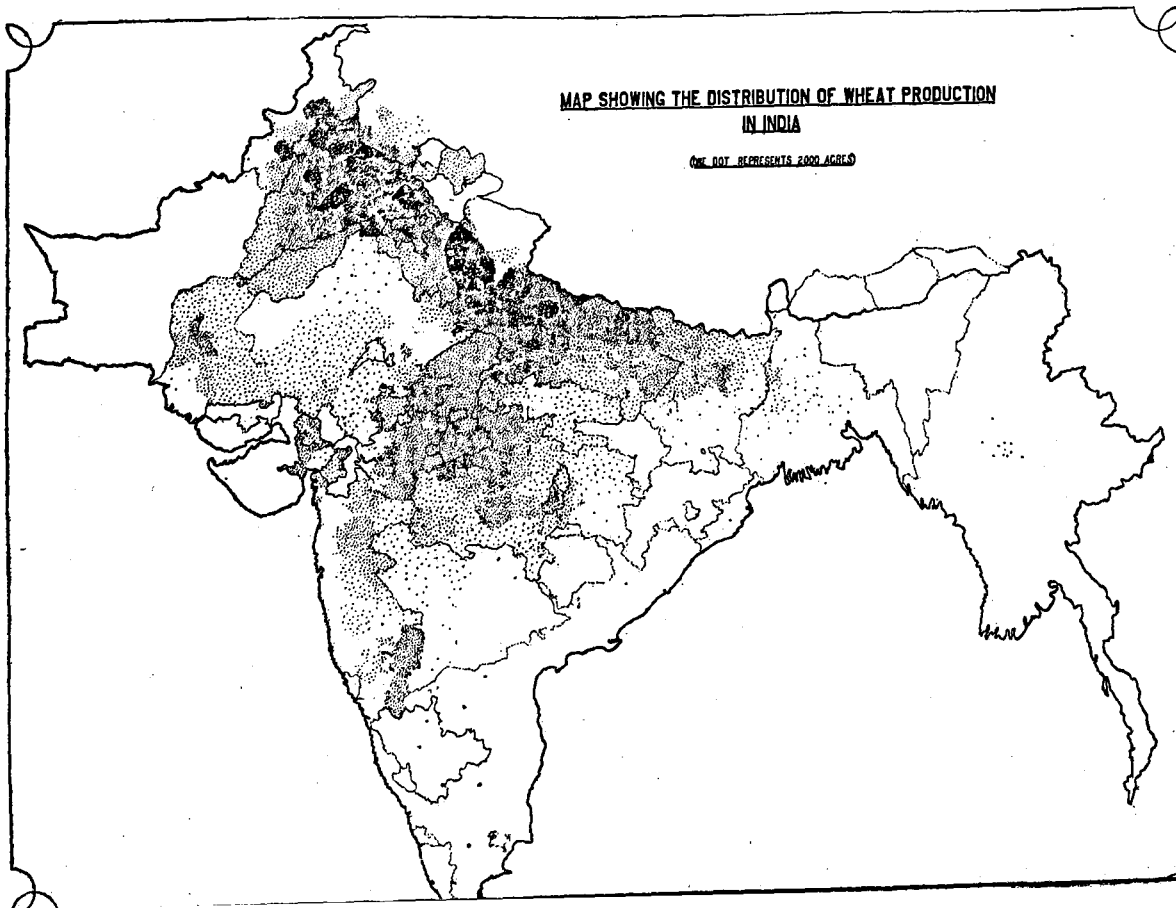
consumers' requirements. The extent to which the immediate objectives of the survey have been attained readers of the report must judge. It will, at any rate, be seen from the report that the present system of distribution is, in many directions, very wasteful and expensive and that there is scope for immediate improvement. Much can be done by growers themselves to improve matters. More can probably be done by merchants and manufacturers who are apparently as a body becoming anxious to improve their efficiency. Finally, something can be done by Provincial Governments, rulers of States and local authorities by way of providing better market places and a proper basis of sale between buyer and seller. The effective standardisation of weights and measures and regulations to ensure fair dealings between all parties whether buyers or sellers are also urgently needed.

Both growers and traders are conscious of these needs and in many places appear ready to support any action taken by the State or local authorities to remedy existing defects. This report will, it is hoped, indicate to all the interests concerned the directions in which they can individually or collectively improve the present system of marketing of Indian wheat.

The Government of India should not be regarded as assuming responsibility for all or any of the material contained in this report.

OFFICE OF THE AGRICULTURAL MARKETING ADVISER
TO THE GOVERNMENT OF INDIA,
DELHI:

February, 1938.



[Facing page 1]

CHAPTER I.

Supply.

At present India grows less than one acre of wheat for every ten persons. Canada and Australia, on the other hand, have two to two and a half acres for each member of the population. Continental countries, *e.g.*, France and Italy have one acre of wheat for every three persons, and the United Kingdom one for twenty five.

A sum of Rs. 64½ crores represents the total hypothetical value of the Indian wheat crop based on last year's production and on up-country prices of, say, Rs. 2-8-0 per maund. The average area under wheat during the last five years is 34.4 million acres, and the production 9.5 million tons. One-fourth of the acreage is in Indian States, chiefly Central India.

Wheat growing is mainly concentrated in the northern part of the country. For example, the Punjab, the United Provinces and the Central Provinces contain more than 80 per cent. of the acreage in British India. The wheat area as a whole is increasing slowly, but even allowing for a fairly rapid expansion in Sind, the additional acreage sown with wheat during the next five years is not likely to exceed 3 per cent.

The methods of estimating the yield per acre and total production leave much to be desired. In spite of increased areas under irrigation, for example, and the planting of 6½ million acres with improved varieties, the estimated average yield per acre shows no increase in recent years. There is, it seems, a general tendency to under-estimate the production. The recently appointed Wheat Committee of the Imperial Council of Agricultural Research has, however, taken up this question.

Although wheat is an important cash crop, almost half the produce is retained by the cultivators and villagers. Growers part with large quantities of wheat in the way of barter and payments in kind for harvest, wages, rents, village *mamools* (customary payments), etc. The existence of this system makes it difficult for growers to derive full benefit from favourable prices. All these barter arrangements tend to retard the development of marketing and the bearing of this question not only on marketing but also on agricultural indebtedness and high rates of interest seems worth considering.

The supplies of wheat actually put on the market show a very wide fluctuation in the course of the season. Between 50 and 60 per cent. is sold in the months immediately following harvest. Later, during the monsoon, supplies fall off and business is practically at a standstill in many up-country markets. As will appear in subsequent chapters this gives rise to a serious depression in prices at harvest time and raises problems connected with storage and also with transport and communications.

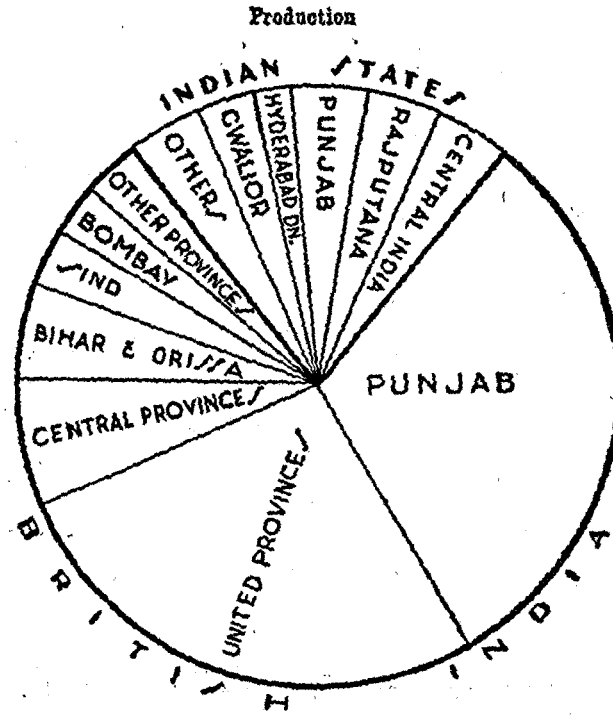
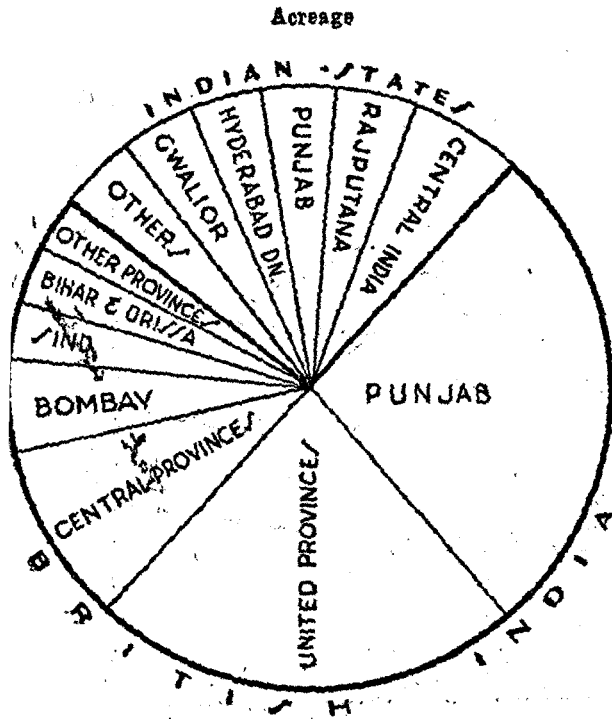
Before discussing the marketing of wheat it is necessary to pause and ask "What is wheat?" The answer is not easy. Two main sub-species are grown in India, viz., *Triticum vulgare* and *Triticum durum* with a sprinkling of others such as the *Emmer* wheats. These differ very widely in their botanical and commercial characteristics; some on account of their quality command a high premium and others sell at a discount. There is a confusing multiplicity of trade names and descriptions of wheat throughout India so that buyers and sellers using the same term may often mean something entirely different. The more generally understood descriptions perhaps are "sharbati" for hard, white wheat and "pissi" for soft white (*Triticum vulgare*): "dara" approximates to "fair average quality" in different districts, and "bansi," "jalalia" and "khandwa" refer to different types of *durum*.

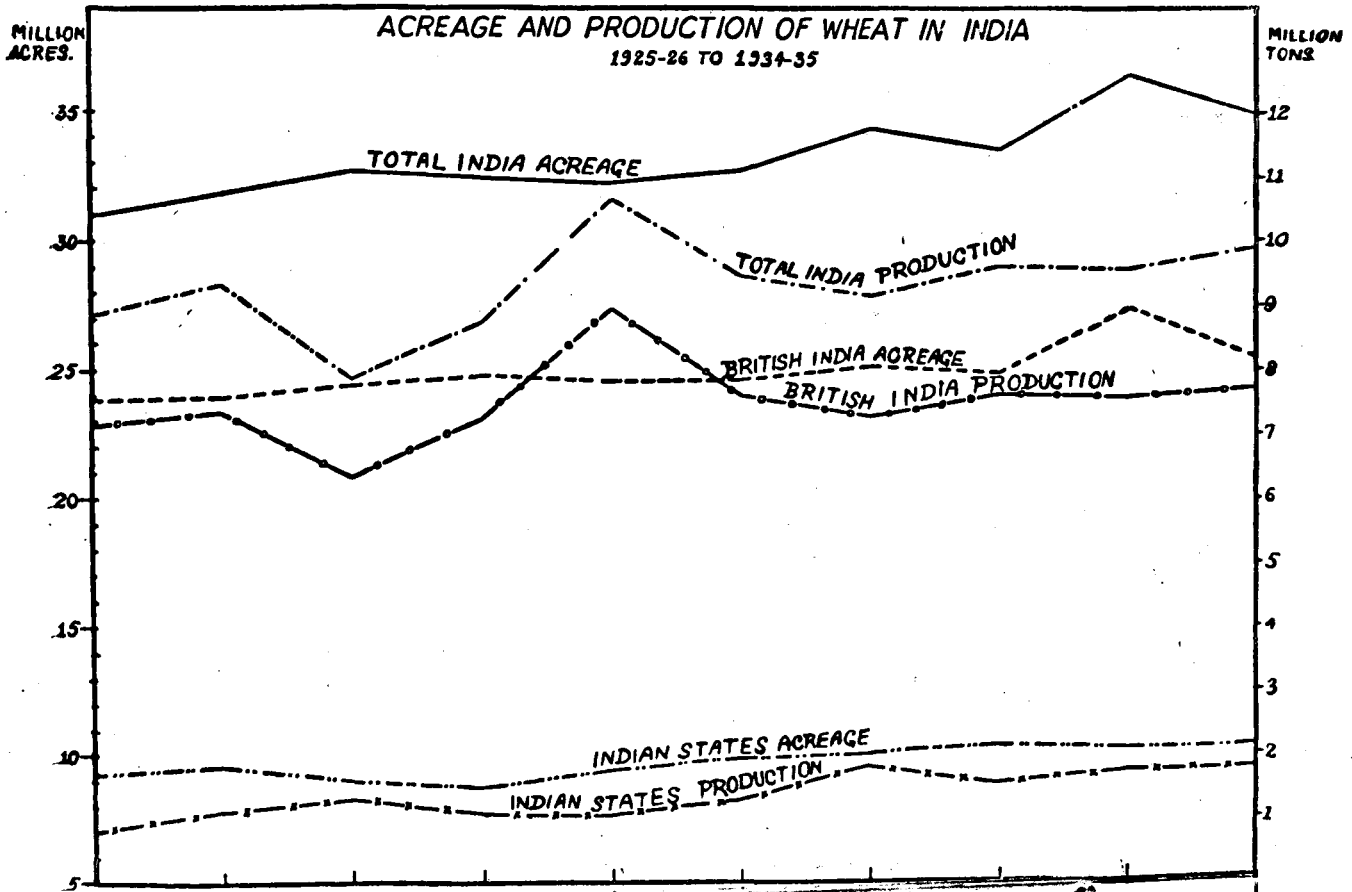
Quite evidently the existing confusion of terms must be cleared up to bring about comparable quotations and cohesion in the internal market. The terms at present in use seem more suitable for the Tower of Babel than a market.

Turning to the question of wheat imports it will be observed that these now amount to very little and only partly offset the exports. For example, during the ten years ending 1929-30 imports represented only about half the exports. Australia provides nearly all the imported supplies and there is naturally an incentive to import when Indian prices are sufficiently high to make it worth while.

The exports of wheat mainly to the United Kingdom, have always been irregular and the average in recent years has been small. During the last five years there have been no exports at all to Continental Europe. Exports of the 1936 crop up to the end of December have almost touched the 200,000 ton mark and are likely to go higher. This is commonly understood to be due to the rising

Shares of important Provinces and States in Acreage and Production of wheat in India.





level of world prices. To some extent this is true but the deciding factor appears to be the margin in India between the price of wheat and the prices of the other important *rabi* food crops, such as gram and barley. When these are relatively cheap large quantities are consumed in preference to wheat which is then available for export and *vice versa*.

The overseas trade in wheat-flour and other wheat products is comparatively small. Imports of flour are almost negligible. Exports are now down to about 12,000 tons which is only a fourth of the exports five years ago. Imports of biscuits and cakes during the past year amounted to about Rs. 36 lakhs and Burma appears to take over 40 per cent. of the total quantity imported.

The net supply of wheat and wheat products available for consumption in India, apart from seed, is from 8 million to 8½ million tons. Of this approximately 3 million tons is retained by cultivators and in the villages in the producing areas.

The remainder of this report deals with the marketing of the balance of the crop amounting to about 5 million tons.

EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER I.

Distribution of wheat production in India, (facing page 1).

Each dot on this map represents 2,000 acres under wheat, the number of dots in each tract being regulated according to its production. The very dark patches in the Punjab and United Provinces are caused by the large number and density of dots and indicate the areas of concentrated wheat production. Sind, Central Provinces, Bihar and Central India States are also important wheat producing areas. The very few dots shown in the southern and eastern parts of the country including Bombay, Madras, Orissa, Bengal, Assam and Burma show that wheat cultivation in those provinces is insignificant. It should be noted that more than nine-tenths of the Indian wheat crop is grown north and west of a line drawn across the Peninsula from Bombay to Calcutta.

Shares of important Provinces and states in acreage and production of wheat in India.

(see page 3).

The total acreage and production of wheat in India have been represented in this diagram by means of two circles which are divided into various sectors showing the proportionate share of each important province and State. The thick line in both the circles enclosing seven small sectors indicates the acreage and production of wheat in British India. It will be noted that British India is responsible for three-fourths of the total Indian acreage and four-fifths of the total outturn, the remainder of the crop being produced in Indian States. The Punjab and the United Provinces occupy a most conspicuous position and jointly produce nearly three-fifths of the total crop on an area which amounts to one-half of the total Indian wheat acreage. The yield per acre in these provinces is on the whole higher than in most of the other tracts. Central Provinces, Bombay, Sind, Bihar, Central India States, Rajputana, Hyderabad and Gwalior are other important wheat producing areas.

Acreage and production of wheat in India—1925-26 to 1934-35.

(see page 4).

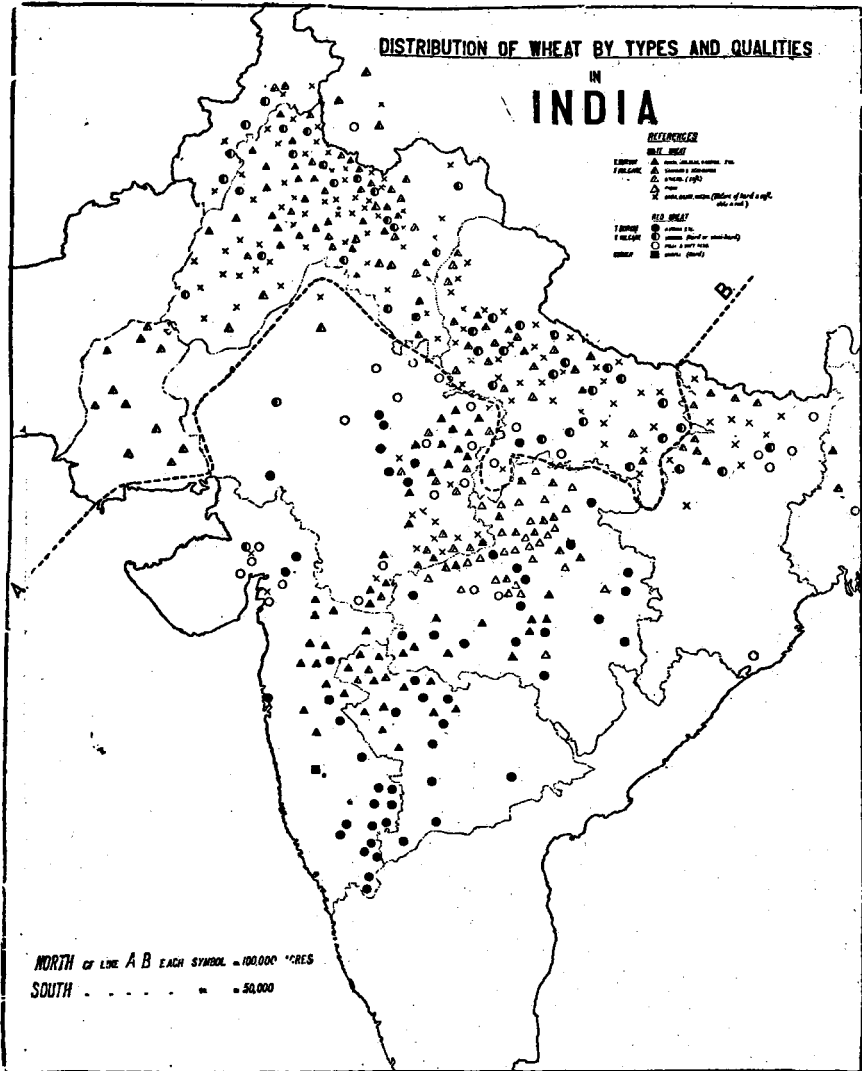
This diagram indicates the trend of acreage and production of wheat in India as a whole and of British India and the Indian States individually for the ten years ending 1934-35. British India acreage does not show very large expansion except in 1933-34 when it rose from 24½ million acres to more than 27 million acres. Next year it again fell to 25½ million acres. Wheat acreage in the Indian States show a fairly steady increase except in 1928-29. On the whole the total Indian acreage showed an increase of 4 million from 31 million acres in 1925-26 to 35 million in 1934-35.

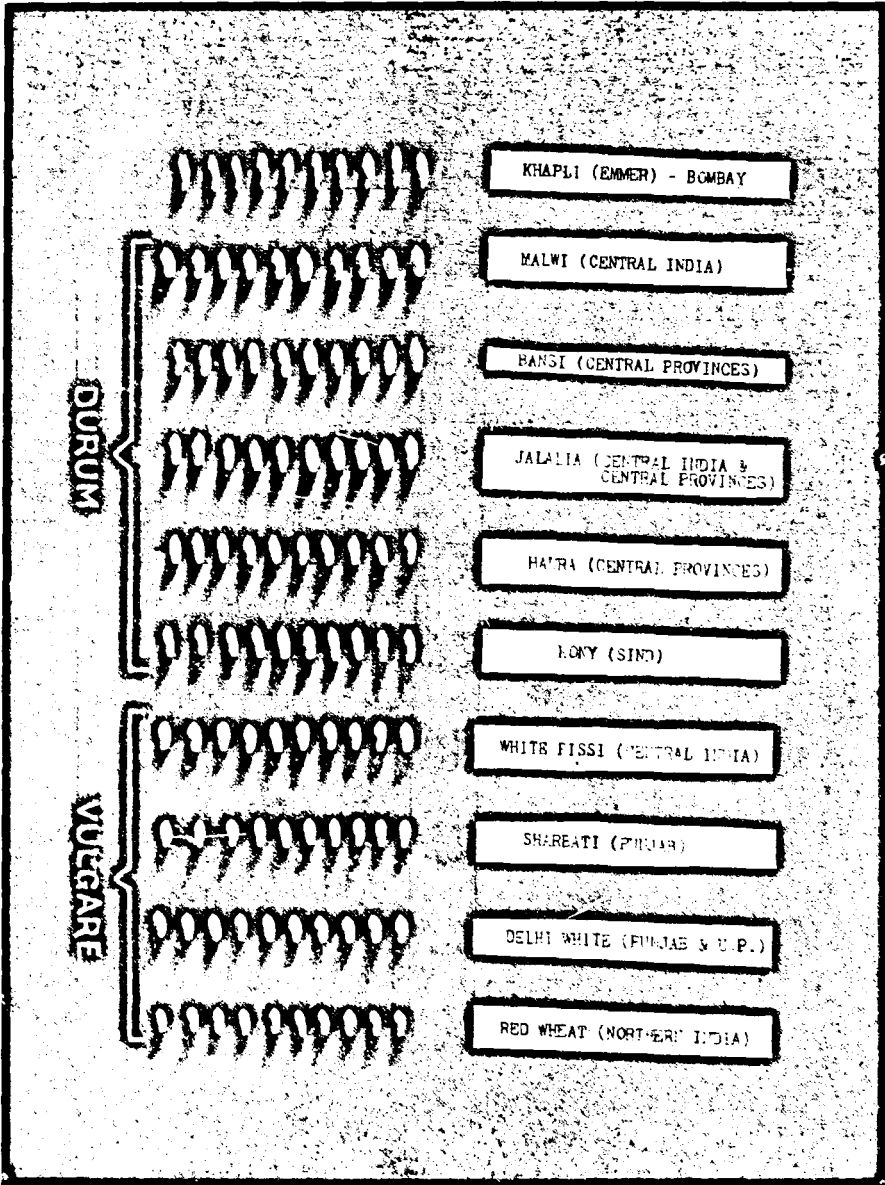
The estimated production of wheat, like the acreage, has not varied more than 10% either way except in 1929-30 when in spite of a very moderate seeded area production rose to a record of 10.7 million tons owing to exceptionally favourable weather conditions.

Distribution of wheat by types and qualities in India.

(see page 7).

It will be seen from the reference table of this map that wheat has been divided into two main classes, white and red, the former being sub-divided into *T. durum* and *T. vulgare* and the latter into *T. durum*, *T. vulgare* and Emmer. The durum wheats, as also the Emmer species, are of very hard structure the former being a bolder grain altogether than





THE CHIEF COMMERCIAL VARIETIES OF INDIAN WHEATS.

the species *T. vulgare* which are the common wheats and represent nearly nine-tenths of the Indian crop. The triangles and crosses represent white wheat and the circles and squares red wheat. It is important to note that each symbol above the line AB represents 100,000 acres and below it 50,000 acres. The symbols are placed in those localities in which each particular kind of wheat is known to grow.

It will be seen from the number of the various kinds of symbols shown on the map that the white wheats occupy about three-fourths of the total wheat area.

The black triangles symbolising white *Durum* wheats, such as *Bansi*, *Jalalia* and *Khandwa* are prominent in the Bombay Presidency, Hyderabad (Deccan), Central Provinces and Central India. The half-shaded triangles which indicate the production of *Sharbati* or semi-hard white wheats are found to be concentrated in Sind, the Punjab and the adjoining tracts of the United Provinces. The unshaded triangles with a line drawn parallel to one of the sides represent soft white wheats which are mostly found in the United Provinces, Bengal and Central India while the plain unshaded triangles illustrating white *Pissi* wheats grown only in the Central Provinces and the adjoining northern tracts. Crosses which indicate a mixture of white and red and hard and soft wheats with various local names such as *Dara*, *Gajar* and *Khebri* are found all over the Punjab, the United Provinces, Bihar, Bengal and the Central India.

Black circles indicate the production of *Kathia* or red *Durum* wheats. These circles are a characteristic feature of the Peninsula including the Bombay Presidency, Hyderabad (Deccan) and the Central Provinces. The half black circles indicate the hard or semi-hard red wheats which are found in the United Provinces, Bihar, Punjab and Bengal. The plain unshaded circles represent the area under *Pissi* or soft red which are mainly found in Rajputana, Central India and the Central Provinces.

The black squares represent Emmer (hard red) known throughout the south as *Khapli* which is found only in the south western parts of the Bombay Presidency, in one or two adjacent parts of Hyderabad and in Mysore.

