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THE INDIAN CO-OPERATIVE REVIEW

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We regret the mistakes that have crept into the last issue of the *Review* (Jan.-June '48). We apologise to the writer of the article.

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For

Read

53 (TITLE)

Sugar-cane Unions in Bihar.

Sugar-cane Unions in U.P.

54 (4TH LINE)

(Bihar)

(United Provinces)

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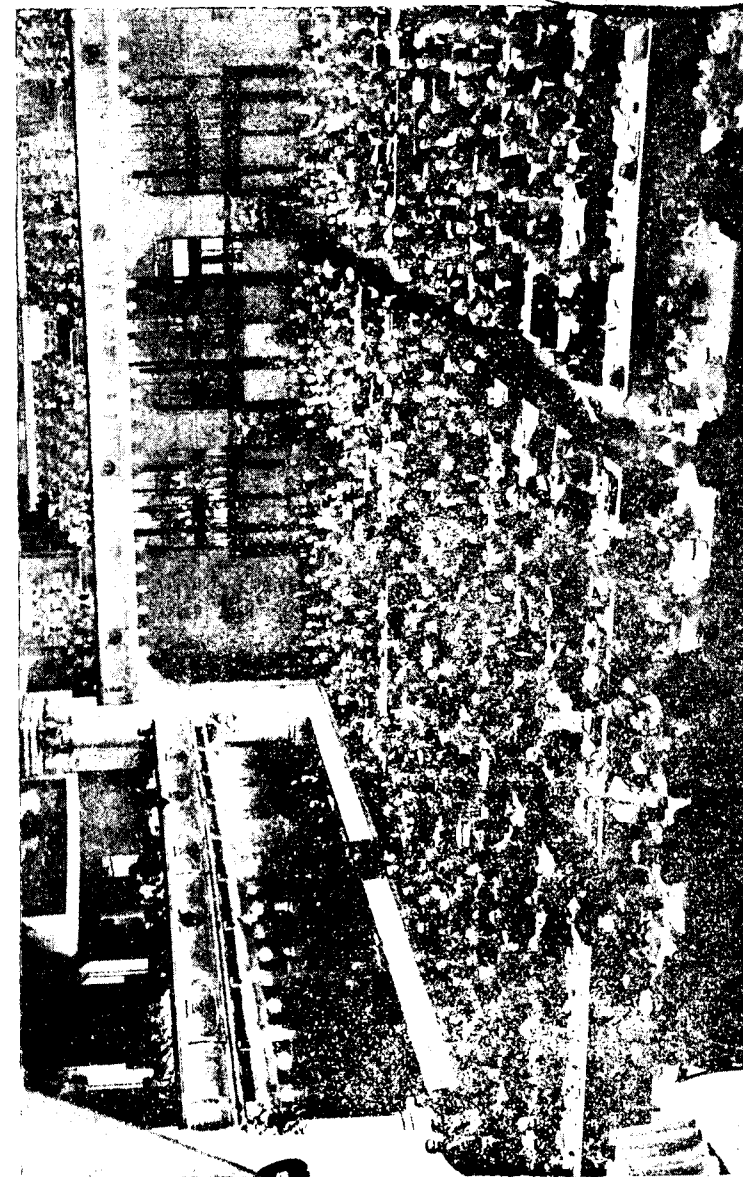
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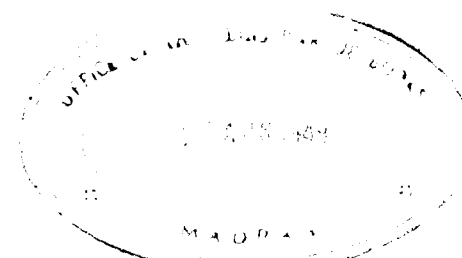
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NVII INTERNATIONAL CO-OPERATIVE CONGRESS
Prague, 27th to 30th September, 1948



Group Photo of all The Delegates in Session
INDIAN DELEGATION



THE INDIAN CO-OPERATIVE REVIEW

VOL. XIV

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No. 3

EDITORIAL NOTES

INDIAN DELEGATION

AT THE INTERNATIONAL CO-OPERATIVE CONGRESS

The 17th Congress of the International Co-operative Alliance was held at Prague, the capital city of Czechoslovakia from the 27th to 30th September 1948. We propose to give in the next issue of our *Review* a detailed account of such of the proceedings as may interest our readers. The Congress was attended by Professor H. L. Kaji, Mr. B. J. Patel of Baroda and Mr. V. P. Varde, the Managing Director of the Bombay Provincial Co-operative Bank. Our readers will be glad to hear that the Indian delegation made a good impression. Prof. Kaji was invited to lecture on Rural Reconstruction at the International School of Co-operation on the 17th September, prior to the Congress. The lecture was much appreciated and the discussion that followed was free, frank and lively. Prof. Kaji also made effective contributions to the discussions on the Co-operative Press, Co-operative Education, Co-operative Insurance and Producers' Societies at the Auxiliary Conferences. To him was given the honour of moving the first resolution at the plenary session of the Congress on the promotion of Co-operation in under-developed countries of the world. He took part in the discussions on some other resolutions and the papers presented to the Congress. Mr. Patel also took part in the debates and Mr. Varde circulated a brochure on the Co-operative Movement in India.

Prof. Kaji invited the next session of the Congress, to be held in 1951 to India—"a land of ancient glories; also a land of future promise". But Denmark and Italy also invited. The invitations were, according to precedent, referred to the Central Committee of the International Co-operative Alliance for final decision.

Prof. Kaji was elected as a member of the Central Committee, an honour not only to him but to the Co-operative Movement of India. He was also wanted on the Executive Committee; but he had to decline the honour as he could not attend its frequent meetings.

We are glad to learn that Prof. Kaji and party have already visited Holland and Belgium and the United Kingdom and their leading co-operative institutions. They propose to visit France and Switzerland before they return to India. We wish them a further happy and instructive tour and safe return to India where we are sure they will give of their best to the Movement.*

*Since writing this Editorial note Prof. Kaji has returned and has already given his first impressions of the Congress. *Vide* p. 194.

INDIAN DELEGATION AT THE CONGRESS



From Row: Left to Right:

1. Dewan Bahadur Professor Hiralal L. Kaji, Special Delegate as Member of the Central Committee of the International Co-operative Alliance.
2. Mr. B. J. Patel, Hony. Secretary, Indian Provincial Co-operative Banks' Association.
3. Mr. V. P. Varde, Hony. Managing Director, Bombay Provincial Co-operative Bank.

MILK SUPPLY UNIONS

We publish in this issue of the Review a number of articles on the major milk supply Unions in India based on up-to-date data of their working. They have always had difficult problems to solve; but these seem to be accentuated after the end of the war. The war indeed gave a great fillip to the expansion of the Unions. Membership, funds, staff, equipment, buildings—all increased to meet the sudden enhancement of demand for milk for the Forces. After the termination of supplies to them, the civilian population have far from absorbed the increased supply. It has not been possible to stimulate the demand for a variety of reasons, the most important being the increased price of milk, which has to be charged by the Unions—three to four times of what it was prior to the war. Prices of all food-stuffs have no doubt increased, but poor consumers, as most of the people are, seem to think that milk is a luxury compared with cereals, which they cannot cut and therefore, go in for cheaper milk even knowing that it is inferior. This is the complaint by every Union, which is obliged to charge higher rates as it endeavours to get purer milk, though in some cases the arrangement made is not perfect. (e. g., in Calcutta, which trusts too much the village collectors of milk working for commission). The private vendors of milk—big and small—compete with the Union and do a roaring trade, as they are able to supply milk at an earlier hour in the morning, which most consumers of tea or coffee prize more than quality of milk. Fresh milk cannot be transported earlier from long distances, at which the societies are generally situated—partly with a view not to compete with local vendors of milk who cannot reach so far.

Pasteurisation does not seem to solve the problem of avoiding early milking at the societies. The bad handling of milk before pasteurisation, which is done at the Union, after a long journey on roads which are far from smooth, and the rough, if not mischievous, handling of it by delivery boys even though sent in sealed cans or bottles (as has been experienced in Lucknow and Madras) do not ensure purity of milk. At any rate the pasteurised milk, if it had been drawn the previous evening, especially in summer, has not been quite popular. Dr. Wright was inclined to doubt the benefit of pasteurisation if it was done within city premises to which it was transported raw. It is doubtful if such pasteurisation has even 'sales value' at present. Expert advice is that pasteurisation should be done at as near producing centres as possible, and the milk so treated should be carried in smooth running vehicles on perfect roads, which are not difficult to make for the required distances to the city. It is a pity that even the Railways do not provide refrigerator arrangements for such huge quantities of milk as are sent to big cities.

It is a reflection on the efficiency of our milk supply Unions, as well as of the standard of consumption of our citizens, that they are not able to cater to more than an insignificant proportion of domestic consumers—at

the most 7 per cent. Most of the Unions depend on the sheltered custom of the Government Hospitals, Jails, Hostels, Mill Canteens, etc., who buy from the co-operative union not entirely for its superior quality but also for the financial integrity of the buying staff that it involves.

One serious trouble for the Unions arises from the fluctuations in supply of the milk of cows in the course of the year. Consumers have to be denied their full demand in the slack season; while in the flush season the unwanted surplus of milk has to be converted into butter and ghee, whose prices are unremunerative compared with the price of milk and result in losses.

Whether the keeping of some she-buffaloes by the Union will solve the problem of meeting the demand in the slack season for cow's milk—as has been suggested in the article on Calcutta Union—we are not in a position to assert. Perhaps it may accentuate the trouble of surplus in a part of the flush season. It seems to us that the Union may offer higher prices for milk during the slack season so as to deter the producers from selling any quantity to private vendors who seek their doors more often at that time.

On the question of buffalo vs. cow, there seem to be divided opinions. In parts of India cow's milk is preferred for reasons of health and taste. Cow's milk and butter contain carotene. But buffalo milk is richer in fat and compared with the average cow at present yields more milk. Popular opinion is that it is a better dairy animal and is less fastidious and expensive as regards feed. But experts seem to think that the cow is capable of yielding far more milk, if properly bred and fed and it is better to have a whole herd of cows, which if supplied with green fodder throughout the lactation and served at regulated intervals, as in Government Farms, will not lead to marked fluctuations in yield. There seems to be yet no decisive policy or expert advice on what milch animals the members of milk supply societies should be encouraged to buy or what bulls should serve them from the point of view of higher milk yield, consistent with the size and strength of the former (*vide* article on Lucknow). Nor is there any clear objective as regards the cultivation and supply of green fodder to milch animals, on which the yield of milk—in respect of quality and quantity—depends. Only a few Unions seem to perceive this need; others are content with supplying at reasonable prices some dry feeding stuffs including concentrates, sold at high prices in the market.

Perhaps an ideal solution would be to remove all the milch animals to a distance of 15 or 20 miles from the city, but well connected with it by roads, having sufficient supply of water and land for growing green fodder throughout the year (*vide* Extracts). Whether every city has such a suburban area, we are not sure. And though it would be a great relief to the animals which are crowded together in the city slums, as well as to the human beings who have had to live in such surroundings, it would be a very expensive affair—and impracticable as an early measure. But every city may well aim at the policy of gradual removal of milch animals to healthier surroundings.

One great help the city municipal health authorities can render to the co-operative union is to check adulteration of milk more strictly than they have been able to do so far; take a larger number of samples for test and have more deterrent fines imposed on culprits. This will offer a fairer field for the Union to compete; and its own responsibility for buying and vending pure milk will then be greater. Also larger supply will help to reduce the cost to be paid by ultimate consumers.

WAR AND RURAL INDEBTEDNESS IN BOMBAY

The Bombay Provincial Co-operative Institute undertook an enquiry into the effects of the War on the economic position in relation to debt of the members of primary rural co-operative societies in certain selected areas of the Province. It is not clear how these were selected. Nor could members of co-operative societies represent all agriculturists. They come mostly from the medium strata of the peasant community. They are not usually substantial farmers; nor are they submarginal farmers. After the data were collected from about 30 societies and 1,600 persons, the work of analysis and interpretation of data was entrusted to Prof. D. R. Gadgil, Director of the Gokhale Institute of Politics and Economics. The enquiry in Gujarat was very imperfect and the meagre data collected there could be of no use. The data collected in the other two Divisions—Karnataka and Maharashtra—have been analysed and interpreted with characteristic thoroughness by Prof. Gadgil, extracts from whose report we publish elsewhere in this issue.

Each of the two Divisions has been divided into a number of tracts according to the predominance of cropping or climatic conditions, or the system of irrigation. The effect of the War is studied and reported with reference to the farms in each tract according to the size of holdings cultivated.

There has, no doubt, been a general reduction of debt, but the reduction is not uniformly correlated to variation in the size of holdings. There has been a marked decrease of debt among farmers holding more than 20 acres in almost all tracts. But in the well-irrigated tract of Maharashtra holders of 5 to 10 acre farms have effected a greater reduction of debt than holders of 20 to 40 acres. Those with less than 5 acres could reduce their debts only very slightly. In the canal irrigated tract of Maharashtra, holders with more than 20 acres have had a 60 per cent reduction of debt, while those with less than 5 acres have had their debt burden increased. In the dry tract of Deccan, the decrease of debt is said to be in inverse proportion to the size of the farm. In the Karnataka, the benefit of high prices has led to the marked reduction of debt only of farmers with more than ten acres—especially in the tobacco and 'below ghats' tracts.

Altogether one gets the impression that the benefits of the recent rise in prices had been over estimated by the previous Government. The pressure of the soaring cost of living has rendered the position of small

holders miserable. We wish the Government had started an enquiry including the lot of tenant-cultivators and labourers, whose position was found to be positively worse in the enquiry at Madras.

AGRICULTURAL CREDIT REORGANISATION IN BOMBAY

The Government of Bombay had appointed a Committee with Sir M. B. Nanavati as Chairman to consider among other things the recommendations of the Government of India (Gadgil) Committee on Agricultural Finance, some of which were quite drastic. The Government of Bombay have now passed orders on the recommendations of the Nanavati Committee, extracts from which are published elsewhere and will be read with interest by all co-operators in India.

It may be stated at once that this Committee came to the conclusion that there was no need for an Agricultural Credit Corporation and that the existing co-operative agencies, with suitable reorganisation and State-aid, could discharge those functions adequately. The Government concur in this view; in fact they have accepted most of the recommendations of the Committee, the first of which was that credit societies that had taken up non-credit work should be converted into multi-purpose societies, that all should be induced to take up non-credit work and that in future only multi-purpose societies should be organised. This is in consonance with the long-held views of the Reserve Bank, which, however, insisted on unlimited liability and 'one village, one society'. The Committee does not seem to insist on either of these. In fact it is left to the local people to decide on the nature of liability, not only to start with but to change it at any time. This is rather strange. It seems to us it would be difficult to work on unlimited liability, unless the area is small and transactions are not multifarious. Otherwise, limited liability should be adopted.

The Committee recommends that there should be no numerical restriction to membership. But is it not advisable to split up big societies or organise new societies when membership becomes too large or too varied for efficient management? The Committee itself recommends special societies for bigger agriculturists who require larger loans. But do these people find it difficult to get loans from outside at reasonable rates of interest and do they have any attraction for co-operation? The Committee recommends the creation of an automatic charge on a specified portion of the property of a borrowing member to render it inalienable as long as the member is in debt. If unlimited liability is understood and is sincerely followed, there is no need for such a charge. But it has not been fully understood nor followed. Lands pass hands quietly. Is it not better to insist straight away on the mortgage of a piece of land to the society by every member on the security of which mainly a cash credit may be fixed for him—as has been done in the Alamuru Rural Bank in Madras?

The Committee states that it will not be possible for land mortgage banks to lend at 4 per cent (as recommended by the Gadgil Committee)

unless the Government gives ample subsidy. The Government of Bombay have not committed themselves on the matter. The Committee holds that long-term and short-term financing agencies—The Bombay Provincial Co-operative Bank and the Bombay Provincial Co-operative Land Mortgage Bank—should continue to work separately and not be merged. We do not know why any local land mortgage bank working at a loss has been recommended to be merged with the local financing agency—the central bank. Nor can we understand why the Committee feels that no new land mortgage banks should be encouraged. The Government agree with this, provided the Provincial Co-operative Land Mortgage Bank takes up the work in areas not served by local banks.

The Committee has endorsed the recommendation of the Saraiya Committee that 50 per cent of villages and 80 per cent of rural population should be brought into the co-operative fold in two five-year periods—but not at the expense of sound organisation. The Government of Bombay are very anxious to spread co-operation and call upon Collectors of districts to help the district co-operative staff in organising new societies and to see to it that the rural folk who are now free do not relapse into debt and get into the clutches of money-lenders.

Various forms of State aid have been recommended to co-operative institutions, some of which the Government have already granted, and the rest will be considered, e.g., technical assistance free of cost, especially for development finance.

A number of recommendations have been made by the Committee on the forms of aid, some of them of a negative character, that the Reserve Bank of India may extend to co-operatives, which are said to be engaging the attention of the Bank:—

The period of its loans should be extended from 9 to 15 months for agricultural operations and it should also arrange for easier negotiability of co-operative paper. The principle of the borrower being independent of warehouseman should be waived in case of co-operative societies. It may reduce the rate of interest on loans to Provincial Co-operative Banks for marketing of crops on condition that the benefit of lower rates is passed on to the ultimate borrower. It should accept the debentures of land mortgage banks as eligible security for loans, as principal and interest are guaranteed by Provincial Governments.

Altogether the Report of the Nanavati Committee should help to solve many a problem agitating the minds of co-operators in Bombay and elsewhere. The Committee and the Government of Bombay deserve the warm thanks of co-operators for the promptness with which the work has been done.

CROP INSURANCE

The Government of India, we learn from a press note, have appointed a special officer to study and prepare schemes of crop insurance which

may be tried in some select areas under the aegis of the Central Ministry of Agriculture. The agriculturists of India often lose heavily on account of acts of nature—for which they cannot be blamed at all—drought, heavy rains and consequent floods, cyclones, pests and diseases which sweep away the crops. They run into debt, which they cannot liquidate except in the course of a number of years. Insurance of the crop can protect them partially if not fully. The risk of loss will be shared by a number of growers: one year's blow will not paralyse them if they are prepared to pay a premium every year. The Government also will be relieved of the task of having to find heavy sums for relief in years of famine or to grant tax remissions in years of drought or cyclone, though the Government will have to give liberal aid financially and otherwise for any scheme of crop insurance at least in the initial stages. The agriculturists too by paying premia, from out of which indemnities are given, can maintain their self respect and not go with a beggar's bowl every time a loss is sustained.

But crop insurance against all risks is not common feature even in advanced countries, though insurance against fire or hail or any single accident is common in Europe. It is only in the United States of America that *all risk* insurance of certain crops has been tried by the Government not directly, but through the Federal Crop Insurance Corporation which is subsidised. Insurance is voluntary and the guarantee is for a percentage of the average yield of the crop on the farm insured. The difference between this percentage and the actual yield is the indemnity paid. The premium and the indemnity may be paid in produce or its cash equivalent at prevailing market prices. The surpluses of good years, when premia exceed indemnities, serve as reserves for payment of indemnities in bad years. This, in substance, is the scheme, which is certainly attractive.

But is it so easy to work it in India? We have no data on the losses sustained by crops by the different natural calamities and by persistent negligence of the growers themselves. As an insurance scheme, it is not merely the losses sustained by the whole community, but by individuals who have insured, that should be known. If it is necessary to free the responsibility of the individual for the loss, it cannot be done by a touring officer of the Insurance Corporation alone; but he should have the frank opinions of local leaders. Will the local people take up such an embarrassing task? Can any voluntary scheme work in India as in U.S.A. and will it be self-supporting, at any rate in the early stages? Insurance should be for a period or cycle of years not for any one particular year only—to avoid adverse condition of risks in any one particular year. As few loopholes as possible should be allowed. Crops requiring great deal of personal attention, like horticultural crops, should be avoided. We do not think private enterprise will take up any such work. The State is too centralised an institution. If co-operators are true to the ideals of the movement, and are frank and earnest, they can undertake the task with

the liberal aid of the State to start with. Agriculturists too must submit to some discipline, carry out instructions of technical advisers and not give up caring for a crop the moment they see signs of any decay.

THE INTERNATIONAL AUXILIARY CONFERENCE ON CO-OPERATIVE INSURANCE

A few days before the Meeting of the International Co-operative Congress at Prague, an Auxiliary International Conference on Co-operative Insurance was held at Prague on 25th September 1948. The Conference was presided over by Mr. Dinnage, the General Manager of the Co-operative Insurance Society of England. Representatives from England, Sweden, Norway, Denmark, Belgium, Switzerland, Italy, Poland, Greece, Palestine and Ireland attended the Conference. India was represented by Dewan Bahadur H. L. Kaji, Mr. V. P. Varde, Mr. K. H. Kaji and Mr. B. J. Patel. Dewan Bahadur Kaji emphasized the growth of Co-operative Insurance in India and mentioned the good work that was done by the Bombay Co-operative, South India, Hyderabad and Baroda Societies. He raised the question of re-insurance and wished that the Insurance Committee would consider the problem of re-insurance of risk premiums organised on a co-operative basis and assured them that Indian Co-operative Insurance Societies would support the International Co-operative Re-insurance Pool. Mr. Apel-Qvist of Sweden presented a report on Insurance Nationalisation Trends in various countries. Delegates from Poland, Switzerland, Italy and India took part in the discussion. Professor Kaji stated that in India also there was a movement in favour of nationalisation of insurance. He was of opinion, however, that the State organisation would not be quite satisfactory and that the State should confine its functions to supervision over the investment and expenses on management of Insurance Companies. The conclusion reached by the Conference as adopted in the resolution was as under :—

“The Executive emphasize that in all countries where the Co-operative Movement has liberty and power to establish enterprises in the insurance field and is strong enough to realize the co-operative ideas for the service of the consumers, nationalisation will not be found necessary for the solution of insurance problems, besides perhaps compulsory insurance of the essentially social character, *e.g.*, superannuation and family pensions. Experience has shown that in such services which cater directly for the individual consumers and correspond to needs of individuals and specified groups, co-operation provides a method of operation superior to nationalisation”.

The Conference also appointed a Special Sub-Committee to undertake further investigations into the question of a Re-insurance Pool.

CALCUTTA CO-OPERATIVE MILK SOCIETIES UNION

BY

JAMES NIRENDRA KUMMAR BISWAS,

Executive Officer.

The subject of procurement and marketing of milk on co-operative basis cannot make itself free of the various difficulties which not only confronted it at the start but continued to maintain their existence at every stage of the enterprise in some form or other and kept the growth of the movement retarded. The history of the Co-operative Milk Union, since its inception in the year 1917 till to-day will bear ample evidence to that effect but sincere believers in the lofty ethical principles of co-operation as the only means to the economic salvation of the masses have devoted 31 years of their service to this cause to gain varied experiences of and local insight into each and every problem for establishing this particular sphere of co-operative trade on firmer footing and basis.

Procurement.—Co-operative societies organised and placed at convenient distances from the railway stations have milkers and carriers paid out of funds of the societies on commission basis over the quantity handled. Milking is done at the respective houses of members and then taken by the carriers to the nearest railway station or assembling centre on headloads or shoulder slings where the milk is received by a Manager paid by the Union. The milk is received from the members of the societies at 100 tolas per seer and duly entered in the pass books of the members concerned. The Secretary or the Manager of the society keeps similar accounts for each member and prepares challan for making over the total quantity collected to the depot Manager of the Union at 80 tolas per seer. The difference represents the income of the society for its expenses. The Secretary or the Manager of the society gets commission from the Union on the total quantity handled. The depot Manager of the Union at the assembling centre makes a combined challan for milk received from all the societies under his group which shows the lactometer reading and then arranges for its transport to Calcutta.

The system of milking at the village homes of the members affords loopholes for adulteration under compulsion of circumstances and places the most important aspect—milking at the hands of untrained and ill-paid milkers who generally adopt unhygienic and insanitary ways. The production is scattered and on a small scale affording very little chance for maintaining checks on the milkers and collectors in the teeth of unhealthy competition from unscrupulous dealers which exists in the milk trade. Further it is not an easy matter to systematically and efficiently deal with the individual producers.