*Price differences in seers per rupee between wheat and gram
and wheat and barley and wheat exports.*

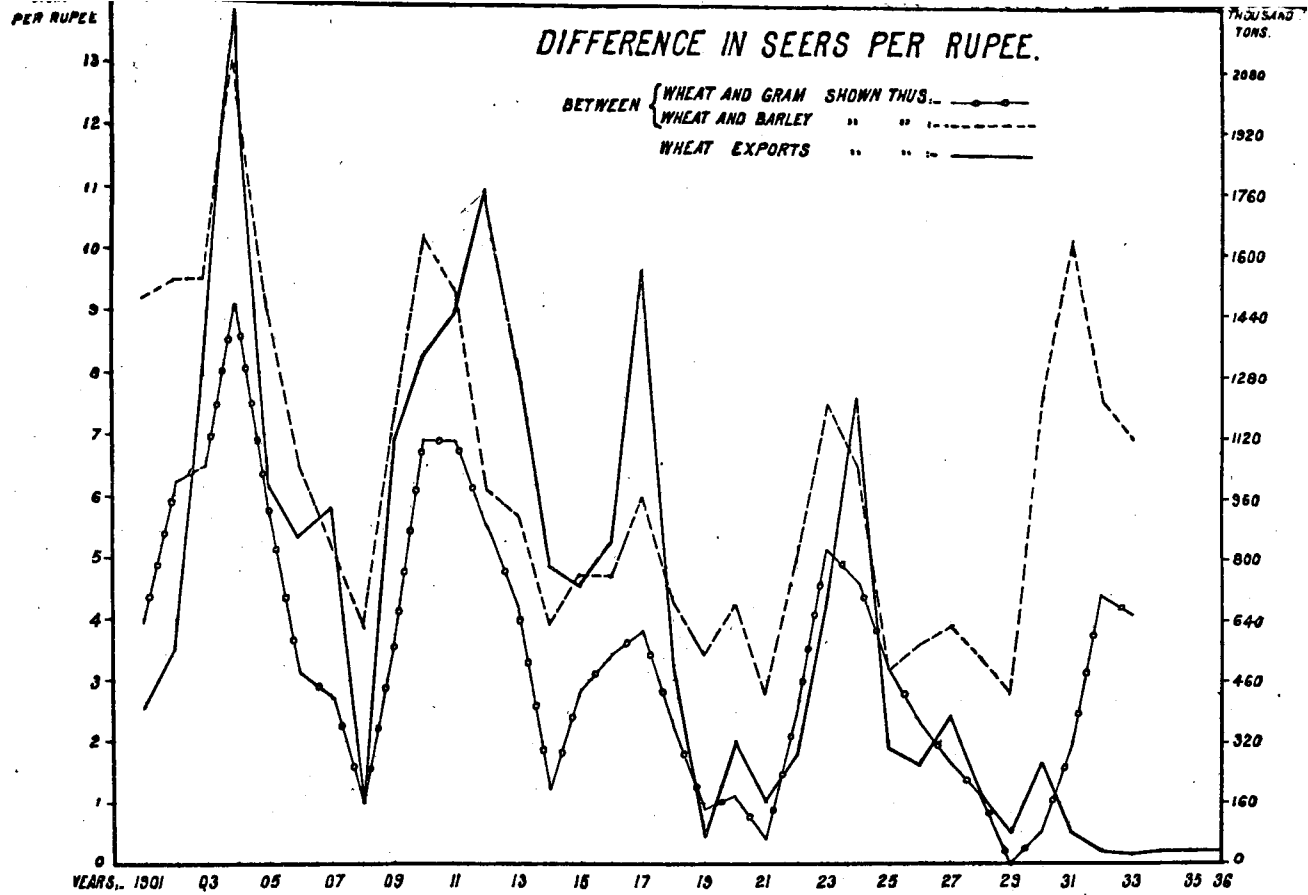
(see page 11).

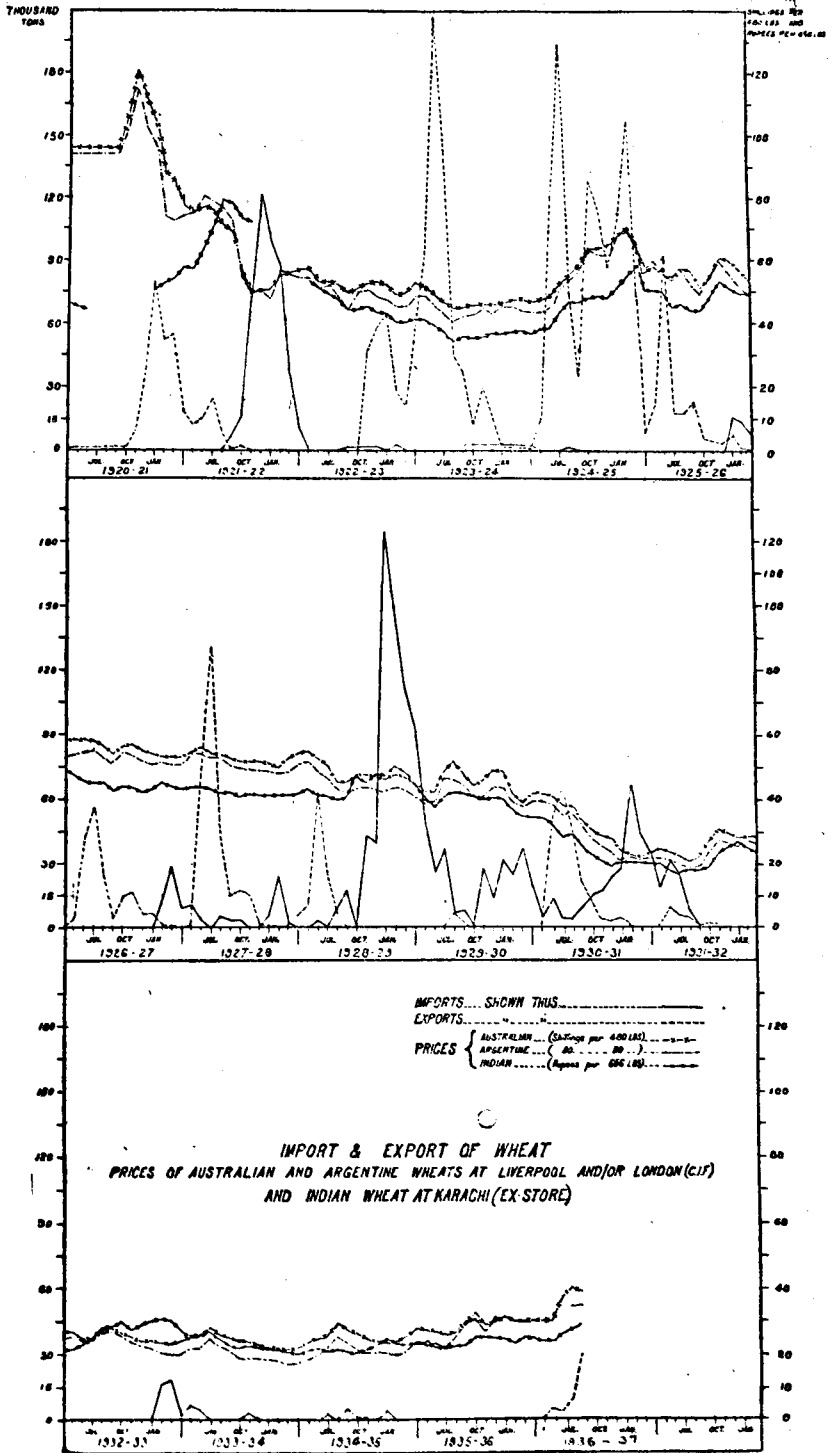
This diagram shows the relation between the exports of wheat and the price differences in seers per rupee between wheat and gram and

wheat and barley. A glance at the chart indicates that whenever the difference between the price of wheat and the other two grains widens exports rise. On the other hand the narrowing down of the price margins between these food grains is usually associated with reduced exports.

*Import and export of wheat and prices of Australian and Argentine wheats at Liverpool and/or London (C.I.F.) and Indian wheat at Karachi (ex-store).
(see page 12).*

This diagram shows the relation between the volume of Indian imports and exports of wheat and the wheat prices in India and other world markets. The curve based upon the Karachi quotations represents the Indian price level while world prices are shown by the curves representing Liverpool-London C.I.F. quotations for Australian and Argentine wheats. It may be observed that the United Kingdom is the chief market for Indian wheat so that exports from India largely depend upon the difference between the prices at Karachi and those of Liverpool or London. From the three price curves, it will be noted that during 1920-21 and from 1923 to 1928 when the gap between the Karachi and the Liverpool-London lines was sufficiently wide to cover the cost of transport and other incidental charges from Karachi to the United Kingdom there were substantial exports. Naturally when the difference falls below the shipping costs export ceases. On the other hand when the United Kingdom parity of Indian wheat exceeds the price of other wheats in, say, London or Liverpool as happened in 1921-22 and again 1928-29, the tendency is for India to become an importer. This condition was nullified after March 1931 when in spite of parity favourable for importing Australian wheat into India the imposition of an import duty excluded foreign wheats.





CHAPTER II.

Utilisation and Demand.

The consumption of wheat is apparently as high as 350 lb. or more per head a year in some of the cities in Northern India. Towards the east in Assam, and the south in Madras Presidency, the *per capita* consumption is as low as 4 lb. per year.

So far as utilisation is concerned, the statistical position leaves much to be desired. Twenty-five of the larger roller mills in India make regular returns of their output to the Director-General, Commercial Intelligence and Statistics, but apart from these there are no official records. It has already been observed that out of a total production of about $9\frac{1}{2}$ million tons, after allowing for seed retained by the cultivators, roughly 3 million tons are disposed of locally in the villages by way of payment in kind, barter, etc. This leaves something like 5 million tons actually put on the market. Of this amount it appears that 2 million tons are crushed for domestic use in hand *chakkis*—mainly in the smaller towns and villages. Over 2 million tons is converted into *ata* in urban-power driven *chakkis* and only 1 million tons is dealt with in all the roller mills. The amount of wheat used for stock-feeding is practically negligible but about 150,000 tons of bran produced by the roller mills, along with a little—at most 2 per cent.—obtained by sifting the product milled by *chakkis*, is used for stock feeding. At least 30 per cent. of the bran produced by roller mills is consumed by horses in cantonment areas.

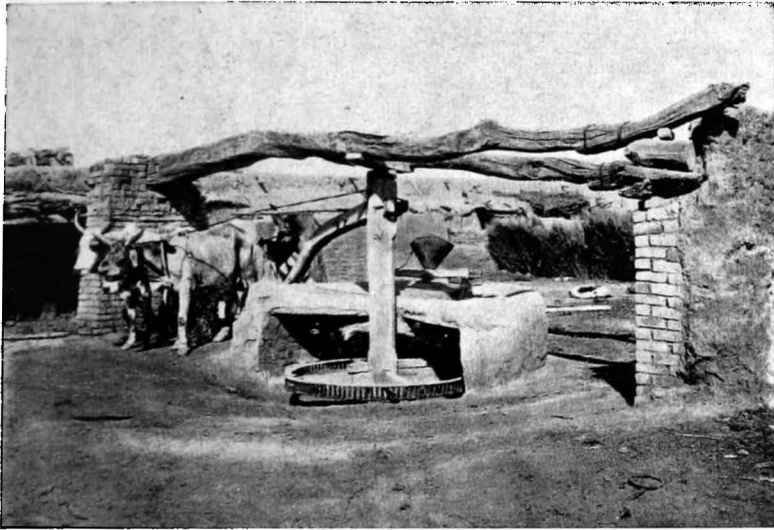
A certain amount of fermented bread in the form of loaves (*dabal roti*) is produced by bazaar bakers and by the large bakeries and restaurants in the cities, and there are also about half a dozen biscuit factories in India but the fact remains that the amount of wheat utilised in this way forms only a very small proportion of the total. The big bulk of the wheat is undoubtedly converted into *chapatis* and *parathas* or *puris* (*chapatis* cooked in ghee). For making *chapatis* a hard, strong wheat of the *sharbati* type with plenty of gluten is required, and discriminating buyers, even amongst the poorer classes, are prepared to pay a premium for this type of wheat. This is apparently justified, for baking experiments which have been carried out show that from one seer of *ata* made from *sharbati* 28 *chapatis* weighing 4 tolas each could be obtained at a cost of 0.62 pies per *chapati*, as

compared with $24\frac{1}{2}$ *chapatis* costing 0.65 pies each, even after paying a premium of 2 annas 6 pies per maund for *sharbati* wheat.

Ata (whole-meal) is the main product made from wheat. In the case of the roller mills the *ata* amounts only to about 34 per cent. but the whole of the output of power driven *chakkis* consists of *ata* and in the case of the hand *chakki* although *ata* is the main product there is a certain amount of *suji* (coarse semolina) sifted out especially in Southern India. The amount of *maida* (white starchy flour derived from the centre of the grain) is about 400,000 tons. This is all produced in the roller mills. *Ata* to be in its best condition must be freshly ground before use and this is in fact the custom whether it is ground by hand *chakki* or in power driven *chakkis*. In some respects consumers in India are fortunate in their present habits. According to McCarrison, for instance, whole-meal flour (*ata*) contains Vitamin A, and is rich in vitamin B whereas at most white flour has only a very little Vitamin B. The protein content of *ata* is also higher and of better quality than that of white flour.

Although the consumption of wheat as a whole appears to be increasing, there is no indication that the consumption of *maida* (white flour) is increasing to the same extent. In fact, the roller mills which produce *maida* apparently find it difficult to carry on and quite a number of them have shut down recently. On the other hand the number of power *chakkis* seems to be increasing very rapidly. Returns from electric supply companies indicate that the number of *chakkis* operated by electric power has more than doubled within the past 5 years. At this rate within a very short time it is possible that the $2\frac{1}{2}$ million tons at present crushed by hand *chakkis*—apart from the 3 million tons retained in the village—may be dealt with in power driven *chakkis* (either oil or electric). This would apparently provide occupation for another 20,000 to 30,000 persons with a total income of about 20 lakhs per month.

Next to *ata*, *suji* (coarse semolina) and *rava* (fine semolina), but mainly *suji*, are the most important. *Suji* represents 5 to 15 per cent. of the requirements of the *halwais* and bazaar food shops in Northern India and the output of *suji* from roller mills amounts to about 71,000 tons or 8 per cent. Approximately the same quantity especially of coarse roughly ground wheat, preferably of the *durum* type, appears to be made in the hand *chakkis* of Central and Southern



**KHARAS OR BULLOCK DRIVEN FLOUR MILL OF A TYPE
COMMONLY FOUND IN THE PUNJAB.**



CHAKKI (OR SMALL STONE MILL) DRIVEN BY ELECTRICITY.

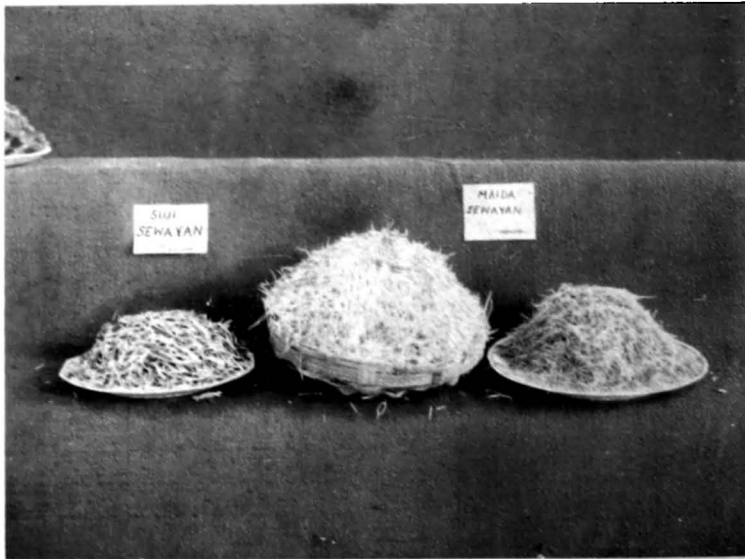
SOME COMMON WHEAT PREPARATIONS.



Top row from left to right:—Khajur, Balushahi, Halwa, Jalebi, Suji sewayan, Maida sewayan.

Middle row:—Sohan halwa, Pheni, Cake, Pastry, Biscuits, Mithi roti, Hotel-made dabal roti, Bazaar-made dabal roti.

Last row —Kachauri, Puri, Paratha, Chapati (unleavened cake), Phulka, Nan (leavened bread), Aligarh biscuits.



SEWAYAN (VERMICELLI).

India. *Suji* is used for *sewayan* (vermicelli), sweetmeats, *halwa*, *kesari*, etc., and in its coarser form for the preparation of boiled products such as *uppumav* and *rabri* which are favourite dishes in Southern and Central India. In Coorg, for example, more than 30 per cent. of the imports of wheat products represent *suji* and in Travancore over 20 per cent.

The hard, *durum* wheats, met with mainly in Central India and in the south, are eminently suitable for the manufacture of these products. It appears, however, that owing to the wear and tear on their rollers the owners of roller mills do not like to use *durum* wheats, and the power driven stone *chakkis* are not at present suitably equipped for separating the *suji* from the remainder of the flour. It would seem desirable to design some simple improved form of separating equipment for use with the power driven *chakkis* if the demand for high quality hard *durum* wheats is to be maintained or increased.

There appears to be a general tendency for wheat grown in any particular district to be used for all purposes irrespective of its quality characteristics. On that account a large amount of soft white wheats are still used but outside their own districts they are not much in demand. For the manufacture of *maida* to be used in the production of fermented bread (*dabal roti*) a certain proportion of soft-wheats, from 25 to 40 per cent. is desirable in the mixture. For the manufacture of biscuits and cakes also soft wheat is to be preferred, but the demand for this is relatively small. Outside Rajputana and Baroda there appears to be no special demand for soft red wheats and even there a tendency to change over to the *sharbat* type of wheat is already noticeable.

For industrial purposes in the manufacture of starch for sizing in textile mills, a soft white starchy wheat is probably to be preferred. Unfortunately it appears that the production of wheat starch in India for this purpose is decreasing. Imported starches, e.g., farina, sago flour and starch, have, however, increased to the extent of not less than 23 per cent. in the last 5 years so that out of a total amount of more than 40,000 tons of sizing starches used by the textile mills in India, less than one-fifth is at present provided by Indian millers.

**EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO
CHAPTER II.**

*Running five years' averages of net available supplies of wheat,
(including wheat flour in terms of wheat)
(see page 19).*

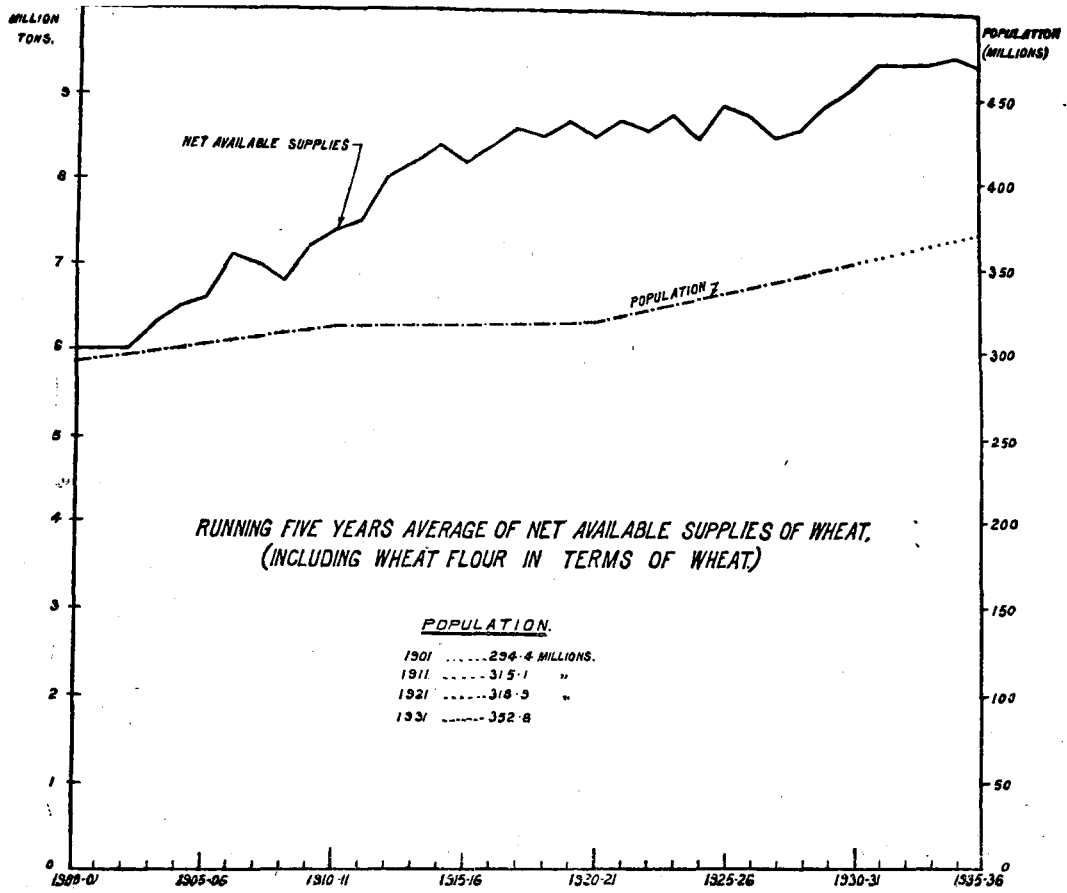
This diagram shows the quantities of wheat available in India for consumption during the past 36 years, and the trend of population. From the curve representing 'Net available supplies', it will be noted that the supplies of wheat have arisen from 6 million tons in 1900-01 to about 9½ million tons in 1935-36 an increase of 58%. There has not been a proportionate increase in population during the same period as is shown by the other curve although there has been an upward tendency from 294.4 million in 1900-01 to 352.8 millions according to the 1931 census an increase of about 20%. This clearly indicates a rise in the per capita consumption of wheat in India.

*Rail and river borne trade in wheat and wheat flour, and production of
wheat flour by certain large roller mills.
(see page 20).*

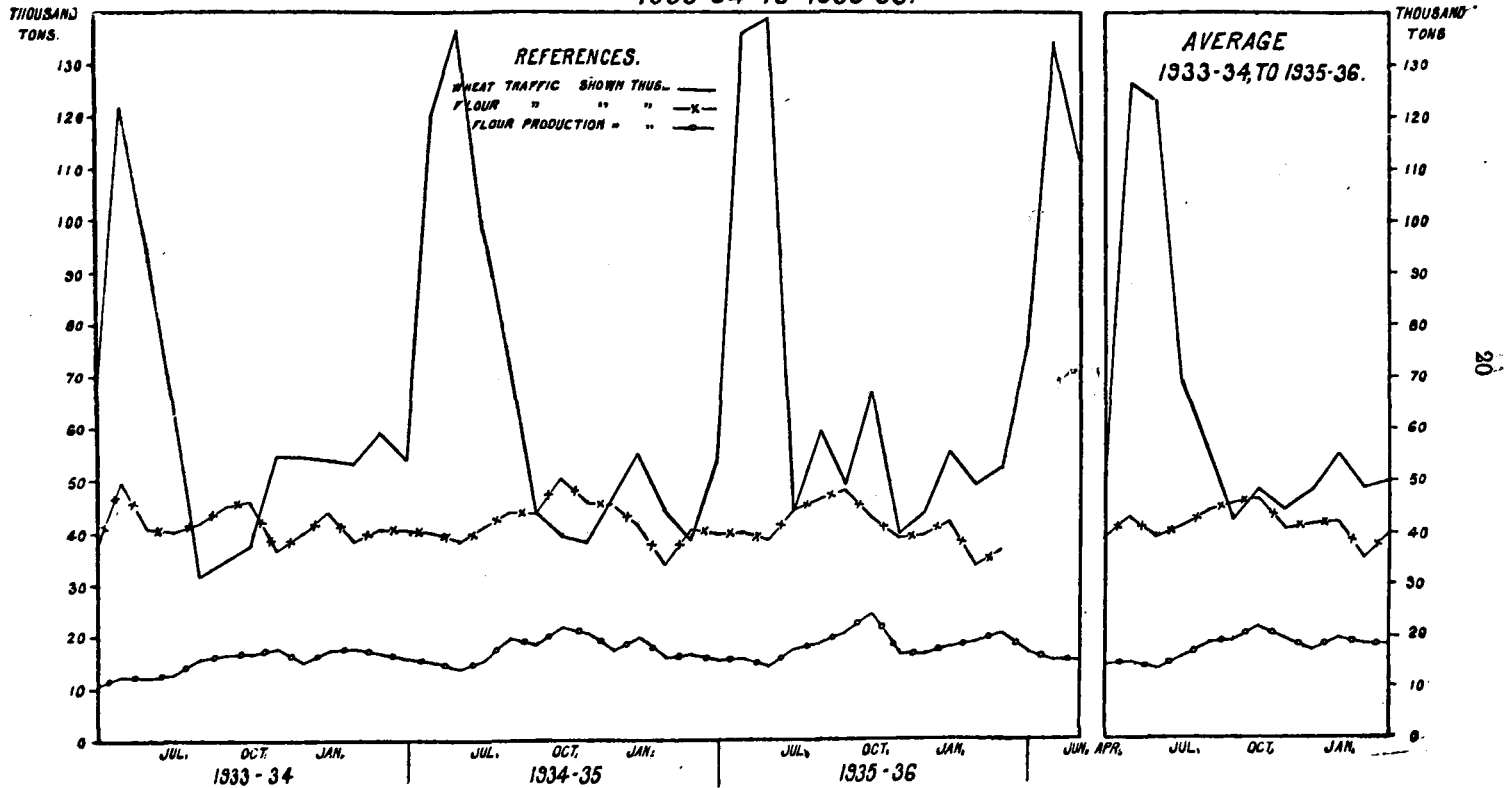
The traffic in wheat and wheat flour and the production of wheat flour by certain roller mills in India have been shown here in two diagrams. The diagram to the left gives the monthly movements of wheat and flour and production of flour for the period from April 1933 to June 1936, while the other diagram to the right shows the average monthly movement based upon the same data.

In the diagram to the left the curve representing the wheat traffic clearly shows that the maximum movement in this commodity takes place in May and June, the period closely following the harvest months in the main tracts. It will be noted that the flour curve indicates less fluctuations than the wheat curve and that this is also the case with the third curve representing the production of wheat flour.

A clearer view of the seasonal movements can be had from the other diagram to the right. The periodicity in the wheat traffic is very prominent. The heaviest movement occurs in May and June while the minimum traffic is recorded during the monsoon months of August and September. As already mentioned the curves showing the production and rail-borne traffic in flour do not show much variation. It will be noted from these two curves that both the production and movement of flour are at their maximum in October in preparation for the increased demand which the winter season invariably brings.



RAIL & RIVER BORNE TRADE IN WHEAT, AND WHEAT FLOUR PRODUCTION BY CERTAIN LARGE ROLLER MILLS.
1933-34 TO 1935-36.



CHAPTER III. Wholesale Prices.

If growers are to get better prices for their wheat the first step is to ask what are the prices ruling in the various markets. Here again the answer is very much like Abracadabra. In Karachi, for example, wholesale prices are quoted in terms of rupees per candy (656 lb.), in Bombay per cwt. (112 lb.), in other places in maunds which may be 82-2/7 lb., and may be not. In some parts—and everywhere generally in the retail trade—the price is quoted in terms of seers (2.057 lb.) per rupee but the buying seer may in some cases be heavier than the selling seer. This gives rise to the anomaly whereby the retailer sells apparently at a lower price than he buys in the wholesale market. Clearly something must be done to put price quotations in all markets on a comparable basis.

After sorting out the mass of conflicting material collected in the course of this survey certain facts stand out quite clearly and may be briefly summarised as follows.

White wheats almost everywhere command a premium, generally about Re. 0/2/0 per maund over red wheats. Soft wheat (*pissi*) is at a discount of about 5 per cent. compared with hard wheat (*sharbat*). *Durums*, the hardest wheats of all, sometimes and in certain markets, particularly in Central and Southern India, sell at quite fantastically high premiums over other wheats, but more generally the premium amounts to between Re. 0/8/0 and Re. 0/12/0 per maund.

As between different markets, prices for the same kind of wheat differ naturally according to their distance from the producing centres. In all the more important markets, however, such as those at the ports of Karachi, Bombay and Calcutta and in the main up-country centres such as Amritsar, Lyallpur, Hapur and Muzaffarnagar, where there are organised trade associations, the prices move very much in sympathy with one another but in many other markets where no associations exist prices appear to move in a disconnected way, up or down, independently of one another and of the main markets referred to. These highly irregular movements add appreciably to the risks and consequently to the costs of marketing and it is necessary that closer connection should be established between all the markets so as to synchronise movements in prices.

A great divergence in prices is similarly observed with regard to *turum* wheats. Their prices in different markets appear to have little or

no relation with one another or with the price level of ordinary white wheats. In order to stabilise *durum* prices there is, therefore, need for an association to establish a *durum* wheat contract in Central or Southern India, say, either at Indore, Hyderabad or Bombay.

The most outstanding and probably the most serious factor from the growers' point of view is the seasonal depression in prices at harvest time. Year by year in some of the leading markets as the harvest reaches its height prices fall on an average by 19 per cent. It is useless to ask the grower to hold back his supplies until prices rise again. He must convert his crops into cash as they come along and if he does not take his wheat to market when the weather is good the difficulties of transport during the monsoon months would, in most cases, render this impossible. The solution is rather to be found in the provision of adequate and suitable storage accommodation and adequate "hedging" facilities at the key positions occupied by the more important assembling markets. That storage can be done with profit will become apparent in the subsequent chapter dealing with conservation.

It is often claimed that speculative trading and dealings in "futures" causes the seasonal depression in prices to be greater than need be. This is not however, borne out by the evidence which, indeed, seems to indicate that the "futures" markets have a stabilising effect on "ready" prices. The speculators, particularly on the more important grain exchanges in the producing areas, are apparently optimistic "bulls," and "futures" quotations generally stand at a premium over "ready" prices. It is not possible to ignore, however, the probable harmful effect on growers' prices at harvest time of the strong and prolonged "bearish" tendency of the July "future" at Karachi and the May "future" at Calcutta.

It is desirable that growers should be kept better informed of the course of prices. At present they depend very largely on hearsay and on reports received from the local *baniya* and their neighbours or others who have been to market. There are, however, two aspects of this problem. First, it is necessary to collect proper and correct information regarding prices and then to pass this on to the grower.

From a marketing point of view this survey shows that "official" prices are of no value. Prices published in the daily and trade press are not intelligible to the ordinary reader who may be unaware of the

weight of the unit quoted or of the quality or amount of refraction on which the quotation is based. Merchants, as a rule, keep themselves in touch by means of post, telegraph or telephone, and daily prices both "ready" and "futures" can be obtained through the trade associations in the larger markets. It is only necessary that all the associations should observe the same standard of quality and a uniform system of price quotation. Steps in this direction are already being taken.

For smaller markets local arrangements should be made probably by establishing market committees whose function it would be to obtain and post up in the market the daily prices, not only of that market but also of the larger wholesale market or markets with which it is directly connected.

Recent developments in the way of broadcasting market prices through village radio sets give rise to the hope that the cultivators will in the near future be brought into more up-to-date and closer contact with wheat prices.

EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER III.

*Percentage deviations of the average monthly wholesale prices from their
annual mean.*

(see pages 25—27).

The seasonal variations in the price of wheat during the year are shown in the seven diagrams on pages (25—27). They are expressed as month by month percentage deviations from the annual mean based upon the five years monthly average prices in respect of 20 important markets in the six main wheat producing provinces and the three terminals of Karachi, Bombay and Calcutta. The movement of the curves above or below the basic line which represents the annual average prices shows the extent (percentage) by which the average prices in a particular month is higher or lower respectively than the annual average price.

These curves may perhaps be taken as showing the loss incurred by growers in selling their wheat immediately after harvest or, taking another view they may be regarded as showing the probable profit on storing wheat till it is wanted for consumption.

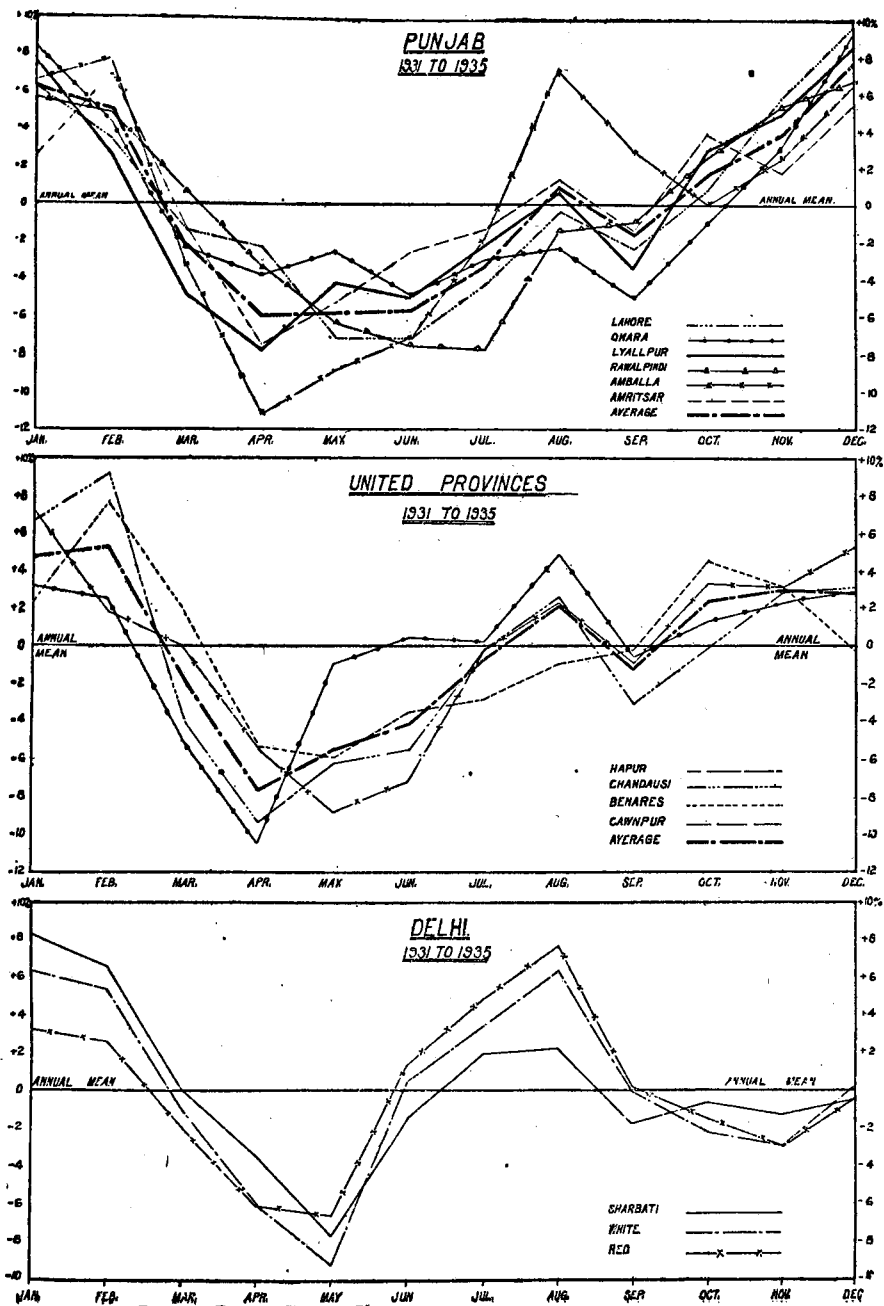
(a) *Punjab*—This diagram contains six curves representing price deviations in respect of Lahore, Okara, Lyallpur, Rawalpindi, Ambala and Amritsar and a seventh one more thickly outlined showing the average deviation for the above six markets. It will be seen from the curves for the different markets that the minimum prices at all the markets in large producing areas such as Okara, Lyallpur, Ambala, Lahore and Amritsar occur about the pre-harvest and harvest period April-June. The maximum prices for these areas occur in the months of December, January and February. On the other hand in the consuming market of Rawalpindi the minimum prices occur in July *i.e.*, a month or two later than in the large surplus areas.

(b) *United Provinces*—This diagram contains five curves of which four indicate the percentage deviations in respect of the Hapur, Chandausi, Benares and Cawnpore markets and the fifth, thickly outlined, the average deviations for the same markets. It will be noted that on the whole the movements of these curves are sympathetic. The pre-harvest decline starts in February the maximum fall being registered at Hapur in April when the harvest is just going into full swing. The greatest upward movement also takes place at Hapur during August although the extreme range of variation (19%) occurs at Chandausi between February and April. All the curves after a decline in September show an upward tendency.

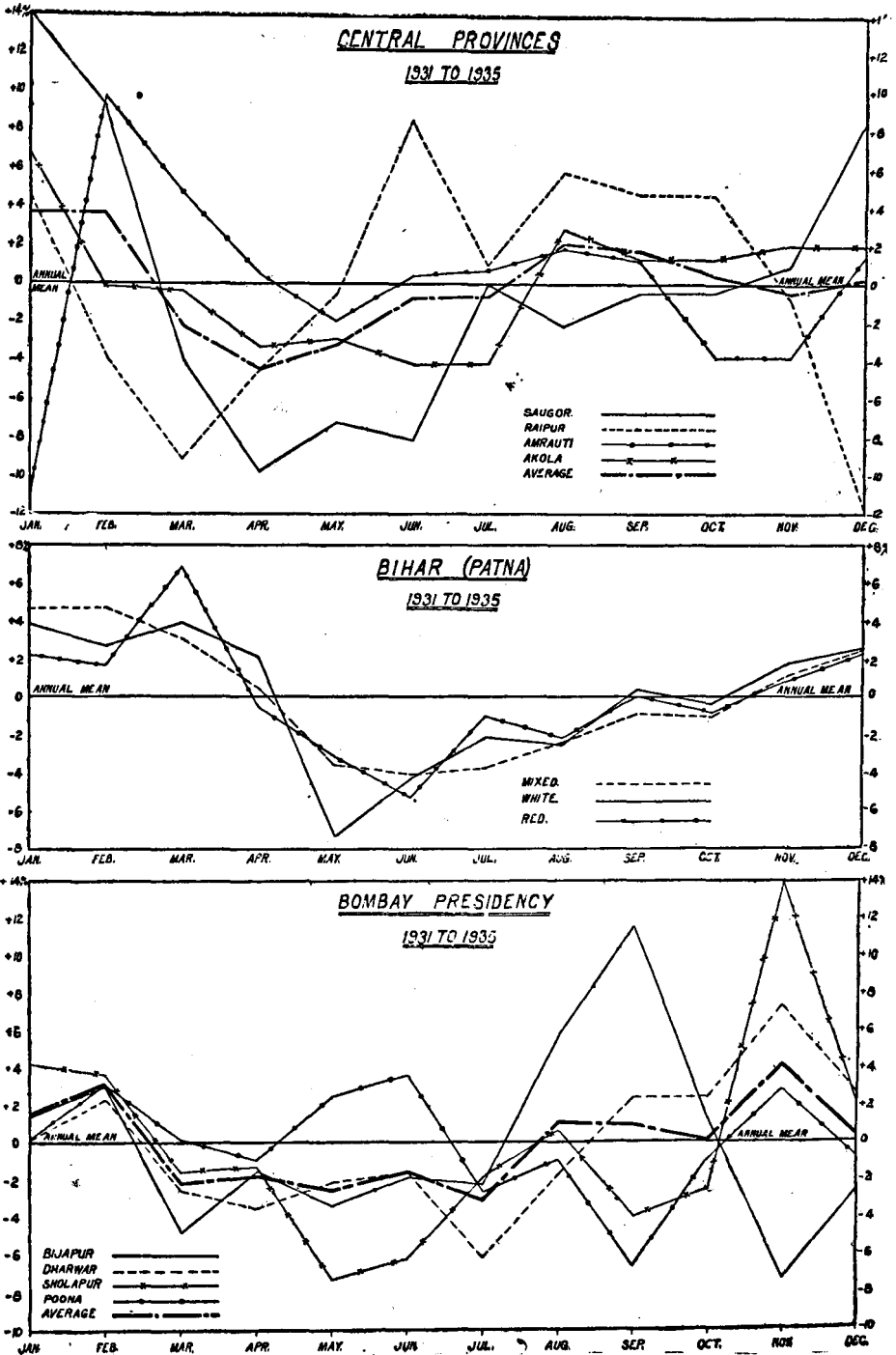
(c) *Delhi*—The diagram contains three curves representing the percentage deviations in the prices of Sharbati, White and Red wheats. As in the United Provinces, the harvest decline starts in February but the maximum fall takes place in May. From May onwards there is an upward trend with a peak in August. Prices decline during September and October but a reaction takes them up again slightly in November.

(d) *Central Provinces*—There are five curves in this diagram, four of which represent price deviations for Saugor, Raipur, Amraoti and Akola and the fifth the average deviation for these four markets. It will be noted that the different curves move very irregularly. In February, for instance, the prices at Raipur decline whereas those at Amraoti go up. It may be observed that of the four markets, Saugor and to a lesser extent Raipur are large producing centres; Amraoti and Akola are important consuming markets in the Berar. However, from the curve showing the average deviation it will be seen that prices conform in a general way to the seasonal movement in other parts of the country being at their lowest in April with a tendency to rise towards the end of the monsoon.

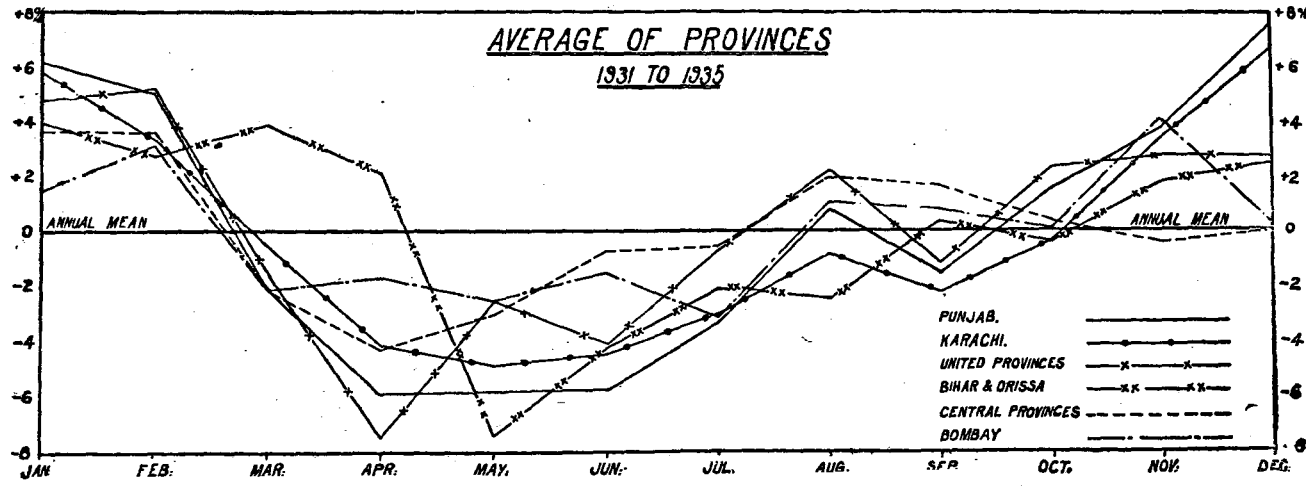
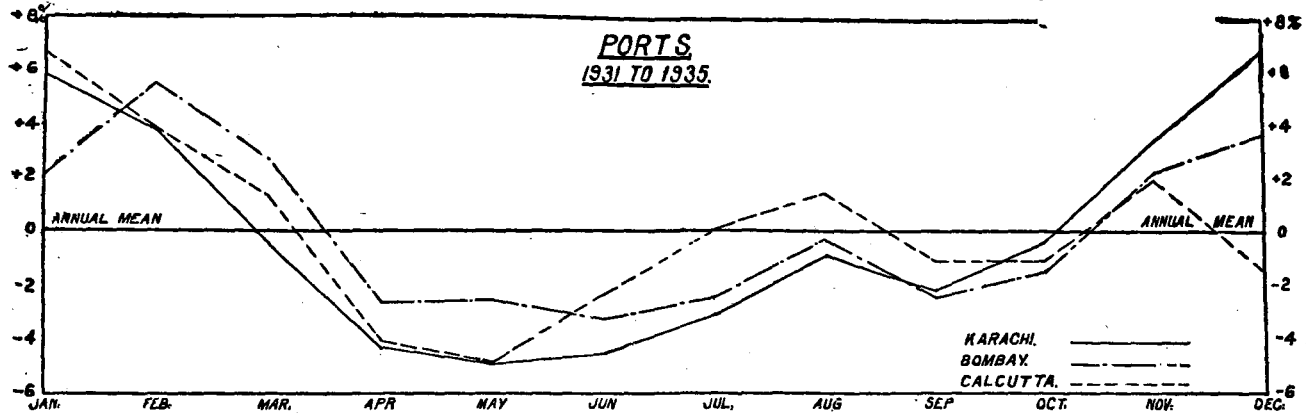
Percentage Deviation of the average monthly wholesale prices from their annual mean.



Percentage Deviations of the average monthly wholesale prices from their annual mean.



Percentage Deviations of the average monthly wholesale prices from their mean.



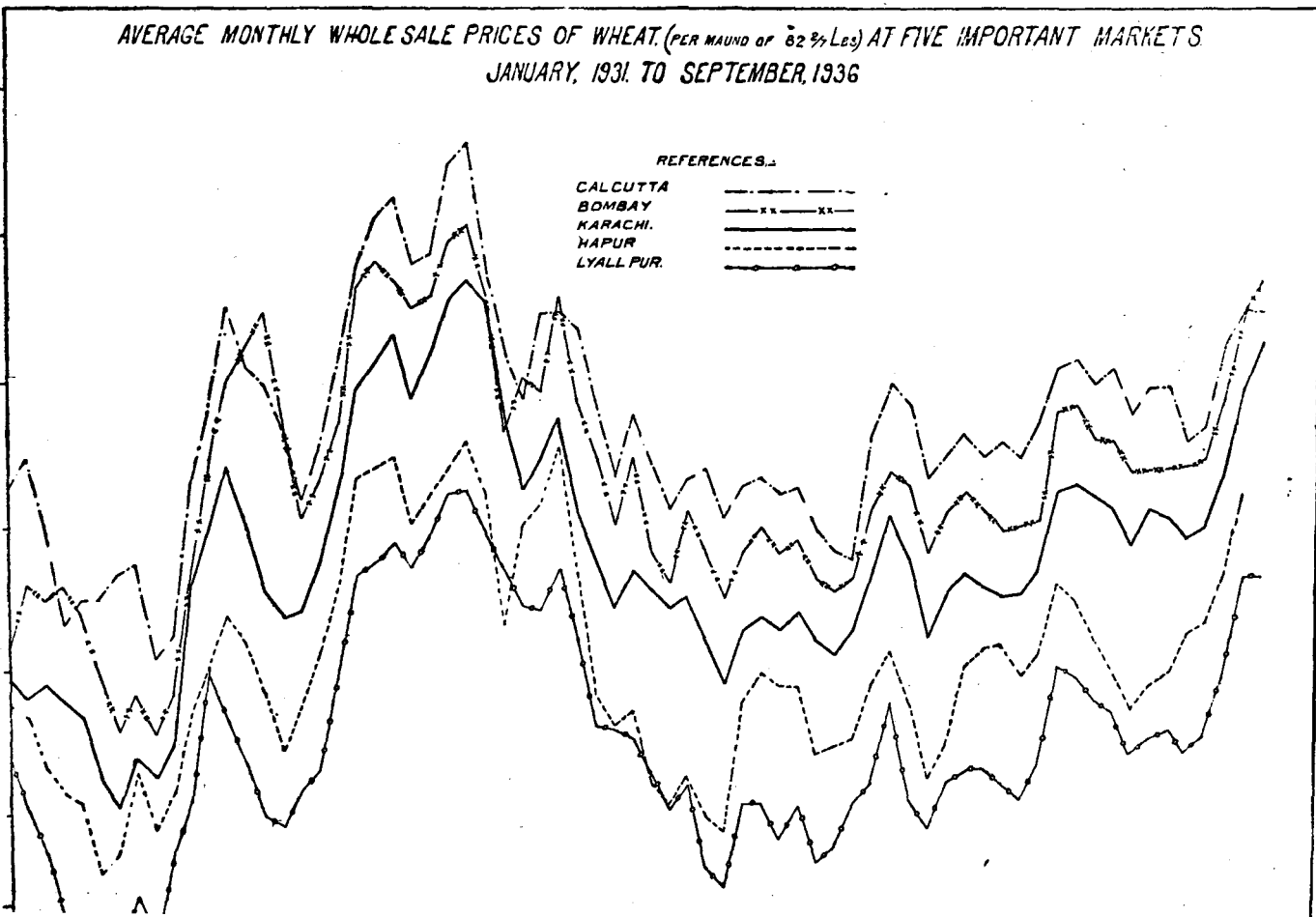
RUPEES

AVERAGE MONTHLY WHOLE SALE PRICES OF WHEAT, (PER MAUND OF 82 3/4 LBS) AT FIVE IMPORTANT MARKETS
JANUARY, 1931 TO SEPTEMBER, 1936

4/4
4/7
3/0
2/7
2/0
2/1

REFERENCES.

- CALCUTTA ————
- BOMBAY — x x — x x —
- KARACHI —————
- HAPUR ————
- LYALL PUR. — o — o — o —



(e) *Bihar*—This diagram contains three curves showing the price deviations in respect of white, red and mixed wheats at Patna. It will be seen that the price fluctuations in the case of white wheats are greater than in the case of the other two varieties. The decline in the prices of white wheat starts in March with a low point in May. Thereafter the trend is continuously upward to a peak in December with slight depressions in August and October.

(f) *Bombay*—This diagram represents price deviations at Bijapur, Dharwar, Sholapur and Poona with an average curve for the Presidency based on these four markets. It will be noted that from January to March there is some sympathy of movement in the various curves. After March the movements lose all similarity the Bijapur curve recording the most violent fluctuations. At this market prices rise sharply from July to September and precede a sudden and violent fall to a low point in November when on the contrary the highest levels are recorded by the other three markets of Sholapur, Poona and Dharwar.

(g) *Ports*—This diagram shows price deviations in respect of Karachi, Bombay and Calcutta. It will be noted that the seasonal variations at these ports follow a very similar course except for the December and January deviations in the case of Calcutta which were caused by some special circumstances in 1934. The preharvest or harvest fall begins in February touching bottom in May at Karachi and Calcutta and in June at Bombay. Thereafter there is an upward trend to August followed by a dip in September and again a rise in October. This conforms to the seasonal variations in the main producing markets although the individual variations are less pronounced. The price level is at its highest in December and January.

(h) *Average for the Provinces*—This graph shows the average deviations for the Punjab, the United Provinces, Bihar, the Central Provinces and the Bombay Presidency and Sind represented by Karachi. It will be observed that on the whole there is considerable sympathy of movement in the various curves. Excluding Bihar the general fall in prices starts in February and reaches bottom in April and May. Thereafter the trend is upward until August. In September there is a general decline, followed in the ensuing months by an equally general rise.

Average monthly wholesale prices of wheat (per maund of 82³/₄ lb.) at five important markets for the period, January 1931 to September 1936.

(see page 28).

The curves in this diagram represent the movement of wheat prices at the three important ports of Calcutta, Bombay and Karachi and two

important assembling markets in the interior *viz.* Hapur and Lyallpur. A glance at the diagram clearly shows a fairly close similarity of movement particularly since the beginning of 1934 when the different lines move more or less parallel to each other. The range of price variations between the different markets is also shown. It will be noted that the price differences between any two markets may vary appreciably from time to time. It will also be seen that the prices in the port markets are always higher than in the up-country markets whence the former generally derive their supplies. Of all the three ports, Calcutta being situated farthest from the surplus wheat areas is the most expensive market for wheat. On the other hand Lyallpur, in the heart of the Punjab surplus producing tracts, is comparatively the cheapest.

Average monthly prices (per maund of 82²/₇ lb.) of wheat.
(see page 31).

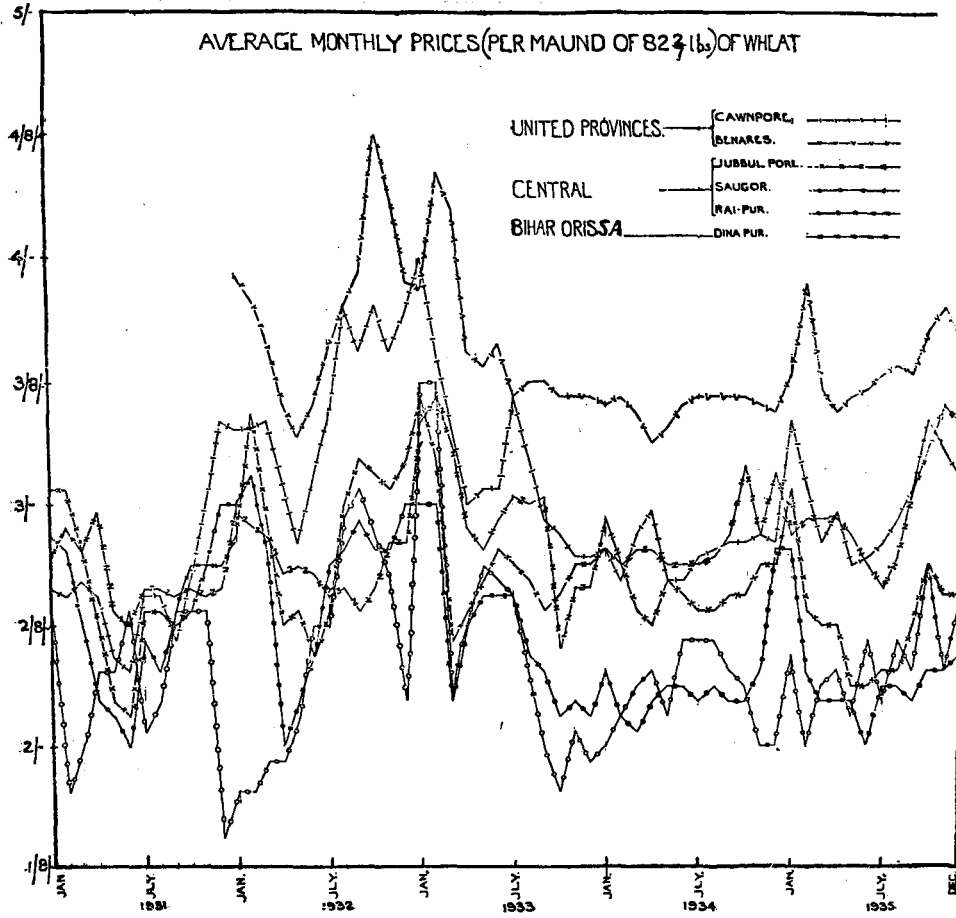
This diagram shows the price movements of wheat at Cawnpore and Benares in the United Provinces, Jubbulpore, Saugor and Raipur in the Central Provinces and Dinapore in Bihar. It will be noticed that in contrast to close relation in the price movements between the markets situated in the surplus producing centres and the main ports there is no similarity of movement in the price of certain inland markets in which consumption plays a large part. In May, 1934, for example, while the Raipur curve was falling, the Saugor curve was going up; similarly the Jubbulpur curve was rising while that of Cawnpore was falling. This appears to indicate the need for better distribution and for an improved price news service in those markets.

Exports of wheat by rail from the Punjab to Calcutta and difference between wholesale prices of Punjab wheat at Lyallpur and Calcutta.
(see page 32).