Milking of the animals by members at central place under the supervision of a paid agent of the Union who can test the milk and keep the

accounts is suggested as a step to counteract the unscrupulous ways of those handling the procurement and collection and to improve the quality of milk—the main spring of the business—by taking off the responsible task of supervising the collection of milk and ensuring good quality from the hands of the commission-paid managers of societies who according to the practice of the present system appear to be paid for their influences in the organisation and running of the societies. An alternative as a compromise between the present system and the one suggested above for procurement and collection of milk is the formation of societies amongst village collectors of milk. Much business acumen and marketing experience are ensured by this, which are lacking in producers co-operative organisations. Once these village merchants can be organised for assembling the produce co-operatively ways and means will not be hard to find to filter down the benefits to the producers.

Transport.—The milk received by the Manager at the assembling centre in sterilised cans of the Union of standard measures is transported by train to Calcutta. The milk is not booked but carried by special men as luggage with their 3rd class tickets. There are different weights allowed under each ticket such as two maunds and one maund ten seers according to the two Railways by which the major transport is made. One man is allowed to carry any quantity of milk so long as he holds the requisite number of tickets. There is no special accommodation for milk in the Railways. Through Railways the milk is not received before the lapse of 5 hours from the actual milking time. At Calcutta the total indent is taken to the dairy where the same is being received as per challans and on verification of the lactometer reading in them. Sample of each group is being kept for chemical analysis but payment is made on the merit of lactometer reading of the dairy.

The gap of five hours between the time of milking and that of receipt in the dairy is too much for milk in tropical climates and both the societies and Unions have the usual burden of sharing a loss every year in respect of milk turning sour on transit during summer. This system of treating milk so late after milking also affects the quality to some extent no doubt. Assembling centres sufficiently far off from the dairy of the Union have crude methods of heating the milk to a certain temperature before despatching the same to extend the durable capacity of the produce. The varied grades of milk assembled together also call for earlier treatment specially when the indent is transported raw in its original condition.

Experience reveals that under any circumstances it is not possible to arrange to bring the milk down to Calcutta earlier when the same is being indented and collected at villages off from the city. The business position of the Union also depends on the distance of the places from which the milk is collected. As the lesser the distance the greater is the chance of ensuring better quality and cheaper rate of procurement.

Arrangement of transport by refrigerated vans of railways should be the proper means for tiding over the above problem and though nothing substantial to that effect came out in the past inspite of all attempts, the conference recently held at Delhi for the planned development of Refrigeration Plant Industry surely holds out bright hopes for a solution of this aspect of the problem in the near future. Otherwise installation of small cooling plants in producing centres is suggested.

Processing.—For the first 2 or 3 years the Co-operative Milk Union, Calcutta handled raw milk but since then it has set up a pasteurising plant to process; the temperature of raw milk received in the dairy is raised to 142° F. and then after keeping the same in that condition for half an hour it is rapidly cooled through the surface cooler to a temperature of 50° F. in order to destroy the undesirable pathologic and other organisms. In order to prevent re-contamination of pasteurised milk it is filled and sealed in sterilised cans and bottles which are maintained at a suitably low temperature till the milk is consumed. The Union has two steam coil vats of a total capacity of 60 maunds. The bottling at present is done by a hand-operated, four syphoned machine, the automatic being put out of use for non-availability of necessary equipments in the present market.

The main bulk of milk in India is produced and consumed in villages where practically no treatment or processing of milk is done. In cities like Calcutta where the major part of the milk is produced within its own boundary no processing appears necessary but in the case of the Milk Union where major part of the milk comes from a distance, pasteurisation though not required for determining grades like grade 'A' 'TT' as in foreign countries, calls for adequate processing, storage and transport under controlled temperature both for purposes of Public Health and for prolonging the life of milk.

Much stress is not given in Calcutta on processing of milk owing to the lack of public demand for the same and want of encouragement of the Public Health Authorities. In cities like Calcutta greater attention is paid to the price of milk rather than its wholesomeness or purity. Even contract customers of the Calcutta Milk Union which are hospitals call for quotations and go in for cheaper rate be it raw milk or pasteurised. Hence the processing and treatment of milk did not get the same amount of attention as it ought to have received.

But still in view of the fact that the milk of this Union is being indented from far off places and in odd times pasteurisation has been kept up as a necessity for prolonging the life of the produce and it is a problem for the Union to compete with others in price who handle raw milk in the city where no importance is attached to pasteurised milk. Rather it is not looked upon with favour by a certain section of the public on various grounds.

Improved processing of milk is only possible if there is sufficient appreciation for the same and a better price is ensured. There is no chance of the same being ever possible until and unless the Public Health Authorities take steps to popularise and stress the need of taking pasteurised milk to the public in a city like Calcutta.

Distribution and Sales.—All the milk after processing is distributed through delivery men paid on monthly basis. Motor vans are used for delivering heavy quantities whereas small ones are carried in hand carts and cycle vans. Out of 105 maunds of milk handled on an average per day about 25 maunds of milk are bottled and delivered to nearly 1,200 customers at their residences, about 10 to 12 maunds are sold in retail in sealed cans having delivery taps from the stalls of the municipal and other markets of Calcutta and the rest is distributed in bulk in large cans to hospitals, jails, Government Institutions and big hotels. Distribution is done twice a day both morning and evening. The retail price of milk delivered in bottles or loose from the cans is the same at present—14 As. per seer. There are different rates for different customers of bulk milk. The coupon system for depositing the price of milk in advance for bottle customers is in force. System of sale of loose milk is in cash only. The contract customers for bulk milk is charged monthly on credit by bills. The Union maintains a staff for supervising distribution and keeping a check on the quality of milk handled during sales and distribution. All milk issued from dairy either in cans or in bottles are properly sealed with the official stamps of the Union and any tampering with the same by the agents engaged in distribution is seriously dealt with. The price of milk is generally uniform throughout the year and regular standard in quality is attempted to be maintained throughout. Very recently the practice of selling milk by respectable agents and consumers co-operative stores on commission basis has been restarted with sufficient securities and safeguards and the same is working with success.

The practice of distribution through delivery men who in good many cases cannot keep themselves above the unscrupulous ways of tampering with the seals and adulterating the quality for personal gains, is a constant headache for the Management. Strictest check and supervision can never fully succeed where the business volume is great and scattered. Timely distribution by a scheduled time to this huge number of customers also appears difficult where human agency is to be depended upon. Use of small motor vans can counteract this evil to an appreciable extent if introduced wholesale till the moral standard is changed. Much headway towards keeping up a high volume of distribution cannot be made owing to the unsteady supply and variation of the standard of milk supplied which are due to peculiarities existing in the system of production and milking at the sources. To add to this there is a tendency of the public for cheaper milk irrespective of quality. No price or value is given to the processing of milk. The remedies suggested for making supply steady and quality

controlled at the source are introduction of milking under common shed, binding of the societies into contracts to offer a minimum and maximum quality of supply under heavy penalties, practice of receiving both buffaloes' and cows' milk for balancing to some extent the seasonal variations of production and maintenance by the Union of one or two dairies of its own in mofussil. The Corporation and the Public Health Authorities can also come up to educate the public to create a bias for pasteurised milk even if it were a little higher in cost which will be however more than compensated by its greater hygienic and nutritional value.

Management.—The management is vested in a board of directors who are elected at a general meeting of the Union from amongst its members who are societies only. The chairman and the vice-chairman of the board are the leading officials of the Government of West Bengal of the Department of Public Health and are nominated members. The membership of the Union is open to affiliated societies who are its share holders. The Union spends part of its profits through societies on general welfare work i.e., establishing village schools, sinking tube wells, construction of village roads etc. It has also arrangement for giving free services of pedigree bulls for the cows of the members. There are two sub-committees such as Business Sub-committee and Finance Sub-committee to manage the two important sides of the whole show in detail. The Union has no financial help from the Government except the full time service of the Executive Officer for the supervision of the societies and general charge of the Union as in the past. There is also a wholetime Veterinary Inspector for looking after the general welfare of the animals of the members.

DIFFICULTIES IN THE WAY OF EXPANDING BUSINESS AND SUGGESTED REMEDIES

Included in the category of difficulties is the seasonal variation of the supply of milk by the societies where only cows are maintained to the exclusion of buffaloes and also absence of any binding obligation on the societies to maintain a reasonable quota of supply and not to divert any part of the co-operative produce to unscrupulous agents and middlemen. In consequence the Union has to face the problem of having to receive a smaller supply of milk in the dry season and a greater quantity in the flush season that it actually requires. This also necessitates the system of cash purchase of milk at high prices from non-members of the city during the period from September to January to make up the short supply and disposal of the surplus milk of societies at abnormally low rates during the period from April to June. Both the systems involve the Union in losses. Maintenance of one or two dairies by the Union stocked with more buffaloes and less cows is a partial solution of the problem though not a total cure. A minimum daily quantity of supply of milk by societies must be prescribed according to local condition with due respect to seasons and that can to some way balance the business of the Union, the major part of which is under contracts. Any attempt to expand business by forming a greater

number of societies will only make the problem more complicated. There should also be provisions of law to allow skimmed milk to be sold under proper conditions to make it possible for the Union to divert the milk in surplus over demand to by-products like butter and cream. This is done now only on a small scale. The present manufacture of by-products is restricted owing to the absence of an open market in Calcutta for skimmed milk.

Steps may perhaps be taken by the Union to make it possible to bring supply of milk from more distant places but the cost of transport and insistence on the quality tend to force up the price to such a level as to compare unfavourably with local market rates of milk, specially as buyers both big and small have a tendency to go in for cheap quality. The main reason is that adulterated milk commands an extensive sale on account of its cheapness inspite of its being banned by the law. Greater co-operation of the Public Health Authorities is desirable if we are to arrive at a solution. Unless effective measures are taken to prevent the sale of adulterated milk, there is little scope for an organisation like a Co-operative Milk Union to procure good quality milk at reasonable prices and market the same at rates which are not too much for an average customer. Rigid inspection and sampling of milk coming from outside at the various milk markets and licensing of individual traders of milk in the city should be insisted upon.

The additional charge of pasteurisation takes the price of milk over what others sell it for. The system of pasteurisation should be economic to give certain relief to the problem. The existing machinery has outlived its utility and there is too much wastage during the processing of milk. Further the plants do not get their average volume of work throughout the year which they are capable of and that also inflates the processing cost. The public should be induced to learn the value of the use of pasteurised milk and to pay more for it to enable the organisation to improve the system of its plants and machinery for processing. Government patronisation in this respect is very much desirable. Societies in their turn should be under written contracts to supply a minimum quota according to seasons to keep up balanced work for the machinery and to help the Union in the matter of building up a regular business.

Big organisations like a Co-operative Milk Union which handle produce right from the source till it reaches the consumer and have to maintain a standard quality naturally incur higher cost by way of higher rates on procurement, maintenance of hygienic ways of transport, processing and distribution and overhead supervision over all stages of its activities. All these together make it difficult for co-operative organisations to face open competition side by side with others in trade who concentrate more on immediate profits in business than on the other aspects of this particular trade taking full advantage of the abnormal demand being in excess of the supply in a city like Calcutta. Full patronisation from the State and the public can alone remedy this sad state of affairs in respect of this important

dietary article of the nation and keep up, strengthen and encourage the enterprise of the Co-operative Milk Unions which otherwise is bound to languish. Fortunately the problem has already been engaging the attention of the Central Government and some proposals have been mooted which if given effect would pave the way for a more efficient functioning of the Co-operative Milk Unions but the Provincial Governments should also be up and doing and render all possible help to the Unions so that they may be better fitted for their great task of providing nourishment to the generation which is the hope of future India.

Table showing procurement of milk from member societies and from non-members due to seasonal variation of supply at the source,
(in maunds)

Period, October 1947 to September 1948.

		Members.	Non-members.	Total
October 1947	...	1,594	1,766	3,360
November 47	...	1,435	1,946	3,381
December 47	...	1,679	1,958	3,637
January 48	...	2,400	1,227	3,627
February 48	...	2,932	908	3,240
March 48	...	3,568	369	3,937
April 48	...	3,662	257	3,919
May 48	...	3,569	205	3,774
June 48	...	3,539	201	3,740
July 48	...	3,862	388	3,750
August 48	...	2,520	1,148	3,668
September 48	...	1,796	1,361	3,157

THE LUCKNOW CO-OPERATIVE MILK SUPPLY UNION

BY

GOPAL LAL

Hon'y. Secretary

The Lucknow Co-operative Milk Supply Union Ltd., was established in March, 1938 with the object of developing the production of milk in rural areas and its collection and distribution, after pasteurisation, for fluid consumption in the city of Lucknow. It aims at making substantial addition to the city's supply by bringing milk from areas, whence it does not come on account of long distance or for climatic and other reasons in a condition fit for human consumption. Therefore it leaves out of its operations areas lying within 10 miles of the city, which are tackled by *duddhas* and other private agencies. At present the Union brings milk from villages situated between 10 to 45 miles of the city on both sides of the Sultanpur and the Sitapur Roads.

The work of the Union is carried on on co-operative lines with a network of societies spread in the area of its operations. In villages which are selected for milk supply, the co-operative milk societies are organised. Until recently the work was confined to the production of milk but now milk societies have been authorised, as an experimental measure, to deal with all development and multipurpose work, so that they may win the goodwill of all inhabitants of villages by catering to their different needs and thereby secure increase in membership and the production of more milk. The affairs of societies are managed by Panchayats which work out the requirements of members in regard to milch cattle and other requisites, see that animals are milked under hygienic conditions etc., at a central place or in groups at two or three places according to the convenience of members and that all utensils are kept properly cleaned. The society employs a Secretary to keep proper accounts of money and other transactions and of milk received from members and supplied to the Union; the *punches* seeing to the distribution of the price of milk, which takes place twice a month. Each member is supplied with a pass book in which all entries about the milk supplied, payments made, loans advanced etc., are made. The society is responsible for the quality and quantity of milk supplied to the Union upto the time of its delivery at the collecting depot concerned. The Union exercises general control over the working of the societies and render all help possible through its staff of Milk Supervisors etc.

Bulls.—Efforts are made to develop the production of milk by the supply of milch cattle and in every other way possible. As milch cattle of this district are of inferior stamp and suffer from being bred from inferior sires, the first requisite for the development of milk production is the

provision of bulls of good pedigree. Murrah bulls are provided for she-buffaloes, but the policy in regard to cow-bulls is undergoing change from time to time. On the advice of the experts of the Animal Husbandry Department bulls of the *Sahiwal*, *Tharparkar* and *Haryana* breeds have been supplied from time to time. Haryana bulls have been found to be satisfactory, but experts have now decided again to revert to the supply of *Sahiwal* bulls in this district in spite of the fact that in the past bulls of this breed were considered unsuitable and too heavy for local cows which are of short stature and get hurt when being covered. The policy of experts is still undecided. It will be a good thing if a final decision in regard to the breed of bulls is taken after considering local conditions and carrying out, if necessary, experiments at one of the farms. Further, there is inordinate delay in the supply of bulls by the Animal Husbandry Department to the detriment of milk production, as the cows do not get service when they are in heat. It takes more than a year to get them.

Supply of milch cattle.—Cultivators purchase she-buffaloes in preference to cows, with the result that there is a considerable decline in the receipt of milk during the hot weather with consequential financial loss to the Union. The supply of more cows and buffaloes to secure uniform production is therefore a necessity and this is being brought home to members. The supply of cows presents another difficulty. The improvement of the local breed by the provision of bulls of good pedigree will take a long time. Early increase in the production of milk can be secured only by importing cows of good breed from other provinces. In view of this, *Haryana* cows of the Punjab were supplied on two or three occasions, but they are not popular with cultivators, on account of considerable decline in their milk yield due to climatic and other reasons, but chiefly on account of their heavy cost, which ruins a poor cultivator if the animal dies after its supply. Decline in milk can no doubt be attributed to a certain extent to bad feeding and lack of interest in the rearing of these animals, but this can be (and is being) set right by educating the members. The hardship caused by death of costly cows cannot be mitigated, leaving out of consideration a slight relief given by the Union from its Relief Fund, unless *cattle insurance* comes to be established in this country. This matter is under the consideration of the Indian Council of Agricultural Research for some time past, but no tangible result has so far come about. The matter is of paramount importance and should receive the immediate attention of all co-operators. When our Government have practically solved the intricate question of *crop insurance* there is no reason why the difficulties connected with cattle insurance cannot be surmounted. What is required is that a deputation of co-operators in India should press the importance and immediate necessity of cattle insurance on the Hon'ble Minister for Food Production with the Indian Union. It will achieve the result desired in a short time, as the Government itself is very anxious to increase the production of milk in every way possible.

During the triennium ending June 30, 1948, five hundred and forty milch animals, 62 cows and 478 she-buffaloes were supplied to members at a cost of Rs. 1,77,887 of which Rs. 1,68,170 were advanced by Government as interest-free *taqavi* loan and the balance was provided by the Milk Union. The recovery of the cost of animals is made 25 per cent to 50 per cent of the price of milk supplied, but, in the case of *taqavi* loans, realisation can also be made, if necessary, from the proceeds of the Rabi and Kharif crops.

Collection and treatment of milk.—From village societies milk is brought on bicycles to collecting centres, where its lactometer test and temperature are taken and milk below 26 lactometer is rejected. After milk of all societies has been collected, it is sent in its raw condition to Lucknow by a motor truck. On receipt at Lucknow samples are taken and tested at the Laboratory. If milk of any society is not found up to the mark, warnings are issued to officials concerned and such milk is converted into cream. Good milk is heated to 160° or so in a hot water bath, and then cooled on an Aerator machine. With a view to the treatment of milk to the extent of 200 mds. a day and to bring about more efficiency and reduction in the cost of processing, a big pasteurising plant has been ordered from abroad and it is expected during the current year.

Distribution and sale of milk.—Door to door delivery used to be made by roundsmen on their bicycles, but this system is being abandoned as distributors have been found to add water by placing sealed cans in a slanting position and by connecting the outlet of cans with a water tap by a rubber pipe. Bulk of the distribution is now made both in the morning and the evening at sales-depots established in different parts of the city, to which milk is sent in motor trucks at a time when customers are present, thus obviating the chances of adulteration. The supply in bottles is also made by a motor truck which goes round for distribution both in the morning and in the evening.

Turn-over of milk.—The quantity of milk annually handled in the decade ranged from 5,668 mds. to 17,408 mds. or from 15 to 48 mds., a day on the yearly average. Last year the quantity handled amounted to 16,210 mds. or about 45 mds. a day. As the capacity of the present cooling plant is of 50 mds. only it is not possible to make any headway, which will be feasible only when plant of more capacity becomes available.

Management.—The Board of Management of the Union comprises 5 representatives of societies, 2 of consumers, 2 nominees of the Co-operative Department, and 2 persons who may be co-opted by the Board, with the Deputy Commissioner of Lucknow as an *ex-officio* President—or 12 members in all. The day-to-day administration is carried on by the Executive Committee composed of five members of the Board, of whom two must be representatives of societies. The strength of both these bodies is being raised so as to increase the number of representatives of societies.

Close supervision over the working is exercised by the Registrar, Co-operative Societies, through the Dairy Development Officer and his sub-ordinates.

The career of the Union has so far been checkered and full of experiments in all spheres of its activities. In the beginning societies organised dealt in milk only, but now multipurpose work has come in its purview, though as an experimental measure. Formerly supervisors, who were under the control both of the Milk Union and of Credit Inspectors of the Co-operative Department, used to attend to the Union's organisation etc., in addition to their credit and other work, but now the system of dual control has come to an end and wholtime supervisors carry on all activities under the exclusive control of the Union.

In the beginning milk used to be brought from areas lying between 10 to 15 miles of the city but, on the success of the venture, areas between 10 to 45 miles are now tackled and consequently bicycles and horse conveyances have come to be replaced by motor trucks. At collecting centres milk used to be heated and cooled and the cold milk sent to Lucknow, subsequently hot milk began to be transported to the city, where it was cooled. Now raw milk is brought whereby both the heating and cooling has been centralised at Lucknow. Formerly fat tests by Dr. Gerbers Centrifugal Machine used also to be taken at collecting depots, but this was discontinued. All tests were until recently carried on in the Union's Laboratory at Lucknow. On the introduction of the "Quality Control Scheme" from April 1948 this has also come to an end and all tests are now conducted by Government staff. The change in the system of distribution, referred to above is also the outcome of experience. In short the results of the trials of different methods of handling, treatment transport etc., are valuable and form useful guides for others to follow, without waste of time and loss of money.

Help from Government.—Realising the imperative need of increasing the production of milk, a food of paramount importance to Indians, the Congress Government established this Union when they were in office in 1937-39 and gave a grant of Rs. 25,000 for the purchase of machinery and a motor van. Practically no substantial pecuniary or other help was received during the regime of the Advisory Government. Since the National Government has come to be established, it is most anxious to increase the production of milk all round by giving substantial help. Apart from cattle farms established by the Animal Husbandry Department under the orders of the Government a separate "Dairy Section" has been set up in the Co-operative Department with the requisite gazetted and non-gazetted staff, and on the lines of this Union, co-operative unions have been established at Allahabad, Banaras and Kanpur and are being established at Faizabad, Jhansi, Nainital and Meerut. Substantial help is being given to bring about increase in the production of milk. Accordingly the Lucknow Milk Union is required to speed up its production to 200 mds. a day and, to

help in the organisation and other work, liberal staff has been provided, the cost of which is to be met as follows :—

Year	Cost to be borne by Government	Cost to be met by the Union
First year	... Full cost	... Nil
2nd. year	... Half cost	... Half
3rd. year	... Quarter cost	... Three-fourths
4th. year	... Nil.	... Full.

Free supply of the pasteurising plant and other equipments of the value of Rs. 1,53,000 will be made, and funds amounting to Rs. 64,000 provided for the construction of milking sheds etc. Roughly about a lakh of rupees will be given for a few years as interest-free taqavi loan for the provision of milch cattle of good breed. All this help is forthcoming from October, 1946.

Profit and Loss.—During the decade beginning from 1938-39 the Union made profit in five years, but suffered losses in the remaining five, with a net loss of Rs. 499 at the end of the decade. The financial position is, therefore, far from satisfactory. The following factors chiefly account for this unsatisfactory position :—

(1) *Small turnover of milk.*—As stated above larger quantity of milk could not be handled owing to the incapacity of the present cooling plant to process more than 50 mds. of milk a day. To prevent pecuniary loss the handling should be at least 75 mds. a day, with a sale of 60 mds. a day.

(2) *Competition with Duddhas.*—This is a serious menace to the interest of the Union. After a great deal of labour, expense etc., the Union develops the production of milk, but, as soon as this comes about, *duddhas* come into the field and, tamper with the loyalty of members by paying a slightly higher price, which they can afford by selling milk adulterated with water or separated milk, and thus snatch away the fruits of the labour of the Union. The remedy lies in resorting to legislation (i) either to reserve a particular area for the operation of co-operative unions, or (ii) to provide that, if 55 per cent of the inhabitants of a village are members of a co-operative milk society; it should be obligatory on the remaining residents to market their milk and milk products through the society. Such an action was taken in Western countries in the beginning to push on milk production and it is understood that the Bombay Government have resorted to such reservation in the Kaira district. Time has come when legislation is called for not only for this, but also for the examination of milch cattle and other kindred matters. Unless such help is forthcoming from Government, no amount of subsidies will place co-operative unions on a solid financial basis.

(3) *Transport from long distance* involves considerable expenditure and pecuniary loss, unless the quantity brought is large, or the payment of prices is regulated according to the distance from which milk is transported.

The former has not been achieved owing to the low capacity of the processing plant and the long time taken in development. As regards the latter, it may be stated that organisation in one of the distant areas was started on the condition that purchase of milk will be made at a cheaper rate than that made from a society situated nearer to the Union. The members agreed to this in the beginning but backed out at the time when production became low, when the Union could not afford to lose a drop of milk. The purchase rate is therefore the same irrespective of the distance of a society from the Union.

(4) *Control of Government.*—This is exercised by officers and inspectors of the Dairy Section of the Co-operative Department. In their dealings they lose sight of financial limitations of the Union or take such action as is detrimental to its interest from the business point of view. Under their direction the Laboratory maintained by the Union has been closed from April 1948 and testing is now done in a Government Laboratory under the control of a Co-operative Dairy Officer, who generally rejects milk of less than 5 per cent in fat, which would not have been done by a business concern, specially when the prescribed standard under the U. P. Food Adulteration Act is 3.5 per cent. This and other similar actions amount to interference in the working and the dual control is, therefore, undesirable.

Generally official schemes tend to strengthen the Dairy Section of the Co-operative Department and not only tighten up official control over a union but also deprive it of some of its legitimate powers. It is understood that there is now a move to make posts of Managers of Co-operative Milk Unions as "gazetted appointments." If this comes about, it will make the non-official control merely nominal. It is most desirable that when such schemes are drawn up, non-officials responsible for running the Union and others with experience of milk industry must be consulted. If this is considered undesirable, either the Government should take over complete control of unions and be responsible for their running in all respects, or allow unions full liberty to deal with all matters and confine the duties of the official staff to see that the work goes on right lines and give advice when a change for the better is called for. Only in the latter case non-officials can rightly be held responsible for the solvency and proper running of unions.

(5) *Competition with Government Dairies.*—This Union has also to encounter competition with the Bhadrak Dairy Farm which has been established in this city by the Animal Husbandry Department and is being run as an official concern. It is very difficult for a co-operative organisation to withstand competition. While the co-operative union has to persuade cultivators to take to the production of milk as a subsidiary occupation, to impress on them the importance of proper feeding and rearing of animals and hygienic production of milk, break up their inherent

prejudices and conservatism and to secure compliance of all that is necessary for the proper running of milk societies, no such difficulties face the Government Dairy. This Union experiences difficulties in getting good animals, while the Bhadrak Farm gets bulk of them easily by transfer, from cattle farms of the Animal Husbandry Department. It takes months for us to get bulls of good pedigree, while no such delay occurs in their case. It is easy for them to collect milk of all animals at one place at the time required, while the collection by the Union extends to scattered villages lying in rural areas upto a distance of 40-45 miles from the city. The transport from such long distances costs a lot to the Union, while they do not incur any such expenditure. Long time taken in the transport of milk from far off places brings about sourage of a great quantity of milk, of which the Government Farm is spared owing to its situation in the city. It can afford to spend any amount on the maintenance of the Farm and the payment of the salary of the gazetted and non-gazetted staff; while the Union cannot afford to do. They get priority in the supply of petrol, equipment and other articles which is not available to this Union. The competition arises chiefly in the sale of milk. Hitherto the Farm used to supply milk to high Government officers, but now they have started sale to the public as well. At one time it was contemplated that their sale to the public should be made through this Union and, as a matter of fact this was done for about a month, but was stopped on the shortage of milk due to the advent of hot weather. Now they have opened some sales depots in the city, where they are disposing of their product at a cheaper rate. This will naturally adversely effect the position of this Union.

The comparison above has been made in detail so that co-operators may know the handicaps under which co-operative organisers labour. Nevertheless, there is no cause for despair. We are doing substantial work for the amelioration of the condition of villagers, putting into their coffers at present about 2½ lakhs of rupees a year by marketing their milk, establishment of oil ghanis and other cottage industries and improving their condition in all ways possible. They are also getting practical and wholesome training in the art of self-Government by administering the affairs of their societies on the Panchayat system. The co-operative organisation is doing solid work in a quiet way for the uplift of cultivators at practically no cost, while several Departments of Government, are spending lakhs of rupees on publicity campaigns etc., to achieve the same object.

To sum up—It will be observed in respect of matters other than financial this Union has established its utility. The financial position will also improve and become satisfactory if the suggestions made above are adopted. There is, however, no denying the fact that it is rendering a very useful service both to the rural as well as the urban population and can be regarded as an asset to the country so far as the milk production is concerned.

THE MADRAS CO-OPERATIVE MILK SUPPLY UNION

By

RAO SAHEB K. MUTHUKRISHNA NAIDU,

Additional Joint Registrar of Co-operative Societies, Madras.

"Milk with its products serves as one of the most important sources of food for all civilized nations. The more highly developed and prosperous the people, the greater the amount of milk and dairy products they consume." —Eckles.

The fact that milk is of special value to Indians is evident from the following observations of the Public Health Commission with the Government of India. "In the first place, a large section of the population is wholly vegetarian and the only way of providing the valuable animal proteins is by means of milk and milk products. Secondly, as milk also contains most of the important mineral salts and vitamins, an increase in its consumption will help to correct existing deficiencies in these directions in the Indian diet." Though milk is not an essential article of food as rice or salt, it is equal and, perhaps, more important from the point of view of health. Milk is consumed by all classes of people in some form or other, though in varying quantities. Experiments have proved that the addition of a supplement of 1 lb of whole milk per day to the ordinary diet of boys has resulted in an increase in their weight and height. This 'most important food known to mankind' for various reasons, has, of late, become scarce in India. Statistics show that India possesses about a third of the world's cattle population. The total output of milk in India is about 800 million maunds and she is the 2nd in the volume of production, next to the U. S. A. The production per capita, however, is far below the other countries—it being only 5 oz. of milk.

While the general position of milk in the country is such, the problem of its production and supply is one of the most complex problems whether in town or village. Although there are many aspects to this problem, it is primarily an economic one and if viewed even from this aspect alone, it bristles with several difficulties, particularly in urban areas. In towns, only men of limited means own the majority of animals. They are distributors as well as producers. Accommodation being scarce and rent heavy, they cannot afford to provide more space and better sanitary conditions for the cattle; they are tied together in congested and insanitary conditions. To ensure clean and wholesome milk, the animals must be kept under the best possible hygienic conditions. It is difficult for the Corporation with its limited staff to supervise effectively the large number of cattle scattered throughout the cities, nor provide them with better accommodation facilities at different centres in its present financial position. In rural parts, the production of milk is carried on in small units and in scattered homesteads. It is not an industry by itself, but only a side line of agriculture. The

average production of milk per day in a village in this province is about 10 measures and it is about 20 measures per sq. mile. Much difficulty is experienced in collecting these small quantities of milk produced in individual homesteads scattered in several villages. Moreover, it is highly perishable. Unless it is used or consumed within a few hours, it becomes unsuitable and dangerous to consume.

Dairying, on the whole, is not a remunerative industry so far as this Province is concerned. Poor quality of the breed and poorer variety of available cattle feed are mostly responsible for the pitiable performance of these animals at the pail. Deficiency in quantity is made good by adulteration and an honest dairy-man has to run a race with the widespread malpractices and in the end gets the knock. The price of milk is high in comparison with the low income and purchasing power of the consuming public. Private individuals hesitate to establish dairy farms for fear of losing their capital.

In the present context of affairs it may be possible to take up the industry only with Government assistance. And the most suitable agency for tackling the problem would be the co-operative organisation composed of owners of milk animals. The co-operative organisation ensures not only a fair return to the producers, but also the supply of milk to the consumers at a lesser cost by reducing the number of intermediaries. There still exists a doubt in some quarters as to the suitability of co-operative organisations undertaking the milk supply in urban areas. Though it is a fact that milk trade has not been organised in its entirety in any particular area, there are many instances to show that co-operative institutions, where they are functioning are able to bring about definite improvement in the milk trade in their particular area of operation and the Madras Milk Supply Union is a conspicuous example of such success in the City of Madras.

The Madras Co-operative Milk Supply Union is the biggest single organisation handling very large quantities of milk in the city. The Union was started in December 1927, and has as its main object the purchase and disposal of milk and milk products of its members, handled under sanitary conditions at reasonable rates to the residents of Madras. It has other objects too, namely to establish a model dairy farm and a modern dairy plant for pasteurising milk, to own or lease pasture lands and maintain dry animals of members and supply cattle feed and other commodities at reasonable rates. The Union had at first 14 societies and 15 individuals as its members. The quantity of milk sold to members during the first year was 17,408 Madras measures. Since then, there has been a steady increase in its business and at present it handles about 5,000 measures a day.

The Union had, of course, its vicissitudes, arising partly out of the indifference of consumers and partly out of the disloyalty of the milkmen-members, who did not know what was good for them and were easily misled by persons who had their own vested interests in the milk trade. In the

year 1929-30, the Union undertook the supply of milk to some of the State Hospitals also. Though the supply was made regularly for the first few months, it had to stop later for some time, owing to the disloyalty of its members engineered by outside agencies. The milkmen struck work for a few days. As a result, the Union had to pay damages to the extent of Rs. 17,000 to Government. But thanks largely to the indomitable energy, patience and perseverance of the founders and the support of the Registrar and the positive encouragement by Government, the Union was able to tide over the difficulties and establish itself even more firmly than before. In the *Report on the Marketing of Milk* in India and Burma, it was estimated that in 1938-39 the Madras Co-operative Milk Supply Union handled 6.9 per cent of the total quantity of market milk in the city, while the Calcutta Union started eight years earlier, handled only 1.8 per cent of the milk business of that city. There was no other co-operative organisation anywhere else in India which handled milk as much as these two Unions.

The progress made by the Madras Union during the last five years is given below :—

	1942-43	1943-44	1944-45	1945-46	1946-47
No. of member societies	38	50	88	168	165
Paid-up share capital Rs.	26,754	27,679	38,749	86,682	89,674
Quantity of Milk produced (M.M.)	6,76,355	5,60,980	12,24,772	23,35,706	23,39,236
Quantity of milk sold (M.M.)	6,46,029	5,48,060	11,75,262	21,93,833	22,73,136
Sale proceeds realised Rs.	3,67,912	3,81,150	11,86,756	23,58,796	24,68,865
Net profits Rs.	399		42,951	25,021	16,388

M.M. Madras Measure = 4 lbs of milk.

The Madras Milk Supply Union has at present its own buildings at Ayanavaram within the extended limits of the Madras Corporation. It is situated on a site extending over nearly 11 acres. The members are permitted to station their animals in the cattle yard constructed on the site. Nearly one hundred animals are stationed there at present. There is also a fly-proof shed as well as a store-house for cattle feed; and a spacious milking yard also is provided to milk animals. There is accommodation for 50 more animals to be stationed on the Union's premises, which can be utilised, if for any reason the Milk Supply Union should think of owning animals itself so that it can have its own source of supply, instead of depending entirely on the milkmen. In the course of its working it found that pasteurisation was necessary for two reasons—to supply disease-free milk to the public and to avoid milking the animals at untimely hours,

which caused trouble and inconvenience to the milkmen and to the animals. With the help of the Madras Government loan of Rs. 25,000 and its own resources, it erected a pasteurising plant at a total cost of about a lakh of rupees. From the year 1939, the Union has been supplying pasteurised milk. It is estimated that the average cost of pasteurising the milk is at present above 12½ pies a measure.

The installation of pasteurisation plant emboldened the Union to draw its supply of milk from the adjoining Chingleput District in villages all around the city of Madras to a larger extent. There are about 80 such feeder societies affiliated to the Union which supply milk to it. The average daily supply of milk from these feeder societies amounts to about 2,750 Madras Measures. The milking is done under the supervision of the societies' directors or the paid staff. Milking in villages is done at one central place mostly in sheds constructed for the purpose. The Union pays for milk to the feeder societies at Re. 1-1-0 per Madras Measure. The societies keep a margin of three to six pies per Madras Measure for meeting contingent charges, small remuneration to office bearers of the societies etc., and the balance is passed on to the members who supply the milk.

The Milk Supply Union affords many facilities to its constituent societies and members thereof. It supplies to the members of milk supply societies cattle-feed upto 75 per cent of the value of milk supplied by them. They are also given interest-free loans provided by Government for the purchase of milch animals.

The Union further extended its activities by undertaking supply of milk to State Hospitals in 1929-30. Since then the Union has every year been given contracts for the supply of milk to a few more Hospitals. It is at present supplying milk to all the eight State Hospitals in the city to the extent of 4,800 lbs. daily. Facilities for stationing animals and providing water for them etc., have been afforded in the Stanley Hospital, Royapuram Hospital, the Mental Hospital at Purasawalkam, the T. B. Hospital at Royapettah and the Victoria Caste and Gosha Hospital at Triplicane. The Hospital authorities are satisfied with the milk supplied by the Union, and the Union is thus rendering useful service to those who are in need of good and clean milk for nourishment and recoupment.

But the Union's service in other fields would pale into insignificance when compared with its heroic efforts, during the critical period of the last war, when professional milkmen fled the city on account of bombardment scare, by supplying about 8,000 lbs. of milk a day to the army units stationed in Madras, St. Thomas Mount and Avadi. The army no doubt provided liberal facilities to the Union to enable them to undertake the supply, by way of provision of free transport through military lorries, giving interest-free advance of Rs. 2.40 lakhs for issuing loans to the suppliers for purchase of milch animals, provision of milk-cans, heaters etc.,

and employment of staff for supervision, free of cost. The Union on the whole supplied to the army 52 lakhs of pounds of milk valued at Rs. 18 lakhs. Several officers of the army visited the Union during the period and appreciated the valuable services rendered by the Union at a critical period.

In April 1945, with a view to augment supply of milk to civil population in the city, the Government introduced a scheme for increasing milk supplies by extending the activities of the Madras Milk Supply Union. Under this scheme about 50 new feeder societies were formed in the Chingleput District for supplying milk to the city, and 6 feeder societies were also formed in the city. The Union arranges to transport the milk from these centres to its factory at Ayanavaram through its own lorries and distributes it to the public after pasteurising it. Interest-free loans have been provided by Government for purchase of milch animals of the members. During each of the years 1945-46 to 1947-48, loans to the extent of about Rs. 2 lakhs have been disbursed to the members of the feeder societies through the Union. Government have also sanctioned a loan of Rs. 50,000 for purchase of motor vans by the Union for transport of milk. A special staff of one Co-operative Sub-Registrar, 5 Senior Inspectors and 6 Junior Inspectors have also been employed at Government cost for supervising of milk supply societies, and increasing production in them. In order to render prompt veterinary aid to the animals maintained by the members, Government have appointed a District Veterinary Officer exclusively for the Union. He has under his control 3 Veterinary First Aid posts at Basin Bridge, Ayanavaram and St. Thomas Mount, each of which is in charge of a stock-man compounder; a mobile veterinary unit to rush aid to the villages in case of outbreak of disease etc., is also in charge of the District Veterinary Officer. When the animals purchased by members from Government loans die on account of contagious diseases Government have also agreed to grant waiver to members to the extent of loans outstanding against them at the time of death of the animals. With the extension of these facilities, the Union has been able to increase its production from about 3,000 measures at the end of 1944 to about 5,200 measures at present. Apart from supplying about 1,100 measures of milk to the State Hospitals, the Union distributes about 3,500 Madras Measures of milk to the public through depots and cycle delivery boys. The value of milk and milk products sold by it during the year ended 31-3-48 amounted to Rs. 14.85 lakhs. The Madras Milk Supply Union is thus creditably fulfilling its main object of supplying purer and unadulterated pasteurised milk to the city population at reasonable rates, providing constituent feeder societies with interest free loans to buy milch animals, cattle-feeds at concessional rates and motor transport and necessary staff to supervise milking operations at common milking yards in the villages.

To fulfil other objects envisaged in the bylaws, it is running a Model Dairy Farm at Government House, Guindy. It bought up all the heifers and bulls once property of the Government House with all the dairy

equipments on the condition that the dairy requirements of His Excellency would be catered by them. All the animals are of Sindhi pure breed. Under arrangement with the Military Secretary to His Excellency, the Union is provided with cattle-sheds, grazing facilities, and farm yards within the Government House. Efforts are on foot to grow fodder on 30 acres specifically granted to the Union for the purpose.

To create emulation among the members of its constituent societies to maintain best milkers and to feed the animals well to yield more milk, Milk Recording Scheme was recently introduced in many of its affiliated societies. This is a small research wing as it were of the larger milk scheme by which the effects of change in diet and the environments on the concerned animals are studied and special care is taken to further improve the breed of such animals whose performance at the pail was best as per the records and the owners of which consequently are awarded prizes for which Government also grant a subsidy.

To make the picture complete in all details as well as to salvage many unfortunate animals who are done away with before they attain their peak lactation period by the greedy milkmen who could not maintain dry animals at tremendous cost in the city, salvage farm for dry buffaloes at Vattambedu is being run under its auspices. A plot of lands of 700 acres is taken on long lease for grazing. The dry animals are gathered at a central place in the city, kept under observation for a few days and protected by inoculation and sent to that village which is about 53 miles from Madras. A stockman—compounder and a Senior Inspector of Co-operative Societies are in immediate charge of the scheme. A good stud to serve these animals is on the farm. The owners are charged a small fee out of which the lease for the land is paid. The ryots of the village are entrusted with the animals at the rate of five for each ryot. For looking after the animals, they are paid a few rupees out of the Salvage fee every month and when they return the cattle after calving they are paid balance of the fee due to them.

This comprehensive and all-round functions and duties of a typical Milk Supply Organisation is being copied by other Unions in other cities all over the presidency bespeaking better prospects in near future not merely to milk supply problem but also to the regeneration of cattle wealth of our country.

Additional machinery had been set up in the Madras Government Milk Factory in order to increase the output of reconstituted milk from about 1,125 measures to about 3,125 measures per day. It is stated that it was the intention of those in charge of the factory to make the increased supply available to all at reasonable price. Of the quantity now produced by the factory about 850 measures are being supplied to the city hospitals, 150 measures to the branches of the T.U.C.S. and the rest to certain residential institutions and individuals. The price per Madras Measure (4 lbs.) is only As. 14.

THE COIMBATORE MILK SUPPLY UNION

By

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Coimbatore has been in the forefront of the co-operative movement, such as it is, in the Madras Province. It has distinguished itself in running sound rural credit societies, land mortgage banks, store societies, sale societies, etc., aided by a strong district bank. Twelve years ago it was induced to take up the supply of milk produced in and around Coimbatore to consumers in the city and suburbs. It was organised essentially in the interests of producers, as the other milk supply societies were, but it has helped consumers as well.

Coimbatore is a growing city, though it has not yet the population of Madras and Trichy. But its rate of growth is faster. Textile and other industries are growing—thanks to the spread of hydro-electric power from Pykara. It produces the finest cotton, sugarcane and groundnut in the Province—which are the raw materials for industries. It is a growing educational centre with Colleges in Arts, Sciences, Forestry and Engineering. There is a growing demand for milk and milk products, not only from the soft handed classes but from manual workers as well, who are paid higher wages here than in most other districts.

But the milch animals of Coimbatore, cows and buffaloes, are by no means reputed for milk yield, as, for instance, the Ongole cows and Guntur buffaloes are. The Kangayam breed is noted for draft and not milk, though a scheme is worked for the increase of milk yield in Kangayam cows. Cross-bred cows are far too few, and there is only a sprinkling of Scindhi cows kept by a few rich men. This is not a favourable condition for the co-operative supply of milk.

In accordance with the policy of organising milk-supply unions in the big towns of the Province, the Coimbatore Milk Supply Union was organised, 12 years ago, by the late Mr. T. L. R. Chandran, I.C.S., Additional Joint Registrar of Co-operative Societies, Madras, though unfortunately he did not live long enough to see its striking progress. The burst of the World War II gave a great fillip to the growth of the Union. As the war went on, especially after 1941, there was a growing demand for milk and cream and butter from the European refugee population, the armed forces of the Army, the Navy and the Air, stationed or resting in or near Coimbatore. Several pockets of surplus production of milk were discovered at 30 to 50 miles of distance from the city, from which quantities of milk were pooled and taken to the Union and then distributed, all by military vans. Producers of milk tempted by high prices began to milk their cows more than they used to do, while formerly calves, especially in breeding areas,

were allowed to take most of the milk. A number of private small creameries were set up in villages near Coimbatore and some other towns, for the export of cream while the skimmed milk was absorbed in the urban coffee and tea shops or converted into curds and sold.

The Coimbatore Milk Supply Union has at present as many as 26 milk supply societies in the district affiliated to it. It had only seven societies before 1942, and all of them were within a distance of 7 miles. Since then seven more have been started within a distance of 12 miles from the Union, which it is possible to reach by a bullock cart or jutka. But twelve more have been organised at far greater distances—even 30 and 50 miles. Some of these were centres of pooling of milk to meet the military demand. Half a dozen of them operated as independent supply societies catering to the local urban population—Tiruppur, Dharapuram, Udampet, Palladam, Avanashi, Pollachi. These societies, required guidance and finance in the early stages, but still choose to be affiliated to the Union though no milk is supplied to it. Six out of the 26 societies are said to be dormant. Some of the distant societies have a small membership and very low share capital.

The Union has only 25 individual members, most of them connected with the organization from the inception. There are more businessmen, bankers and industrialists than producers of milk among them; some of them have been long connected with the leading co-operative institutions. The member societies send each a representative to the General Body of the Union. The Board of Directors is composed of 15 elected members from among individuals and societies. The Board elects an Executive Committee of seven to decide matters of administrative detail.

The Union has a paid up share capital of nearly Rs. 20,000, the authorised share capital being Rs. 30,000 with 3,000 shares of Rs. 10 each which is rather too low for the Union. Of the affiliated societies 5 have more than Rs. 3,000 each of paid up share capital, 3 have between Rs. 2,000 and Rs. 3,000, 4 have between Rs. 1,000 and 2,000. The rest have below Rs. 1,000; 7 of them have below Rs. 500.

The daily average supply of milk by the societies to the Union exceeds 1,000 lb. only in two societies nearby the Union; they have 3 to 4 sub-centres. The other societies, leaving aside the distant independent societies, contribute from 115 lb. to 390 lb., to the Union per day. Altogether the Union's daily average receipt of milk amounts to 5,000 lb. excluding the supply of milk to the Forces, which varied from 5,000 lb. in March 1944 to 15,000 lb. in March 1946, which was all entrusted to some distant societies, where from it was carried in military vans over a distance of 30 to 50 miles. This was done, it is stated, with a view not to affect the civilian consumers of the city and suburbs. Previously more cows' milk was left to the calves to consume or more butter was made of she-buffaloes' milk as there was little demand for milk as such in those

localities. At present it is not clear what use is made of all such milk. The war years were years of very strenuous work for the management and staff of the Union and of some of the societies who were hard put to it to meet the heavy demand.

Animals are brought to the milking shed by members between 3 and 4 a.m. and between 3 and 4 p.m. for being milked in the presence of an employee of the society, who measures the milk and puts it in two cans—cows and buffaloes milk separately, seals them and sends them to the Union in a bullock cart or jutka. From the more distant societies, the motor vans of the Union collect them. The distributing clerk in the Union measures all the milk received and acknowledges receipt. Then begins distribution by means of delivery boys, 28 in number, who are paid each a salary of Rs. 12 to Rs. 23 according to years of service plus a dearness allowance of Rs. 18 and a cycle allowance of Rs. 8 per month.

The total supply of milk to domestic consumers, delivered at their doors, ranges from 3,500 to 4,000 lb. per day. The Jail, Hospitals, Hostels, Mill Canteens, Railway Refreshment Room, etc., are taking in all about 1,500 lb. per day. On the whole the civilian population get between 5,000 and 6,000 lb. The Union caters at the most to 2,000 families in a city where there may be at present about 40,000 families.

The rest of the domestic consumers get their milk from small producer-vendors, who have to walk long distances, carrying milk in vessels placed in a small basket and sell at slightly lower prices than the Union, with some adulteration of course. Another system has grown up in recent years of vendors on cycles purchasing milk in villages from small producers, adulterating it liberally and taking it in cans on cycles, each to a small clientele of purchasers with no guarantee of quality, but at cheaper rates.

Prices paid by societies for milk supplied by members vary with the distance of the society from the city. They range from 3 annas to 4 annas per pound. Societies supply milk to the Union at rates ranging from 3 annas to 4 annas 2 pies, transport charges being borne by the Union where prices are lower.

The Union sells milk to domestic consumers at 4 annas 7½ pies per pound and charges a little more or less to institutions. The Union's margin between buying and selling rates is at least 6 pies per lb. It is out of this margin that it has to meet the heavy establishment charges which amount to Rs. 3,500 per month. Transport by motor vans costs nearly Rs. 1,500.