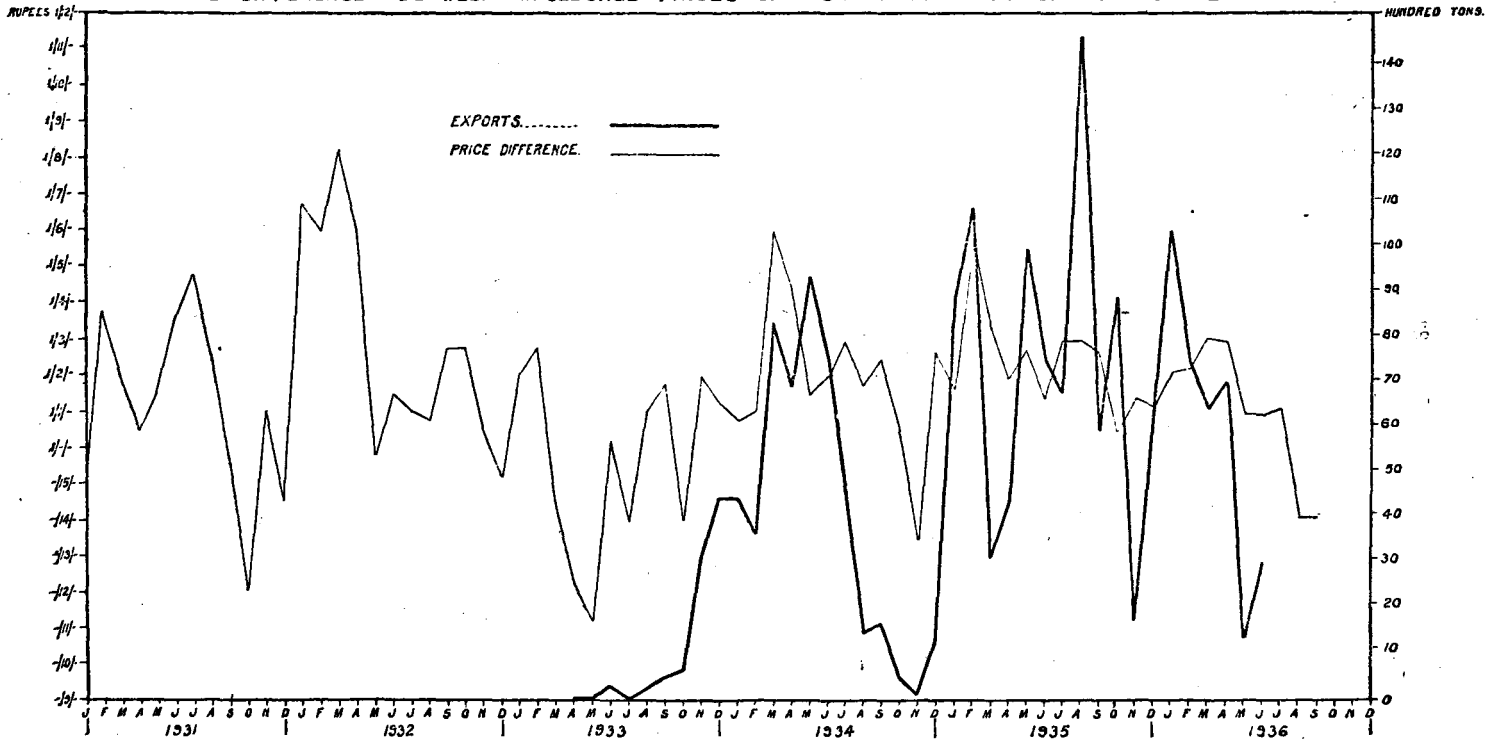
This diagram shows the relation between the exports of wheat by rail from the Punjab to Calcutta and the margin between Lyallpur and Calcutta prices, the former market being taken as the typical wheat exporting centre of the Punjab. It will be noted that a rise in the curve representing the price difference is accompanied or immediately followed by larger exports and *vice versa*. Generally the differences are wider after September or October in the off-season and the exports are also correspondingly greater during that period.

"Futures" prices of wheat at six important markets.
(see page 33).

This diagram indicates the movements of the monthly average prices of the nearest "futures" or forward position to the ready "or spot"

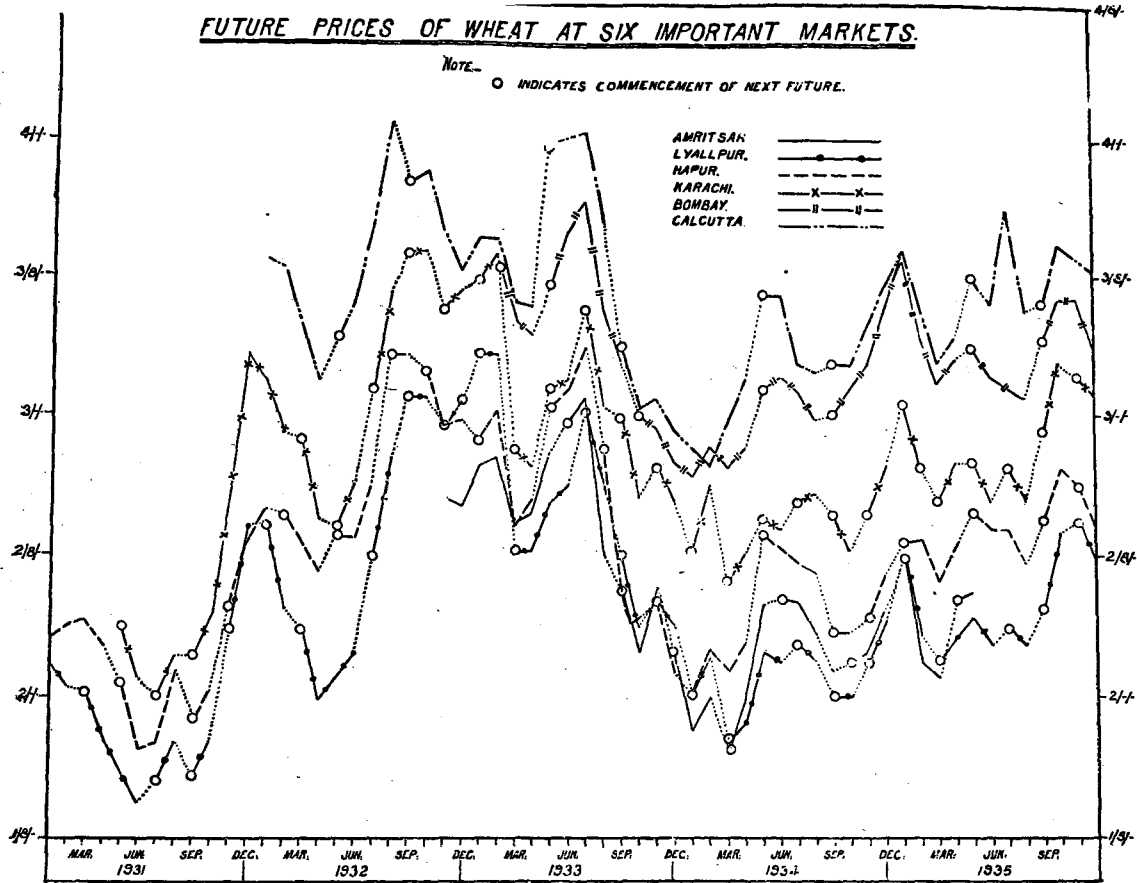


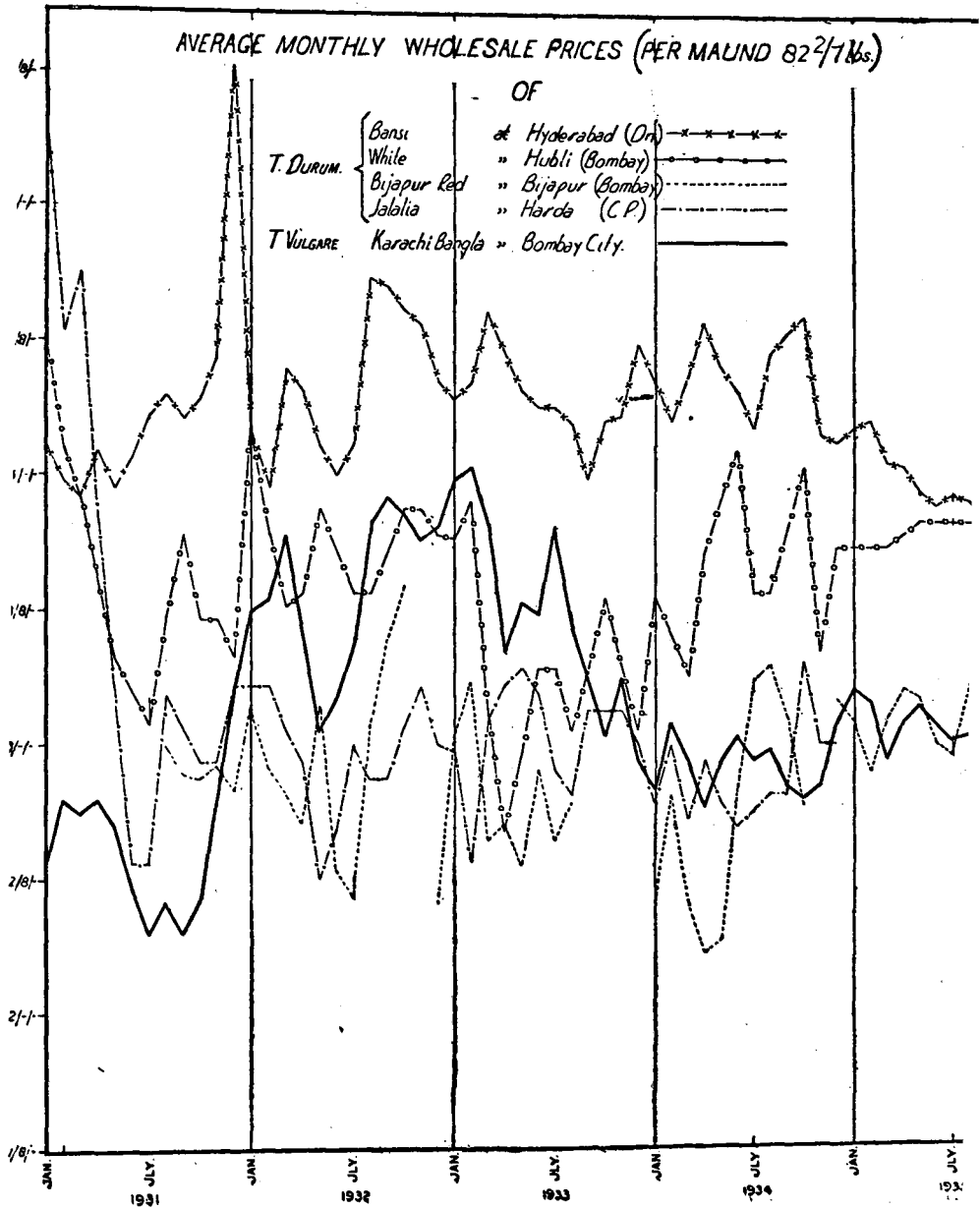
EXPORTS OF WHEAT BY RAIL FROM THE PUNJAB TO CALCUTTA,
AND DIFFERENCE BETWEEN WHOLESALE PRICES OF PUNJAB WHEAT AT LYALLPUR & CALCUTTA



FUTURE PRICES OF WHEAT AT SIX IMPORTANT MARKETS.

NOTE.— O INDICATES COMMENCEMENT OF NEXT FUTURE.





quotation ruling in the three terminals of Karachi, Bombay and Calcutta as well as the three upcountry assembling markets of Amritsar, Lyallpur and Hapur during 1931-35. The circles which appear along the various curves show the commencement of the next 'future' and the thin dots represent a blank period during which there are no quotations. It will be noted that like the ready prices in these markets the "futures" prices show a great degree of sympathy in their movements which is very striking during 1934-35.

Average monthly wholesale prices.

(see page 34).

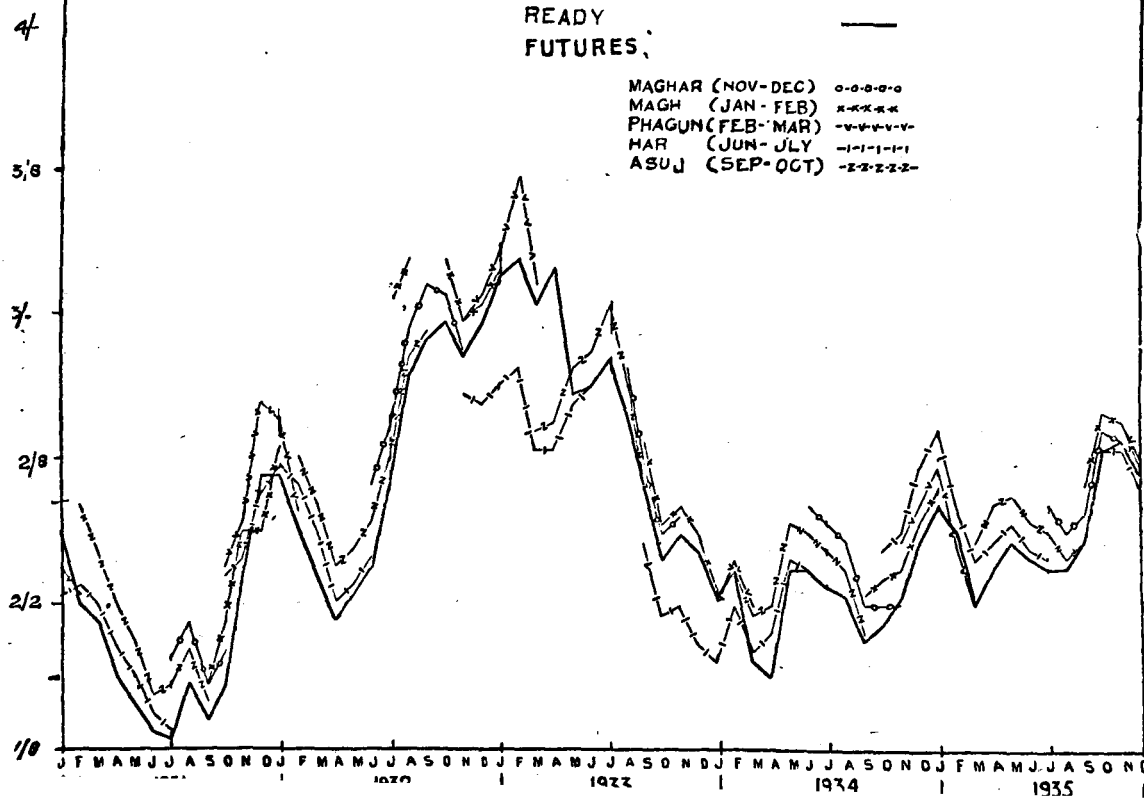
This graph represents the movements of prices of *durum* wheats at Hyderabad, Hubli, Bijapur and Harda and the *vulgare* or common wheats at Bombay. It will be observed that no similarity exists between the movements of the "*durum*" and "*vulgare*" types. In February 1935, for instance, the price of *vulgare* wheats dropped whereas that of *durum* as exemplified by Bijapur quotations advanced. It may also be added that even among the *durum* wheats there appears to be little in the way of a common tendency. For example, in January 1933 the prices of Jalalia at Harda (C. P) dropped, whereas those for Bijapur Red at Bijapur showed a sudden rise.

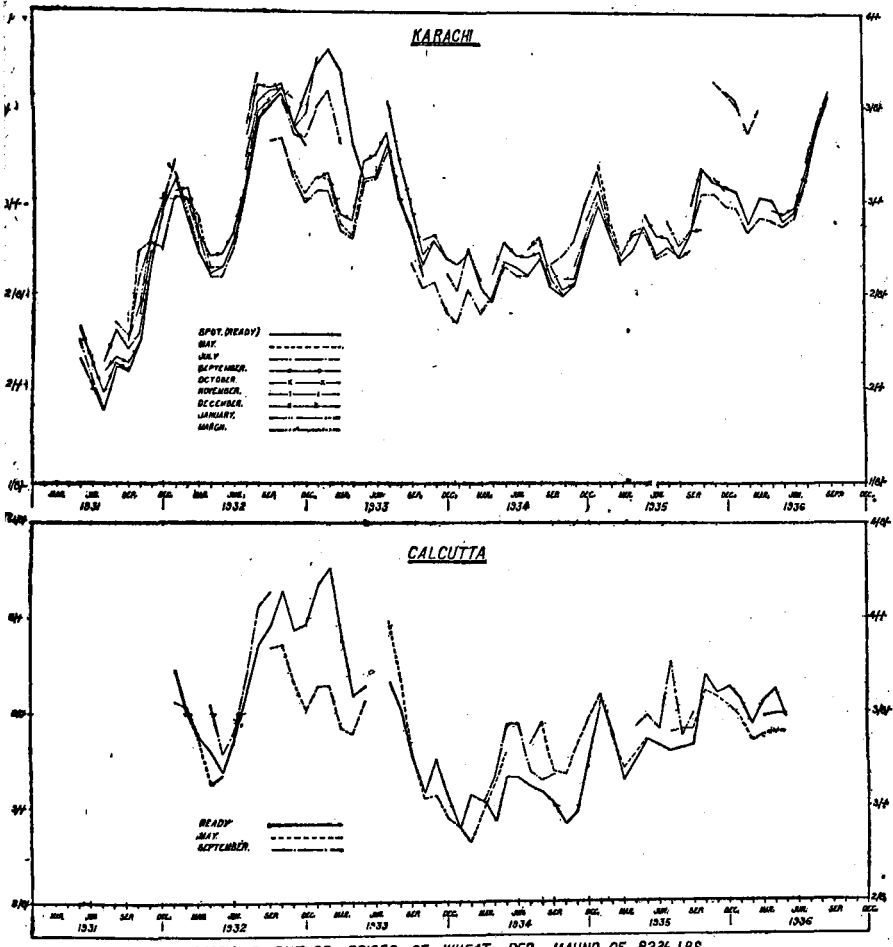
Ready and Future prices.

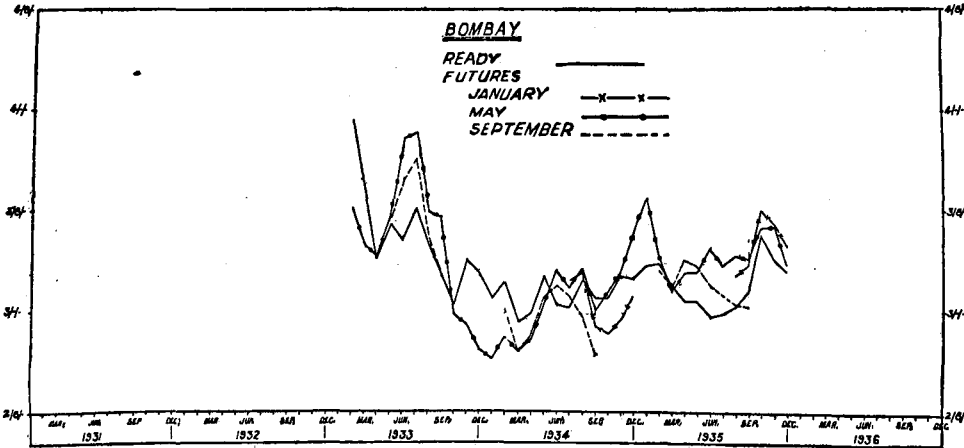
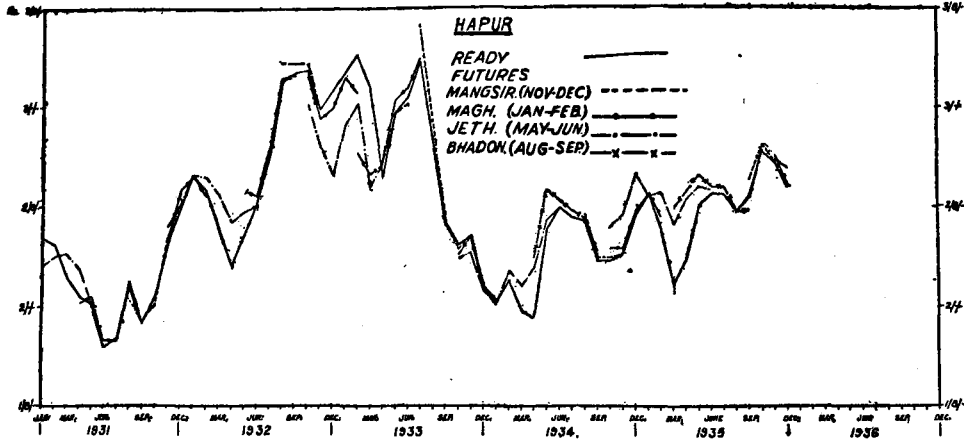
(see pages 36—38).

These five diagrams show the relation between the "ready" and "futures" prices of wheat at Hapur, Bombay, Karachi, Calcutta and Lyallpur. It will be noted from the various graphs that in periods when prices have a rising tendency the futures prices generally lag behind, whereas in times of depression "futures" values ordinarily range higher exercising a somewhat steadying tendency on the market. For instance, in the case of Hapur it will be seen that from July 1932 to March 1933, when the general tendency of the prices was to rise, "futures" lagged behind while in the period from January 1934 to December 1935 when prices remained at a rather low level the "futures" price ranged comparatively high. Another example may be seen in the Bombay diagram.

READY AND FUTURES PRICES OF WHEAT AT LYALLPUR







CHAPTER IV.

Preparation for Market.

The first step in preparing the wheat for the market is harvesting. This is generally done by the hand sickle. Subsequent threshing is done by bullocks treading out the grain, and in winnowing the ryot generally depends on the winds of heaven.

Efforts have from time to time been made to wean the cultivator from his present primitive practices. Scythes have been tried but without success since the workers object to adopting an upright position. Mechanical harvesters and bullock driven mechanical reapers have been tried out in different districts but owing partly to technical difficulties they have rarely been found economic either on irrigated or *barani* lands.

The cost of reaping by hired labour which is usually paid for in kind represents about 5 to 6 per cent. of the crop. Threshing, in rare cases where hired labour is employed, works out to about Rs. 4/6/0 per acre and winnowing about Rs. 1/8/0.

It is a question whether there is any great necessity to try and alter or improve the present methods of preparing wheat for the market as practised by the cultivator at any rate till primary markets are better organised.

The presence of impurities such as other food grains, oil seeds, etc., is partly due to the custom of sowing mixed crops, partly to the stacking of barley, gram and other grains or seeds in close proximity to the wheat and partly also to the use of one and the same threshing floor for all varieties of crops. Even when thoroughly cleaned in the process of winnowing, dirt may later find its way in among the wheat before being marketed owing to the practice of covering the wheat with earth, etc., in store as a protection against weevil attack.

For sale on the internal market a large amount of trouble and labour has to be undertaken after the wheat leaves the hands of the producer, before it is sufficiently clean and fit for conversion into *ata* by the consumer or in the power *chakkis*. In almost every wheat market in India large numbers of labourers of both sexes are employed for the purpose of dressing or cleaning the wheat before it passes into the wholesale or retail trade, and scattered groups of workers may be seen attending to separate and individual heaps, both small and large, all over the market place. The first dressing having been completed and the larger impurities eliminated, further operations are performed with a winnowing tray for

the removal of the smaller impurities, particularly where retail quantities are concerned and the buyer is the actual consumer. The screenings or residue from a heap, after it has been bagged, is also carefully re-winnowed by hand. The inconvenience and waste of time involved in these numerous operations at every stage is very considerable apart from the fact that the results achieved are often not commensurate with the amount of labour expended.

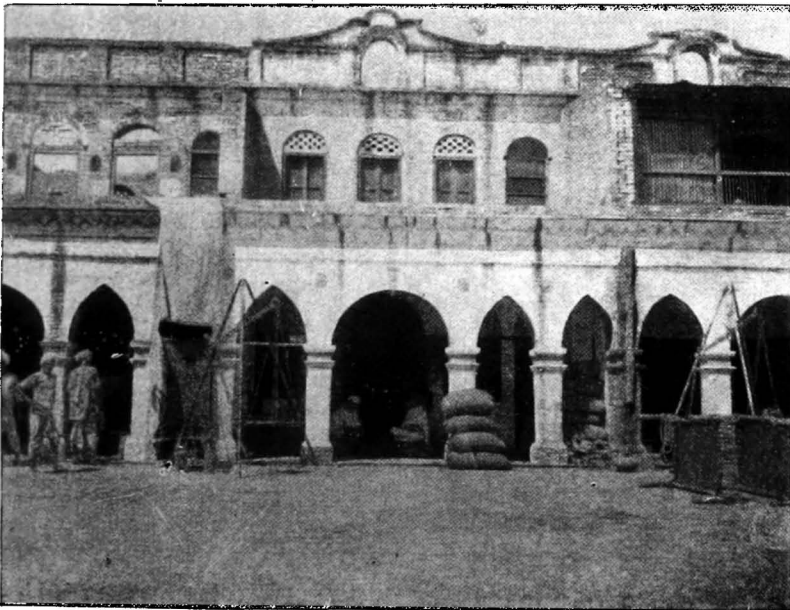
Where the wheat is destined for the export market shippers re-dress the grain at the port so far as is necessary. If barley is present in appreciable quantities in the wheat and if the price of barley is more than half the value of the wheat it may pay to have a special cleaning plant for removing the barley. For example, at Karachi until four or five years ago there was at least one elaborate cleaning and barley separating plant for wheat destined for the export trade. The fact that this machinery has now been dismantled is due to the decrease in exports and the irregularity of the trade as well as the difficulty of finding a market abroad for the barley with which the wheat formerly sent to Karachi from Sind and the south Punjab was often heavily adulterated.

For sale to roller mills the existing system of preparation as carried out on the holding appears to be adequate. These mills are equipped with suitable machinery for cleaning the grain and the barley or other grains extracted in the process are ground separately to be mixed in with the bran for stock feeding, and thereby the amount of loss is reduced. In regard to the dirt content this is usually discounted in the price when buying and, even if the wheat were as clean as a cultivator could possibly make it, it would still have to be washed in the process of conditioning prior to milling.

For the wholesale market the present methods pursued by the cultivators can generally make the wheat sufficiently clean to meet the terms and conditions of the contracts prevailing in the different markets. In fact, it would appear that the amount of dirt and other impurities present in the grain as put on the market is not infrequently due to the high percentage allowed in the contracts of different trade associations rather than to any shortcomings in the methods of preparation by the cultivators. In Lyallpur market for example, where the quality of the wheats specified in the local contract is high, (i.e., only a small percentage of refraction is allowed) and where the terms are mutual, the wheat as normally delivered by the cultivators is much cleaner than in,



A CORNER OF A TYPICAL *MANDI* IN THE PUNJAB
Notice the dirt and ordure on the floor in the foreground.



AN *ARHATIYA*'S SHOP IN A *MANDI*.



WINNOWING. A TYPICAL SCENE ON A FARM.



AN EXPERIMENTAL HAND WINNOWER USED ON A GOVERNMENT FARM IN THE PUNJAB.

say, Amritsar market where until very recently the local contract used to allow a high percentage of refraction and the terms were non-mutual so that anyone who delivered cleaner wheat of a higher quality than that required by the contract did not derive any benefit therefrom. As a result of an informal conference of representatives of trading associations and mills initiated by the Central Marketing Staff early in April 1936 a modified contract has lately been adopted at Amritsar which provides for the mutual adjustment of refraction.

The new basis has, however, not been long enough in operation to enable a fair comparison to be made with the condition of the wheat arriving under the old non-mutual contract.

For the export market, for roller mills and for the general wholesale trade there seems no necessity to try to induce the cultivator to alter his present methods of preparing wheat for the market. Although, as will appear in a later chapter, there is ample scope for improving the cleanliness of the wheat in the cultivators' own interest, the present methods are in the main adequate except in the case of the wheat purchased by consumers direct in small retail quantities or for crushing in the power *chakkis*. This constitutes, however, by far the greater proportion of the wheat used in the internal market and amounts probably to between 4 and 5 million tons in all, 2½ millions of which are crushed in the power *chakkis*. As has already been observed this wheat is dressed and redressed at every stage but the methods employed are primitive and although fairly efficient after their own fashion the wheat when finally ground still contains a certain amount of dirt and other admixture. It seems desirable that this should be eliminated. The wheat to be consumed in this way should, if possible, be made as clean as that used for producing flour in the roller mills. This can only be done if, as well as using sieves and separators, the wheat is also subjected to some form of washing. This, however, does not seem to be an operation which could be carried out by the cultivator but could be more properly done at the large wholesale assembling centres in the producing areas by those enterprising enough to instal a simple plant necessary for the purpose.

Experiments are at present being carried out to see how far there is a demand for this special type of clean wheat and if justified by the circumstances it seems possible that the conditioning plant attached to roller mills which have been closed down might be suitably used for this purpose.