Prices paid for milk and charged for it were much lower before 1943, but they had to be raised gradually, and the price is still at the high level of 4 annas 7½ pies. Some reduction seems to be contemplated. The cost of production of milk has gone up on account of the rise in prices of all feeding stuffs and of wages of labour as may be seen in the table:

Prices of cattle feeding stuffs.	Unit	1941	1942	1943	1944	1945	1946	1947	1948
Cotton seed ...	1 viss	A. P. 1 2	A. P. 2 2	A. P. 2 5	A. P. 4 10	A. P. ...	A. P. 7 0	A. P. 6 9	A. P. 7 8
Groundnut oil cake...	"	0 11	1 10	1 11	2 9	...	...	2 2	4 6
Cocoanut oil cake ...	"	1 8	2 10	2 11	4 6	...	9 3	4 8	5 0
Rice bran ...	1 MM	0 2	0 4	0 5	0 11	...	1 5	1 4	1 0
Cholam straw ...	One bundle of 12 lb. roughly.	1 0	1 9	1 7	2 5	...	5 4	3 7	3 8
Prices charged by the Union for milk to the consumers ...	Per lb.	1 6	1 9	2 3 to 2 6	2 9 to 3 0	3 3 to 3 9	4 0 to 4 3	4 3 to 4 9	4 7½

A great difficulty is experienced by the Union, and to some extent by the societies too, on account of the marked fluctuations in the supply of milk in the course of the year. There is the flush season between October and March, when there is ample yield of milk, and there is the slack season between March and September, when the supply is far short of the demand. The supply to the Union ranges between 5,000 lb. in the slack season and 7,500 lb. in the flush season. The deficient supply causes serious loss to the Union by the conversion of excess milk into butter and ghee (20 lb. of milk purchased at 4 annas a pound can yield only 1 lb. of ghee valued at Rs. 2-8-0). If the Union fixes a quota of supply to societies, it is simply shifting on the burden to them. In the flush season, a new temporary clientele will have to be found, while in the slack season a temporary source of supply will have to be found.

No wonder the Union which earned high profits amounting to Rs. 1,40,000 in 1943-1946, has sustained losses recently after the termination of supplies to the armed forces—not being able to find, all of a sudden, sale for the excessive supply of milk, though not all the members of societies, numbering 4,270, are loyal. They are tempted to sell to vendors who go to their doors on bykes and pay nearly the same prices or even higher, and make up by adulteration. The hours of milking in the morning are far too early and not all would take their animals in the chill hours.

The producers no doubt realise certain benefits in dealing with the society and the Union. They stand no risk of loss whatsoever in selling the milk co-operatively rather than to private individuals. They are paid regularly and according to correct measures. They are given loans free of interest by the Government or at low rates by the Coimbatore (Dt.) Central

Bank for purchasing milch animals, which they can repay in instalments or by deductions from the sale proceeds of milk supplied. It would be better if members were enabled to go in for superior milch animals, such as Scindhi cows or Murrah buffaloes. The Union used to purchase groundnut cake from the Department of Agriculture and sell the same to members through their societies, at control prices. Other feeding stuffs like cottonseed were sometimes purchased and sold. The Union has been running a milk-recording scheme in two centres where milch animals of members have their milk yield recorded and certificates issued of their yield. There is a buffalo improvement scheme at Senjeri, 25 miles from the city, where the local buffaloes are graded up for which a few selected stud bulls are kept in the local society. In the Union office compound two Scindhi stud bulls are available for the service of cows of members. An attempt was made by the Union to run a sewage farm for growing succulent grasses, which, however, turned out to be a failure.

Consumers of milk supplied by the Union do not complain of the quality of milk nor suspect its purity; but they do complain of the late hours at which milk is delivered, especially in the morning. But delivery boys have to cover each a large area and some amount of delay appears to be inevitable in a centralised institution. Whether pasteurisation or any other treatment of milk will satisfy consumers or create fresh prejudice against milk is a matter for consideration. The fundamental difficulty, we believe, is the high price charged for milk which many consumers cannot pay. They prefer to go in for cheaper milk, which they know is inferior. Any steps that will reduce the cost of production and conveyance of milk—breeding of better cows and buffaloes, growing of more succulent fodder, removal of milch animals beyond city limits and conveying all milk in motor vans on improved roads—will help to popularise co-operative supply of milk. But these cannot be accomplished except in the course of several years. Quicker results may follow a fall in the price of milk, which cannot be effected without a fall in the general level of prices.

THE TELANKHERI DAIRY SOCIETY, NAGPUR

By

C. J. JOHN, I.D.D.

The present Society is an outcome of the amalgamation in 1922 of two primary Gaoli Co-operative Societies which were in existence since 1913.

Location :—The society is situated at the Government Dairy Farm Telankheri, about three miles away from the Nagpur City. The residential buildings, cattle sheds, godowns dairy buildings etc., are all the property of the Government. These together with grazing area measuring 980 acres have been taken on lease from the Government at the rate of Rs. 3,552 per year. In addition, the society has its own five cattle sheds and one godown for storing concentrates and about 9 acres of land at village Dabha, which is about 2 miles from the Dairy premises, for growing fodder.

In this area the society is permitted to keep 550 adult cattle. Because of this limitation of space, it was not possible to increase membership in the past. In the new set of bye-laws it is envisaged to open cattle sheds and working centres in different localities.

Membership :—The membership of the society is at present 30. All these are individual members. Before 28-9-48, only individuals dealing in milk and its products or interested in cattle breeding and dairying and who agreed to keep their milch animals at the Telankheri Dairy Farm could become members of the society; but as per new bye-laws, recently registered, both individual and dairy societies, owning milch cattle and reside in the area of operation of the society (which extends over the whole of Nagpur District) can become its members. So far, however, no dairy society has joined the membership.

Share Capital :—The society has a paid-up share capital of Rs 8,537. A share is of the value of Rs. 100. No member can hold more than 10 shares. It was an unlimited liability society till 28-9-48 when it was converted into a limited liability society. The liability is now limited to three times the face value of shares held by a member.

Cattle :—Out of 29 members on roll, 24 kept their cattle in the Dairy as shown below on 30-6-48 :—

Milch.		Dry.		Young Stock.	Total.
Buff.	Cows.	Buff.	Cows.		
104	141	67	117	133	562

The society maintained at its own cost 2 buffalo breeding bulls of Nagpur Breed, 5 breeding bulls of Sahiwal Breed supplied by the Government, and 1 buffalo breeding bull of Murrah Breed owned by Shri U. P. Kataria, Joint Secretary. The Government bulls are given free of cost to

the society. Free services of all these bulls are made available for the cattle of the members.

Working of the Society :—Milk Business :—Every day in the morning and in the afternoon milch cattle are brought into a fenced area for milking. At the first bell the servants enter this area with their milking pails which are carefully examined at the gate. The hands of the servants are also examined at the entrance. Actual milking starts at the stroke of the second bell. The staff of the society and of the Government Farm, Telankheri, go round the pen for supervision, when milking is in progress. The milk of each member is then weighed and taken over by the society. It is then sent out all over the Nagpur City in sealed cans on cycles, rickshaws, etc., through the distributors and supplied to coupon-holders and to Government and private big Hospitals. The delivery is made through taps provided in the cans and the seal of the can is inspected when the distributor returns to the dairy after delivering the milk. Milk products such as cream, table-butter, and ghee are made out of surplus milk.

Besides purchasing milk from its members, (4,48,274 lbs.) the society purchases milk from non-members also (1,75,000 lbs). The society sold 4,19,000 lbs. of milk and milk products; cream 344 lbs; butter 746 lbs. and ghee 2,931 lbs. The rate of purchasing milk was only 5 as. 3 pies per seer on 1st July 1947. It was raised to 10 as. from 1st Sept. '47. Milk was sold at 6 as. per seer on the 1st July 1947 and it was raised to 12 as. per seer on the 1st Sept. 1947.

Manure :—The society provides free housing accommodation to the cattle of members and takes droppings of animals in return. The droppings are collected and stored in pits and then sold to public as fertilizer. Three carts, six bullocks and three cartmen are maintained for transport of manure to the places of customers for which reasonable transport charges are recovered. The society collected and sold manure to the extent of Rs. 6,247 in 1947-48.

Feeds and Fodder :—Besides 980 acres of grazing area available from the Government under lease arrangements referred to above, the society takes on lease grass reserves either from the Government or from the Nagpur Municipality during summer months. The members are charged As. 8 per month per adult animal as grazing fees, and the grass obtained from the grass reserves is supplied to members according to their requirements after charging nominal profits on cost price. Surplus grass in the municipal grass reserves is sold to non-members at reasonable profits. The society maintains two trucks for grass transport work. Out of these one has been recently disposed of for being replaced by a better one.

Food Depot :—The society purchases cattle feeds such as oilcakes, cotton seeds, chuni, wheat bran, rice bran etc., in bulk in proper season and supplies them to the members every week according to their requirements.

It charges half an anna per rupee as profit on this business. The business transacted under this head was as below :

	1946-1947.		1947-1948.
Purchases	... Rs. 58,109	...	Rs. 68,755
Sales	... „ 75,582	...	...

The milk is purchased on credit every day and the supplies of feeds and fodder are also made on credit to members every week. These accounts of credit purchases and sales are settled in the meeting every month.

Reserve Fund and Profits:—The Reserve Fund as on 30-6-48 amounted to Rs. 15,325. The balance is distributed amongst the members by way of dividend on their shares and rebate according to the quantity of the milk supplied. Dividend was paid at 6 per cent upto 1944-'45. For subsequent years it is yet to be declared.

Management:—The affairs of the society are managed by a Managing Committee consisting of nine members including the Registrar, Co-operative Societies or his nominee and the Director of Veterinary Services or his nominee. The Secretary is also the Manager of the society.

General:—Recently the Provincial Government has sanctioned a loan of Rs. 40,000 to the society, out of which Rs. 10,000 is for running a Cattle Feed Depot and Rs. 30,000 for advancing loans to the members for purchase of cattle. This will help the society in expanding its business and in increasing milk supply to the City of Nagpur.

The society has been a principal source of milk supply to the public of Nagpur City for nearly three decades and has, during this period, built a sound business reputation. The members have served the society faithfully and with devotion. The Government has also been ever helpful, without which it would not have been possible for the society to reach its present stage of development. The management has been ever anxious to ensure cheap and pure supply of milk to the public with due regard to the financial condition of its members. But they now feel that both in the interest of public and its members, the society should have its own buildings and lands for the housing and grazing of its animals. It is hoped that the society would be able to achieve this object in the near future.

The Sixth 'Agmark' Ghee Conference which met at Delhi on the 21st September adopted a number of resolutions dealing with arrangements for enforcing correct specifications, penalties for adulteration, extension of grading schemes, organisation of producers' co-operatives and the need for improved methods of manufacture and storage of ghee. Among the important resolutions adopted one requested the Provincial and State Governments to take steps to organise the primary producers of ghee into co-operative production and sale societies, who should be encouraged to take up grading of ghee under the Agmark.

CO-OPERATIVE MILK SUPPLY IN MYSORE STATE

By

Y. SRINIVASAYYA

Though consumer co-operative movement in the Mysore State is functioning ever since the introduction of co-operation into the State in the year 1905, and most of the household requirements of the middle classes both in the food and clothes, especially in urban areas, are to some extent supplied by these stores, the attempt to collect and distribute pure milk in the cities is very feeble indeed. One of the reasons for this apparent failure is that there are not many cities of large population such as Madras, Calcutta, Coimbatore, etc., except Bangalore, which have a large proportion of industrial population; who must buy their milk and cannot keep cows of their own. Many families in the towns of the province keep their own milch cattle and are self-dependent. There are a large number of milk vendors who go to the houses of people and milch in the presence of the buyers. Those who necessarily buy milk, get it locally, and the imported milk goes to a substantial extent to the hotels but not to families.

There is a society in Bangalore city called the Kamadhenu Co-operative Society, Ltd. Its object is to market the milk which the members of the society who are all keepers of cattle, get from their cows or buffaloes. The members are also given loans to meet their requirements and the society sells to them fodder and cotton seeds also. Its attempts to collect the milk supplied by its members and distribute it in retail have been repeatedly unsuccessful except when its tender is accepted by the Hospitals of the place. Its tender has been recently accepted once again by two of the very big Hospitals of the city. 300 cows are taken every day by the members to the Hospitals, and their product amounting to 1,600 seers of milk (Mysore Measure) is supplied every day. The monthly bill amounts to Rs. 20,000 now. The owners of these cows get value in proportion to the yield of milk of their cows less society's commission. There is a cattle feed co-operative society in Bangalore whose object is solely to supply cattle feed to its members. There are about 300 members to whom fodder worth about Rs. 6,500 a month is being sold by the society.

There is another society which is registered under the Societies Act, but not under the Co-operative Societies Act. It is called the Bangalore Dairy Cattle Society Ltd. It is intended to convert it into a Co-operative Society if the society, works successfully. Its object is to look after the condition of the cattle kept by the householders, by levying a monthly contribution of one rupee. A man qualified in veterinary science attends to the cattle once a week, and gives directions to the owner when the animal is not well. This Society has secured a plot of 80 acres of dry land near the southern border of Bangalore city to serve both the purpose of a grazing ground to the cattle as well as a field to raise special fodder crops. Its object and system of work have been appreciated by the Government also, who have also started a similar organisation in Bangalore city, which

is granted an extensive plot of ground near Hessarghatta towards the north of Bangalore city about 8 miles off. The Mysore Government have an idea of sanctioning 8 lakhs of rupees to develop this scheme which they have recently organised.

There is very little of co-operative marketing of agricultural products in the Mysore State and until that aspect of co-operation develops there are not bright chances of co-operative milk trade. The hotel keepers who often get their milk from a distance of even 30 or 40 miles are not conspicuous for their fair treatment of the poor village agent who collects the milk and supplies them. The hotels are so many and so widespread that there is not a village of a decent size which has not got a hotel of its own now, are the biggest consumers of milk and there is a wide field for co-operators to collect marketable milk in each village and send it to the hotels through their co-operative societies. The number of hands required to work efficiently is so great that it requires a very large-scale organisation if it has to succeed on business lines. Even in towns, as it is very costly for a society to undertake house to house delivery of the milk to each customer, and the people cannot be expected to change suddenly their habit of receiving milk at their homes, the chances of successful retail trade in milk on co-operative lines even in the cities of Bangalore and Mysore are not very bright. The economic conditions of most of the house-holders who are in these areas are so delicately poised, that most of them are not able to venture to face increase of cost of goods, even in consideration of superiority of service or quality. Recently a village co-operative society situated in an area which supplies butter for export to urban areas has been financially helped by the Government to collect butter in the locality and send it to urban consumer societies for distribution. The society finds that if it sells in the cities at competitive rates, it cannot give to the butter seller in the village, the local ruling rate; if it pays him the local ruling rate, it cannot sell at the current market rate in the cities. The trading interests have occupied now even the remotest corner of the countryside, and there is no new ground for the co-operators to occupy. They have to compete with the trading interests, dust them out of the field, and establish themselves in their place. It is indeed a very hard job and until duly trained people who are imbued with genuine co-operative spirit of mutual goodwill and who are actuated with the motive of not exploiting either the producer or the consumer also are forthcoming, such ventures as marketing of milk on a large scale cannot be started in the State with any chance of financial success.

Propaganda has to precede formation of such societies, but co-operators have not yet fully realised the benefit of propaganda and are reluctant to spend on it. But latterly in the District Conferences these new ideas and the need for spending on propaganda and education are being placed before the people and it is hoped that a new idealism will evolve as a result of all these efforts.

CO-OPERATIVE MARKETING OF GHEE IN U. P.

By

MAHESH CHAND

In the *Review of the Co-operative Movement in India, 1939-1946* it has been said that remarkable progress has been achieved in U. P. in the development of co-operative marketing, mainly of cereals and oilseeds, ghee and sugarcane. I am summarising below certain recent figures :—¹

Year.	No. of unions	No. of societies.	Member-ship.	Ghee handled (mds.)	Value of ghee sold (000's Rs.)	Profit (000's Rs.)	Bonus distributed (000's Rs.)
1936-37	...	3	153	3,153	100	18.5	...
1939-40	...	6	607	12,600	215	50	8.5
1942-43	...	8	727	...	354	33	34
1944-45	...	12	870	20,000	367	50	...

So far as the years 1939-40 and 1944-45 are concerned, I give below certain calculated values :—

	1939-40	1944-45	Percentage change
No. of societies per union	...	101	72.5 — 28
No. of members per union	...	2,033	1,667 — 20
No. of members per society	...	20.6	23 + 12
Price realised per maund of ghee	...	40	75 — 87.5
Sale-value of ghee per member	Rs. 17.2	18.4	+ 6.7
Profit per member	" 4	2.5	— 37.5
Quantity of ghee handled per thousand members	...	430.6	245 — 43
Profit per maund of ghee handled	Rs. 9.3	10.2	+ 10
Percentage profit on sales	...	23.1	1.4 — 94
Ghee handled per society	...	8.9	5.6 — 46
Ghee handled per union	...	897	406 — 55

The ghee societies have been in existence for about two decades and the various negative figures of percentage decline show what a remarkable progress has been made by these societies during recent years! Though the size of the societies has slightly increased, the proportion of unions has increased instead of decreasing. Although the price almost doubled, profit per maund of ghee handled has increased by only 10 per cent and the profit on sales has really declined by 94 per cent. The quantity of ghee handled per society as well as per union has also declined and it is greater for the unions. It cannot be explained by saying that cattle have been slaughtered and the production of ghee has decreased. The decrease in the milch cattle does not seem to have been sufficient to explain the decline in the ghee handled by these unions and societies. This is indicative of quantitative expansion. The superstructure is being expanded. Naturally the cost of administration and distribution is increasing beyond capacity. Although the sales per member increased by 6.7 per cent, the profit per member decreased by 37.5 per cent. Remarkable progress indeed!

¹ *Co-operatives in the U.P.* by J. P. Misra, Page 105.

One is reminded of the observations made with regard to the Central Co-operative Ghee Sale Union Ltd., Etawah, in the *Report of the Co-operative Marketing of Agricultural Produce in India 1943*.² The condition of the societies has been deteriorating from year to year. There has been over-loaning. Supervision and control has been very slack. The indigenous *kataun* system does not offer any inducement to the solvent persons to join the society or to continue as active members after they have joined. Hence there is disloyalty of members. One-third of the ghee sold in India was estimated to be adulterated as long back as 1937.³ The position has definitely deteriorated since. In such circumstances, there should be a good scope for honest ghee marketing institutions. Again, as can be gathered from the following figures of the quantity of milk converted into ghee in the different provinces and States, U. P. produced about one-seventh of the supply of ghee in undivided India and definitely a far larger proportion in the present India :—⁴

Quantity of milk converted into ghee (In crore maunds).			
Provinces	Quantity	Provinces	Quantity
U. P.	... 5.0	Punjab	... 9.6
Bihar	... 3.4	Bengal	... 1.8
Madras	... 3.2	Other Indian States	... 1.1
Other present Indian provinces	... 2.1	Others	... 9.1
Hyderabad State	... 1.1		
		Grand Total	... 35.9

Taking ghee at 6 per cent of the milk, U. P. produces about 80 lakh maunds of ghee and the ghee co-operatives handle about 0.05 to 0.06 lakh maunds of ghee i.e., about 0.07 per cent of our Provincial production. Not even one-thousandth. That fixes the achievement and indicates the immense scope for progress.

But the organizers seem to believe in starting with great zeal and then dozing into a sound sleep. During 1936-40 i.e., within four years the membership became four-fold, while during 1939-45 it increased by only 6 per cent. Even in absolute numbers, the respective increases are about 9.4 and 7.5 thousands. We have criticised the undue increase in the proportion of unions. But there too the slowing process is evident. During 1936-40 the unions took three years to double in number, and they took another five years 1939-45 to double again. The zeal for developing must not be lost and must be kept up—not only for quantitative but also qualitative progress. No reports and information are available for the period after 1944-45. It seems the Provincial Government is concentrating on their Scheme of organising the Development Blocks.

² *Report on the Development of the Cattle and Dairy Industries of India* by Dr. N. C. Wright, 1941, Table 15 on page 163.

³ *Report on the Co-operative Marketing of Agricultural Produce in India, 1943*, Government of India, Page 84.

⁴ *Report on the Marketing of Milk in India and Burma, 1948* (Second Edition), Table given in Appendix IV, pp. 130-131.

GHEE SOCIETIES AND THEIR PROBLEMS

By

BIRESHWAR SINGH, B.A., LL.B., EX-M.L.A.

Organisation of Ghee Societies affiliated to the Central Co-operative Ghee Sale Union, Shikohabad was undertaken in 1936. At first only seven societies with 83 members were organised. Their number is 199 at present, with a membership of 7,302. The actual number of ghee producers, of course, does not exceed one fourth of this figure. They collected 10,563 maunds of ghee during a period of 12 years and sold it for Rs. 2 lakhs. A sum of Rs. 4 lakhs was earned as profit on the sale of ghee. Societies' own capital exceeds Rs. 1.5 lakhs. This success is very creditable and more success could be achieved, but for some obstacles in running these societies which are discussed below.

The chief difficulty is paucity of funds. The business of ghee has no element of speculation and its price also does not fluctuate so sharply. Banks advance money according to some set principles of their own and no one can convince them on the need. People in the rural areas never invest in their own societies, as they can easily do but exploit the needs of their less fortunate brothers and sisters and lend money charging 24 per cent per annum as interest. The low rate of 5 per cent dividend per annum in the ghee society is no attraction to them.

The other great problem facing the ghee societies is adulteration. It does not require much intelligence to adulterate with genuine ghee, some brand of 'vegetable ghee' which, unfortunately, is of the same colour, consistency and odour. Each member of ghee collecting agency of the co-operatives cannot be provided with a costly apparatus. The best solution of this problem is complete closure of vegetable ghee factories. But, perhaps making this demand is crying for the moon in the present capitalist-ridden society, and it is here that grading of ghee comes to our rescue. But even grading does not carry us far, it cannot reveal cent per cent truth: and it requires elaborate organisation and good deal of scientific knowledge which cannot be public property. The only thing which can be of some help is the cultivation of sound public opinion against the mal-practice of adulteration.

There is one more obstacle, though it cannot be said to be peculiar to the co-operative movement. It is the general apathy to do any public work or even appreciate it. India provides illustrious examples of public men who renounced every material comfort for the sake of spiritual uplift; but the number of those who raised their little finger for the material benefit of others was not large, at least recently. In rural areas, most people want everything done for them. Co-operative movement in India is often said to be suffering from official spoon-feeding, and it is true to a great extent. But things must remain as they were, unless people of good calibre come forward and devote their time in carrying the message of co-operation to the remotest hamlet.

IMPRESSIONS OF THE XVII INTERNATIONAL CO-OPERATIVE CONGRESS*

By

DEWAN BAHADUR PROFESSOR H. L. KAJI.

The XVII International Co-operative Congress held at Prague on the 27th September 1948 and three succeeding days was a remarkable gathering of Co-operators in many ways. The number of delegates was about 500. Almost all European countries were represented well. The Czechoslovak delegation was naturally the largest; but Great Britain, France, Italy and Russia also sent large contingents. The delegations from other countries, the U.S.A., and Canada from America, and India, China and Israel from Asia, were naturally small, the long distances from their homes and the expense and difficulties of travel to the seat of the Congress being deterrent factors of considerable importance. The Congress was thus an International gathering with Europe predominating. It was indeed a genuine pleasure to meet and come to know so many persons from so many different countries, and yet all with a deep and abiding faith in Co-operation as the only true basis for the just ordering of society and with a good record of co-operative services in their own lands. Professors and teachers, managers and directors, traders and bankers, insurance men and pressmen, all were there participating with close interest and attention in the discussions.

The Plenary sessions were preceded by the International Co-operative School held at Jiloviste, a short distance out of Prague. Mr. Ch. Barbier, a leading Swiss Co-operator, was the Principal and notable co-operators from different countries, including India, were invited to deliver lectures. There were about 85 students from many different countries attending the school. The lectures were of higher standard and evoked keen and lively discussions and enquiries for further knowledge and information. The school was a very useful adjunct of the Congress and deserves expansion and enlargement of its scope so as to include special courses for special forms of Co-operative endeavour.