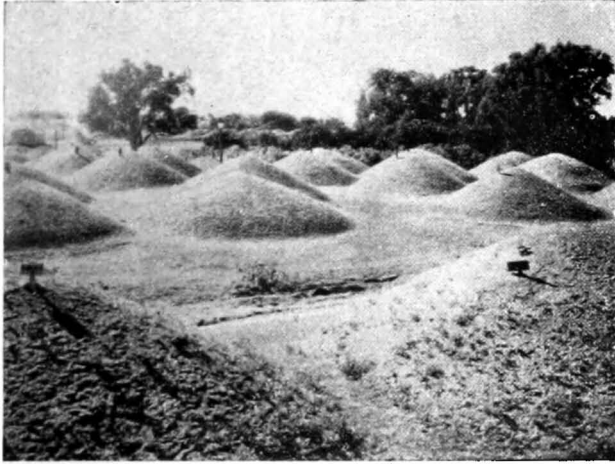
CHAPTER V.

Assembling.

Having laboured for months to produce Rs. 100 worth of wheat the grower takes it to the market where he meets with the *kachcha arhatiya* and his tout, the *dalal*, the *rola* who dresses his wheat, the weighman, the *charhava* who fills the scale pan, and the *ota* who holds open the mouth of the bag. These and the *munim* (the *arhatiya*'s clerk), the *chaukidar*, the sweeper, the waterman, the *arhatiya*'s cook and a horde of beggars of every description all regard themselves as entitled to a share of his produce. He is fortunate if by the end of a day they have only taken two or three rupees, since they are just as likely in some markets to take seven or eight rupees of his precious hundred. It is not surprising if many cultivators rather than face this appalling array prefer to sell their grain to the *baniya* or the itinerant *ghumars* and *telis* who come round the villages.

Before he reaches the market the grower has to pay, in most cases, octroi, toll or terminal tax to the municipality. In the market he has to meet charges such as *arhat* and *dalali* and be subject to deductions for *karda* (refraction) or *dhalta* and *dane* on account of weight. *Tulsi* he pays actually for the weighing, *palledari* or *hammali* for handling by various people, and *dharmada* or *dharmao* on account of charity. Many of these charges are taken in kind and in taking their share the persons concerned are liable to be generous—to themselves. In the case of cash deductions also such as commission or brokerage, the customary charge is more liable to be enhanced than reduced although concessions are frequently given to the larger *zamindars*. The scale of charges given in this report must, therefore, be regarded as the minimum admitted charge in the markets concerned and it appears that in the Colony markets in the Punjab these are as low as Rs. 2-1-3 per Rs. 100 but in the central and eastern markets of the United Provinces the total charges may amount to as much as Rs. 7-13-0 per Rs. 100. In regulated markets they tend to be lower. In Hyderabad, for example, the maximum in those markets is Rs. 3-2-4 but in the unregulated markets Rs. 5-1-8 per Rs. 100. This in itself is strong argument in favour of the regulation of markets.

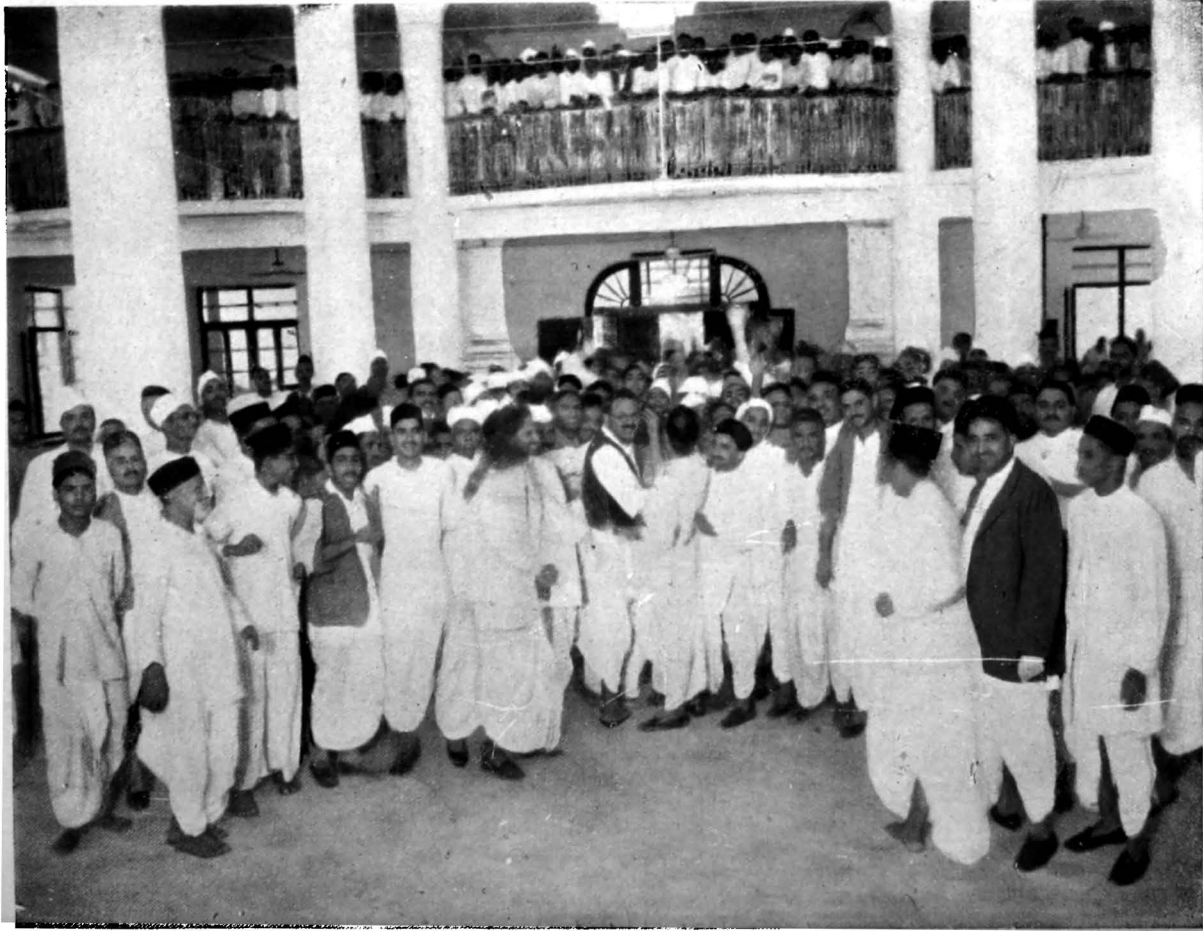
The great objection to these market charges lies not only in their multiplicity but also in the fact that they are not clearly defined and specified. In every market each separate charge always tends to be exaggerated in individual cases. Some provision ought, therefore, to be made whereby the charges payable in each market should be drawn up



THE INTERIOR OF A *BANDHA* (C. P.)



FILLED *BANDHAS* WITH CONICAL MUD TOPS (C. P.)



by some market authority under rules made with the approval of the appropriate department of the local Government. The scale of recognised charges should be posted up in a conspicuous place in the market and all persons entitled to make or take charges either in cash or kind should be licensed by the market authority. In the event of any one taking more than his legitimate fee or share the license should be suspended. It may be observed that trade associations in various markets have already done much to regularise the charges in the markets where they are operating even although growers are not represented on the association. Provided the market charges are fixed it does not seem to matter whether it is done by trade association or by instituting regulated markets for grain under the local market legislation such as already exists in Bombay, the Central Provinces, Madras and Hyderabad State.

Many of the practices current in markets should be abolished or improved. The weighing charges and deductions seem excessive and some attempt should be made to experiment with the introduction of weigh-bridges with a view to improving conditions. A fixed deduction (*karda*) on account of impurities (refraction), which may or may not be present, seems an unjustifiable charge on growers who put good clean wheat on the market. Similarly the practice of *dara* sales by which heaps of varying quality are sold together at one price is distinct deterrent to any effort by cultivators to improve the quality of their wheat. Sale should be by individual lots and a standard contract with mutual allowances as subsequently referred to should be adopted for "ready" sales in the markets as well as for "futures". The method of bidding under the cloth (*pardah*) has been frequently criticised and the secrecy which it involves invites such criticisms, but there would seem to be no objection to the practice if, as is commonly done in the Central Provinces, the final bid is openly declared.

If markets are to be improved particularly in regard to the layout, sanitation, regulation of charges, etc., some form of regular supervision by the municipality or the local Board is necessary. The fact that the ownership of some markets is in private hands would appear to be no obstacle to this and any regulations applied to Municipal markets should be made equally applicable to those under private control.

In improving the layout of grain markets consideration ought to be given to the desirability of protecting the produce from rain during the monsoon or other times. Apparently only in one major up-country grain

market, namely at Nagpur, is provision of this kind made. Were the practice more general it would partially remove one of the causes of the seasonal rush of supplies by allowing the marketing of grain to continue in some measure during the monsoon. It would at least prevent a good deal of damage which occurs from irregular and unexpected rains later in the season.

Attention needs to be drawn to the hampering effect of octroi duty terminal taxes and tolls on marketing. These amount sometimes to 4 or 5 per cent of the value of the wheat and are generally to be paid by the cultivator. In theory of course the octroi duty should be payable by the consumers in the town in the form of enhanced prices but owing to the fact that they are in the first instance paid by the cultivator-seller who has no alternative outlet the charge comes altogether out of his pocket. Considering the fact that the amount of octroi collected in the course of the year by municipalities—mainly on agricultural produce—amounts to over Rs. 1½ crores^o, the fairness of the incidence of this tax is a matter for serious investigation. That the octroi is frequently "more than the traffic can bear" is clear from the fact that in quite a number of cases markets have been driven outside municipal boundaries.

So far as the finance of assembling is concerned the larger joint stock banks are developing a growing business in making advances against stocks but this is only noticeable in certain districts and markets, and much apparently still needs to be done to make those facilities more generally available in the lesser markets.

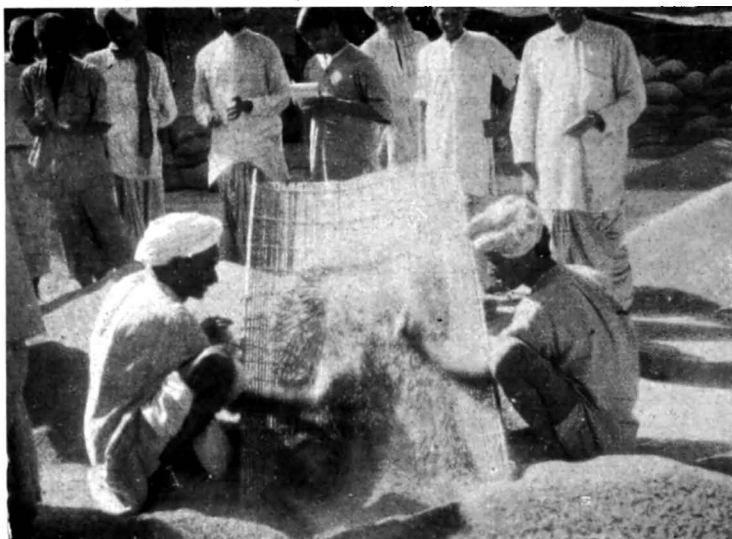
^oStatistical Abstract for British India, 1932-33.



**A TYPICAL *KACHCHA ARHATIYA* WEIGHING OVER WHEAT TO
A RETAIL PURCHASER.**

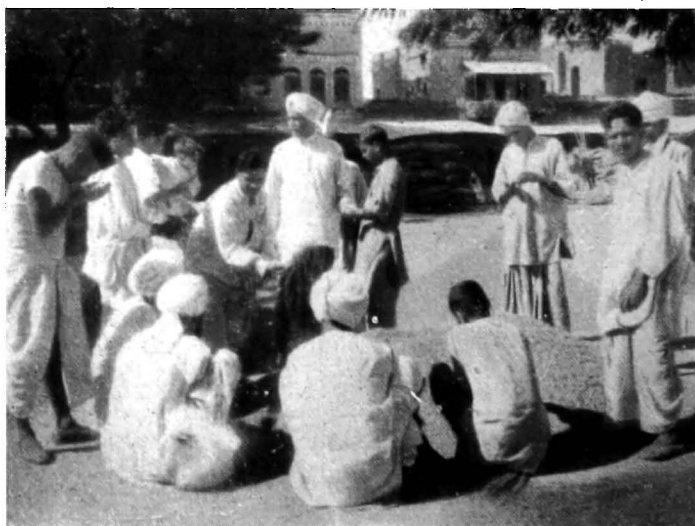


**WEIGHING OVER A HEAP OF WHEAT.
Note the four functionaries employed in this operation.**



**DRESSING AND CLEANING WHEAT BY PASSING IT THROUGH
BAMBOO OR CANE SLATS.**

This method is very commonly used for separating wheat-gram mixtures



**AUCTIONING A HEAP OF WHEAT IN A MARKET IN THE EAST
PUNJAB.**

The prospective buyers may be seen examining samples preparatory to making their bids.

CHAPTER VI.

Classification, Grading & Standardisation.

There is a deal of loose talk about the classification, grading and standardisation of Indian produce, so much so that one would think that this step is all that is required to put marketing on a sound and efficient basis. But is there any point in all this talk?

We have already seen in previous chapters that in certain markets certain types of wheat, e.g., white *durums*, command a premium of as much as Re. 1 per maund over other wheats. Suppose a grower sees from some paper or other that white wheat is selling at these high prices in a certain market and that after allowing for freight he could apparently sell his produce there at a premium over what he might obtain in the local market. If he then sends his produce to that particular market he may later discover to his chagrin that instead of obtaining a premium over the local price, as he had hoped, his wheat is sold at a discount. He would be most disappointed. He probably did not realise, and under existing conditions could not be expected to know, that the wheat he was trying to market was a soft *pissi* type whereas the wheat which was selling at a premium was white *durum*. In order to avoid misunderstandings of this kind it is necessary in the first place to classify the different types of wheat into their various categories.

From a commercial point of view the most important type consists of the hard or semi-hard white wheats of Northern India which cover about two-fifths of the total wheat area in the country. This class of wheat may be generally recognised as "*sharbati*". The term "*pissi*" may be used to denote the soft white wheats grown in Central Provinces and part of the United Provinces south of Cawnpore and Lucknow. Hard or semi-hard red wheat grown in the Punjab may be classified as *lal kanak* and the soft red of the Central Provinces as *lal pissi*. All these types belong to the common species of wheat—*Triticum vulgare*. The *durums* of Central India and Central Provinces are most easily classified as white (or amber) "*bansi*", "*jalalia*", or "*khandwa*" and red as "*kathia*" in Central India and "*Bijapur red*" in the Carnatic.

If these different classes of wheat were recognised and generally adopted as the basis of trade description and price quotation much misunderstanding would be avoided. In the absence of this systematic classification, price quotations, however, have no real meaning from a business point of view.

Grading involves the sorting out of produce into different steps or gradations of quality. When considering the question of quality it is necessary to have in mind the quality factors required by buyers—either manufacturers or consumers. So far as wheat is concerned the great majority of final buyers want a good, hard, strong, clean, white wheat.

A sound wheat is recognised as one free from damage and shrivelled grains. Damage owing to bad storage and other conditions may affect the internal structure of the grain so as to impart a disagreeable flavour and make it quite unsuitable for milling or human consumption. The price of any particular sample must therefore be related to the amount of damaged or slightly damaged (touched) grain it contains.

Hard wheats and strong wheats are generally but not always synonymous. Hard wheat usually has a high percentage of gluten which makes the flour (*maida*) or *ata* produced from such wheat capable of absorbing and retaining a considerable amount of water whereas soft wheats are usually deficient in gluten and when made into *chapatis* readily part with their moisture and become stale much more quickly. The hardness and the strength of wheat is related to the variety and classification already referred to but may be modified to some extent by the district and the growing condition of the season.

A clean wheat is free from dirt and impurities such as oilseeds or other non-farinaceous matter like *bhusa*. The presence of these impurities and also of barley naturally lowers the value of any particular lot. The presence of red wheat in a sample of white also involves a discount.

Grading therefore involves the sorting of wheat according to these various factors and a grower or other seller may divide his produce into different lots accordingly. Experience shows however that it very seldom pays an individual grower to go to this trouble since his produce so graded when it reaches the market sells at the ordinary market rate. This is sometimes taken as an indication that grading is not a paying proposition.

It must be admitted that in isolated individual cases this is so. Not until the market and buyers as a whole recognise certain grades as being better than others is it possible to obtain, for high quality produce, a premium over low quality. There is in fact a constant tendency for low quality to drag down the price of the high quality. In the case of *dara* sales, for example, where a number of heaps of different quality

are sold all together it is evident that the high quality wheat is carrying the poor stuff with the result that the bad producer is being paid a premium for his inefficiency.

Until grades have been defined and standardised in such a way as to be made the basis of the majority of transactions between buyers and sellers the full advantage is not gained from grading. Every effort should therefore be made to introduce standard grades along with systematic classification.

The present procedure in regard to "ready" sales in country markets varies enormously. In some places, no matter how good and clean the cultivator's wheat may be, after the bargain is completed a customary deduction ('*karda*') is made on account of impurities which the wheat may or may not contain. In such markets any cultivator with a modicum of sense makes sure that his wheat is adulterated beyond the limits of the customary "*karda*".

There are great differences also in the quality of wheat tenderable under the "futures" contracts of many of the leading grain trade associations in this country. Where the amount of refraction (impurities) allowed under a local contract is high evidence shows that the tendency is for sellers to lower the quality of the wheat until it corresponds with that allowed under the standard contract prevailing in the market so that, although the cultivators in the district concerned put good clean wheat on the market, before this reaches the final user it has been subject to a considerable amount of adulteration. This is particularly the case where the terms are non-mutual, i.e., where specified deductions are made by the buyers for refraction beyond certain prescribed tolerances and there is no provision for making payments to the seller if the wheat should, in fact, contain a lower percentage of impurities than that specified in the contract. There is great need for the wider adoption of a mutual basis in wheat transactions. By making all allowances within a certain range mutual, sellers are given the best possible incentive to deliver clean and pure wheat.

The enormous variation which exists between the different contracts throughout the country makes it difficult for traders in one market to deal in another. This is now becoming generally recognised by the more progressive merchants and at a recent conference of certain representatives of grain trade associations and milling interests with the Central Market-

ing Staff a fair measure of agreement was reached which may result in a standard all-India contract being adopted by the interests concerned for the 1937-38 crop.

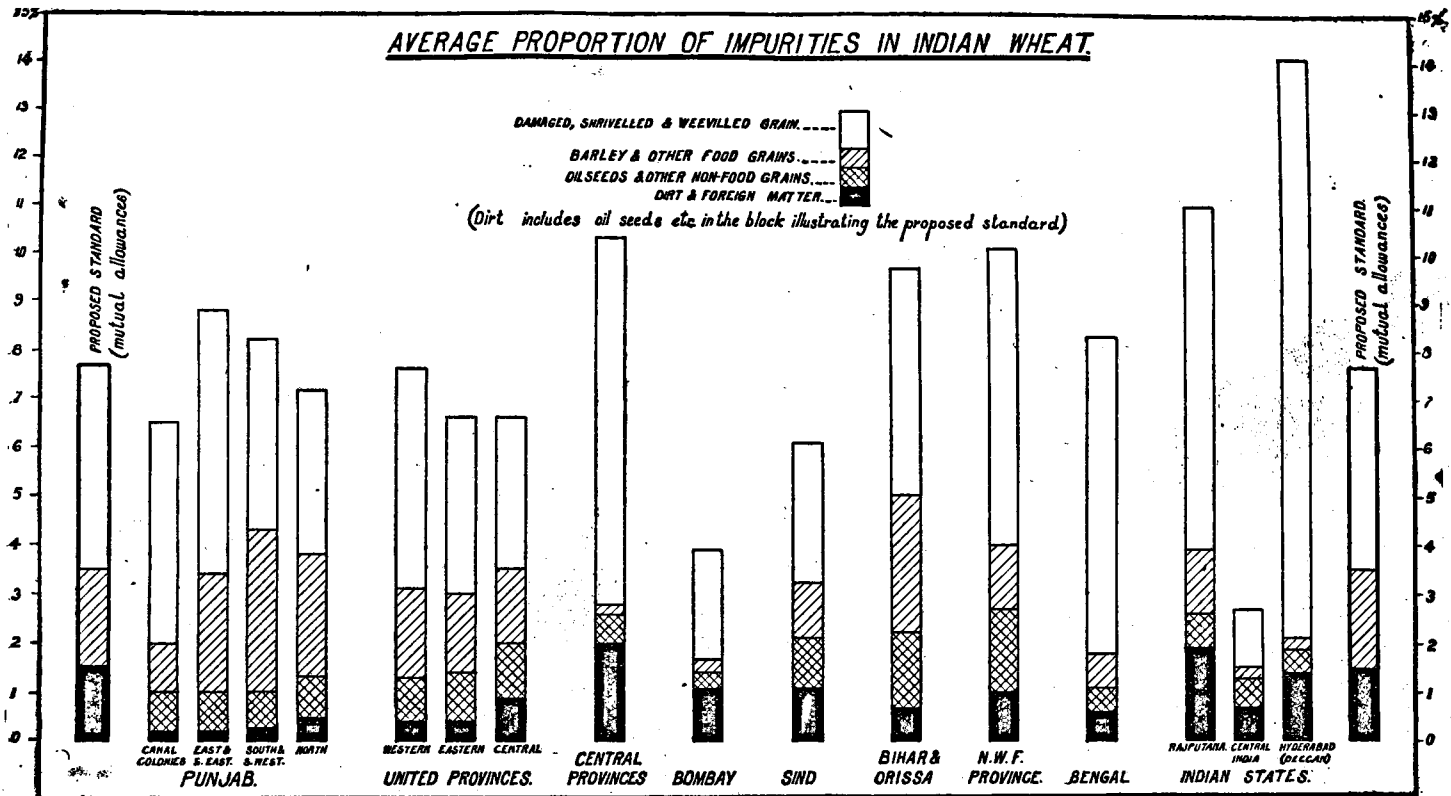
The proposed contract provides a uniform basis in respect of dirt, barley, damaged, shrivelled, weevilled and red wheat and in so far as the wheat tendered is of a higher quality than the basis the terms are mutual and allow for the seller claiming a better price on that account.

It may seem somewhat too advanced to apply the principle of standard tolerances with mutual allowances to "ready" sales. The terms of the proposed "futures" contract, however, having been adopted by the larger and more important buyers, it seems desirable that they should also be used in connection with "ready" wheat. It is suggested that although all the produce sold is in such cases open to inspection, the price should be fixed on the basis of the standard contract and any premiums payable because the wheat is of a higher than the basic quality provided for under the standard contract, should be paid and conversely any deductions on account of the wheat containing a greater percentage of impurities than the tolerance, should be made with reference to the actual facts of the case. Customary deductions such as "karda" should be abolished.

The price arrived at in the ordinary process of bargaining should be the price of standard quality wheat. Any premiums or deductions made thereafter should be related to the quality of the district especially in regard to the particular sample on offer. If this were done and this price were quoted in all markets and all publications it would be possible for growers, traders, or others to know in which market it would be possible either to buy or sell their wheat to the best advantage.

An improvement in the present classification of wheat can be most readily effected by the trade and the trade press recognising and quoting the different classes referred to above. The Agricultural Departments could also help by recognising that those commercial classes of wheat are in the main related to certain geographical areas and when they are propagating "improved" types of wheat they should have regard to the class of wheat already grown in the different districts. For example, except on very good grounds, the department should not attempt to extend the cultivation of *Triticum vulgare* in typical *durum* districts.

AVERAGE PROPORTION OF IMPURITIES IN INDIAN WHEAT.



So far as standardisation and grading practice is concerned wholesale traders and large buyers generally through their Associations can do a great deal and they have already shown their willingness to introduce a standard contract for "futures" transactions. The application of the same standard contract terms to "ready" transactions in the ordinary country markets is desirable and it is a matter for consideration by local authorities and local trade associations whether this should be made the subject of statutory provision or left to the initiative of market committees or the trade as represented by private enterprise or producers' co-operative societies.

EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER VI.

Average proportion of impurities in Indian wheat.
(see page 55).

This diagram illustrates the total average proportion of refraction of all kinds found in the wheats of the various provinces and States in India for comparison with the proposed standards tentatively agreed upon at the first Grain Conference held at Delhi in April 1936. It will be seen that the total refractions vary from 2.71% in Central India wheats to 14.11% in those of Hyderabad (Deccan). The proposed standard tolerances were originally fixed at 7.75% but were subsequently modified at a second Conference in April 1937 to 7.5%.



STORING WHEAT IN A DWELLING HOUSE IN THE HEART OF AMRITSAR CITY. THE BAGS ARE BEING CARRIED TO AN UPPER STOREY WHERE THE CONTENTS WILL BE EMPTIED INTO BULK.



MOUTH OF BRICKLINED PIT AT CHANDAUSI.



**BULK WHEAT FROM THE VILLAGE BEING UNLOADED IN A
CENTRAL PROVINCES MARKET.**

Note the containers used.



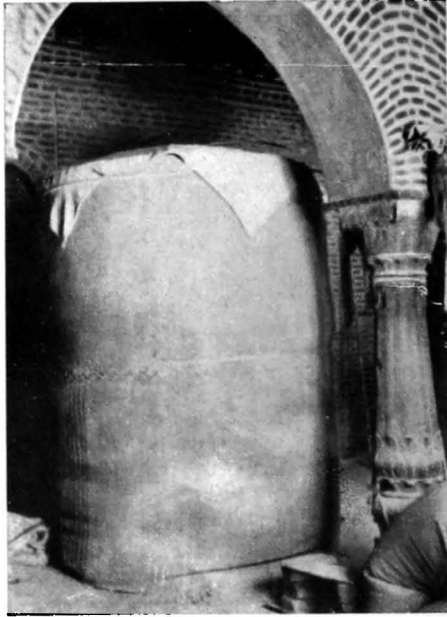
THE TYPICAL BULLOCK CART OF NORTHERN INDIA.



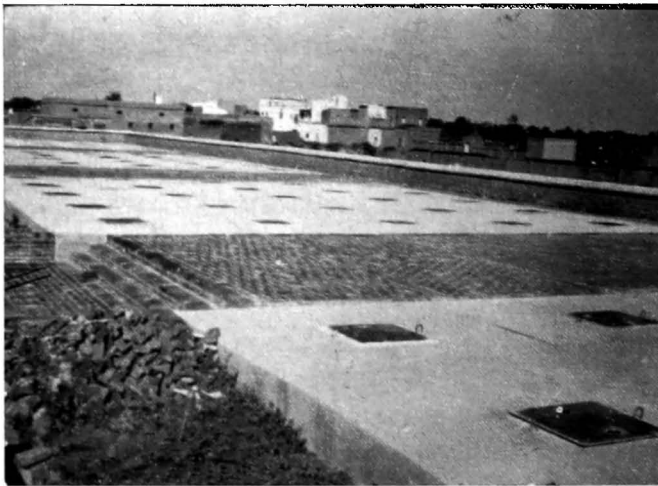
STORING WHEAT IN A DWELLING HOUSE IN THE HEART OF AMRITSAR CITY. THE BAGS ARE BEING CARRIED TO AN UPPER STOREY WHERE THE CONTENTS WILL BE EMPTIED INTO BULK.



MOUTH OF BRICKLINED PIT AT CHANDAUSI.



THE THEKKA (EAST PUNJAB).



**REINFORCED CONCRETE KHATTIS, OF MODERN DESIGN
(MUZAFFARNAGAR).**

CHAPTER VII.

Conservation.

Many and various are the methods of storage practised throughout India, from small woven *pallis* or *thekkas* in the villages holding only a few maunds each to the large godowns at the ports capable of storing hundreds of tons. In most of the upcountry markets storage is done in a *kotha* (generally a room in the *arhatiyas'* shop or a portion of a dwelling house adapted for the purpose) or a *khatti* (or *khondi*)—a pit in the ground lined with mud and *bhusa* (*kachcha*) or masonry, or concrete (*pakka*)—capable of holding from 250 to 1,000 maunds but usually about 450 or 500 maunds each.