While the School was in session there commenced a series of Auxiliary Conferences on special Co-operative topics like the Co-operative Press, Co-operative Education, Producers' Co-operation, Co-operative Insurance and Co-operative Banking. The attendance at these Conferences was small but the discussions on the papers read were stimulating and informative. In view of the growing importance of the Co-operative Movement as an important instrument for World peace, the proposal of Mr. Barbier for an International Co-operative Press agency deserved more real support than it obtained. The antagonism between co-operative developments from the producers' end and those from the consumers' end did not seem to be sufficiently realised and pious hopes as to the two harmonising served no

* Held at Prague from 27th to 30th September 1948.

very useful purpose. These Auxiliary Conferences deserve more attention, since they serve a very useful purpose indeed by the discussion of actual Co-operative problems of great topical importance, and it is only in sectional conferences that Co-operators can establish contacts with one another to mutual advantage in their own particular line of activity.

The Congress sessions were held in the spacious Municipal Hall, tastefully decorated with flags of the countries represented. The Rainbow flag of the International Co-operative Movement was prominently displayed as a symbol of Unity in diversity and for the fact that Co-operation does not recognise any distinction of class, creed or colour. It would have been very appropriate indeed if the proceedings had commenced with a hoisting ceremony, so that delegates could have more vividly realised that while in session they owed allegiance to the Rainbow Flag of Co-operation, be their caption—political, racial, economic—what it may. Instead, half a dozen coronets blazoned forth their welcome. On the broad platform were seated the office-bearers of the International Co-operative Alliance and the Reception Committee, with the fraternal delegates and guests specially invited in the row behind. The Prime Minister of Czechoslovakia extended his welcome and he was followed by the Mayor of Prague. Then followed the welcome address of the Chairman of the Reception Committee. These speeches lost much of their interest by being in the Czech language; they had to be translated by the official interpreters into English and French.

The President, Lord Rusholme, in a clear voice, delivered his presidential address and proposed the adoption of the Report of the Central Committee. The Report evoked a somewhat acrimonious debate, the Russian delegation leading the opposition. Then followed three resolutions suggested by the Central Committee. The first one on the Promotion of Co-operation in under-developed areas was moved by myself and was adopted after a heated debate by the Russian and Polish delegations. Promotion of Co-operation is one of the fundamental functions of the Alliance and it would have been definitely better if a Special Committee has been appointed to implement the pious hopes enunciated in the resolution since the Executive Committee is hardly the body to work out any special plan for this work. Even now it seems to me very desirable that the executive should appoint a special Regional Committee to study the problems and to recommend definite action for the further development of Co-operation in the different countries of the world. The other resolutions relating to the Petroleum and Housing problems were similarly adopted after the Russian amendments had been defeated.

Next the amendments recommended by the Central Committee in the Rules and Articles of the I. C. A. and the future policy and programme were considered and passed. Lastly two papers on the Nationalisation of Industries and the Role of Co-operation in International Economy were read and discussed and suitable resolutions were adopted,

The Congress concluded its labours after four days' sittings on the 30th September at the scheduled time.

India extended a warm welcome to the next Congress. The Invitation, along with invitations from Rome and Copenhagen, were referred to the Central Committee for decision. If the I. C. A. is to function as a truly international body it would be very desirable if the next Congress met in India, which is really centrally situated in the Eastern hemisphere and where new life and new impulses pulsate very actively since the achievement of freedom.

The Congress was a great success indeed. The organisation and arrangements were excellent; the documentation, agenda and papers relating thereto were accurate and complete, thanks to the efficiency of Miss. Polley, the General Secretary of the I. C. A. and her staff.

Lord Rusholme made an excellent President, with a striking personality he was tactful and yet firm; humorous yet assertive and maintained full control throughout. Though the agenda was long and though the floodgates of oratory were let loose, and though translations in the various languages often sorely tried the patience of the delegates, the President handled the situation very well indeed and brought the proceedings to a close at the scheduled time.

The Hospitality of the Central Co-operative Council of Czechoslovakia was excellent. The dinner parties, socials and excursions were not only thoroughly enjoyable but served a very useful purpose indeed in restoring harmony and comradeship among the delegates after a day of heated debates and discussions.

It was very gratifying to notice that Co-operation was no longer a passive or a neutral agency for the weaklings of society but that it had grown into a powerful Movement, standing up and making its voice felt in the cause of the promotion of peace throughout the world. The strength of the Movement was demonstrated in no uncertain manner by the presence at the Congress of the representatives of the U. N. O. and of some Governments, as also of non-governmental international organisations like the International Labour Office and the World Federation of Trade Unions. It was further strikingly demonstrated in the speeches made by speakers of various countries and various persuasions. Indeed all speakers, whether relevantly or otherwise, stressed the absolute necessity for maintaining peace and urged the Movement to work for and towards that end. In these times of grave peril it was very stimulating and heartening to note the unanimous adoption by the Congress of a special resolution on Peace, and we hope and trust that the voice of Co-operation will be heard and the dire perils of a third world war will be averted.

While thus united on the need for peace, the delegates differed fundamentally on ways and means. There were clearly two camps into which they seemed to have been divided—the one, like Great Britain, France

Scandinavia, Holland, Belgium and Switzerland pinning their faith in free and voluntary co-operation within a democratic State, the other, headed by the "Centrosoyus" of Russia supported by Poland, Italy and Czechoslovakia, standing up for Co-operation on the Soviet model where it would be compulsory and an instrument of the State. On almost all resolutions, these two camps collided and votes had to be taken. The voting, however, was hardly free. It was practically in effect by delegations or countries all the delegates of a country voting alike. This was not quite a pleasant feature, since in Co-operation there should be complete freedom to the individual and political connotations or aggressive nationalism should have no place.

Another feature was quite noticeable that the Congress was dominated by Consumers' Co-operation. Agricultural Co-operation was sadly neglected. While the consumer has a very important place in social economy, it hardly needs to be said that the producer—agricultural and industrial has a place second to that of none. We trust that in future all forms of Co-operative activity will be fully discussed and given their proper place at the Congress. It also seemed as if the delegates were not imbued sufficiently firmly with the tenets of the Co-operative ideology. While mention of the Rochdale Principles was frequent, it did not seem to be realised that Co-operation is a creed with its own philosophy which makes for efficient production and just and equitable distribution, and thus provides the only correct basis for peace, progress and prosperity.

Britain is reported to have been flying pencillin to New Zealand for use in a large-scale experiment designed to increase the milk yield of cattle there. The experiment, which is being conducted by the New Zealand Dairy Board and the Department of agriculture, seeks to eliminate cattle diseases which, it is estimated cause an enormous loss in milk production.

REVIEWS

THE CO-OPERATIVE MOVEMENT IN LABOUR BRITAIN,—*Edited by N. Barou,*
(Victor Gollancz, Ltd. 1948 ; 7/6).

This new and valuable publication contains a series of essays on various aspects of the Co-operative Movement in Britain, edited by Dr. N. Barou and published on behalf of the Fabian Society. The fact that the Fabian Society, which has contributed very largely towards the gradual conversion of Conservative Britain to the Socialist view of thinking, should actively interest itself in the propagation of the co-operative creed is, indeed, a significant sign of the times. The editor, Dr. Barou, who has contributed the introductory essay on "Whither Co-operation" and has summarized the conclusions to be drawn from the ten other essays is a well-known figure in the World of co-operative literature, while the other contributors are either experienced writers on co-operation or active workers in the cause. The publication is divided into four sections: the first is introductory and the last contains the conclusions; the other two sections are headed "Co-operative Trade and Production" and "General".

The survey of the movement and of its place in the social and economic structure of Britain is of very recent date, and is intended to cover all conceivable aspects of the subject. There are chapters on "Agricultural Co-operation" and on "Industrial Co-operatives", besides essays dealing with "Retail Distribution and the Price, Dividend and Financial Policy of the Consumers' Movement", "Labour Relations in the Co-operative Movement in the Distributive Trade" and "the Productive Enterprises of the Consumers' Movement". The place of the consumer in politics, the role of the British Co-operative Movement in International Co-operation and the re-action of the national economic policy on the Co-operative Movement form the subjects and other valuable articles.

Among the various sections, special interest attaches to an article on "Co-operation and the Community" by Mr. W. P. Watkins. What he observes of the influence of machine technology which broke up the old traditional community life without assisting in the building of a new one is of universal application. In several parts of the world, at no other period in human history has it been so easy for so many to be governed by so few; and the results—we observe even in India—are frustration and exasperation. The question that is posed is: Is there any prospect of the Co-operative Movement, with its harmonising influence, being of help in resolving the conflicts of interest which underlie so many modern social problems and in establishing a social order which not only unites their interests but also provides scope for active participation in affairs?

In India, the question acquires special significance because of the acceptance of the ideal of a Co-operative Commonwealth by the Indian

National Congress. Co-operation does possess the essential elements that can contribute towards the establishment of a stable and, withal, a progressive social order, providing the fullest scope for a social life tolerable to the free men and women to-day. Co-operation, as Prof. G. D. H. Cole has remarked, can promote democracy even in the changed economic conditions of modern life, because it is in a position to give the small groups, of which the great society is made up, real opportunities of action. However, conflict, as another writer has said, is unfortunately a strong force. From the practical point of view does co-operation provide an equally potent force? If we agree that it does, it is essential for those who hold that view to get together and devise means by which the desire and the capacity of individuals and groups to combine to serve a common end can be harnessed for the various aspects of the programme of socio-economic re-organization.

In his concluding chapter, Dr. Barou, in examining the position, appears to put forward the view that it is only in limited fields, such as of agriculture and artisan production, that co-operation possesses potentialities which need to be explored. Writing on the same subject in a pamphlet entitled "The Co-operators and Labour", Prof. Cole propounds the view that in the future reordering of our economic structure, co-operators will be specially interested in small manufacturing industries, in distribution, embracing both wholesale and retail trade, in marketing, including the marketing of exports and bulk purchase through import boards, and, to a smaller extent, in the building trade, in agriculture, in the organization of certain services such as banking and insurance. They may also, he adds, be associated with the organization of such services as laundries, petrol stations, garages, entertainments and sports and the running of hotels and restaurants. The movement, according to him, has little or no part to play in the field of large scale manufacturing industries, in civil engineering, in shipping and in aviation.

These observations relate to the economic set-up as it obtains at present in England: Probably with our differing conditions, the analysis may differ. All the same, the survey of the possibilities indicates a line of approach that may suitably be pursued in the context of Indian conditions. For many in India, State ownership and control of all economic activity seem to provide a solution for our economic malaise. But, as Dr. Barou points out, the voluntary co-operative system, both productive and distributive, is nearer the ideal of socialists than semi-corporated State industry. In certain fields, at any rate, co-operation possesses definite advantages over nationalization, and subserves, to even a greater extent, the basic conception of economic democracy for which socialism stands.

V. L. MEHTA.

YEARBOOK OF AGRICULTURAL CO-OPERATION, 1947. Edited by the Horace Plunkett Foundation Heffer & Sons, Ltd., Cambridge, 1948; 15 Sh. net.)

This Yearbook begins appropriately with a note on the trends of agricultural co-operation after the World War II. During the war co-operative organisations were made use of by the State in the rationing of food and of the means of production like seeds, manures and implements, to extract the utmost from the soil of beleaguered countries. This quasi-official position is still retained in most of the countries—particularly in Eastern Europe. The question is asked whether the co-operative movement will revert to its voluntary but un-co-ordinated status or whether State Socialism will encroach on the movement so that it becomes a subsidiary and formalised part of the national plan. It is worthy of note that thirty years of Communistic regime have not obliterated the co-operative societies in the Soviet Union. A semi-compulsory amalgamation is taking place in several States on the national plane; whether left to themselves this tendency to coalesce will persist, it is hard to prophesy.

There was a revival of international conferences, not only of consumers, but of agricultural producers—the former at Zurich, the latter at London. The Food and Agricultural Organisation of the United Nations also deals with co-operative problems; it seeks in particular to relate the complementary needs of food producers and food consumers.

The account of the movement in several countries, old and new, shows that co-operation is a stubborn and vital institution, which neither war nor totalitarian regime has eradicated. It is capable of continuous growth and adaptation to new conditions.

The account of the movement in different countries is preceded by a few general chapters. One deals with conditions of health and agriculture among the natives of Central Africa south of the Sahara, as found from an enquiry made by three doctors at the instance of the Church Missionary Society, England. There is a good deal that is interesting and even moving in this account; it is of interest to us as we have such backward races in parts of our country too, for whom the recommendations might well be adapted. But there is no reference at all to co-operation as a cure or palliative.

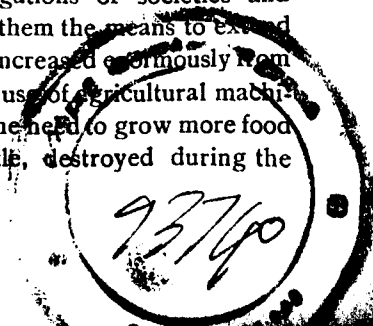
This is followed by a detailed account of some experiments in Co-operative Farming in Saskatchewan, a province in Canada, with a cultural pattern similar to, if not identical with, that of the United States. These were conducted by some enterprising farmers who set out to clear bush and forest and reclaim them for cultivation, which they could not individually accomplish nor economically without the use of modern machinery. The need for social contacts in this wilderness was another spur to co-operation. The anxiety to provide for younger sons, who had to seek their own fortunes according to the law of primogeniture but who were enrolled as co-owners of co-operative farms also played some part in the foundation,

Another object was to provide for war-returned young men. The provision of ample land for all these objects was possible in a new country; but it is very difficult to find such land in India on any ample scale. In these Canadian experiments themselves, we find only small groups of men, less than a dozen each. Many of them were well educated and occupied a high status. They were not mere adventurers out to try their luck. They stressed social values more than material. They gave ample powers to managers, and each one did the job for a 'going wage'. There was sufficient and timely State-aid too. Perfect harmony is said to prevail. Such conditions are hard to find in this country. Nevertheless, it is a stimulating study for ardent aspirers of a co-operative way of life.

Next comes a short sketch of co-operative organisation among fishermen in about a dozen maritime countries of the world, including United Kingdom, Canada, Newfoundland, Japan, U.S.S.R., Norway, Iceland. Greatest development has taken place in Canada, Newfoundland, U.S.S.R. and Japan. The data supplied are admitted to be neither full nor up-to-date. It is not clear why such a scrappy account should find a place in this Yearbook.

Then follow the accounts of the movement in different countries in Europe, Asia, North America and Australasia. The movement has come out little damaged in spirit, in fact it has been reinforced, by the hard struggle during the war, which inflicted not a little physical damage in a number of countries in Europe, far advanced in co-operation. Even in England, not so advanced in agricultural co-operation, the societies for the supply of agricultural requirements did remarkably well in 1945-46, while marketing of eggs, fruits and vegetables, a new line, was very promising. The National Farmers' Union, formerly not very sympathetic, took a great deal of interest in the development of co-operation not only on a national but on an international scale and organised an International Conference of Agricultural Producers, in London.

France suffered a great deal during the war; seven Regional banks in the north-west were blown up and agricultural land went out of use. Her co-operative credit structure, which resembles that of India in some respects, has had to exert itself in particular in the resuscitation of agriculture and on behalf of the war-veterans, returned prisoners of war and of those who had lost their farms. These have been helped with long-term and medium-term loans at 3 per cent—the former repayable in 15 to 20 years, while repayment was not insisted on in the first 3 years. As for short-term loans, the ordinance of 1945 gave a new frame-work to co-operatives, put an end to certain uncertainties, clarified the obligations of societies and provided simple rules for their operation and gave them the means to extend their activities. Naturally the amount loaned out increased enormously from 1946. The greatest development has been in the use of agricultural machinery, owned or more often hired, necessitated by the need to grow more food at home, the lack of labour and the dearth of cattle, destroyed during the



war. Air-craft factories turned over to the manufacture of tractors etc., and co-operatives came to the rescue of small farmers by hiring out machinery which could not be and need not be individually owned.

The Netherlands suffered not a little during the war; but every type of co-operative society in agriculture seems to be flourishing, thanks to her stable foundations before the war. A very high percentage of produce is processed and/or sold co-operatively—not only milk, but also beetroot, pig's flesh, fruits, eggs, vegetables—unparalleled except perhaps by the Danish co-operative societies. The co-operative fertiliser factory produces nearly 30 per cent of phosphates. There are nearly 2,000 cattle insurance societies and 200 fire insurance societies.

In Switzerland, which fortunately suffered little by war, another country noted for milch cattle, co-operative marketing of milk has been greatly developed recently. What is more remarkable is the part played by co-operatives in the increase of arable area from 2,10,000 to 3,50,000 hectares.

Sweden, which managed to remain neutral during the war, has a finely developed agricultural as well as urban consumers' movement. Practically all the farmers with more than 2 hectares each, and they are the great majority, are said to be members of co-operative societies. The Federal Swedish Farmers' Association is a unique institution with a dozen or more departments, each specialising in one line.

The most spectacular and many-sided progress in co-operation is to be seen in the United States of America, of which Dr. J. G. Knapp, as usual, gives a vivid account. Societies for the marketing of all produce except cotton and wool showed greater transactions. There was, however, a great deal of anxiety as regards future prices, which led to conservative practices and stimulated researches in business methods and technique of production. There was improvement in the breeding of livestock, especially the hog, in the setting up of cold storage and community locker plants. Dairies were modernised, which led to lower handling and marketing costs. Fruit selling co-operatives set up packing houses, added cold storage equipment and were studying the possibilities of air transport of fruits. The grain and seeds co-operatives increased storage space and developed seed service through regional associations. The processing of soya beans was improved which had been improvised during war to make up for protein shortage. Feed mills were renovated and enlarged. Petroleum distribution was increasing as a result of the greater use of tractors by agriculturists. There was a rapidly growing demand for rural electrification, both on the farm and in the house, thanks to the much larger earnings of the farmers and the aid given by the Rural Electrification Administration. There are other lines of activities on the managerial and educational aspects of co-operation, which co-operators in India might study with interest.

Now coming to India, Mr. J.C. Ryan gives a glowing account of the progress of the movement, particularly how Madras and some other provinces

made hay during the sunshine of the war and the boom prices, how several societies catered to the needs of the fighting forces, how agriculturists were able to repay their long standing dues to societies, how over-dues by societies to banks melted down, how non-credit activities, particularly distribution of consumers goods, came to the fore—though seasoned co-operators felt that it was all due to control regime and wanted to put by more to reserves and strengthen the loyalty of members in the days to come. We wish some reference had been made to the hardships of the poor, whom prosperity born of scarcity by-passed. The rest of the contribution is a defence of the recommendations of the All-India Planning Committee on Co-operation, of which Mr. Ryan was an active member. The series of State-aids recommended would certainly "startle orthodox co-operators who cling to the principles of self-help and mutual help as the bed rock of co-operation." State-aid of this all pervasive type is not such a common feature of many progressive countries. We are not sure whether once aid is given, it will not cease to be demanded after the initial stage. It might well lead to more and more departmentalism and more lamentation on the part of old co-operators that young men are not coming forth to take up their share of organisation and management of co-operative institutions. Compulsion in co-operation is another vexed question. We would rather remove consolidation of holdings from the ken of co-operation and make it compulsory, as is done all over the world—except the Punjab, than make co-operation unpopular by introducing a coercive element.

The Yearbook contains as usual a note on recent co-operative legislation and concludes with brief reviews of the latest literature on co-operation.

K.C.R.

THE RURAL ECONOMY OF GUJARAT. By M. B. Desai, (Oxford University Press, Bombay. 1948. pp. 352. Rs. 20.)

Prof. C. N. Vakil introduces the author as one who belongs to an agricultural family of one of the districts of Gujarat, and had made a first-hand study of several rural problems of what formed British Gujarat till recently. The work was done for the Ph.D. degree of the Bombay University during 1941-46, and has been brought up-to-date.

The author has made a close enquiry of 21 villages, representative of different tracts, of 217 families comprising 178 farmers, 19 artisans and 20 agricultural labourers.

The rural population is 70 per cent of the total population in the area. Nearly 60 per cent of them are cultivating owners, 4.4 per cent are non-cultivating proprietors, 7 per cent are tenant cultivators and 28 per cent are agricultural labourers. 75 per cent of the area is under ryotwari tenure. An elaborate account is given of all the systems of land tenure in vogue: Talukdari, Mehvasi, Maleki, Narvadari and Bhagdari tenures. The last two tenures have responsibility but no rights. They depend on tenants for tilling the soil. They must pay Government dues regularly, but they find it difficult to collect rents from tenants. Due to famine and decrease

in population, tenants are hard to find. They cannot freely sell or alienate their shares. The Government too are not able to collect their dues. The system affords scope for evading land tax. A proposal to abolish these tenures and convert them into ryotwari was opposed 40 years ago. But the Baroda Government has effected the reform. It is stated that as a result agriculture has improved, and efforts at rural reconstruction have met with ready response from cultivators.

The average holding was only 6 acres in 1942-43 and it has been progressively declining. Evils of excessive fragmentation as well as sub-division are found here as elsewhere. Attempts at consolidation of holdings by legislation have failed, partly because compulsion was to be resisted to and the law of inheritance of land was to be interfered with at the discretion of the Collector. The aim to create as many 'economic holdings' as possible is not easy to achieve in the conditions of Gujarat. The author says that, consolidation on the basis of original ownership is alone practicable.

The conditions of agricultural labour are anything but satisfactory. Different forms of labour—farm servants, share tenants and serf labour. their methods of recruitment and remuneration are detailed. They resemble more or less conditions found elsewhere; but wages seem to be even lower than in Madras.

As for agricultural finance, moneylenders still play a very important part, but their terms and rates of interest are said to be reasonable. The Debt Relief Act of 1945 has helped to reduce rural debt by Rs. 1,60,000 only. The Co-operative Movement has made some progress in Broach and Panchmahals, being probably cotton areas. Only a little more than 5 per cent of the rural population have come into the movement. There are only three primary land mortgage banks—much too small for the area studied, while the estimate made by the author of total rural debt is Rs. 21 crores. The system of marketing is very defective and as a consequence the spread of prices between producers and consumers is to the detriment of both. Co-operative sale societies have achieved some measure of success in respect of cotton only; but even here membership is confined to well-to-do farmers. It has not touched the vast majority of poorer peasants with small marketable surpluses. The movement, it is said, should be reorganised and expanded so as to embrace several lines of activity. Multi-purpose society is suggested as the solution. Whether there is enough earnestness and ability to organise it in the villages, is not gone into. Similarly the evils of fragmentation and sub-division are expected to be got rid of by co-operative farming. Whether people will be able to run co-operative farms when they are not able to run simple credit societies is a matter for serious doubt.

The chapter on War and Agriculture is very informative and shows evidence of painstaking research. The plight of poor peasants is miserable. But what can be done to alleviate the misery is not dealt with in detail.

The book is priced Rs. 20, which is beyond the reach of most students.

S.V.D.

ACKNOWLEDGMENTS

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NEWS AND VIEWS

In view of the shortage and unhygienic production of milk in Hyderabad City a Committee was set up which recommended the reorganization of co-operative societies of small scale producers and the rendering of financial assistance of private dairy farms. The Veterinary Department put up schemes, among others, for the setting up of co-operative credit societies of the Gowlies, and the establishment of dry cattle farms. These schemes were approved by the Government.

The *Co-operative Credit Societies* will arrange to supply good milch cattle to the members at concession rates and will in turn accept all their dry and young stock for salvaging them at the dry farms which will be established at reasonable distance from the city. The Government earmarked Rs. 1,25,329 and Rs. 1,20,300 for the recurring and non-recurring expenditure on the project. The constitution of these societies has been framed on the following lines :

1. Each society for the present will consist of fifteen members and each member will be provided with two milch buffaloes at half the cost price, payable in twelve instalments but the rate of interest will not be over 4 per cent.

2. Only those members of the society who produce a property security equivalent to the full price of the buffalo will be eligible to purchase cattle at concession rates.

3. The society will reserve itself the right to withdraw all its concessions and special facilities or even take back the animals in cases of non-payment of the instalment or any fraudulent dealings.

4. For reasons of uniformity in work and administration all these societies will be registered under the Hyderabad Co-operative Act but in view of the specialized nature of work, the required capital should be provided by the Government.

5. The society will charge to its members an admission fee of Re. 1 per member.

6. Each society will invite from members a share capital of Rs. 1,500 divided into 15 shares of Rs. 100 each. Every member will purchase at least one share and pay off the share value in twenty instalments.

7. These societies will work with the grants-in-aid by the Government for three years, after which period they will have their own capital for the continuity of the work.

The object of the scheme for the *establishment of dry cattle farms* is to make arrangements for maintaining 300 dry cattle of the members of the co-operative credit societies or Gowlies at nominal charges. These animals will be returned to their respective owners after the completion of their dry period. This scheme involves an expenditure of Rs. 92,175 non-recurring and Rs. 12,040 recurring.

—*Indian Farming*, September, 1947.

The Government of Bombay had set apart 3,000 acres of land for a dairy farm at Goregaon to which all milch cattle in the city would be removed by 1950 and where plenty of green fodder would be available. The Government milk scheme has five main features: evacuation of cattle to the dairy farm, bringing maximum quantity of milk from surplus districts, preparing toned milk for sale at cheaper but subsidised rates, organising distribution under controlled conditions, including processing, and setting up of a statutory body to look after the entire milk supply as a permanent feature. In the dairy farm at Goregaon production of milk would be in the neighbourhood of 50,000 lbs. a day when the milk scheme got well under way. It is said that the total expenditure on the scheme for the Government was

estimated at between six to seven crores and financially the scheme considered perfectly sound.

The Government of India for the first time embarked upon large scale co-operative farming through partial mechanisation of cultivation, whereby about 1,50,000 acres of land will be reclaimed and brought under cultivation in Matsya Union. The main object of the scheme is the rehabilitation of those who had lost their all because of the partition of the country.

For the first time in the Madras Presidency an experiment in co-operative farming will shortly be started on the Nilgiri eastern slopes at a place near Balli-Moyar on the Moyar river basis. The agriculturists of the place have formed a collective farming co-operative society and are taking on lease 500 acres of forest land from the Government for a period of five years. The members will jointly cultivate 100 acres each here.

The Government of Orissa have decided to reclaim about 7,00,000 acres of waste land. It has been decided to give first chance to refugees to colonise these areas. Cultivation will be done on co-operative lines and mechanical equipments will be supplied by the Government. The Provincial Government have requested the Central Government for the supply of tractors. The present scheme prepared by the Government, it is stated, will reduce the annual shortage of foodgrains by 3,50,000 tons. The cultivators concerned will be granted all facilities by the Government including financial assistance. The guidance and advice of Grow More Food officers will also be available to them.

The Central Tractor Organisation of the Ministry of Food, Government of India, has a total stock of about 600 tractors which are let on hire to the provinces for reclamation of land as part of the Grow More Food drive. The rent for reclamation of weed infested or cultivable but waste land is about Rs. 8-8-0 per acre. The organisation supplies two trained men per tractor for operation. At present 82 tractors are working in Bombay, 79 in the U. P., 21 in the C. P., and 18 in West Bengal.

Forty-eight tractors were loaned to the Matsya Union for reclaiming and bringing under cultivation 1,50,000 acres of land on a co-operative basis.

The Government of India have sanctioned a loan of Rs. 64 lakhs to the United States of Rajasthan for financing the Pratap Nagar Township scheme for refugees from Sind. The scheme, which has been sponsored by Shree Bhupal Co-operative Society, Ltd., Udaipur, envisages the construction of 3,000 houses and will provide accommodation for 20,000 displaced persons from Sind. The scheme was recommended by the Government of Rajasthan which has extended its patronage by making a free grant of 700 bighas of land and a loan of Rs. 4 lakhs to the society for the purpose.

The Government of Madras have directed that the distribution of the controlled portion of the groundnut cake should be handed over by the Agricultural Department to the Co-operative Societies. The Wholesale Store in the area will procure the stock from the mills and transport it to co-operative institutions in each centre who would stock and distribute it to ryots, both members and non-members.

The Government of Bombay decided to organise their own machinery for the entire distribution of mill cloth all over the province. The Government propose to appoint their agents to collect cloth from the mills and distribute it to the districts according to quotas fixed by the Government. The cloth will be available to the public from co-operative societies and the Government grain shops and fair

price shops which have been already opened. The handling charges of cloth from the mills to the retail shops are expected to work out to 10 to 12 per cent. The consumer will get his cloth in co-operative societies and Government grain shops within less than 15 per cent above ex-mill prices.

The Government of Central Provinces, it is understood, will take over 25 per cent of the province's production of cloth for distribution in the rural areas through co-operative societies. As regards yarn, the Provincial Weavers' Co-operative Society would import the extra-provincial yarn and after retaining a portion for use by its members, distribute the rest to dealers in districts according to the license system already in vogue. Of the provincial mills' yarn, a portion would be allocated to the Society, while the balance would be distributed through the normal trade channels.

According to the Textile Control Orders of the Madras Government, the co-operative societies will now handle $\frac{1}{4}$ of the mill cloth and upto 50 per cent of the yarn allotted to the province. The price to the consumer of mill cloth ex-retail will be ex-mill price plus 18 $\frac{1}{4}$ per cent or three annas in the rupee in the case of cloth from Bombay. The price from local mills will be slightly less—ex-mill prices plus two annas and six pies in the rupee. In addition to these margins, the actual transport charges and sales tax are allowed to be passed on to the consumer.

In furtherance of the scheme of establishing garden colonies in almost all districts of East Punjab, sanctioned by the Provincial Government sometime ago, it is proposed to set up a Co-operative Development Board to look after the interests of fruit-growers. The Board will be constituted from amongst refugee garden owners who have been allotted areas in the province for fruit culture. Other fruit-growers of East Punjab will also be associated with the activities of the proposed Board.

Mr. N. V. Gadgil, Minister, for Works, Mines and Power, Government of India, speaking at the Annual General Meeting of the C.P.W.D. Co-operative Thrift and Credit Society at the Council House premises at Delhi, recently, stated that the present Government favoured co-operative effort in all fields where it was practicable, in preference, to individual effort, for it meant relief to the individual as well as to the nation. He added that this and other similar securities should venture into new fields and instead of restricting their activities only to credit and loans, they should provide to their members cloth, medical facilities and other amenities on a co-operative basis. Eventually, this would help to fight inflation, he said.

The Madras Government have passed orders approving the syllabus drawn up by the Sub-Committee for the Rural College, which forms an important feature in the recently announced programme for adult education. The main subjects of the syllabus are : language and literature, history and culture, economics with special emphasis on Co-operation, political science, sanitation and health and everyday science.

The Congress Economic Programme Committee recommended co-operatives for agriculture, small-scale and cottage industries and for the distribution of consumers' goods. It is proposed that State aid to small-scale and cottage industries is to be provided only through the co-operatives. Similarly agricultural requisites are to be supplied to the cultivators only through their societies.

CO-OPERATIVE CONFERENCES AND MEETINGS

THE NINETEENTH BOMBAY PROVINCIAL CO-OP. CONFERENCE

Held at Bombay on the 11th April 1948.

Extracts from the welcome speech of Sir Janardan A. Madan, Chairman of the Bombay Provincial Co-operative Institute :

Sir Janardan A. Madan, welcomed the gathering, and referred to the rapid pace of expansion of the co-operative movement in the Province since the last Provincial Conference which was held in 1944. He said: "There were 6,133 societies in 1944 with a membership of 9,02,443 and a working capital of Rs. 25,25,52,000. The number of societies increased on the 30th of June 1947 to 8,003 with a membership of 12,29,050 and a working capital of Rs. 38,71,27,000. Six hundred and twenty three institutions are added on the average every year. The funds handled by co-operatives increased annually at the rate of Rs. 4 $\frac{1}{2}$ crores. There has been an insistent demand for more societies, and the forms of societies coming into existence are no less varied than the class of people from whom the demand comes."

As regards the conditions created by the war and their effects on the movement in general he observed that the inflationary tendencies and general scarcity of food, clothing and housing, still formed the main features of our economy, although it was nearly three years since the war ended. The agriculturists stood to gain in earlier years by this rise in prices of agricultural commodities. They were able to repay loans in increasing numbers and amounts. There was no pressure for money on the part of agriculturists during the earlier period of the war, and so there was a shrinkage in the loan transactions of credit societies. But with the termination of the war and even a little earlier, the demand for loans reappeared on account of the reduction in the margin of profit to the cultivator. The land mortgage banks, he said, had to work in an entirely different economic set-up from the one in which they had been ushered into being. This coupled with the extension of the provisions of the Bombay Agricultural Debtors' Relief Act, further tended to curtail their business, in spite of the fact that an attempt had been made to link up debt legislation with the working of those banks. The central financing agencies found themselves with a plethora of funds; they had invested in gilt-edged and other government securities and minimised the effects of the wartime conditions on their loan business. Moreover, the decline in demand for seasonal finance from agricultural credit societies was to some extent made good by the demand from the non-credit societies such as purchase and sale societies and stores which remarkably expanded their activities under the stimulus provided by the war. Many of the agricultural societies and urban banks undertook the distribution of controlled and rationed articles amongst their members and other card-holders, actuated by a desire to serve the needs of the community in times of emergency.

Co-operative marketing societies, however, received some set-back in their working on account of the introduction of the movement controls, fixation of ceiling prices of foodgrains and the compulsory levy system. They, however, undertook distribution, as agents of Government, of agricultural requisites, such as manure, seed, etc. He continued: "Consumers' societies recorded unprecedented progress during the war period. The magnitude of the service of co-operative societies in both rural and urban areas in the matter of equitable distribution of food-grains and other necessities of life could be gauged from the fact that 33 per cent of their fair price shops and ration shops were conducted by these co-operatives for the benefit of members and other card-holders. The war also exercised a healthy influence and gave an impetus to the handloom industry in

general. Weavers' co-operative societies and industrial co-operative associations recorded an era of good progress."

On the subject of providing adequate finance for all credit-worthy agriculturists, Sir J. A. Madan said: "The Gadgil Committee recommended in their report that where the co-operative financial structure was, as in Bombay, strong enough to undertake the work envisaged for the Agricultural Credit Corporation, the agency of the co-operative institutions should be utilised. The Government of Bombay appointed a Committee under the chairmanship of Sir Manilal B. Nanavati to suggest the nature and extent of State-help needed by the co-operative banks and also the modifications needed in their structure so as to enable them to discharge the functions of the Agricultural Credit Corporation. Government have recently passed orders covering all the recommendations of the Nanavati Committee except the form and manner in which State-aid should be given and the method of harnessing the existing co-operative credit structure to meet the future requirements of rural credit as envisaged in the Gadgil Committee."

A series of amendments to the Bombay Co-operative Societies (Act 1925) were enacted calculated to ensure, according to the Hon'ble Minister for Co-operation "progressive de-officialisation of the movement." Sir Madan added: "In order to ensure, however, that under the non-officials' control, the machinery shall have the same efficiency as under officers of Government, it is essential that the authority should be centralised with a view to ensure uniform policy, efficiency, and prospects to deserving staff, so that we may be in a position to recruit contented and efficient staff for the discharge of these additional duties."

On the future development of the movement, he said "Nationalist workers of all shades of opinion have agreed to the development of co-operative organisation as an instrument of national development. We can, therefore, confidently look forward to increasing use being made of co-operative institutions, in achieving the prosperity of the country. All the plans that have been prepared in recent times, such as the Bombay Development Plan and the Radical Democratic Party Plan, give an important place to the co-operative movement as a very suitable agency for putting into execution many of their recommendations... The proposed modification in the constitution of the Indian National Congress visualises the setting up of a Co-operative Commonwealth based on equality of rights and opportunity for all."

"A Committee on Co-operative Education set up by the Minister in charge of Co-operation, with myself as its chairman, came to the conclusion, that in substitution of previous arrangement, co-operative education should be provided in districts through educational Supervisors of the Institute, in three regional divisions of the Province through regional schools, and a Co-operative College be started in Poona with the object of imparting higher education to the higher staff of the Co-operative Department as well as co-operative institutions. The recommendations of my Committee were accepted by Government and three regional schools and a Training College at Poona were established in the year 1947. I am glad to say that the Government is extending its financial support to the College by meeting all its expenses, which in the first year amount to Rs. 36,180 recurring and Rs. 9,000 non-recurring. The total expenditure for the whole educational scheme is expected to be about Rs. 1,69,000. Co-operative institutions should take advantage of the educational facilities provided by the Institute by deputing members of their staff to undergo systematic training in co-operative ideals and principles, and give due recognition to such trained staff by providing special grades of promotion for them. The Government of Bombay had already made it obligatory under the Act for a contribution out of profits by all registered societies paying a dividend of 4 per cent and over for the training activities of the Institute."

Extracts from the speech of the Hon'ble Mr. B. G. Kher, Premier of Bombay:

Inaugurating the Conference, the Hon'ble Mr. B. G. Kher, observed that "The co-operative movement, as it had developed in India, seemed too much a part of the machinery of administration run by the representatives of an alien government to attract to it those who had pledged themselves to bring to a speedy end that system of government. With the dawn of freedom and the installation of a responsible government both at the centre and in the provinces, the outlook, has, however, undergone a transformation. But whatever the political label of those in charge of the administration, it now becomes the duty of all who believe in the co-operative method of remoulding society to join together, irrespective of consideration of caste, creed or political colour, and I expect the co-operative platform, will as in other countries, be a meeting place for all sections of society." Continuing he assured that "we are all of us very keenly interested in the progress of the co-operative movement and the remarks which I will now address to you will make it clear how the co-operative ideology has come to influence the policy of the Government of Bombay and animate many of its actions."

Referring to the use to which co-operation could be put for promoting the welfare of the Adiwasis, he asked: "How many of us knew that the population of the Adiwasis amounts very nearly to 3 crores of people in the whole of India and that their conditions of living were really those of semi-slavery until the attention of the Central as well as the Provincial Governments was keenly concentrated on their uplift?" He said: "Last year in nearly a dozen centres in the districts of Thana, Kolaba and Nasik, the Government of Bombay not only approved of the formation of co-operative societies of Adiwasis for timber-cutting and charcoal manufacture, but extended liberal assistance to those societies. The way these experiments have gone on makes me feel that we ought to welcome them... A number of people who have taken contracts and the middlemen are now paying the Adiwasis proper and adequate wages."

As regards housing, he said that "In the programme chalked out by the Housing Board for housing in the industrial cities of Bombay, Ahmedabad, Poona, Sholapur and Hubli, co-operative housing occupies a very prominent place." In Greater Bombay, Ahmedabad and Poona, not less than 85 societies had been registered in the last two years. He said that Government had approved of the formation of ten co-operative housing societies for Halpaties (agricultural labourers) in the Surat district, as an experimental measure and he assured sympathetic consideration of similar schemes if sponsored by responsible public bodies carrying on social work among the backward sections of the community in rural areas.

With regard to distribution, he promised: "The Civil Supplies Department.. would accord preference to co-operative institutions of various types in the scheme of rationing and rural distribution of controlled food-grains and other essential commodities. As a result the number of distribution centres of various types entrusted to the charge of co-operative institutions rose by 50 per cent in a year and a half. A number of Government grain shops in Bombay City have been taken over by the consumers' co-operative societies." He said further that the work of opening fair price shops will be entrusted by the Civil Supplies Department as the first choice to co-operative organisations provided suitable local agencies are available.

With regard to assigning of waste lands, again, he announced that "preference will be shown to groups of agriculturists constituting themselves into co-operative societies." He hoped that "co-operative farming, when it extends widely, will bring to an end the state of economic disequilibrium."

Though the idea of setting up a specially constituted Agricultural Credit Corporation has considerable adherents, he stated, "Government have come to

the conclusion that such a body will not be needed in our Province. But this decision is dependent on the system of agricultural credit undergoing suitable reorganisation and the financing agencies agreeing to shoulder the new responsibilities that the expansion of the scope of agricultural credit involves." With regard to industrial co-operative societies he said that the Government assisted in the establishment of the Provincial Co-operative Industrial Association "to assist in the organisation of various types of industrial producers' societies to help in improving the technique of production and to provide facilities for credit for the supply of raw materials and tools and for the marketing of finished goods."

Speaking on the educational work of the Bombay Provincial Co-operative Institute, Sjt. Kher wanted "wider diffusion of the knowledge of co-operative principles and practice and the distribution of simple handy tracts on various aspects of the co-operative movement" and stressed that "they have to be in the various regional languages and written in simple language which will appeal to the masses of our people who are not only uneducated but proverbially illiterate. Co-operative education should form an integral part of the programme of adult education, especially in the countryside, and I would urge co-operators to establish early close contacts with those in charge of that other programme."

Concluding the Hon'ble Mr. Kher said: "We will require a large number of young energetic men and women imbued with the spirit of social service. The co-operative movement provides a form of public activity which should attract to itself, as it has done in countries of the West, those who feel the urge to bring about a change in the social fabric. It will be putting the country above party, above religion, above community, above everything else."

Extracts from the Presidential Address by Sir V. T. Krishnamachari, Dewan of Jaipur:

"What part can the co-operative movement play in a free India? Can the co-operative principle become a vital, living force capable of assisting in the eradication of wide-spread poverty which threatens the very structure of our society? The outstanding problem in India is the deplorably low standard of living of the people—the lowest in the world except perhaps in parts of China and Africa.

"What India needs more than anything else at the present moment is a large increase in production—specially agricultural production—within a minimum period of time and the energies of the whole nation must be concentrated on this for years to come. It is well known that the need for importing foodgrains for feeding the population is impairing the country's financial position. In his recent speech on the budget the Finance Minister pointed out that in 1946-47 food imports cost the country Rs. 104 crores and the estimates for 1947-48 put the figure at Rs. 110 crores. In 1946-47 the food subsidies including the bonus for procurement were Rs. 20.16 crores and for the current year these will amount to Rs. 19.91 crores. These figures are staggering and convey an idea of the strain to which India's economy is subjected by the shortage in food production. In 1944 the Government of India accepted the following figures as a guide to the all-India targets of production required to provide a balanced diet for the population of India in that year. The targets comprise increase over present production of Cereals by 10 per cent, Pulses by 20 per cent, Fruits by 50 per cent, Vegetables by 100 per cent, Fats and Oil by 250 per cent, Milk by 300 per cent and Fish and Eggs by 300 per cent.

"This means an aggregate additional production of 6 million tons for 1944. Assuming an increase in population at the rate of 6.5 millions a year there will have to be a further addition to production beginning from 1.2 tons a year in 1945 and increasing steadily every year thereafter. These figures relate to India prior to

partition: but they give an idea of the tremendous efforts we have to put forward if the country's economy is to be saved from an inevitable breakdown.

"The Governments in India are keenly alive to the urgency of increased production and they have prepared and taken in hand comprehensive schemes of development to ensure increased production and a rapid rise in the standards of living of the rural population. These schemes may be grouped under the following heads:

"Firstly, there are projects for dealing with lands rendered unfit for cultivation by soil erosion and for checking the colossal losses of acreage and production caused by wind and water erosion. This subject of land utilisation and soil conservation has not however, received the attention in India which the seriousness of the problem demands. In the Bombay Province, work has been done for some years in Bijapur area and I understand that the results achieved are being examined. There is, besides, the problem presented by the spread of 'desert' conditions in North Gujarat owing to encroachments by the Runn of Cutch and the Rajputana desert. An expert commission to study land utilisation in India is an urgent need. Further, irrigation projects have been sanctioned all over India or are under investigation and these will lead to large increases in food production.

"Secondly, measures must be taken to improve agricultural methods by bringing the results of research to the fields, supplying better seeds and manures and introducing better methods of tillage, of fundamental importance under this head is to organise a countrywide campaign for the conversion of all village and town refuse into compost. Attempt should also be made to overcome the disabilities due to fragmented holdings and also to establish a more diversified agriculture—the growing of fruits, vegetables etc.—including dairy farming, poultry-rearing etc.

"Thirdly there should be carefully devised subsidiary occupations suited to different regions enabling agriculturists to work longer hours. Fourthly marketing and storage arrangements should be improved and the loss caused by insect and other pests minimised. Fifthly are problems connected with agricultural finance. Sixthly are allied measures for the benefit of the population, reform of land tenures rural education, communications, etc.

"All these problems have been studied in considerable detail by sub-committees of the Council of Agricultural Research and the reports have been published. One of these sub-committees has dealt with another vital question on which agricultural progress depends—how to guarantee to agriculturists a range of prices at which agriculture can be remunerative and save it from the ruinous effects of a depression like that of 1929-1936.

"The essential point underlying these programmes is the recognition that all sides of rural life are inter-related and that their improvement should be taken up simultaneously. Also, the execution of the plans is a matter of immediate urgency. The grave issues involved have been brought out in what has been already said; what is involved is the survival of the whole of the country's economy.

"The question should now be asked—what form of organisation is best adapted for the successful carrying out of such an all-embracing plan with a definite target viz., that of doubling the agricultural production within a period of about fifteen years? There is a school of thought which goes farther and holds that there can be no appreciable progress unless the present pattern of agricultural economy in India undergoes a revolutionary change and the whole of India is brought under a system of Collective farms on the Russian model. I do not agree with this. Conditions in the two countries have no similarity whatever and in the U. S. S. R. collectivisation was achieved after colossal losses and suffering for which there are few precedents in history. India cannot stand a shock to its economic system of this character. It is also pertinent to draw attention to Dr. Collin Clark's summing

up of the position in regard to real income in Russia. He says, "The figure for Russia" i. e., of quantity of goods and services obtained per man-hour of work done, "stood at about .18." (U.S.A. being 1). "The Russian figure has shown a most disappointingly slow rise since 1913. I do not want to imply that before 1913 the increase was high but over the whole period from 1913 to 1939 the net real increase was extraordinarily small."

"My conviction is that, with a reorientation of its nature and aims, the co-operative system offers the best line of advance in India—and that it is possible to achieve under it the progress we have set before us as the target. The principle of Co-operation is capable of application to an infinite variety of conditions. This is its supreme merit. As the Royal Commission on Agricultural said: "The modern conception of the co-operative movement differs from that commonly held at the close of the last century; the term 'agricultural organisation' or better still 'rural reconstruction' expresses more accurately the nature of the activities included within the movement. It is now accepted that co-operative principles can be used in overcoming most of the obstacles to progress in rural communities. Wherever agriculture is the predominant industry, co-operation is commonly regarded as the natural basis for economic, social and educational development: and India is no exception". Every kind of activity included in the summary of development schemes I have given above lends itself to the application of the principle of co-operation.

"The organisation should be somewhat on the following broad lines. There will be at the top, planning by the Central and Provincial or State Governments and the organs connected with it. At the other hand, in the village itself, there will be a multi-purpose society which will 'enlist the mass of the cultivators in the campaign for their own improvement' and execute schemes of improvement considered necessary for raising the standard of living in it—advancing loans; buying whatever the agriculturists need; deciding what crops should be raised; distributing seeds and manures; possibly bringing about joint cultivation in the highly irrigated areas in which holdings are minutely divided and scattered and cultivation by tractors etc., in areas in which this is possible; arranging for grading and sale of produce; organising supplementary occupations etc. Groups of such societies will be under a union which will have technical staff whose duty it will be to advise individual societies. These unions will be under district societies with expert staff to provide advice and at the top a Provincial organisation in the closest touch with the Planning Authority. There will be besides special unions for marketing, financing and other purposes—all closely linked up with one another and general movement. Thus will the co-operative movement be widened and becomes the agency for rural reconstruction activities in their broadest sense.

"What we aim at is a dynamic psychological change in a population of nearly 300 million people—to bring about among them a passionate desire to 'live better': a consuming urge to improve their standards of life. A revolution like this can come only if the whole population is set to work on its own betterment: if it makes its plans and implements them under the democratic processes of the co-operative movement. Only in this way can we have long term permanent results. These cannot be produced by outside regimentation. This point is so obvious as to need no further elaboration. There are also other advantages in the universal application of the co-operative principles. When large scale development schemes are in operation, social and other problems of complexity soon emerge. To give only one example, it is found within a few years that all increases in national income resulting from development schemes are absorbed by increases in population that have occurred in the interval—that economic progress does not lead to a higher standard of living but only to increases in population. To deal with this evil, drastic changes will have to be made in laws of succession and possibly efforts will

have to be made to modify the traditional attitude in regard to birth control measures. With the co-operative movement coming face to face with such issues, the necessary changes will come more rapidly than otherwise. Further, with increasing efficiency in agriculture, there will have to be a steady displacement of populations from agriculture. Industrialisation even on a large scale cannot absorb all these; and the problem of replacing those displaced is best solved as it arises by the setting up of cottage and other industries on a co-operative basis.