The new system of concrete *khattis* erected by the local grain trade association at Muzaffarnagar is worthy of serious attention. Storage of this type, if specially provided with some form of roofing to make handling possible during the monsoon months and if constructed in close proximity both to the railway and to the market, would form a suitable model for the reorganisation of storage accommodation in all the main assembling markets. Not only is the Muzaffarnagar concrete storage a paying investment for the trade association, but it safeguards the grain in large measure against damage during storage so that it sells at a premium over wheat stored in *kachcha khattis*. On that account although the prime cost and seasonal charge are higher for concrete pit storage it is in the end cheaper and more economical than storage in *kachcha* pits. It may be observed incidentally that judging from the experience with the elevator at Lyallpur this form of storage is not suited to Indian conditions.

Owing to defective storage large losses are incurred each year by dampness and weevils as well as other vermin such as rats and white ants. The total loss is, on the most conservative estimate, about 3 lakh tons a year valued at over Rs. 2.4 crores. Any money devoted to the elimination or control of this enormous loss would be money well spent.

At present the risks of storage are high not only owing to the amount of damage in storage but also on account of price risks. Storage costs are also, therefore, high and tend to produce a serious depression in prices at harvest time.

It seems clear that the risks can be largely eliminated or reduced by improved storage and by improved organisation for "hedging" stored grain on the "futures" markets. If this were done the present net margin of nearly 8 per cent gain could apparently be almost doubled. Assuming,

however, that the traders' margin, by force of competition, remains at its present level the large drop in growers' prices at harvest time—amounting to almost 20 per cent at some centres—should on that account be reduced by something like 8 per cent.

In view of the substantial gains to be achieved for all concerned—growers, merchants and consumers alike—every inducement and encouragement should be given to trade associations or others operating in the large upcountry assembling markets to concentrate and improve the storage accommodation on the lines indicated and to make available a reliable system of "hedging" wheat stocks on the basis of standard "futures" contracts capable of being dealt in not only by local traders but also by buyers in the more distant consuming markets. This point is, however, more fully dealt with in a previous chapter dealing with standardisation.

Incidentally the gain in weight of wheat stored in exposed conditions—due to the absorption of moisture—is likely to blind some people to the need for improved storage and in some cases even give rise to opposition. Under a standard contract such wheat will no doubt in due course be discounted or a premium given for dry wheat. Investigations are proceeding at the instance of the Imperial Council of Agricultural Research for determining the natural moisture content of wheat under different conditions in various districts with a view to establishing a basis for a fair rate of deduction.

The total available storage accommodation of all kinds in India is difficult to estimate and there is no regular record of the amount of stocks held, or of the amount of carry over in March from one year to the next. Figures obtained in the course of this survey from various centres show, as might be expected, that stocks are normally at their highest in June, July and August, by far the greatest concentration taking place in the upcountry markets. There is no evidence, however, that the carry over at the end of the year in any district usually exceeds more than about two months' supply. It should, perhaps, be observed that the trends of stocks at the various ports do not always correspond with one another or with stocks in the upcountry markets.

Having regard to the bearing of stocks on day to day prices it is essential that a proper system should be devised for regularly collecting, recording and publishing the stocks held at a number of the chief port and upcountry markets. A beginning in this direction has already been made by broadcasting weekly, along with prices, the stocks reported by a number of the leading trade associations.

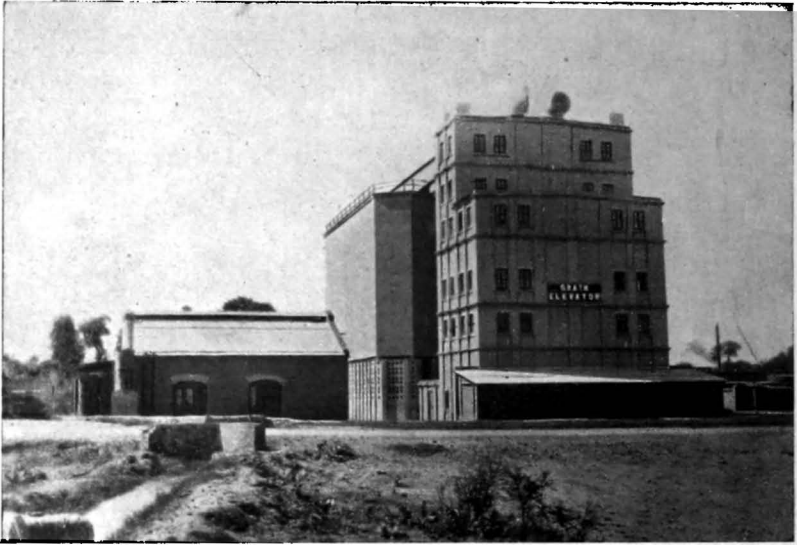


**BULK WHEAT FROM THE VILLAGE BEING UNLOADED IN A
CENTRAL PROVINCES MARKET.**

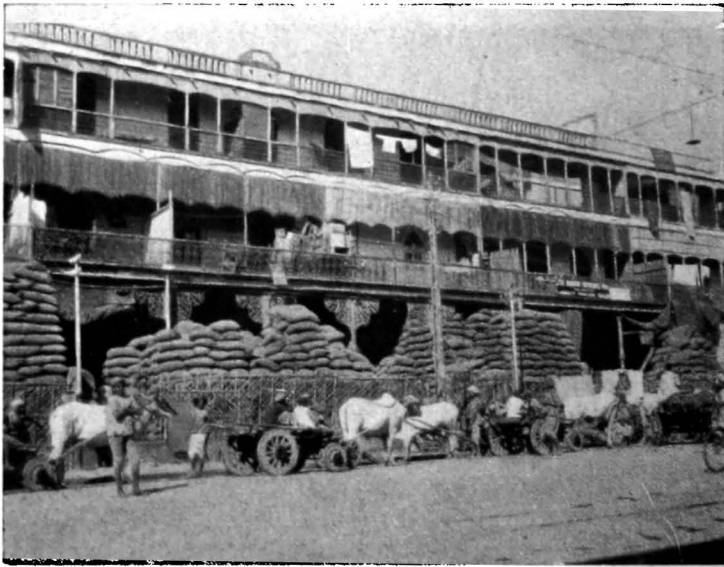
Note the containers used.



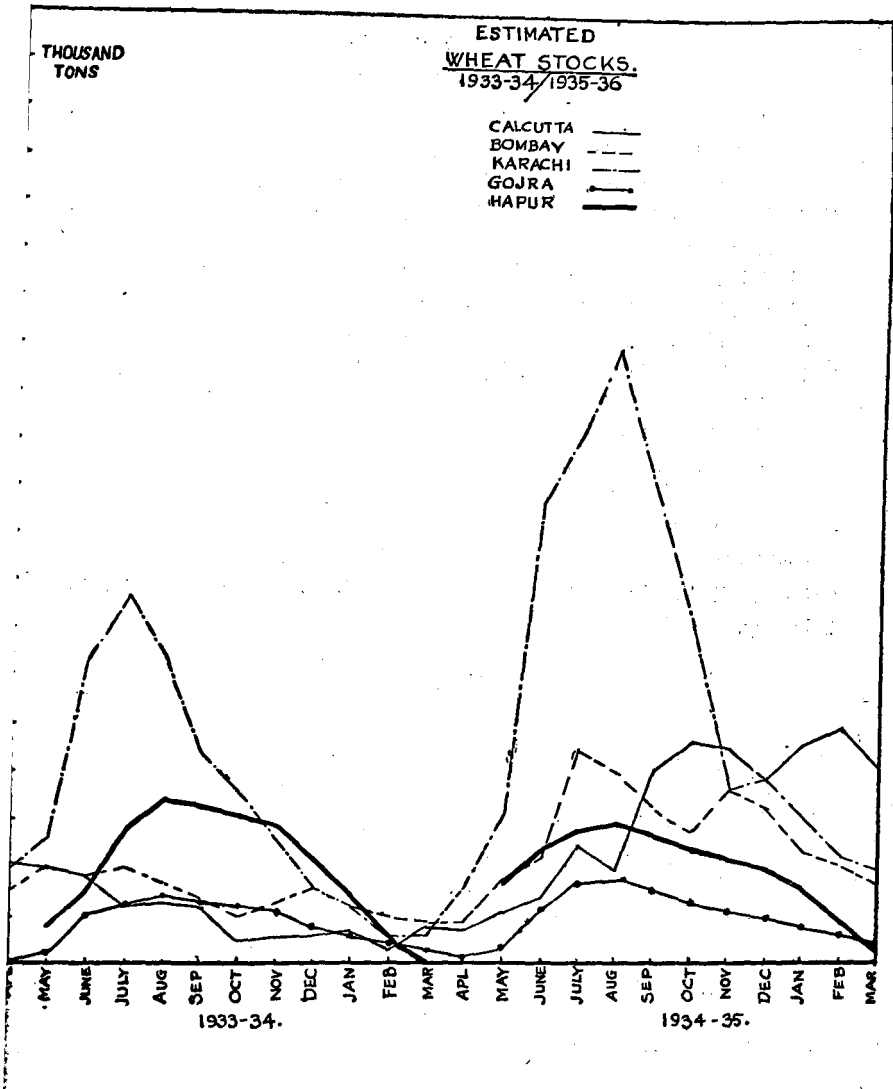
THE TYPICAL BULLOCK CART OF NORTHERN INDIA.



GRAIN ELEVATOR LYALLPUR.



THE CHIEF WHOLESALE GRAIN MARKET—DELHI.



EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO
CHAPTER VII.

Estimated wheat stocks.

(see page 63).

This diagram illustrates the periodicity in the estimated stocks of wheat at the three main ports of Karachi, Bombay and Calcutta and two upcountry markets Gojra (Punjab) and Hapur (U.P.). It will be seen that the curves representing stocks at Karachi and the two upcountry markets afore mentioned, indicate a marked periodicity. The peak is reached between June and August and thereafter stocks begin to decrease reaching the lowest point between February and April, the period just prior to the harvest season. The curves representing the stocks at Bombay and Calcutta, two large consuming centres, show great fluctuations. In 1933-34 the stocks at those Ports were at their highest during April and July, while in 1934-35 on account of the undercutting of sea freights exceptionally cheap transport resulted in abnormally large shipments from Karachi during the latter part of the monsoon and towards the close of the year. Stocks at Bombay increased rapidly between October and November, while those at Calcutta started to rise in August, reached the peak in October, fell slightly in December and rose again to a new high point in February.

CHAPTER VIII.

Handling and Transportation.

The cultivators almost always transport their wheat in bulk to the nearest market. In the assembling markets in the producing areas some wheat is stored in bulk and some put in sacks before storing but in any case from that point onwards all the wheat is handled in gunny bags (*khesi*). B-twills $44'' \times 26\frac{1}{2}''$ are used for export and very largely for the mill trade in wheat and products and heavy C, $40'' \times 28''$ in the internal trade. At present these bags cost about Rs. 26 or Rs. 27 per 100 delivered in the Punjab markets.

In some markets, and particularly in the assembling markets of the producing areas, the price of wheat excludes the price of bags but in the ports and some of the large consuming centres in the interior the market price as quoted includes the cost of the bags. This is another of those factors which make it difficult to compare prices in one market with those of another.

It is frequently suggested that the costs of distribution could be reduced by eliminating the use of bags and handling all the wheat in bulk. This would involve the creation of suitable storage, transport and handling facilities at every stage. The experience of the Lyallpur elevator indicates that isolated attempts to introduce bulk handling cannot be successful. The question is, however, do the buyers wish to have their wheat delivered in bulk or sacks.

The export trade is now relatively so small and spasmodic that exporting merchants, port authorities and shipping companies have no inducement to make permanent alterations in their warehouse accommodation and equipment to provide for bulk handling.

Although existing railway wagons could apparently be readily adapted for the purpose, the large Indian roller mills show no inclination to adopt the bulk system—partly probably because by the present methods of trading by a large number of mills the latter make a profit on the sale of bags to the purchasers of their flour and *ata*. The greater part of the wheat entering the channels of distribution goes to wholesale markets and subsequently to retailers, *chakkis*, millers and consumers. These markets are in the main very congested. Purchases are made in small quantities and for this general trade the handling of wheat in sacks is most convenient and appropriate. There seems no likelihood of any immediate change in the nature of those requirements so that the question of applying bulk

handling methods to the greater part of the wheat trade in India may be left out of consideration for the time being.

Railways play an important part in the transport of wheat. In the course of the year more than 1.7 million tons or about one-sixth of the total crop is put on rail and railway freight forms a high proportion of the total cost of distribution. For example the average difference per maund for a 5 year period on Punjab wheat selling in Lyallpur and Calcutta is Rs. 1-1-7 of which Rs. 1-0-4 is due to rail freight alone although this is a special reduced rate.

There is also a good deal of coastal traffic—especially from Karachi—amounting to between 150,000 and 200,000 tons in the course of a year. River transport is not, apparently, very important but it is difficult to arrive at the precise amount carried especially by country boats.

Large quantities of wheat are also carried by bullock-carts and pack animals such as donkeys and camels. For distances up to 40 miles or so the bullock-cart appears to be preferred to rail transport. More recently the motor lorry has become of increasing importance wherever metalled (*pakka*) roads exist. In spite of special rail freight concessions and even where the rate by lorry is higher than rail—*e.g.*, from Okara to Lahore (80 miles) the rate per maund by lorry is Re. 0-3-6 as against Re. 0-2-11 by rail—transport by lorry is preferred by senders. The reasons given are :—

- (1) direct collection from senders and delivery to buyers by lorry ;
- (2) saving of time owing to slowness of rail goods transport ;
- (3) elimination of trouble at the station and of the necessity to placate railway staff.

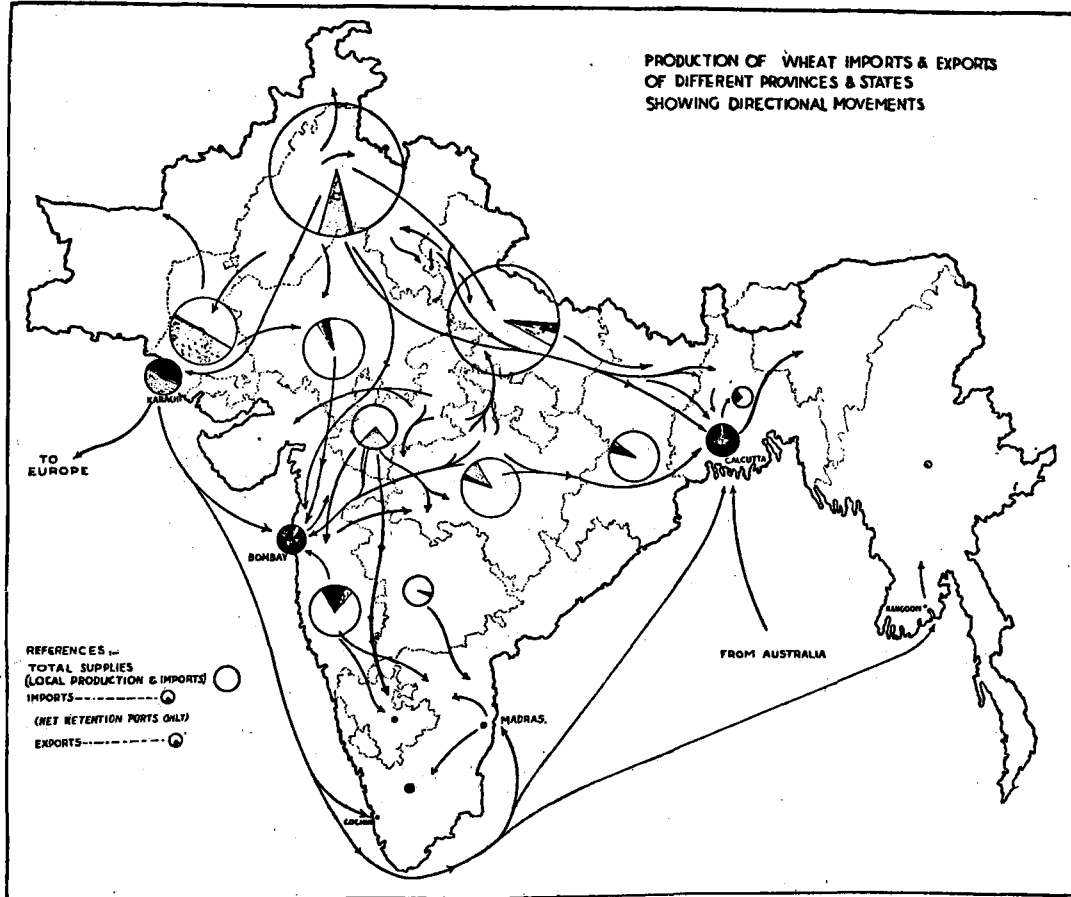
It is apparent therefore that the question is not altogether one of cost but of better service.

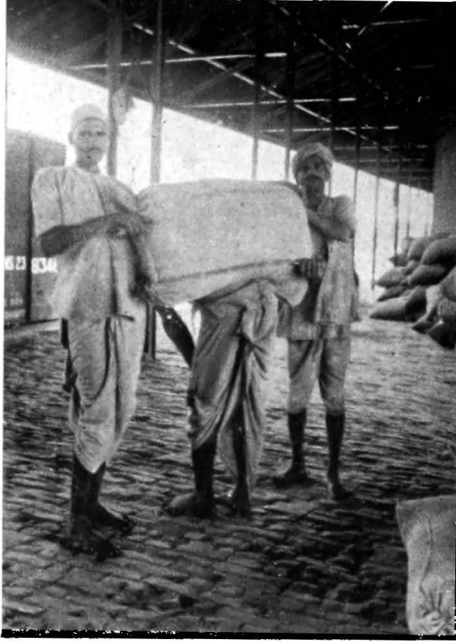
EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER VIII.

Production of wheat, imports and exports of different provinces and States showing directional movements.
(see page 67).

It will be seen from the reference table to this map that the circles, which have been drawn to scale, show the total supplies position in the

PRODUCTION OF WHEAT IMPORTS & EXPORTS
OF DIFFERENT PROVINCES & STATES
SHOWING DIRECTIONAL MOVEMENTS





LOADING FLOUR AT A RAILWAY STATION.
Note the use of hooks.



A CULTIVATOR WITH HIS PACK BULLOCK USED FOR TRANSPORTING WHEAT TO THE MARKET IN THE PUNJAB.

different provinces, States and the major ports based on the averages of 3 years. The shaded portions of the various circles indicate the quantities imported in the case of provinces and States and the net retention in the case of the ports. The dotted sectors of the circles represent the proportions exported. The directional movement is illustrated by arrows. The map clearly shows the importance of the Punjab, the U.P. and Sind.

CHAPTER IX.

Wholesale Distribution.

The *pakka arhatiya* is the pivot of the whole system of distribution. The *pakka arhatiya* in the assembling market sells to his opposite number in the distributing market. In addition to purely trading activities they function in many cases as bankers (*shroffs*). Much of their business is financed by means of *hundis*, which may be either drafts payable on demand (*darshani*), or more generally payable within a fixed period (*mudatti*). The *pakka arhatiya* firms usually deal also in other articles apart from grain *e.g.*, oilseeds, sugar, etc., which they may purchase by way of return trade.

As compared with *shroffs*, modern joint-stock banks play a limited part in financing the distribution of wheat mainly owing to the fact that they are not represented and cannot function in regard to remittances in the smaller towns and larger villages, *e.g.*, although there are over 2,500 towns in India with a population of 5,000 or more, bank branches exist in less than 830 of them.

In the grain export trade two or three large firms of international repute are the main operators. Some of these have employees acting as agents in the upcountry stations. More recently, however, many of these up-country agencies have been closed. Their presence was useful in so far as the daily buying rates given to the agents by their principals tended to keep all the markets in the line with one another and with the prices in the port exchanges. Their place has not since been adequately filled by any other corresponding agency engaged in the internal trade.

The business of the *pakka arhatiya* is based very much on personal relations with certain other *pakka arhatiyas* who are acquainted with the market practices and charges prevailing in their district. There is need for these firms to enlarge the scope of their operations and this would be greatly facilitated by the regulation of market practices and the standardisation of market charges throughout the country. They could then send produce with greater confidence to merchants in new and more distant markets.

Producers' co-operatives play an insignificant part in the distribution of wheat. At most, they function as *kachcha arhatiyas* in the locality where the society exists. There is no machinery whereby the local producers' co-operative societies could sell their produce in distant markets. There are few consumers' co-operative societies in the towns to which they

might be linked up. They cannot act as *shroffs* like the *pakka arhatiya's* firms and the absence or rudimentary nature of joint-stock banking facilities in out-of-the-way places makes it impossible to rely on them always as collecting agencies against railway receipts. If producers trading societies are ever to expand beyond the embryo stage it is essential that their sponsors should develop marketing machinery corresponding to the *pakka arhatiya* or else engage the *pakka arhatiya* or some other large firms having connections throughout the country to act as selling agents on behalf of the societies. It would seem feasible at least to make an experiment in employing some responsible firm or firms as sole agents for the sale of the produce of these local co-operative societies and the experiment seems worth trying. The linking up of producers' societies with consumers' urban stores might also be considered.

It is very difficult to generalise in regard to the costs of wholesale distribution. These vary from place to place and from one merchant to another. Railway freight, as already mentioned, constitutes a large proportion of the intermediate charges and varies in amount according to the distance from the producing centres of the market concerned. The other charges—excluding railway freight—also vary considerably and it is impossible to state an average figure which has any real meaning. For example in some cases the total cost of distribution—apart from railway freight—may be barely $4\frac{1}{2}$ per cent. of the prime cost and in other cases as much as $18\frac{1}{2}$ per cent. The number of charges made against both buyer and seller and also the amount under each heading varies. It is doubtful whether any justification exists for some of those charges. *Bardana* in the form of an allowance to cover differences between new and second hand bags appears to be made irrespective of the condition of the bags concerned. The whole system of charging for bags apparently needs to be put on a proper basis. Commission may or may not be charged where *dami* is included, but there ought to be some rule about this and deductions for charities should not be made except with agreement of the seller and unless they are subsequently paid over to the charitable body concerned. It is highly desirable that the number of recognised charges should be defined and also the approximate amount of each charge.

Some of the expenses are charged to the account of the seller and others against the buyer who, along with the final consumer, ostensibly bears his share of these numerous charges. In actual fact this is a polite fiction so far as wheat in India is concerned. The price paid by the consumer of the Indian wheat is strictly competitive. Not only has the

cultivator's wheat to compete with the world price of other wheats at the ports but, in different districts within the country it must compete with rice, barley, gram, *guar* and other substitute food grains. The upper limit of prices is therefore definitely fixed. All the octroi duties, terminal taxes, tolls, market charges and charities paid on the wheat between the cultivator and the consumer are inevitably forced back on to the cultivator who is willy-nilly compelled to pay for the upkeep of municipal roads and other amenities of the town through octroi and similar duties. He also pays, by way of charities, in many cases for educating the urban children and for maintaining other charitable institutions from which he himself derives no direct benefit. He pays everybody's interest and carries all the risks of marketing by way of a reduced price for his produce. All those who have any control over those charges and have the interest of the cultivator at heart should use their influence in having these charges reduced or eliminated. In the absence of action of this kind expressions of interest in the welfare of the cultivator may be regarded with scepticism.

Traders themselves through organised associations can do a great deal to reduce the number of these charges and standardise the others. Municipal and local authorities also have a responsibility in the matter but failing action by those parties in the immediate future local Governments will, no doubt, consider what steps should be taken to institute the necessary measures.

Grain trade associations operating produce exchanges at the ports and in the larger markets up-country play an important part in distribution. They are particularly useful in providing facilities for dealing in "futures". Altogether it is estimated that about 60 million tons were traded in at those exchanges during the year 1935-36 of which between $\frac{1}{5}$ and $\frac{2}{5}$ per cent. represents the actual deliveries on "futures" contracts. It seems clear that there is at present an excessive number of such bodies. There are, for example, at least 41 in the Punjab alone and 20 in the United Provinces. The history of these associations does not inspire confidence. For instance out of 61 such institutions registered in the Punjab during 1932-33 only half of them were able to survive even a season's working and many were either moribund or in liquidation in 1934-35.

Size and financial stability are essential factors of an association handling trade in "futures" and it is necessary that the basis of trading should be as broad as possible in order to bring about conditions likely

to promote a large amount of inter-trading between members of different associations and their clients. There seems a tendency at the slightest sign of disagreement for some members of these associations to part company with the parent body and establish competing institutions in the same town. This practice is reprehensible and in order to prevent a constant recurrence it would be advisable that every member should have a very large stake in the association by being required in the first instance to make a heavy deposit which can only be withdrawn with the approval of the managing committee or after fairly long notice and for very good reasons.

The contracts recognised by these various associations differ considerably in character in regard to the basis of tenderable wheat, months of delivery, margins, etc. Before inter-trading can be practised to any real extent it is essential that the contract conditions and other terms of trading should be standardised. A large measure of agreement has already been obtained at a conference of representatives of grain trade associations and milling interests along with the Central Marketing Staff but much yet remains to be done in order to get a standard contract in operation in time for the 1937-38 crop.

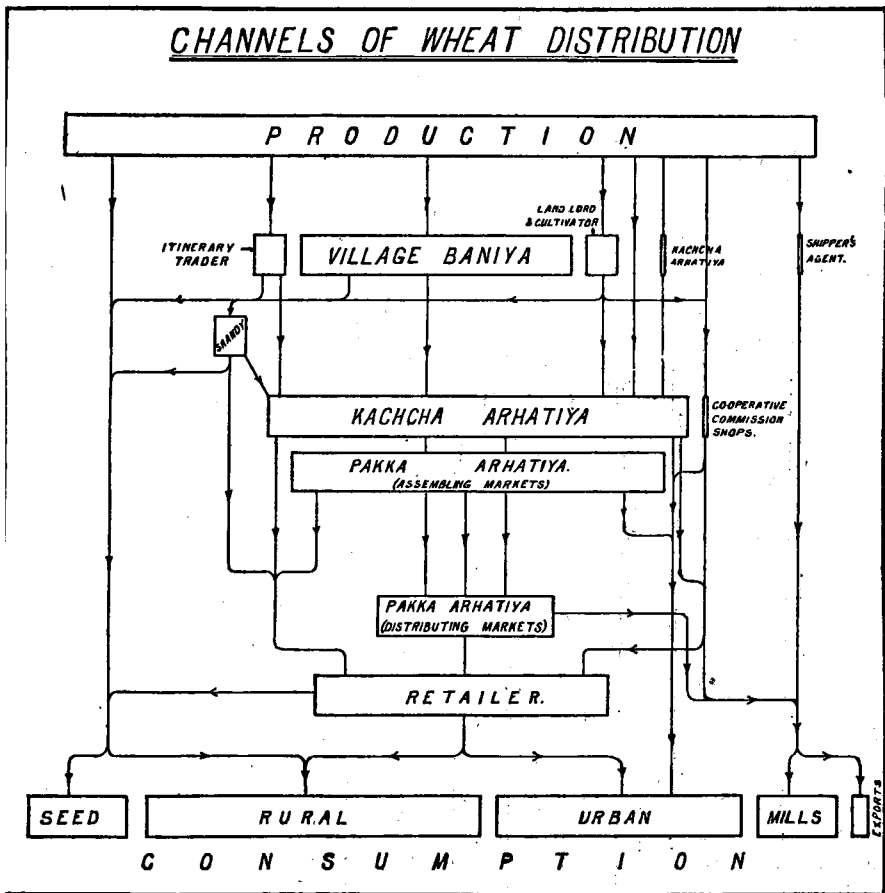
As matters stand at present it is not likely that legislation will be required to introduce standard contract terms in the larger and more important grain exchanges. In order to bring other smaller exchanges into line it may however be necessary for provincial Governments and State Durbars to take action by giving statutory recognition to the bye-laws, rules, regulations and contract terms of recognised grain associations within their jurisdiction. If and when this is being done it would be desirable to keep the number of recognised associations to, at most, two or three in any province or State.