"I have spoken so far of 'long term' schemes of development. But strenuous efforts are needed immediately all over India, to bring about increased production—of the order of about 10 to 12 millions of tons a year—within the shortest period of time, say 3 or 4 years for India as now. The reasons for this have been stated—the strain on available foreign currency imposed by the necessity for paying for imported food and the heavy cost of food subsidies. This objective can be realised if all Provincial and State Governments concentrate their energies and resources and enlist those of their people on three main lines of work.

"I. A nation-wide campaign for compost making should be organised. A machinery should be speedily brought into existence for seeing that this is done and for distributing compost and chemical manures—the food plan prepared by the Royal Institute of International Affairs suggests 1 maund of ammonium sulphate for an acre—to all irrigated land in areas of good rainfall. For this purpose, there should be a work party for each compact group of 20 to 30 villages with higher supervising and other agencies. The necessary supplies of chemical manures should be obtained by the Central Government for all Provinces and States and these latter should distribute to agriculturists at concession prices.

"II. Good seed—wheat, rice, etc.—should be grown and distributed on the widest scale possible.

"III. In areas in which irrigation wells can be dug without much difficulty, an extensive programme of well-sinking should be carried out: also small bunds should be constructed on rivers where facilities exist.

"In such a programme co-operative societies of all kinds can be of the utmost use: they can carry on educative work; distribute seed and manure in areas assigned to them and see that these are used according to directions given; and in other ways bring the official agency into the closest contact with the agriculturists. Eventually, the short term programme will merge into the long term operations.

"My own conviction, therefore, is that the co-operative movement can, and will, play a great part in the life of India. Co-operation is the natural basis for development of all sides of rural life and the movement should be the recognised agency for the execution of all projects for raising the people's standard of living.

"I have not spoken specially of the movement in the Bombay Presidency as a Committee under my friend, Sir Manilal Nanavati has made valuable recommendations on the lines on which the movement should develop in the coming years. I would, content myself with offering my congratulations to all those who are connected with the movement on the steady progress it is making."

The following were among resolutions passed at the Conference :—

"This Conference requests all marketing organisations to take up this opportunity of functioning as licensed warehousemen as soon as the Bombay Warehouses Act is brought into operation in this province."

"This Conference recommends that in view of the difficulties facing the consumers' movement in the province, arising out of the progressive decontrol policy of Government, individual consumers' stores societies should take steps to amalgamate themselves into larger economic units."

"This Conference records its appreciation of the recent Government policy adumbrated in the creation of Co-operative Tribunal under the amendments to the Bombay Co-operative Societies Act and the entrusting of co-operative education and training of even departmental staff to a non-official body. This Conference is of opinion that this policy of progressive de-officialisation should be extended particularly in cases of societies which are well managed and financially sound in the opinion of the Registrar, so that they may be left increasingly free to manage their own affairs to the maximum extent possible."

"This Conference is of opinion that the time has now arrived for the co-operative movement to take the necessary steps to secure direct representation in the legislative assembly and on all local and administrative bodies, with a view to safeguard its interests and also to voice effectively its demands. It urges the Provincial Co-operative Institute to take the steps needed for the purpose."

"This Conference is of opinion that the co-operative movement needs a greater measure of publicity than hitherto, and therefore urges on the Government the necessity of providing a special publicity officer to be attached to the Provincial Co-operative Institute, Bombay."

"This Conference is of opinion that the urban immovable property tax operates as a heavy and unexpected burden on the co-partnership housing societies and requests Government to exempt such societies from this tax."

"This Conference resolves that steps be taken by the Provincial Co-operative Institute to form a federation of housing societies of Greater Bombay whose objects shall be to co-ordinate the efforts and supervise the administration of member societies and to organise new societies and that similar federations be started for housing societies in each of the three linguistic divisions of the Province."

"This Conference recommends that Government and local bodies should not be permitted to levy local taxes on open lands owned by housing societies."

"This Conference views with grave concern the whittling down of the resolution of the Housing Board on financial assistance to co-operative housing societies of 3rd November 1947 by fixation of a maximum limit of Rs. 5,000 only as loan to a member of a society and calls upon the Government of Bombay to grant financial assistance fully up to the percentages laid down in the original resolution."

"This Conference is of opinion that co-operative farming is decidedly a better method of cultivation than cultivation of small and scattered holdings by individuals and it should therefore be introduced on an extensive scale. The Conference therefore recommends that the following measures should be adopted :

i. Government should maintain specialised staff to survey local conditions, prepare schemes for co-operative farming and assist people in implementing them.

ii. Government should declare the nature and extent and facilities and concessions by way of loans, subsidies, and other financial assistance which would be made available for such undertakings.

iii. Government should provide adequate and qualified staff for the administration and supervision of co-operative farming societies.

iv. Every effort should be made in the plan to guarantee minimum income to members by providing wherever necessary employment in subsidiary industries."

"The Conference is of opinion that the best way to develop co-operative farming is through spread of the multi-purpose ideal in co-operation, which will provide the necessary background and requisite training for the same."

EXTRACTS

AGRICULTURAL CREDIT ORGANISATION COMMITTEE IN BOMBAY GOVERNMENT'S ORDERS ON RECOMMENDATIONS

After studying the position of the co-operative financing agencies and examining their ability to absorb new clientele, the Agricultural Credit Organisation Committee has come to the conclusion that the existing co-operative agencies can, with suitable reorganisation and State aid, carry out the work of the Agricultural Credit Corporation and in view of this it is not necessary to start an Agricultural Credit Corporation. Further, the representatives of the various financing agencies, whom the Committee met have readily agreed that if co-operative banks were to be considered a suitable substitute for an Agricultural Credit Corporation, they must satisfy certain uniform standards of business and administration which the general public would expect them to maintain. Government is, therefore, pleased to accept the Committee's recommendation that it is not necessary to establish an Agricultural Credit Corporation and that co-operative agencies can carry out its work and to pass the following orders on the various recommendations made by the Committee.

Reorganisation of Rural Credit Structure

Nomenclature of primary societies:—The Committee recommends that:—(i) credit societies which have taken up non-credit activities should be designated as multi-purpose societies, (ii) the variety of nomenclature which is in vogue in this Province for various types of rural primaries is confusing and it would be desirable to limit the categories of primary societies in rural areas. This recommendation is accepted.

Future registration:—The Committee's recommendation that the normal policy should be to organise multi-purpose societies only and to convert existing village societies into multi-purpose societies preferably on the same liability is accepted. The conversion of the existing societies into multi-purpose societies should be attempted as far as possible.

Liability:—The Committee's recommendations are:—"A free hand should be allowed to agriculturists to form their societies on limited or unlimited liability basis. If the large land-holders want to have a limited liability society, they should be free to do so, but in such cases the requirements of the poorer classes should not be ignored."

This principle has already been accepted by Government and it is proposed to recast section 5 of the Bombay Co-operative Societies Act, 1925, and also to insert a new section (16-A) enabling an agricultural credit society to change its liability from limited to unlimited and *vice versa*, when it chooses to do so.

Maximum membership:—The Committee recommends that if the co-operative movement is to serve the maximum number of agriculturists there should be no numerical restriction on membership. Government accepts this recommendation.

Co-operative Credit Association:—The Committee recommends that co-operative credit association for big agriculturists may be registered on a limited liability basis. They should be in a position to sanction larger loans which exceed the normal individual limits of village credit societies; Government accepts the recommendation.

Individual loan limits:—The Committee's recommendation is: "It would probably be in consonance with the present level of prices and cost of cultivation, if the limits for short term and intermediate loans are raised from Rs. 200 to Rs. 300 and from Rs. 400 to Rs. 500 respectively. It would also be desirable to link

individual loan limits with the assets of the borrower and his repaying capacity rather than to regulate them on a mechanical basis."

Government considers that there is no objection to the raising of the limit. As regards the second point, it is necessary to see that funds of a society are not locked up only in advancing loans to bigger land-holders and that the needs of the poor cultivators are adequately met. The Registrar should examine the present procedure and report his views to Government.

Local deposits:—The recommendation is: "A co-operative credit society should be a real village bank and local deposits should be the primary source of its funds. Of course, safeguards will have to be evolved for safety of funds and repayment of deposits and, as a general rule, receipt of demand deposits by village societies should not be encouraged."

The bye-laws of the multi-purpose societies already provide for acceptance of savings deposits. The Registrar should examine the question of encouragement of members' and other local deposits in co-operative societies and submit his report to Government.

Prompt finance:—The Committee has discussed the existing procedure for sanctioning loans by co-operative societies and the reasons for delay. It has also suggested certain measures for eliminating the delay. The revised procedure suggested by the Committee for sanctioning of loans by primary societies should be adopted. It is necessary to provide for certain degree of elasticity in the finance to borrowers by allowing them to take loans as and when necessary within the limits of their credit-worthiness instead of dispensing such loans in lump at one occasion. Provision is also necessary for supplementary credit against standing crops for late seasonal operations. The cash credit system also needs to be developed to provide elasticity and convenience.

Agencies for supervision:—The recommendation reads as follows: "Apart from audit, the work of a co-operative society is at present checked by two agencies—the Supervisor and the Bank Inspector. This question should be re-examined, both to effect economy and to ensure efficiency. Under a reorganised scheme it should be possible for the banks to dispense with majority of their inspectors and reduce this expenditure. They should, however, have closer control over supervisors. For this purpose, we recommend the adoption of arrangements similar to those adopted in the Ahmedabad district, where entire field staff is controlled by a staff committee consisting of the Assistant Registrar and two nominees of the Central Bank who represent the rural and urban side of the movement.

The Registrar should consult the District Central Banks and the Bombay Provincial Co-operative Bank and submit to Government agreed proposals in this respect.

Recoveries:—The recommendations are:—

(i) "To minimise delay in this respect we recommend that the Assistant Registrars of Co-operative Department should have powers without undergoing procedure of arbitration to grant certificates for summary recovery of loans in indisputable cases, where they are satisfied that the loans have been defaulted and have become irrecoverable without recourse to coercive processes. This provision exists already in respect of land mortgage banks and deserves to be extended to the dues to other co-operative societies also.

(ii) "We further suggest that the special recovery officers should be appointed and controlled by the Registrar as is the case in Madras."

(i) Since speedy recovery of outstanding dues and arrears of co-operative societies generally is absolutely necessary, Government is pleased to accept the

recommendation made by the Committee regarding the adoption of the procedure laid down for the recovery of the dues of the land mortgage banks in section 59-B of the Bombay Co-operative Societies Act, 1925, in respect of recovery of dues of co-operative societies also in cases where the arrears and the society's claim are not disputed by the debtor. The Registrar should submit proposals for amendment of the Bombay Co-operative Societies Act and the rules thereunder to achieve this object. The requisite amendment to section 59-B of the Bombay Co-operative Societies Act, 1925, so far as recovery of crop finance dues are concerned has been incorporated in clause 35 of L. A. Bill No. VIII of 1948.

(ii) Special Recovery Officers are at present under the control of the Collectors of the districts concerned. The Committee, however, recommends that these officers should be appointed and controlled by the Registrar as is the case in Madras Province. The Commissioners of Divisions should favour Government with their remarks on this proposal.

Charge on the property of the members:—The recommendation is that an automatic charge on a specified portion of the property of a borrowing member should be created by law with a view to render it inalienable so long as the member is in debt. The requisite amendment has been incorporated in clause 14 of L. A. Bill No. VIII of 1948.

Rates of interest:—The Committee has recommended the following measures for the purpose of making short-term credit available to members of co-operative societies at low rates of interest:—

(i) Central banks should advance money to co-operative societies at 4 per cent or less.

(ii) Co-operative societies should work within a margin of 2½ per cent.

(iii) Efforts may be made to employ village teachers as part-time secretaries.

(iv) A Society charging more than 6½ per cent interest should be debarred by law from declaring a dividend of more than 4 per cent.

(v) The societies should cut down their expenditure by adopting as many of the following measures as are feasible:—

(a) By increasing their size with a view to enable them to run as economic units; (b) By collecting local deposits, where feasible, at low rates of interest; (c) By undertaking multifarious activities with a view to supplementing their profits. (d) By cutting down all avoidable overhead expenditure.

The above suggestions are reasonable. The Registrar should advise all societies accordingly. Section 38 of the Bombay Co-operative Societies Act, 1925, is being amended with a view to provide for the limitation of dividends—*vide* clause 19 of L. A. Bill No. VIII of 1948.

Target:—The Committee has endorsed the view expressed by the Saraiya Committee that an attempt should be made to bring 50 per cent of the villages and 30 per cent of the rural population within the ambit of the re-organised primary societies within a period of 10 years, in two five-year periods and remarked that this should not be done at the expense of sound organisation.

It is clear from the Committee's report that the co-operative movement cannot cover the entire Province—partially excluded areas, famine tracts, backward hill tracts, etc., may remain outside its scope for the reasons mentioned in the Report. Since in these areas also, the needy agricultural borrowers will have to be catered for, Government will have to devise means like tagai, grain depots, etc., to meet their requirements. It is to be hoped, however, that in course of time the Bombay Provincial Co-operative Bank, Ltd., would be able to extend its operations as in Dohad and Jhalod talukas to other backward areas.

Secondly, the Report indicates that the 8 lakhs more of credit-worthy borrowers who are at present outside the pale of the co-operative movement will be covered in ten years. The aim of Government is to provide immediately financing agencies alternative to the money-lender to obviate relapse into heavy indebtedness. Co-operation is a voluntary process, and it may not be possible for it to show immediate results though Government does not consider that because of the time factor alone, the co-operative movement should be replaced by an Agricultural Credit Corporation, yet it is clear that the ten-year period would be too long in view of the object it has in mind, viz., immediate fortification of the agricultural borrower against relapse into irrational indebtedness and his dependance on the village money-lender. Every effort should, therefore, be made to accelerate the pace of the co-operative movement. Collectors have been directed to give full help through their subordinates by way of active propaganda, sympathetic guidance, etc., to the district officers of the Co-operative Department, in this respect.

Closer control over secretaries:—The recommendation is that secretaries should be recruited from the villages where they are serving and that they should be properly trained and suitably guided. Since local secretaries will be more economical, this recommendation is accepted. Village guides and rural assistants wherever available should also be utilised as secretaries for co-operative societies.

Rural development activities:—The recommendation is that efforts should be made to make the village co-operative societies, whether credit or multi-purpose, efficient instruments of rural rehabilitation. The Registrar should impress this recommendation on the officers of the Co-operative Department and workers of the co-operative movement.

Banking unions:—The Registrar should arrange for the supply of the instructions drawn up by the Reserve Bank of India for organisation of banking unions to the officers of the Co-operative Department for their guidance. Government is prepared to consider the question of granting a subsidy in the initial stages of a banking union on merits in each case.

Long-term finance and rates of interest:—The recommendations of the Committee are:

(i) The Provincial Co-operative Land Mortgage Bank, should not be merged with the Provincial Co-operative Bank but should continue to function separately as at present.

(ii) The work of primary land mortgage banks which are working at a loss should be transferred to the central financing agency operating in the area concerned. The latter should keep a separate department and obtain funds, from the Provincial Land Mortgage Bank and carry out all the existing safeguards about scrutiny of applications for loan.

(iii) New land mortgage banks should not be encouraged.

(iv) Land mortgage banks should have full liberty in selection or rejection of awards passed under section 33 of the Bombay Agricultural Debtors Relief Act, 1947. The banks should be consulted before awards are passed.

Government accepts the Committee's proposal that the Bombay Provincial Co-operative Land Mortgage Bank should not be merged with the Bombay Provincial Co-operative Bank, Ltd.

The Land Mortgage Bank, Surat, has been merged with the Surat Central Co-operative Bank. Similar action in areas where primary land mortgage banks are working at a loss may be necessary. The Registrar should examine this question in consultation with the banks concerned and report the result to Government.

Provided arrangements are made by the Provincial Land Mortgage Bank to take up work in the areas not served by local banks, Government accepts the proposal.

The question (iv) is being examined by Government separately.

Rates of interest:—The Committee has observed that it will not be possible for land mortgage banks to advance loans at 4 per cent, as recommended by the Gadgil Committee unless Government gives substantial assistance for this purpose. The Committee has left the question at this point and not recommended the extent of the substantial assistance. No orders of Government are, therefore, called for.

Co-operative marketing:—The Committee has recommended that:—

(i) There should be complete harmony and close co-ordination between the working of the credit institutions and marketing organisations.

(ii) Members of co-operative societies should sell their produce through co-operative marketing organisation.

(iii) Arrangements for marketing could be improved by:—

(a) grading and standardisation of staples,

(b) proper storage facilities,

(c) creation of properly regulated markets.

(iv) Establishment of licensed warehouses,

(v) Grant of assistance on the lines allowed by Madras Government for construction of godowns by co-operative societies.

(vi) Appointment of a small Committee to consider the problem of co-operative marketing and to recommend the lines on which the future development of co-operative marketing should be guided and proper co-ordination of various units secured.

(i), (ii) and (iii). Accepted. The Registrar should arrange to give effect to these recommendations as far as possible.

(iv) The Bombay Warehouses Act, 1947, has recently been enacted. Steps will be taken for the establishment of licensed warehouses after rules are framed.

(v) Government has recently ordered that loans up to a limit of Rs. 5,000 or half the cost of the godown, whichever is less should be advanced to co-operative societies for construction of godowns. The rate of interest on such loans has also been reduced to 3½ per cent, per annum.

(vi) Government does not consider that the appointment of such a Committee is necessary at present.

Reserve Bank of India:—The Committee's recommendations are:—

(i) The procedure and arrangements for assistance to the Provincial Co-operative Banks by the Reserve Bank in emergencies should be clearly laid down so that there should be no delay or difficulty in meeting the requirements of the Provincial Banks in times of stringency.

(ii) The period of loans for agricultural operations should be extended from 9 to 15 months by the Reserve Bank which should also arrange for easier negotiability of Co-operative paper.

(iii) The principle of the borrower being independent of the warehousemen should be waived in case of co-operative societies.

(iv) If a co-operative society functioning for marketing has stocks of agricultural or other produce such stocks should be eligible as security for

advances from the Reserve Bank which should be satisfied with the signature of the marketing society plus the Provincial Bank.

(v) The Reserve Bank may consider the desirability of reducing the rate of interest, at which funds are made available to Provincial Banks for marketing of crops on the condition that the benefit of lower rates is passed on to the ultimate borrower.

(vi) The Reserve Bank does not accept the debentures of co-operative land mortgage banks as eligible security on the ground that they are not marketable. As interest and principal of these debentures are guaranteed by Provincial Government, the Committee hopes, it would be possible for the Reserve Bank to revise, its attitude with regard to these debentures.

(vii) The Reserve Bank has laid down a condition that a Provincial Bank which wants accommodation should maintain with it not less than 2½ per cent of demand, and 1 per cent of the time liabilities without receiving any interest for the same. The Committee recommends that the Reserve Bank should not insist on such a condition which is not statutory.

(i), (ii) (iv), (v), (vi), and (vii) The Committee has observed that many of these proposals are engaging the attention of the Reserve Bank, which will be addressed by Government in the matter.

(iii) This view has been already accepted—*Vide* section 21 of the Bombay Warehouses Act, 1947.

Free remittance facilities:—Co-operative societies enjoyed this facility for a long time. This has been lately withdrawn. The Committee recommends that facility should be restored. Orders on this point will be issued separately in consultation with the Reserve Bank of India.

Rural Credit Board:—The Committee has recommended the appointment of a Rural Credit Board which might meet twice a year and generally review the arrangements for rural finance including those made through co-operative credit societies. The personnel of the Board is to be :—

1. Honourable Minister in charge of Co-operation—Chairman.
2. Secretary or Deputy Secretary, Finance Department.
3. Secretary or Deputy Secretary, Revenue Department.
4. Chairman, Bombay Provincial Co-operative Bank.
5. } Two persons nominated by Government.
6. }
7. Registrar of Co-operative Societies and Director of Agricultural Marketing and Rural Finance—Secretary.

This Board should keep in touch with the manner in which arrangements for rural credit are working and consider complaints and reports received about these arrangements.

The question of constituting such a Board will be considered by Government after all arrangements regarding rural finance are settled.

Special Arrangements for Co-operatively Undeveloped Areas

Partially Excluded Areas:—The Committee favours the extension of the co-operative system for areas where conditions, similar to those in Dohad and Jhalod talukas in which the co-operative movement has made considerable success, exist. Government accepts this proposal.

Famine Areas and Areas With Restrictions on Alienation of Land

The Committee has left such areas for advances either through tagavi or grain banks to the State till the system of land tenures is reformed or land is made alienable for co-operative finance. Government considers that there is scope for development of the co-operative movement in areas with restrictions on alienation of land.

Lines of State-Aid

The Committee has remarked:—

“Rural finance is fraught with risk and a certain measure of State assistance will be necessary if a satisfactory agency is to be set up or maintained for providing finance in rural areas. The need for such State assistance has increased on account of the rates of interest recommended by the Gadgil Committee and the fact that Government has asked us to evolve a scheme by which co-operative societies can provide agricultural credit on the lines envisaged by that body.”

The Committee has discussed the lines on which Government assistance should be granted to different types of co-operative societies, viz., primary societies, district central banks and banking unions, Bombay Provincial Co-operative Bank, Ltd., and the Bombay Provincial Co-operative Land Mortgage Bank, Ltd. Orders on these recommendations are passed in the following paragraphs.

Primary societies:—The Committee has recommended that State-aid to primary societies may have to be given in the following form :—

- (i) Assistance towards meeting the expenditure on the cost of secretaries of rural credit societies,
- (ii) Subsidies to multi-purpose societies,
- (iii) Increased expenditure over the departmental staff, both for organisation and administration of co-operative societies,
- (iv) Building up of a Rural Stabilisation Fund.

(i) The Committee's recommendation is that Government should contribute towards the cost of the salaries of the secretaries if the societies are unable to do so on condition that societies registered on unlimited basis distribute no dividend in respect of the years for which grants are given and contribute all they can towards their secretarial expenditure without increasing their lending rate beyond 6.25 per cent. This assistance should be available to the societies up to the first ten years of their existence. Dividend up to the bank rate may be allowed in the case of societies registered on the basis of limited liability as otherwise enough share capital may not be attracted. The Committee has suggested that grants to the extent of one per cent of the total working capital of the rural primaries should be placed at the Registrar's disposal and the Registrar empowered to give grants to a society up to a maximum of 2.5 per cent of its working capital. The Registrar should furnish Government with an estimate of the expenditure involved.

(ii) For multi-purpose societies, a subsidy for the first five years on a descending scale has been recommended as follows :—

Rs. 300 for each of the first three years, Rs. 200 for the fourth year and Rs. 150 for the fifth year or half the cost of management and propaganda in any particular year whichever is less.

Such assistance is already being granted by Government.

(iii) Proposals for increase in the staff of the Co-operative Department will be considered on merits.

(iv) The recommendation is that such a Fund should be built up by Government by contributing annually for a period of five years, one per cent of the outstandings of the co-operative societies towards this Fund which can be drawn upon by Government in an emergency for rendering assistance to the Bombay Provincial Co-operative Bank, Ltd., central banks and village primaries. The recommendation will be examined in connection with the proposals for the grant of State-aid to district central banks and the Bombay Provincial Co-operative Bank. The proposals are still under discussion with the Bombay Co-operative Banks' Association and the Bombay Provincial Co-operative Bank.

Bombay Provincial Co-operative Land Mortgage Bank, Ltd.:—The Committee has recommended the following measures:

(i) Government should guarantee both interest and principal on long term debentures that may be raised by the Bank from time to time.

(ii) The Provincial Bank and its agencies may be given technical assistance, free of cost, especially for development finance—

- (a) in regard to examination of schemes of development, and
- (b) for land valuation.

The Registrar should submit his remarks on both the proposals to Government.

The Registrar of Co-operative Societies and Director of Agricultural Marketing and Rural Finance should ascertain from the Bombay Provincial Co-operative Land Mortgage Bank Ltd., District Central Banks, etc., whether they are agreeable to work out the scheme of rural finance on the lines indicated by the Nanavati Committee and the orders of Government thereon and intimate the result to Government. No expenditure should be incurred on the scheme unless and until it is brought into effect with the approval of Government.

— *Bombay Co-operative Quarterly*, July, 1948.