An all-India federation of the more important grain trade associations in India could probably assist in this direction and afford guidance to the local Governments regarding the exchanges which should be recognised and also the terms of the bye-laws and standard contract to be approved. The usefulness of a federation of this kind would however be largely nullified if it aimed at being comprehensive rather than selective. It should limit its membership only to those associations on whose exchanges all or any of the members of the federation could trade with confidence. Any association with inadequate financial backing or doubtful methods of procedure would have to be rigorously excluded.

Coming to the retail stage it is still more difficult to generalise. Official prices, for what they are worth, would appear to indicate that the normal retail margin in Northern India does not exceed Re. 0/4/0 or Re. 0/5/0 per maund and is frequently even less than this, and a general average would place the retail margin at about 5 per cent. of the selling price. In southern India the margin appears to be higher, *e.g.*, in Cochin it is Re. 0/6/0 to Re. 0/7/0 per maund and in Hyderabad (Deccan) it appears to range from Re. 0/4/8 to as much as Rs. 1/1/5. It is doubtful, however, whether any reliance can be placed on these retail price quotations. In the course of one morning in various retail markets in Delhi a number of buyers, after the usual process of bargaining, obtained 5 seers of *dava* white wheat at prices, ranging from Re. 0/6/9 up to Re. 0/8/6, making altogether a range of about 26 per cent. in one day between different retailers. The quality on the whole was fairly uniform except for one sample which was badly weevilled and for which Re. 0/8/0 was paid for 5 seers. The total refraction of the remainder did not exceed 2 or 2½ per cent. For this type of wheat on the wholesale market that day the prices between different merchants ranged from Rs. 2/15/0 per maund up to Rs. 3/5/6 per maund so that the lowest retail price, *viz.*, Rs. 3/6/0 per maund, represented a very low margin over the highest wholesale price. On the other hand the highest retail price, *viz.*, Rs. 4/4/0 per maund (which incidentally was for the poorest quality) represented a margin of Rs. 1/5/0 per maund over the lowest wholesale price.

One fact which would strike a newcomer to India is that the retail prices are never marked on the articles in the same way as in other countries. The first price asked by a retailer is frequently put forward more in the way of a basis for argument rather than as a serious quotation. It is claimed that the instinct for bargaining is so much ingrained in the Indian temperament that it would be depriving both buyer and seller of a great deal of pleasure if this element in every sale were eliminated. It is doubtful however whether in the end either the buyer or seller gains anything and it certainly involves a considerable waste of time.

One would like to see the retailers of one town trying an experiment by forming an association to eliminate this needless process of bargaining by marking clearly on the goods exposed for sale the day's prices which would be strictly adhered to. It seems possible that the members of such an association would attract to their establishments much more



The above diagram has been drawn approximately to scale.

business than they lost. Consumers' cooperative stores in urban districts might give a lead in this matter.

At present the cultivator in some cases gets only about Re. 0/9/3 out of each rupee paid by the consumer. There seems no reason why the parties concerned should adopt a defeatist attitude and accept such conditions for all times to come. Unfortunately, however, the position cannot be altered without a greater measure of efficiency being shown by the distributive trade as a whole and a frank and more open distinction being made between legitimate and illegitimate deductions and charges.

EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER IX.

Channels of wheat Distribution. (see page 75).

This diagram illustrates how the wheat crop moves from the producer to the ultimate consumer and the various agencies through which it passes on its way to eventual consumption. The course of movement is indicated by arrows. The various blocks which are drawn approximately to scale represent the total production, the share of the crop handled by the different agencies concerned, e.g. cultivators, village merchants, itinerant vendors, *Kachcha* and *Pakka Arhatiyas*, cooperative organisations, exporters, etc. and the main heads of disappearance, namely, seed, rural and urban demand, mills' requirements and exports. It will be noted that before a considerable proportion of wheat reaches the consumer, particularly in the urban area, it passes through a number of intermediaries. For instance, the producers may sell to village merchants or itinerant traders who in their turn may dispose of the produce in a nearby shandy or through a *kachcha arhatiya* in a wholesale market. The stockists and *pakka arhatiyas* who buy from the *kachcha arhatiyas* consign wheat to their prototypes in distant markets where the wheat is re-distributed by the local *pakka arhatiyas* to the retailers and through the latter to the ultimate consumer.

Typical price structures between important surplus and consuming markets. (see page 76).

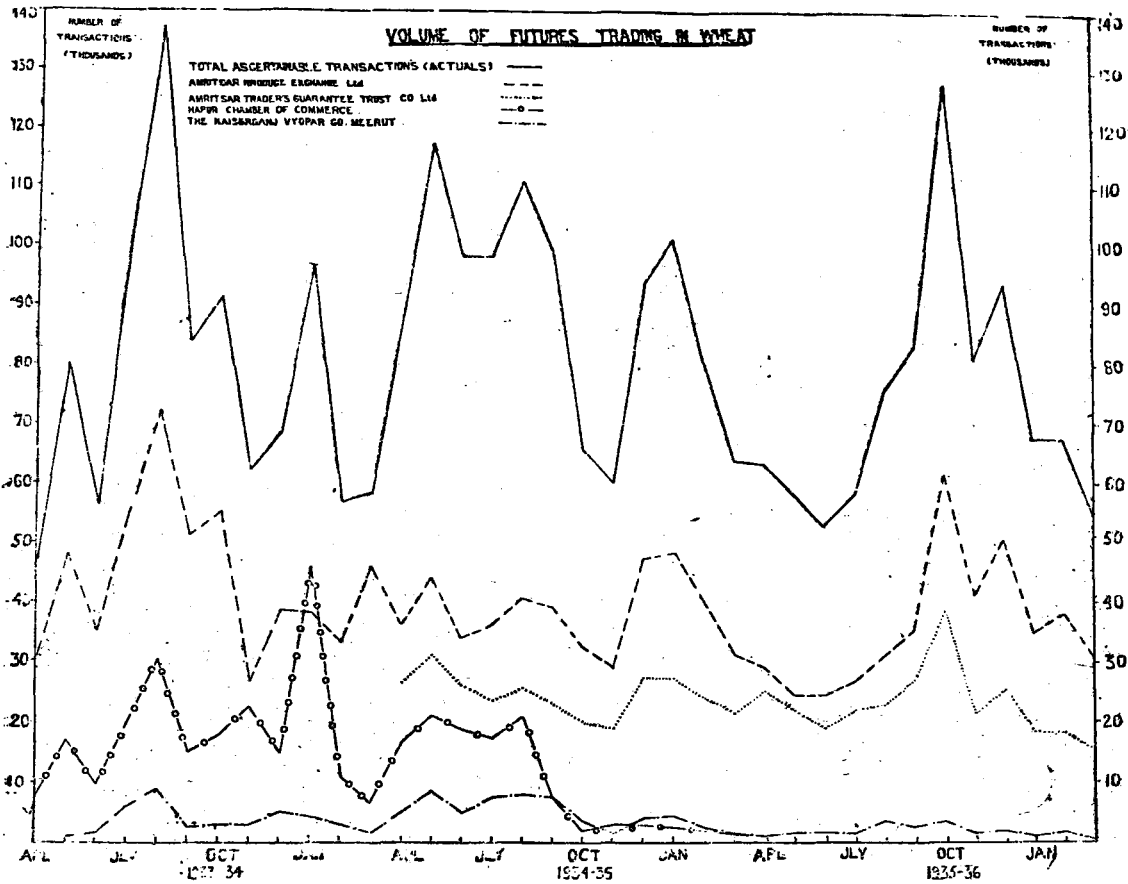
This diagram illustrates the costs of wheat distribution between some of the more important markets in surplus areas and large consuming

centres. It consists of nine blocks each showing a price structure between a surplus and a consuming market. The price paid to the cultivators and the subsequent charges and costs incurred in conveying the wheat to the consumer are represented by dividing each block into sections. These are based upon percentages calculated on the consumer's price. It will be noted from the blacked-in sections which represent the cultivators' price that the amount realised by the farmer varies from 58.6% of the price paid by the consumer in the case of the Lyallpur-Calcutta structure to 83.2% for Hapur-Delhi. In other words the cost of distribution ranges from 16.8% to 41.4% of the consumer's price in the nine examples under consideration. Although the merchandising costs and margins vary appreciably between the different groups of markets the main item responsible for these differences is the incidence of freight charges. Between Lyallpur and Calcutta, railway freight accounts for 27.3%, while it is only 2.1% in the case of Hapur-Delhi. It will also be noticed that where the goods have to pass through an intermediate market, as happens when wheat from say Lyallpur is consigned to Calcutta by rail and sea via Karachi, the costs of merchandising are correspondingly increased.

Volume of futures trading in wheat.

(see page 79).

This diagram shows not only the monthly volume of futures trading in wheat at four important upcountry exchanges, viz. two at Amritsar and one each at Hapur and Meerut, but also the total ascertainable futures business at all markets, for the period April 1933 to March 1936. It is significant that the volume of trading expands and contracts with a considerable degree of sympathy at the various exchanges. As regards the periodicity of trading, it will be noticed that on the whole business is particularly active in August, September and October, probably because it is on the volume and distribution of the rainfall during these three months that the prospects of both kharif and rabi crops depend. On the other hand there is no very definite periodicity in the months during which trading is slack. In 1933-34 the volume of futures trading was at its lowest in April 1933 and February 1934. In the following year November and March showed the least activity while in 1935-36 June and March recorded the minimum business.



CHAPTER X.

Processing and Distribution of Wheat Products.

Wheat is still converted into *ata* predominantly by the hand mill or *chakki*, particularly in the rural areas, in which there are also a large number of stone mills (*chakkis*) driven by water or by bullocks and camels. Apart from these there are about 16,000 power driven *chakkis* (oil and electric) engaged wholly or partly in milling wheat. They work almost entirely on hire or for customers who bring small quantities—generally 10 to 15 seers at a time, usually the former—for grinding into *ata*. The charge made by the *chakki* miller for grinding ranges from Re. 0/2/0 to Re. 0/8/0 per maund or on an average about Re. 0/4/0 with or without further weight deduction to represent losses in grinding. The amount of wheat ground by these *chakkis* ranges between 20 and 40 maunds per day. A 14" *chakki*, for example, is capable of a throughput of 2½ maunds per hour and an 18" one about 4 to 6 maunds. At a conservative estimate not less than 2 million tons are annually processed by these small mills.

The number of power driven *chakkis*, is rapidly increasing. Returns show that there are now about 3,000 electrically driven *chakkis* as against 1,200 five years ago. This would appear to indicate that the habit of grinding wheat in the household is rapidly dying out especially in the urban areas and that there is scope for enterprising young men in setting up those *chakkis* and developing a local trade in *ata* with a relatively small amount of capital. A small *chakki* fitted with electric motor can be obtained for less than Rs. 300 and one fitted with an oil engine with a somewhat higher crushing capacity can be got for an initial outlay of Rs. 1,200 to Rs. 1,500.

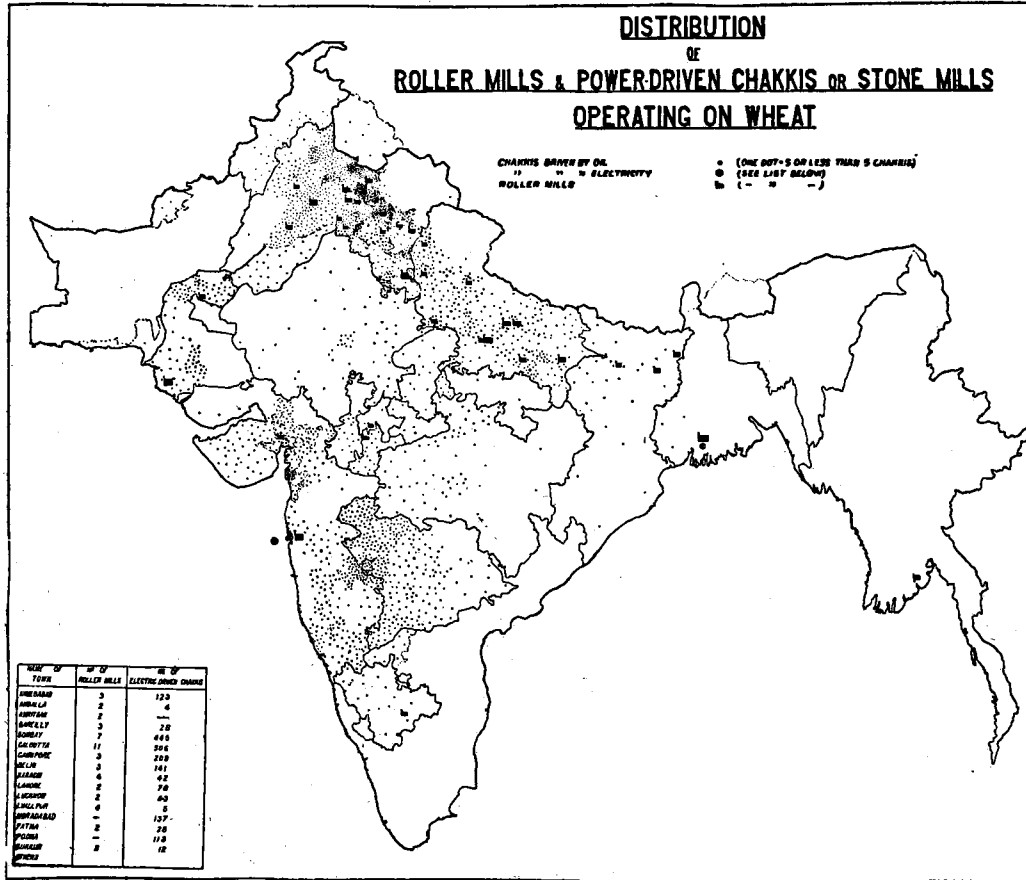
When the stones are properly set they are capable of turning out other products, *e.g.*, *suji* and *rawa* although the practice at present is for nothing but *ata* to be made by these *chakkis*. There seems, therefore, a need to devise some simple screening or sieving apparatus in order to increase the types of product turned out by these small mills.

There are about 80 large modern roller mills in the country with milling capacities ranging from 20 to 210 maunds per hour and an estimated potential capacity of nearly 2 million tons per annum which is about double the quantity of actual output at the present time. The largest mills are situated at the ports of Calcutta, Bombay and Karachi, each mill represents an investment of several lakhs of rupees. They are well equipped for turning out all types of products from high class super-

DISTRIBUTION OF ROLLER MILLS & POWER-DRIVEN CHAKKIS OR STONE MILLS OPERATING ON WHEAT

CHAKKIS DRIVEN BY OIL
" " " ELECTRICITY
ROLLER MILLS

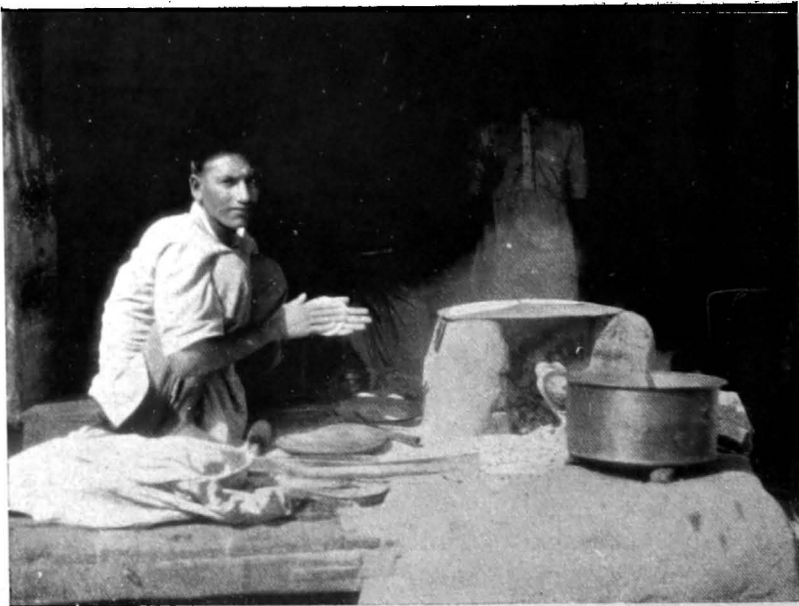
• (ONE DOT'S OR LESS THAN 5 CHAKKIS)
◉ (OVER LIST BELOW)
◻ (" " ")



NAME OF TOWN	NO OF ROLLER MILLS	NO OF ELECTRIC-DRIVEN CHAKKIS
AMBALABAD	3	123
AMBALA	2	4
AMRITSAR	2	—
BANDELUP	3	28
BANDELUP	7	465
CHANDIGARH	11	305
CHANDIGARH	3	209
DELHI	3	141
DELHI	4	42
DELHI	2	70
DELHI	2	90
DELHI	4	5
DELHI	—	137
DELHI	2	20
DELHI	—	110
DELHI	2	12
DELHI	—	—



A RETAIL PURCHASER HAVING HIS WHEAT DRESSED PRIOR TO GRINDING (*Chakki* in the background).



PREPARING *CHAPATIS* IN A BAZAAR FOODSHOP.

fine flour to second and third quality *ata* and bran. The bare cost of milling in these establishments per maund of wheat appears, on an average to be about Re. 0/4/6. In many cases the only profit made by such mills particularly in Northern India is obtained by charging their customers for the bags as containers a relatively high price as compared with the cost price to the mill. This partly explains the apparent anomaly of certain products selling about as cheaply as wheat itself and on some occasions even at lower prices, but costs will obviously vary, other conditions being equal, according to the type of product turned out.

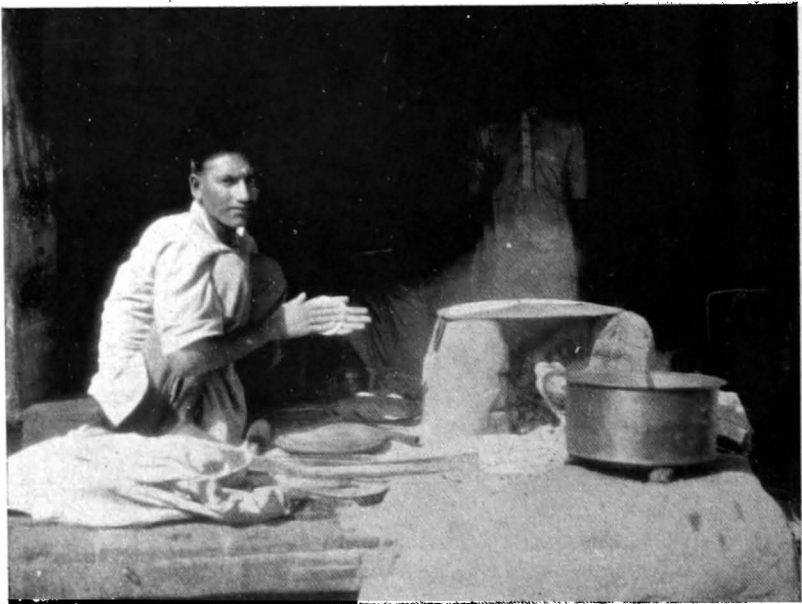
These mills put out a very large number of different qualities and brands of products. Their *atas* for example, may be described as No. 1, No. 1½, No. 1½, No. 2, No. 3, etc. The No. 1 of one mill may be altogether different from that of another and not itself consistent in quality from one period to another. It is probable that the multiplicity of qualities at present on the market has its origin in the exceptionally keen competition which exists in the flour trade. The roller mills feel compelled to adopt every conceivable device to bring their *ata* down to a competitive level with the *chakki* milled article with the result that they are constantly in the market for the cheapest type of wheat available. They do not therefore, provide any incentive to cultivators or sellers to put on the market high quality produce.

It seems possible that if the roller mills could take steps to abolish excessive competition amongst themselves they could obtain a better price than at present for their various types of white flour (*maida*), including sizing flours and for their *suji*, *rava* and bran in respect of which the *chakki* miller is not at present in a position to compete. As a first step in this direction it would be desirable that the roller mills as a whole, acting as an associated body, should come to some agreement regarding the minimum standard of quality to be observed in respect of flours designated No. 1, 2, 3, etc. Apart from this there seems scope for individual mills to develop still further the trade in high quality reliable products in small pre-packed, branded retail containers.

As regards the subsequent preparation of other products the baking of fermented bread in the form of loaves (*tabal roti*) seems to be confined mainly to the cities and larger towns. Machine-made bread is apparently only produced by one or two concerns in Calcutta and Bombay, the remainder is hand-made. One of the great difficulties in the production of this type of bread in India is the irregular supply of good pure yeast and



A RETAIL PURCHASER HAVING HIS WHEAT DRESSED PRIOR TO GRINDING (*Chakki* in the background).



PREPARING *CHAPATIS* IN A BAZAAR FOODSHOP.

there seems little doubt that the low quality of the average Indian loaf is in a large measure due to defective fermentation. The inferior grades of flour which are used—frequently in mixtures or blends mainly with the object of cheapening costs—by bakeries catering for the tea and coffee shops trade is also responsible for the indifferent quality of Indian bread.

The conditions under which this bread is baked are capable of considerable improvement and there is evidently as yet no attempt made to regularise these or the hours of baking as in other countries, nor is a minimum weight of loaf anywhere prescribed in India. The price of a loaf therefore varies from one baker to another but the usual price for the bazaar made article is from Re. 0/0/9 to Re. 0/1/0 per loaf weighing about half a pound. The gross profit to the baker per sack of flour is apparently somewhere in the neighbourhood of Rs. 5 or 6.

Other cereal products are *sewayan* (vermicelli) and macaroni. The former is manufactured to quite a large extent in several towns in Northern India where the consumption is fairly high and in Bombay and Madras for sale in south India. The production and distribution of such products require to be further investigated with a view to organising the trade properly. If these were suitably packed and distributed there seems no reason why India should continue to import similar products from abroad. There is every reason in fact why the position might be reversed. It is perhaps significant that enterprising firms in the south of India by packing their product in a suitable container are able to send it to central and northern towns and sell in the neighbourhood of Re. 0/6/0 per lb. packet in competition with the local made product which is largely sold loose and in bulk.

So far as macaroni is concerned in spite of the fact that India grows some of the finest macaroni wheats in the world there is apparently as yet only one small factory operating, and imports of macaroni from abroad continue to arrive. This seems to indicate the necessity for advertising and giving greater publicity to the Indian products. The possibility of building up a trade in macaroni, *sewayan* (vermicelli) and also *suji* and *rava* (semolina) on the basis of a standard quality mark, both for the internal market and for export, requires serious consideration. At the moment, however, the type of container used in packing several of these products compares very unfavourably with containers imported from abroad (*see* plate on page 85) and requires to be considerably improved, not only to make them more attractive but also to preserve the flavour and quality of the article.



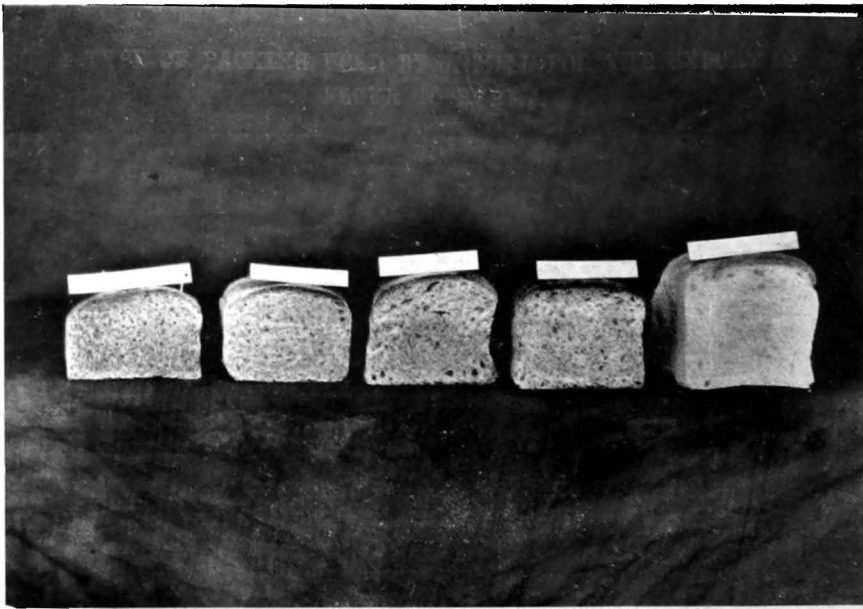
DIFFERENT TYPES OF PACKING FOR MACARONY AND VERMICELLI. (All are imported with the exception of the Indian manufactured article—put up in the brown paper packet seen in the top right hand corner of the plate).



A RETAILER OF WHEAT PRODUCTS.



A TYPE OF PACKING USED BY A MILL FOR THE EXPORT OF FLOUR TO BURMA.



A B C D E
Loaves baked under ordinary commercial conditions from:—
A—Bijapur red wheat *ata*; B—Bakhshi wheat *ata*; C—*Khapli*
(*Emmar*) wheat *ata*; D—*Pissi* wheat *ata*; and E—High
grade *Buniah maida* (flour).

The wholesale distribution of cereal products is mainly operated on a commission basis. Different types of *maida, ata, etc.*, bear a brand or description up to the point at which they leave the wholesalers' hands but lose their identity after that stage and no description of quality applies to the products sold in most of the retail establishments. The trade in branded sealed packets is still at most infinitesimal. The retailer also mixes low quality with high quality produce in order to lower his selling price. It is therefore difficult to arrive at any average retail price or the margin of profit which exists between the wholesale and retail price of any cereal commodity.'

There is a large body of consumers in India who are prepared to pay a good price for a good quality article and the safest method of approach at present would be for processors and manufacturers to develop and expand the trade in retail packets sealed and suitably branded with their trade description. Apart from that, as already referred to, much might be done by the retail trade themselves particularly in urban areas to introduce the practice of labelling their goods with a quality description and the daily selling price.

EXPLANATORY NOTES ON MAPS AND DIAGRAMS RELATING TO CHAPTER X.

*Distribution of roller mills and power driven chakkis or stone mills
operating on wheat.
(see page 81).*

This map shows the location and distribution of roller mills and stone chakkis driven by oil engines or electricity. It may be observed that a good many of the latter work in conjunction with cotton ginneries or rice hullers and are also used for grinding other food grains, pulses, spices etc. This map shows that the large roller mills are mostly located in the main areas of production *i.e.*, in the Punjab, the U. P., and Bihar or at the large consuming centres such as Karachi, Bombay, Calcutta and Delhi. Reference to the table showing the number of roller mills at certain large centres will show that the three ports contain some 22 mills out of an all-India total of 80. The main concentration of stone chakkis occurs in the Punjab, but there are many in the United Provinces, and numbers in Sind, Central India, Bombay and Hyderabad. About four-

fifths of the total number of chakkis are worked by oil-engines and the rest by electricity. Electricity is the most popular form of motive power in the large towns where current is usually available on favourable terms. A list of the more important towns with the number of electrically driven stone chakkis against each is given in the reference table to the map.

Prices of wheat and products at Karachi 1933 to 1935.

(see page 89).

This diagram shows the relation between the prices of wheat and its various products, namely, Suji (Semolina) two qualities of flour *viz.* super-fine and household, three qualities of Ata, *viz.* Nos. 1, 2, and 3, and bran. It will be seen that the curves representing the prices of these various products follow the wheat curve quite closely. Another point which will be noticed from the movement of the curves is that the differences between the prices of wheat and its various products vary from month to month usually quite slightly. Exceptional circumstances, however, may cause the price spreads to widen or narrow. The former condition for example took place in October 1935 when the millers and dealers envisaged a great demand for flour from Abyssinia owing to the Italo-Abyssinian war and in consequence flour became relatively dear. Such differences are usually short-lived, as it does not take the mills long to adjust production to demand.

Prices of wheat and products at Calcutta 1933 to 1935.

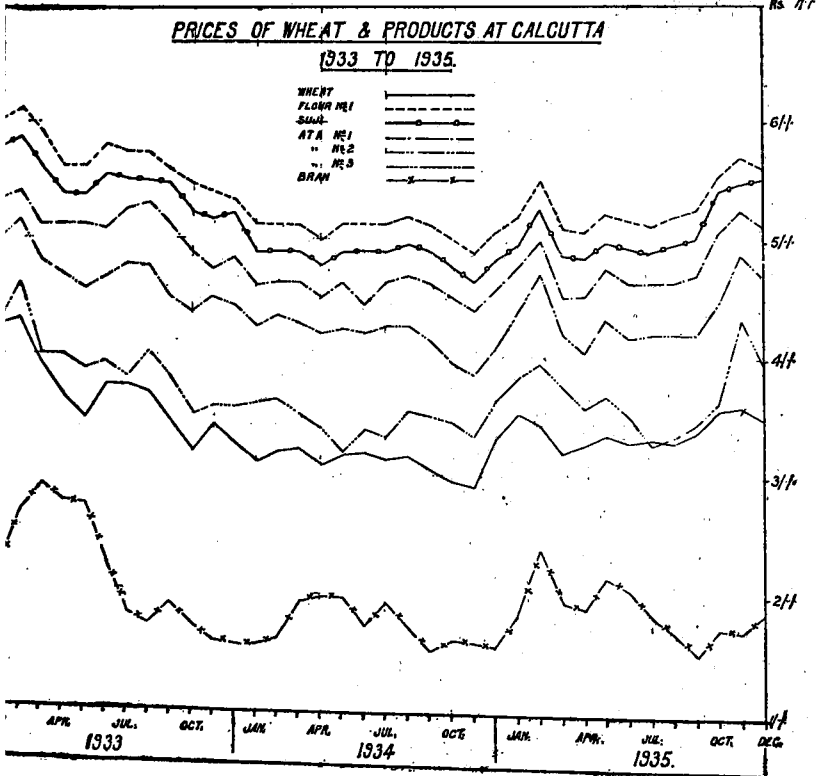
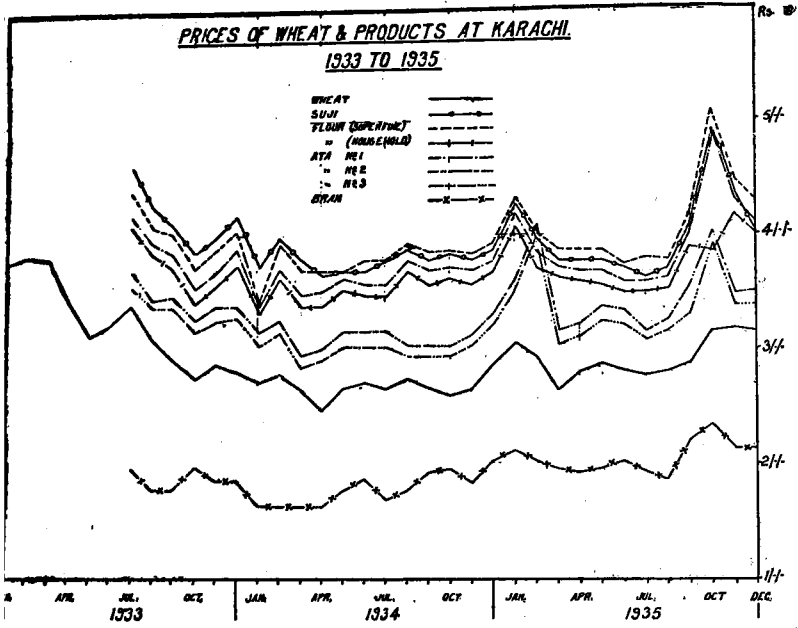
(see page 89).

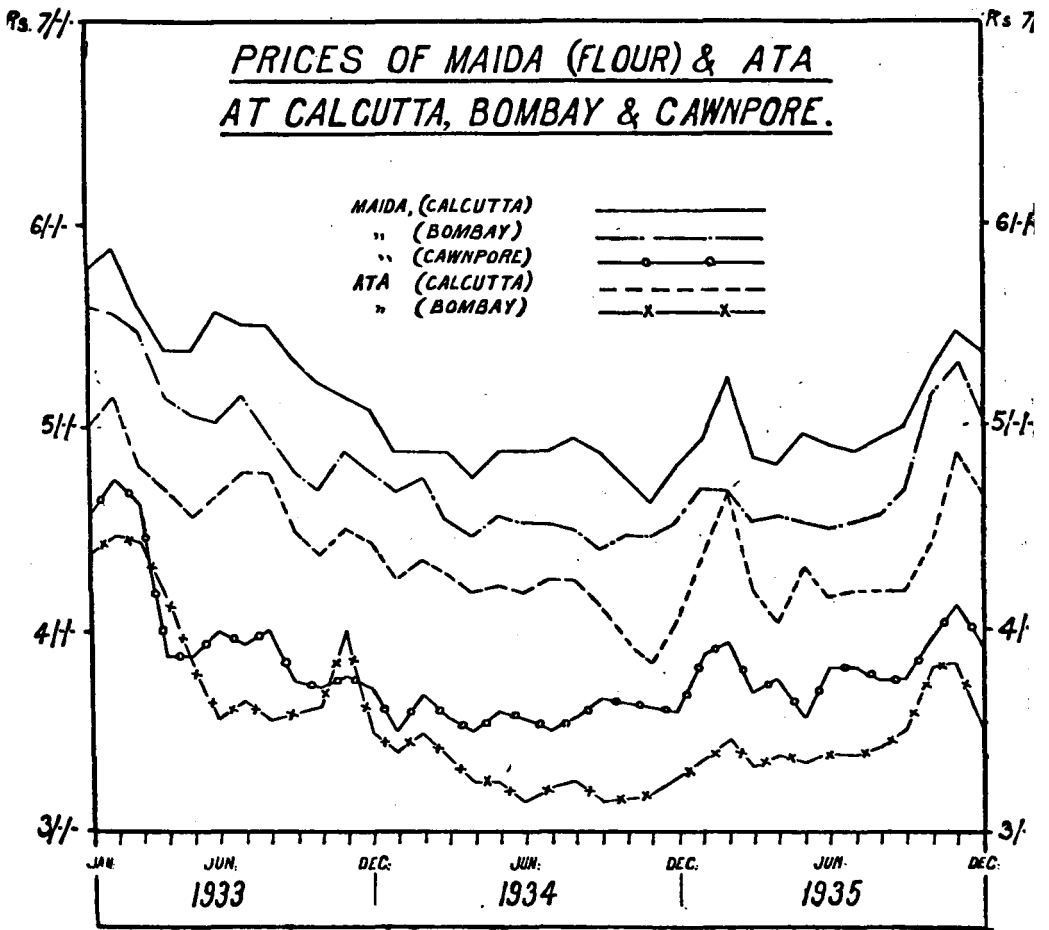
This diagram, like the previous one, shows the relation between the prices of wheat and its products *viz.* Flour No. 1, suji, Ata Nos. 1, 2 and 3, and bran. The sympathetic trend of the curves representing the various products with the wheat one is also quite marked in this example. It will be noticed that the margin between the prices of Ata No. 3 and wheat shows rather violent fluctuations. For instance in March 1935 this Ata was dearer than wheat by -/9/- per maund whereas three months after, in July, it was cheaper by -/1/- per maund. As already observed this may be due to a sudden demand for the product or to temporary shortage of wheat supplies. On the other hand the price of low grade Ata often depends on the market for the fine products and percentage of extraction of say high grade flour.

Prices of Maida (Flour) and Ata at Calcutta, Bombay and Cawnpore.

(see page 90).

This diagram shows the relation between the prices of Maida and Ata at different markets. It will be noticed that the curves representing the prices of these two products in the Calcutta, Bombay and Cawnpore markets move fairly sympathetically.





CHAPTER XI.

Seed.

The average amount of seed sown in different districts varies from 50 to over 100 lb. per acre and altogether about $1\frac{1}{2}$ million tons or approximately one-eighth of the whole crop is used as seed.

Most of the cultivators appear to sow seed of their own growing but it is difficult to generalise. For example, in the Canal Colony zone around Lyallpur more than 80 per cent. of the growers use their own seed but in the Bombay Presidency the practice is to buy seed and only the cultivators in the cotton growing tracts of Gujerat and the Carnatic appear to retain their own produce.

When it is necessary for the cultivator to obtain seed from outside sources this is generally done on *sawai* terms which involve a re-payment either in cash or kind of 25 per cent more than the amount borrowed. Reckoned on the short period outstanding this normally represents a rate of interest of 50 per cent. per annum. When the loan is repayable in terms of cash, however, the unfortunate borrower having taken the loan when values are high is under the necessity to repay at harvest time when values are low. The calculated interest in some cases then works out at the exorbitant rate of 125 per cent. The *sawai* system is not, however, confined to the trade. In the Central Provinces the local Government since 1926 provide loans to growers' associations on the *P-Barhi* system which originally involved a repayment in kind of 20 per cent. per annum, but later was made repayable in cash. The system was not only onerous particularly when working on a cash basis but was unsuccessful in maintaining the purity of the seed and the operations of these growers' associations are being brought to a close.

The quality of seed is important. Cultivators generally take particular care in storing their own seed which they intend to sow. The quality of supplies obtained from the *baniya* and other merchants often leaves much to be desired, especially when the wheat has been stored in *kachcha* pits.

There is no "Seeds" Act in India requiring sellers to give any kind of guarantee or particulars regarding the quality of seed sold and there is no official seed testing station where cultivators might have their seed wheat tested for purity and germination. Buyers generally get their seed locally and there is no special body of seed merchants engaged in trading between different districts. At present the only reliable agency for

obtaining improved seed, true to type, from outside sources is the Agricultural Department of the Province or State.

The methods employed for the propagation and distribution of improved types vary from one province to another.

In Sind the Agricultural Department begins with a seed patch of 5 acres and works through an increase block of 50 acres, thereafter through A class registered seed growers for field scale planting and subsequently B class registered seed growers constituting a village group of about 5,000 acres and eventually to general cultivation in the district covering about 50,000 acres.

In the United Provinces grants are made to selected cultivators for the supply of pure seed and at the same time tube well owners are allowed to grow and deliver a stipulated quantity of improved wheat in lieu of the supervision charges over the tube wells. Recently the Department has introduced a policy of exchanging improved seed for an equal quantity of ordinary wheat through its seed stores.

The Punjab system of distribution through registered commission agents appears to have something to commend it. There are, however, definite weaknesses in the scheme in so far as at present the rate of commission seems high and no check appears to be made to ensure that the improved seed is passed on to the cultivator and actually sown by him. If this could be combined with the system in Patiala whereby the seed is collected and issued in sealed containers—frequently kerosene tins—the system would be greatly improved. Agricultural Departments as well as devoting their energies to the production of improved types should follow up their distribution. For example, in 1933-34, owing to the floods in that year in Delhi Province, more than 9,850 maunds of pure Punjab 8-A wheat were imported and distributed to cultivators. This should have been sufficient to seed an equal number of acres. In actual fact a survey made in the following year showed that there were at most only 3,200 acres of 8-A in the province. The quantity which was not seeded was utilised for home consumption probably because of the low rate of interest at which the seed was obtained from the Government as compared with the cost of borrowing from the *baniya*.

Where the system of registered commission agents is employed it would appear to be desirable that the pure seed produced under the supervision of the Agricultural Department should be issued in sealed

containers and that the departmental officers should take an interest in seeing that this grain is actually received by the cultivators and used for sowing.

In order to popularise the use of improved types by the cultivator it seems desirable that some system should be introduced whereby he may purchase through the commission agents his requirements in kind. At the present moment the commission agents are required to refund, when called upon, the cash value of the seed issued by the Department. It would be much better if, as in the United Provinces, payment could be accepted in kind and that the amount so paid should cover interest (if any) and the commission payable to the agent. Arrangements would, of course, have to be made by the Department subsequently for disposing of the ordinary wheat received in payment, through commercial channels in the large wholesale markets.

Research and plant breeding work has been largely devoted to producing improved types of white wheat (*T. vulgare*) and so far not much attention has been paid (except in Bombay) to the development of varieties of *durum* wheat. It is expected, however, that the Imperial Council of Agricultural Research will soon be in a position to arrange for a sub-station to be opened in the black soil tract of the Central Provinces where work of this kind could be done.

The attention of the plant breeders in India has been largely devoted to producing hard, strong white wheats suitable for milling. More lately their work has been concentrated on trying to produce rust-resistant types. The cultivators in some parts appear to believe that the sowing of a mixture of wheat and gram is a kind of protection against rust attack. The practice at any rate has a beneficial effect on the soil and acts as an insurance against complete crop failure. Similarly on dry lands where there is a danger of failure of the wheat crop, the growers are in the habit of sowing a mixture of wheat and barley or gram as a form of insurance against a total loss of crop.

From a marketing point of view the admixture of barley with wheat is reprehensible. This does not apply in the case of gram, however, which may be harvested separately or can in any case be easily separated from the wheat subsequently on the farm or in the market. There is apparently occasion for some scientific work being done on crop mixtures to provide the cultivator with a better alternative than barley for sowing with his wheat, particularly on *barani* lands.

CHAPTER XII.

Weights and measures and Units of Sale.

No honest man could see any advantage in the present chaotic state of weights and measures throughout India. Weights made of sticks, stones, bricks and bits of old iron are a common feature in the markets and villages. A seer may range from 31 tolas to 102 tolas as in the Punjab, a *paseri* which is five seers, may range from 5 to 9 seers and the maund may go upto 64 seers as in parts of Bihar and Orissa. Even the tola—normally the weight of one rupee—is not always the same. Weights vary enormously from district to district and sometimes within the district itself. These differences become more baffling when they are of small dimensions. For example, in Calcutta, where the normal unit of sale is the standard maund of 82-2/7 lb., the bazaar maund of 82-2/15 lb., is in regular use.

Many municipalities and local authorities have bye-laws prescribing the use of standard weights and measures. The Punjab Municipal Act, 1911, for example, provided for the checking of weights and measures by standards to be kept by municipalities. A recent survey in the Punjab, however, showed that only about half the weights in use are correct and that 2 out of every 3 scales used for weighing are defective. This seems to indicate quite clearly that the control by local authorities is at present quite ineffective, and that no adequate steps are taken even where bye-laws do exist, to ensure that the weights in use are properly checked from time to time. In Delhi, for example, it was found that although the bye-laws provided for the checking of weights by means of standard weights to be kept at the office of the municipality no trace could be found of the latter after a prolonged search.

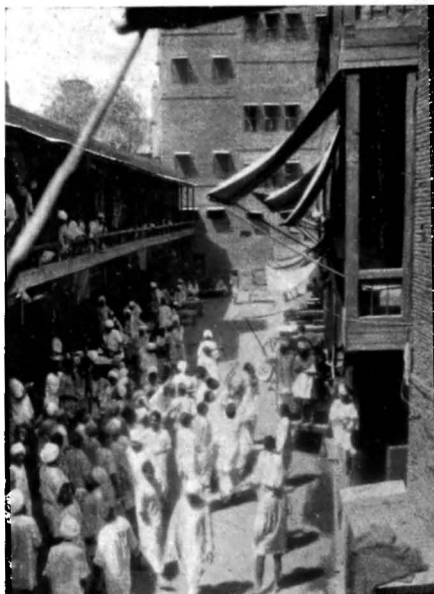
The Bombay Government are to be congratulated on having taken thorough and energetic steps to put in force standard weights and measures throughout the presidency and Sind. The Bombay Weights and Measures Act was passed in 1932 and was made applicable to the whole presidency in March 1936 and the old bazaar and village weights will soon be a thing of the past in every district.

Far from being a source of expense to the local Government, the Act has in fact been self-supporting and yielded a substantial surplus. The Bombay Act with its accompanying rules and the system of administration seem therefore worthy of study by all Provincial Governments and State Durbars with a view to taking similar steps.



A FEW OF THE WEIGHTS, MEASURES AND SCALES USED IN INDIA.

(Collected by the Marketing Staff in the United Provinces and photographed at the Industrial and Agricultural Exhibition, Lucknow.)



THE AMRITSAR PRODUCE EXCHANGE LTD.—TRADING PIT.

So long as there is a series of standard weights it seems a matter of no very great practical importance as to what the standards should be and in so far as the Bombay Government has given a lead and the units adopted are in accordance with the standard weights in use on the railways throughout India and on the lines recommended by earlier committees of enquiry it would seem desirable that other governments should follow suit and retain the same units with, if necessary, appropriate local vernacular names.

It seems impossible to over-emphasise the desirability, in fact the urgent necessity, for the standardisation of weights and measures as one of the first steps to be taken for the improvement of agricultural marketing.

FINAL CHAPTER.

General Conclusions and Recommendations.

This report aims at getting better returns for Indian wheat cultivators and indicates how this can be achieved at no distant date. The gains to which the report draws attention are, however, not to be had for the asking but involve increased effort and efficiency on the part of all concerned. Certain recommendations on points of details are to be found at their appropriate place in the body of the report and are better read in their context. Only the more general conclusions and recommendations are summarised here.

The uninitiated always think that the marketing of wheat is one of the easiest problems to tackle. This is probably because wheat being one of the world's staple foods has been the subject of more study—outside India—than any other commodity. The welfare of the inhabitants of some countries depends on maintaining a large export trade in wheat. In others, whereas wheat imports are essential to the population as a whole, their control is of vital importance to local producers. Governments in exporting and importing countries for years, therefore, have been trying and are still trying by one device or another to improve the conditions of their cultivators with varying degrees of success. In India there is perhaps a tendency to rely overmuch on Government beneficence. The fact that there is State regulation of the wheat trade in many other countries encourages this attitude here, but it is not possible to apply to Indian conditions the forms of Government action taken in countries with a regular export or import trade. Here the problem is entirely different.

Exports of wheat from India are spasmodic and depend not only on the world price of wheat but also on the relative price of barley, gram, rice, maize and other competing food stuffs. If in the internal market these are cheap as compared with wheat more wheat will be available for export, and not otherwise. The large firms customarily engaged in the export trade are sufficiently well organised to deal with this trade as opportunity offers. The railways also have co-operated by reducing freights on wheat destined for export. There is apparently not much more that can be done to encourage exports of wheat without injuring the interests of the cultivator.

If people in India prefer to consume the wheat rather than part with it at the price offering on the world markets that is their affair. Exporters

quite naturally wish to do as much trade as possible and to buy as cheaply as they can; but if, in order that they might attain their objective, it becomes necessary to impart a greater degree of instability to Indian wheat prices and to accentuate the marked seasonal depression which faces cultivators at every harvest, an increased export trade might do more harm than good. The strong and prolonged bearish tendency of the July "future" at Karachi cannot be ignored since it is probably characteristic of the factors which are at work in the export trade.

In regard to imports the Government of India imposed a duty on wheat and wheat flour which by preserving the internal market for Indian produce had some stabilising effect on prices and on the channels of distribution in the internal trade. Although only partially effective in regard to price any attempt to make it more effective by raising the duty would probably have failed because of the internal competition between wheat and other substitute food stuffs. Stability is probably in the long run more important to both producers and consumers than either the raising or lowering of prices.

Apart from the external trade in imports and exports of wheat the *Government of India* should not be called upon to function except through the Central Marketing Staff acting as a co-ordinating agency between local Governments and trade interests throughout the country and initiating where possible practical improvements of an experimental character, *e.g.*, in regard to grading and standardisation. The main problems of wheat marketing are connected with the internal trade, and where Government action is called for in the interest of producers this could apparently best be done by the local Governments and State Durbars concerned. The following are some of the main points which might commend themselves to the interest of local Governments.

The standardisation of weights and measures as administered by municipalities and other local bodies on the basis of existing legislation has proved quite ineffective. The existence of countless inaccurate weights and measures—many deliberately false—and the absence of uniformity in different parts of the country are a serious obstacle to trade. The Bombay Government, with profit to the local exchequer and to the advantage of producers and traders, has enforced an Act to standardise weights and measures throughout the Presidency. This example might well be studied and followed even to the extent of adopting the same standard weights—with appropriate local names if necessary.

The number of trade associations dealing in "futures" in certain provinces is excessive. It is essential that such bodies should be fully representative, financially sound and capable of ensuring strict compliance with contracts made on the basis of standard quality and other terms. Local Governments might therefore consider the possibility of giving statutory recognition to one or at most two associations in the province or State in the same way as the Bombay Government recognises the rules, regulations and bye-laws of the East India Cotton Association. Though the legislative action may be provincial there is great need for uniformity in certain essential matters, especially in the terms of "futures" contracts. In matters such as these the Government concerned will doubtless seek the advice not only of their local Marketing Staff but also of the Central Marketing Staff and any all-India federation of grain trade associations which may exist.

Reduction and regulation of market charges is a matter for urgent attention on the part of local Governments if the growers are to receive better returns. This may be tackled in various ways according to local conditions. Existing Markets Acts in Bombay, Central Provinces, Madras and Hyderabad for example, might be further extended to grain markets and other Governments might be expected to study and adopt corresponding legislation and regulations. These Acts provide for statutory recognition being given to a scale of charges drawn up by the proper authority in each regulated market.

It is possible, however, that some Governments may prefer to advance on a wider front and declare certain customary charges, *e.g.*, *karda*, *bardana*, etc., to be not enforceable by law except with the prior consent of the seller in writing. Whatever the method of approach the fullest possible use should be made of the local Marketing Staffs which should be extended as required so as to be able to undertake the additional duties involved.

The dissemination of market news to cultivators needs to be done locally. Information regarding stocks and prices could be collected from the more important markets and disseminated daily to the smaller primary markets if the necessary funds and staff were made available to the local Marketing Officer. Full use could also be made of the radio and the press in order to put sellers on more even terms with buyers.

Other general matters but none the less vital requiring the attention of local Governments are the incidence of municipal octroi duties, terminal

taxes and tolls which appear to bear very heavily on the producers and also the consideration of such measures as would lead to the cessation of payments in kind on account of harvest wages, etc., and lead to the abandonment of a barter for a money economy in the villages.

The foregoing points relating to action by local Governments have been placed first but probably more can be done by traders themselves—and that more quickly—so as to make the system of distribution more efficient and less costly with advantage to all concerned.

In some markets local trade associations have been effective in standardising and reducing market charges. They have also, *e.g.*, at Muzaffarnagar, introduced an improved system of ferro-concrete storage, not only with profit to the association but also with advantage as regards the quality and price of wheat stored there. Wastage has been reduced to a minimum. Incidentally if a similar system be universally applied to all grains the constant recurrence of serious outbreaks of plague might be largely prevented.

Standards of quality and of contract terms for buying and selling, particularly on the "futures" markets, are primarily a matter for the trade. They have already shown their willingness and readiness to take steps about this. A closer affiliation of the larger grain exchanges throughout the country into a representative all-India body would speed up action on those lines and promote a greater degree of inter-trading than exists at present. An organisation of this kind could quickly reduce to some semblance of order the present multiplicity of trade descriptions and bases of price quotations. The question of instituting a suitable standard contract for *durum* wheat seems a matter which could easily and readily be done by agreement between the leading grain trade associations. The provision of better market information regarding wheat stocks, movements and prices concerns the trade. In this direction also they have shown their readiness to assist, in providing a basis for a weekly broadcast by the Central Marketing Staff.

Organised trade associations might also put their house in order. Hitherto the conditions of trading in some of the important grain exchanges have been primitive in the extreme. Recently Karachi and Bombay have given a lead in erecting business premises comparable with the dignity and status of their respective associations and where business

can be done in decency and comfort at all seasons. Other associations will presumably follow suit and the example, it is hoped, will percolate down to the smaller markets where the lay-out, cleanliness and sanitary conditions generally leave much to be desired. It is to be hoped that the influence of a well organised body of grain traders may be effective in instigating municipal authorities into taking action for providing proper services and exercising adequate control over their local market places.

Among transport agencies country boats, camels, donkeys and other pack animals go their own way and no one complains much about river and coastal freight. The fact that recent developments in Sind have brought the surplus wheat producing area nearer the coast is a matter for congratulation by all traders at the ports from Karachi to Calcutta. The motor lorry has become in some districts a serious competition of the railways. Even in some cases where the freight is more senders prefer to employ the motor lorry as it provides a quicker and more efficient service and eliminates the palaver at stations which is apparently generally accepted as inevitable. It is doubtful, however, whether motor transport rates are always economic.

Agricultural Departments have been doing good work in producing and propagating improved varieties of common white wheats (*T. vulgare*) suitable for making *chapatis* and fermented bread. Something more might perhaps be done on the same lines for *durum* wheats having regard to their special suitability for macaroni, etc. Indian wheat cultivators have shown that they are by no means conservative in adopting new varieties but they have their idiosyncracies and it would seem desirable that Agricultural Departments should follow up the seed distribution of new types to ensure that the seed as issued is actually sown. The enthusiasm of plant breeders for creating new crosses and types can be appreciated but as well as having regard to consumers requirements the departments should consider the needs of the trade for obtaining unmixed types in different districts. Common wheats (*T. vulgare*) should not therefore be propagated in typical *durum* districts without good reasons.

There remains the question of what the wheat producers should do for themselves. There is, of course, the co-operative movement but producers' co-operative trading societies in this country have not passed the elementary stage. Those that exist function only as *kachcha arhatiyas* and sell their wheat locally in their own markets. It is claimed that by doing so they have kept down the local market charges and to this extent

they perform a useful function. They have, however, no facilities for selling in distant markets and there are few urban consumers' co-operative societies with which they might usefully be linked up. The main object of the local co-operative departments therefore should be to provide some such distributive machinery either by employing existing firms as agents or by establishing some other suitable agency for the purpose. The possibility of establishing closer relations between the financially sound producers' and consumers' societies might, however, be considered especially where the co-operative banks concerned can guarantee the respective accounts and are equipped to clear the railway receipts quickly.

This report in some parts seems almost to ignore the interests of the wheat grower and to point to opportunities for enterprising youth to establish themselves in business as merchants or as owners and operators of stone mills (*chakkis*) or in organising baking or the production and distribution of cereal products such as *sewayan* (vermicelli), macaroni, *suji* (semolina) and the like. An influx of educated youth into these spheres should do much to improve the whole machinery of distribution. The cultivator at present gets about three fifths of the consumer's rupee and his best chance of obtaining a higher return seems to lie in increasing the efficiency and reducing the cost of distribution generally. It is hoped that this report shows how this might be done.

The Central Marketing Staff have already done something towards improving conditions. The main terms of a standard contract for white wheat have been agreed on with the trade and several local associations have made alterations in their existing contracts so as to bring them into conformity with the proposed all-India standard. This question is being further pursued.

Arrangements were also made to collect the information necessary to provide a weekly broadcast giving the stocks, movements and prices of wheat—both 'ready' and 'futures'—at the main port and up-country markets. This service commenced operating at the beginning of November 1936 and is being extended.

As a small contribution towards eliminating the large amount of dressing and redressing of wheat done by retail purchasers an experiment

has been initiated for selling *ata* prepared from cleaned, washed and conditioned wheat of different grades. Small sealed and branded bags of 10 seers have been used for the *ata* so that consumers can with certainty obtain a clean and good article of pure and reliable quality.

These trial steps have shown that there is a surprising amount of mutual interest and goodwill among the better class of cultivators, merchants and manufacturers in India who are apparently prepared to sink old superstitions, to deal openly and fairly and march together along the road of progress. There are, at least, good grounds for optimism.

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Govt. of India.

Report on the marketing
of wheat in India

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