BRANCHES OF THE BOMBAY PROVINCIAL CO-OPERATIVE BANK

The number of branches of the Bombay Provincial Co-operative Bank was 53 in ten districts. Two new branches were opened at Matar and Thasra and one branch at Jhalod was closed due to the establishment of the Poorva Panchmahals Co-operative Banking Union. It is intended to close the branch at Dohad and transfer the working of financing the societies in both Dohad and Jhalod to the Poorva Panchmahals Co-operative Banking Union in the near future. Requests for opening new branches were received from several centres during the year. Government were also addressed in the matter of assistance for opening branches for the finance of adjusted debtors in case of their proving uneconomic. Government have kindly consented to contribute towards the losses of uneconomic branches opened with this object in view for the first few years.

EFFECTS OF WAR ON INDEBTEDNESS OF MEMBERS OF CO-OPERATIVE SOCIETIES IN BOMBAY PROVINCE (DURING 1939-40 AND 1943-44.)

Summary of a Report By Prof. D. R. Gadgil

(Published in the *Bombay Co-operative Quarterly*, July, 1948.)

This survey of rural indebtedness was undertaken by the Bombay Provincial Co-operative Institute in order to ascertain the effects of War on the economic position, especially in relation to debt, of members of primary co-operative societies... It is, however, expected that the varied types of conditions that it was possible to cover even in this small survey by the method of selection adopted gives results which, if they cannot be said definitely to be representative of particular tracts, are at least illustrative of a large variety of conditions..... It is likely that the bulk of the members of co-operative societies, especially in some tracts in the sample are drawn from the middle strata of the peasant community and that it does not contain a proportionate representation of the substantial class of farmers and possibly does not contain a full proportion of the marginal and sub-marginal farmers.

A series of misfortunes were encountered by the investigator who was put in charge of societies in Gujarat. As a result he could not cover more than a total of about 200 persons and in most cases his coverage of individual societies was low. It was, therefore, not thought worth while to tabulate data collected by him exhaustively and incorporate it in this report which is thus confined to data collected for Karnatak and Maharashtra. In these two regions, the total number of societies whose membership was studied was 29 and the total number of persons studied was 1,601. On receipt of the questionnaires filled in by the investigators, it was decided that the work of tabulation should be entrusted to the Gokhale Institute of Politics and Economics and that the report should be written by Prof. D. R. Gadgil.

The region of the Karnatak has been divided into four tracts for the purpose of the survey which have respectively been called: (i) Below Ghats, (ii) Paddy (Dharwar), (iii) Tobacco and (iv) Famine.

Judging the various tracts by the change in the total debt position at the end of 1943-44, it appears that the debt increased, on an average, in the Paddy and Famine tracts and decreased in the 'Below Ghats' and the Tobacco tracts. The increase in the average debt for the Paddy tract represents less than 14 per cent of the debt in 1939-40. The size of this debt, as noted above, had been the smallest, on an average, among all the tracts in 1939-40. The average increase during the intervening period is significant, though not large. The position varies from group to group. There is an actual diminution of the average debt by nearly 30 per cent for the group of largest farmers, that is, for those who operated more than 40 acres of land. There is an increase in the debt for all the other groups of farmers in the tract. The increase is, however, not graded uniformly; the highest proportionate increase is for those operating less than 5 acres and for those operating between 10 and 20 acres and much less in proportion for the remaining two sub-groups. The highest proportionate increase in total debt is for the sub-group below five acres which more than doubled its 1939-40 debt by 1943-44. The persons in the sub-group 10-20 acres is more than 55 per cent. Even this increase, however, does not bring the total average debt of this group in 1943-44 to a level higher than that of the group operating five to ten acres.

The increase in the total debt of the Famine tract cultivators is small, being on an average less than 6 per cent of the debt in 1939-40. All except the smallest group, *i.e.*, of five to ten acres, record an increase in debt. The amount of the average increase in each sub-group increases with the decrease in size. This

result is consistent with the hypothesis that over certain periods Famine tracts exhibit a deficit economy and that the smaller the size of operations, the greater is the proportionate deficit.

The other tract in the Karnatak region which may be said to represent deficit economy conditions, the 'Below Ghats' tract does not record an increase in average debt between the two years. It records, on the other hand, a small decrease of about 6 per cent. The decrease is specially marked for the cultivators operating more than 10 acres. The ten to twenty acres group shows a decrease in the average debt of a little less than 18 per cent. The decrease in the debt of cultivators operating five to ten acres is much less marked being only about 7 per cent. On the other hand, the group containing the largest numbers in this tract, that of cultivators operating less than five acres, shows an increase in debt by about 9 per cent. The indications here are of conditions which are in the main stagnant and in which also the small size is seen to be an economic handicap.

The Tobacco tract is the only one that appears to have profited in a substantial measure because of war years. The average reduction in the size of the debt is almost equal to 28 per cent of the debt in 1939-40. On a closer examination of the figures, it is however, seen that the abnormally high figures of one particular group in this region, the 10 to 20 acre farms give an exaggerated idea of the average decrease. If these abnormal figures are omitted from consideration, it is seen that the reduction in average debts is not very high. The average reduction in debt of farmers operating between 20 to 40 acres is about 12 per cent of the debt in 1939-40. On the other hand, for those operating between 5 to 10 acres, there is an average increase of about 4 per cent, while the group containing the largest number, that operating below five acres shows an increase in the debt of over 38 per cent of the debt in 1939-40.

On a general review of the position, it would appear that the results of war years have not been as favourable to the Karnatak farmers included in this survey as might have been expected. Significant benefits, as reflected in the total debt position, seem to have accrued only to farmers operating a more than ten acre holding in the Tobacco and the Below Ghats tracts. On the other hand, the position of the smallest holders, that is of holders below five acres, even in the Below Ghats and Tobacco tracts, where they are numerous, seems to have worsened as measured by the size of the money debt during the same period. The Paddy and Famine tracts, as a whole, do not seem to have benefited from war years.

The region of the Deccan has been divided into five tracts: (i) Canal Irrigation, (ii) Paddy, (iii) Well Irrigation, (iv) Dry and (v) Cotton.

In both the Canal and Well Irrigation tracts, the average debt has decreased during the years under consideration. The decrease in the Canal Irrigation tract amounts to almost 60 per cent of the debt in 1939-40 for the groups of cultivators operating acreages between 10 and 20 and above 40. The next largest proportion of decrease is for cultivators operating between 5 and 10 acres. The proportion of the decrease in the average debt of the group, 20 to 40 acres, is smaller than of the groups mentioned above. There is an actual increase of the average debt of the small number of cultivators who own less than 5 acres. For the Canal Irrigated tract, a holding of less than 5 acres is so small that this group may effectively be considered as of almost non-cultivators.

The average decrease in the debt of cultivators in the Well Irrigation tract is about 20 per cent of the debt in 1939-40. The reduction in debt is proportionately the highest in the group of cultivators operating 5-10 acres amounting to approximately 40 per cent of the debt in 1939-40. The reduction is about 25 per cent for those who operate between 20 to 40 acres. For the other two groups, the reduction is small being a little over 10 per cent in the group of smallest holders, that is those operating less than 5 acres, and almost negligible, less than 3 per cent for

the group operating 10 to 20 acres. The small proportion of the decrease in debt in groups with fairly large holdings in both Canal and Well Irrigation tracts deserves notice. It is clear from all the data relating to various groups within the Canal and Well Irrigation tracts that the average and economic size of holding, in terms of adjusted acres, is definitely larger in the Canal Irrigation tract than in the Well Irrigation tract.

The reduction in the average debt of farmers in the Cotton tract is roughly 35 per cent of the debt in 1939-40. The distribution of this average decrease is, however, far from being uniform. In the group of farmers holding more than 40 acres, the reduction of the debt is more than 50 per cent whereas in the next group, that is, of those operating between 20 and 40 acres, it is less than 20 per cent. It is more than a third in the groups of operators of land between 5 and 10 acres and 10 and 20 acres but is small being less than 8 per cent for those operating less than 5 acres.

The Dry tract shows a small average decrease of about 9 per cent. The direction and percentages of the variation vary considerably from group to group. The decrease is the highest, a little less than 50 per cent for cultivators operating less than 5 acres of land. This is obviously due to circumstances other than those connected with agriculture. The non-agricultural income of members of this group in 1943-44 was substantially higher than that of any other group in the tract and the reduction of the debt must obviously be attributed to that factor. In the best of conditions, a dry acre holding of less than 5 acres cannot be expected to yield a surplus enabling a substantial reduction of the debt in a four-year period. Eliminating this group, the highest reduction—about 30 per cent is that for holders operating more than 40 acres; the group 5-10 acres shows a reduction of about 12 per cent and the smallest approximately 5 per cent is for holders operating between 10 and 20 acres. The farmers operating 20 to 40 acres, on the other hand, show an increase in debt by over 10 per cent.

The reduction in the average debt in the Paddy tract is about 40 per cent. The size of the debt in this tract and the proportion of reduction, are weighted by the figures for the 3 persons operating areas above 40 acres. Eliminating these from consideration, the reduction is highest in the group of those operating between 5 and 10 acres, amounting to almost 30 per cent. In the group of those operating between 10 and 20 acres, the reduction is somewhat less than 20 per cent, while it is only about 7 per cent for the smallest group operating less than 5 acres.

On the showing of the survey, the farmers in the Deccan, in various tracts, seem to have done better than the farmers in the Karnatak during the war years under review, with the exception of two groups. One of very small cultivators operating less than 5 acres in the Irrigation tract and the other of 20 to 40 acres farmers in Dry tract. Farmers in all other groups in all tracts seem to have been able to decrease their debt. The proportion of the decrease, however, varies considerably from less than 3 per cent to more than 55 per cent and in almost all tracts it is not uniformly correlated to variations in the size of the holding.

This feature of the general reduction in the average debt is equally marked in the group of non-cultivators. Except for the group with the lowest incomes in the Well Irrigation tract, all tracts have been able to decrease their debt during the four years considered in the survey.

THE MILK PROBLEM IN INDIA

The regeneration of the milk industry is a matter of extreme urgency since it is vitally linked with the economic prosperity of the country in several ways. Apart from its intrinsic importance as a valuable food, milk together with its derivatives, constitutes the only source of animal protein and protective substances for the vast majority of the people, who are accustomed to a rigid vegetarian diet. In addition, dairying is closely connected with agriculture which is the mainstay of Indian economic life, and unless an efficient milk industry is in existence, no successful agricultural policy can be formulated.

India is credited to possess the highest milch cattle population in the world (66.4 millions according to 1941 census). the total annual output of milk is only about 6,400 million gallons i. e., 96.4 gallons per head of cattle and 8 oz. per head of human population. In contrast to this, about 11.8 thousand million gallons of milk were produced in the United States of America annually during the war years with only 25.3 millions of milch cattle, which works out to 466 gallons per head of cattle per lactation and 35 oz. daily per head of human population. The average *per capita* consumption of milk (including milk products) in India is only 7 oz. as against the minimum of 21 oz. required from the standpoint of balanced nutrition. The actual amount of fluid milk reaching the consumers would be still less since only about 30 per cent of the total milk production is available for consumption, the rest being utilised for milk products' manufacture, mainly ghee. The serious effects of this low consumption of milk are strikingly manifested in the high infant mortality rates and the appalling state of ill-health among nursing mothers, children as well as the general population of the country.

The main factors responsible for this deficiency of milk supply are recognised to be (i) the poor productive capacity of the milch animals, (ii) the concentration of milk production in isolated pockets of the country without any facilities for transporting milk to deficit areas, and (iii) the enormous wastage of milk due to souring or other causes or its conversion into uneconomic products. With greater attention being paid in recent years to better methods of feeding, selective breeding and scientific management of the herd, considerable increase in the yield has been effected and further improvement is in sight.

The outstanding importance of milk as a human food is due to the highly nutritive substances which make up its unique composition and its pleasing flavour. Any of these may be seriously impaired due to bacterial activity, physiological or pathological abnormality of the udder, drastic heat treatment and adulteration apart from the effects of improper feeding and certain natural causes. Milk is thus highly perishable in nature and it is always susceptible to microbial infection from the time of its production till its utilization. It is also easily infected by pathogenic organism derived from the animals, human personnel or other sources and is known to communicate several serious diseases like tuberculosis, brucellosis and typhoid to mankind.

The production of clean and safe milk, with its natural properties unimpaired, is beset with considerable difficulties. It is only after years of intensive research work and the coordinated efforts of the trade, State authorities and the consuming public, that these intricate problems were overcome in countries like the United States, England and Denmark and great advances made in market milk industry. Till about the end of the nineteenth century, there was no organised milk industry in these countries. Sanitation in milk production was unknown. Adulteration with water and addition of preservatives were extensively practised and outbreaks of milk-borne diseases were very common. Within the course of just three or four decades, the methods of milk production and marketing were thoroughly revolutionized and remarkable improvements made in

the standard of market milk supply. The principal steps taken were (i) the early rationalization of the methods of milk production and marketing on a collective and organized system, (ii) introduction of sanitary methods in all aspects of the industry, (iii) control and detection of disease infection in the herds, (iv) proper arrangements for the cooling, processing and distribution of milk soon after production, (v) quality control of market milk, (vi) pasteurization as a means of rendering milk safe and prolonging its keeping quality, (vii) employment of mechanical refrigeration in rail and road transport of milk, (viii) official regulations for controlling the production and handling of milk and grading of market milk.

The present state of market milk industry in India is more or less similar to that prevailing in Western countries at the end of the 19th century... Fortunately, milk is universally boiled before consumption and this practice has saved many of the likely victims from serious diseases. Adulteration of milk with water and the addition of substances like starch, flour and other substances are widely prevalent. The task of raising the standard of milk production from the present state is certainly a formidable one. The practice of adulteration may be expected to be controlled gradually with the introduction of strict legal measures and the elevation of the economic standard of the people concerned. The improvement in the bacteriological quality of milk is, however, fraught with exceptional difficulties in this country... The types of micro-flora predominating in milk in this country are said to possess a high degree of resistance towards heat and other adverse conditions, while they are remarkably active in bringing about biochemical changes leading to the rapid deterioration of milk. Secondly, high temperatures prevailing here favour a rapid multiplication of bacteria and even the cleanest available milk has a comparatively shorter life while in Western countries, the low atmospheric temperatures provide a natural system of refrigeration and even the worst types of milk will have an appreciably longer life as compared with the average quality of milk here....

It has also been stated that pasteurization, which has proved so valuable in Western countries in increasing the keeping quality of milk, is not very efficacious for general adoption here due to the high incidence of heat-resistant flora in milk in India which survive the process and bring about rapid spoilage of the heat-treated milk unless it is stored in a refrigerator.

The whole problem, therefore, merits very careful consideration and there is an urgent need for the speedy inauguration of an equitable national policy for improving the quality of market milk. It is necessary at the same time to launch effective programmes for cattle improvement and augmentation of milk production. A full-fledged quality control programme cannot be successfully implemented under the existing scattered conditions of milk production..... It will then be possible to rebuild the whole system of milk production on a collective basis so that clean and safe milk could be economically produced in rural areas and supplied to the nearest consuming centres without neglecting the needs of the villagers.....

The difficulty of transporting liquid milk over long distances from milk pockets to deficit areas brings out the necessity of starting milk drying and condensing factories in suitable places at a very early date. All these developments can be undertaken only on a long-range basis and they would necessarily take some time to materialize. In the meanwhile, since the problem of milk shortage is so acute, some immediate steps are called for in exercising some sort of control over the large-scale handling of milk in larger cities and towns and in organizing some form of consumers' milk stores, either under municipal control or on a co-operative basis, where milk can be purchased from villages and stored at a low temperature for retail distribution to the people.

—Indian Farming, April, 1948.

FIVE-YEAR PLAN FOR PRODUCTION OF MILK IN INDIA

Scheme by the Dairy Development Adviser, Government of India.

A proposal for a Five-Year Milk Plan embodying specific projects designed to bring about an over-all increase of milk production of 758 lakhs of maunds in all Provinces over a five-year period, has been drawn up by Dr. Zal R. Kothavalla, Dairy Development Adviser to the Government of India.

The Plan in general aims at bringing about improvements with regard to cattle and milk by improving the lot of the cultivator-milk-producer through the improvement of his cow and organising the production, handling and marketing of milk on an economic and satisfactory basis.

The Plan has been drawn up in five parts. Part I brings out the present position with regard to cattle and cattle feeds, milk and milk products and other cognate matters such as dairy education, research and equipment. Part II indicates the possible ways and means of improving the dairy industry of the country. Part III gives an idea of what constitutes the Five-Year Plan. Part IV indicates the work each Province will have to do to fulfil the Plan, and Part V contains the proposals for the implementation of the Plan.

In the proposed Plan, the following eight specific projects are envisaged: (1) milk-cum-bull breeding farms, (2) small-holder milk production farms, (3) colonisation of dislodged urban cattle, (4) artificial insemination, (5) cross-breeding of inferior milch cows in hilly regions, (6) co-operative milk unions, (7) co-operative rural creameries and (8) production of green fodder and silage.

The programme of work under each project is extended over five years. For the successful execution of the different projects a total of about 6,400 technicians will be required over the five years' period. In addition, equipment such as steam boilers, refrigerators, etc., will have to be imported and their cost is estimated at Rs. 10 crores.

Distribution in rural areas :—The only organisation that can meet the demand for a continuous supply of good milk is a chain of dairy farms established on sound lines. These are recommended for providing a continuous supply of good milk, especially to the vulnerable groups of population in towns and cities, and producing a large number of high quality 'seed bulls' for distribution in rural areas. A total of 117 farms is proposed to be established near towns and cities. Three sizes of farms are proposed for producing 25, 50 and 100 maunds of milk daily. The first type is proposed for towns with a population between 50,000 and 75,000; the second type of farms for towns with a population between 75,000 and 1,50,000 and the third type of farms for cities with a population above 1,50,000. The farms when fully established in the fifth year will maintain a strength of 94,000 milking cattle with 'followers' and help to increase milk production by 6.37 lakhs of maunds, and also produce about 400 'seed-bulls' for distribution.

To meet the demand of a very large number of the enterprising public, including small-holders who are interested in the production of milk on an organised and scientific basis and are unable to raise a large capital, the establishment of small-holder milk production farms is proposed. It is planned that a small-holder farm should produce a minimum of 2½ maunds of milk daily. About 2,500 farms are to be encouraged to produce 6,250 maunds of milk daily in the fifth year. The increase in milk production is expected through (a) better feeding and management and improvement in the milking quality of the progeny and (b) reduction in dry period by timely service of the milch animals. The additional milk production in the fifth year is estimated at 7.28 lakhs of maunds. The total increase over the five-year period will be nearly 18 lakhs of maunds.

It is considered that if the present large number of milch cattle kept in urban areas under insanitary conditions are dislodged and facilities provided for establishing them into colonies in selected rural areas, the cattle would not only be preserved and looked after well, but the greater bulk of the milk that is used by the urban areas could be produced and supplied under controlled conditions, to the mutual advantage of the producers and consumers. It is proposed to dislodge 1.7 lakhs of milch cattle in urban areas and settle them on 173 colonies each of 1,000 milch cattle in surrounding rural areas in five-years. With an organised system of working, better feeding, breeding and management, the colonies are expected to produce 7.1 lakhs maunds of additional milk in the fifth year and total of 16.26 lakhs of maunds during the five-year period.

The immediate need of the country is to obtain better milking progeny from the existing stock and the only effective way of achieving this would be to resort to artificial insemination employing the limited number of good bulls now available. About 10 per cent of the existing milch cattle population is proposed to be inseminated in 5 years. A total number of 37 lakhs of cattle or about 10 per cent of the existing population of milch cattle in the provinces is proposed to be inseminated through 74 'seed bull centres' and 370 'insemination yards'. The number of 'seed bulls' needed will be 3,700 in the fifth year starting from 195 in the first year. The increase in milk production is estimated at 25.75 lakhs of maunds in the fifth year. The total increase over the five-year period is expected to be 42.88 lakhs maunds.

Climatic and other conditions in some of the hilly wet tracts such as of Assam, West Bengal, Madras, etc., make it impossible for indigenous cattle of good quality to thrive. By crossing them with Western breeds, a progeny of appreciable value as a milch as well as a draught animal can be secured. About 10 per cent of the total cow population in the provinces of West Bengal and Madras is proposed to be cross-bred in 5 years and 20 per cent in Assam. About 1.75 lakhs of cows are proposed to be cross-bred in the fifth year through 7 'seed bull centres' and 35 'insemination yards'. For this purpose a total of 175 exotic bulls will be required starting with 20 in the first year. About 1.4 lakhs of maunds of additional milk is expected to be produced in the fifth year. The total increase over the five-year period is estimated at 2.38 lakhs of maunds.

CO-OPERATIVE MILK UNIONS

The only certain and effective way out of the present chaotic conditions of milk supply to towns and cities created by intermediaries or middlemen, lies in the elimination of the latter as far as possible and encouraging direct supply from the producer to the consumer to the mutual advantage of both. This can be done by organising the production and marketing of milk on co-operative lines. The project envisages the organisation of co-operative milk producing societies in villages and federating them into unions of economic sizes for increasing the supply of good quality milk at reasonable prices to towns and cities in the different provinces. To begin with, the areas far away from towns and cities may be organised for supplying a part of the milk requirements of the urban population. Unions to handle 50, 100, 200, 500 and 1,000 maunds of milk a day are proposed to be set up for supplying milk to different towns and cities according to their population and the existence of milk producing areas within their reach. A total of 136 unions of different sizes are proposed to be set up in five years.

There are several 'milk pockets' in every province lying far away from the consuming centres where milk is produced in quantities larger than what can be consumed locally and which is generally converted into ghee. It is expected that if the indigenous process of manufacturing ghee is replaced by the cream separator method and the production and the marketing of ghee organised on co-operative lines the output could be augmented, quality improved and the income of the member producers considerably increased. This project envisages the organisation of co-operative ghee producing societies in villages and federating them into

rural creameries of economic sizes in different provinces. The creameries will be of three sizes to handle (i) 20,000, (ii) 50,000, and (iii) 1 lakh maunds of milk annually. A total of 794 co-operative rural creameries is proposed to be established in five years to handle 369.2 lakhs of maunds annually, which would represent about 20 per cent of the total quantity of milk used for ghee making at present. The increase in the output of ghee and milk in the fifth year is estimated at 92,300 and 13,97,000 maunds respectively. The total increase over the five year period is estimated at 2,76,000 maunds, of ghee and 34,52,000 maunds, of milk.

The scarcity of fodder of sufficiently good quality is one of the main causes responsible for the present poor yield of milch cattle. Any attempt at increased milk production must, therefore, include production and supply of succulent fodder along with other feed requirements. To assure an adequate supply of nutritious succulent fodder throughout the year it would be necessary to grow both seasonal and perennial fodder crops and also produce silage for feeding during periods of draught. It is proposed that efforts should be made to provide a continuous supply of succulent fodder to about 20 per cent of the population of milch cattle in the provinces in five years. To do this, about 29 million tons of seasonal and perennial fodders including 7.25 million tons of silage will have to be produced by the fifth year, for which 29 lakhs of acres of land including 7.25 lakhs of acres of irrigated area will have to be utilised. The increase in the output of milk in the fifth year is estimated at 248.6 lakhs of maunds. The total increase over the five-year period is estimated at 620.9 lakhs of maunds.

It has been emphasised that a concerted effort at under-taking projects of the type and magnitude suggested is absolutely essential. This should mainly come from provinces. The specific steps suggested to give effect to the plan are: (a) creation of a well-staffed dairy development section in each province, (b) encouraging private enterprise—both individual and co-operative—and providing them with help—technical, financial or otherwise, (c) setting up a Milk Board with representatives of provinces, dairy-men and consumers, (d) providing an adequate supply of concentrates at reasonable prices and an assured supply of water for the cattle, (e) controlling the manufacture of milk products to enable as much milk as possible to be consumed in fluid form, through enactment of necessary legislation, (f) exercising stringent legal control on the quality of milk and milk products, (g) providing facilities for training of technicians by fully exploiting existing institutions and opening new ones and (h) providing facilities for the purchase of equipment and appliances of the type required at reasonable rates through Fair Price Shops.

Our milk production is tragically low compared with that of Western countries. The daily consumption of milk and milk products per person in Canada is 56.8 oz., in New Zealand 54.6 oz., in the United Kingdom 40.7 oz. and in India 5.8 oz.

It is an astonishing fact that only 27 per cent—little more than a quarter—of our milk production ever reaches the consumer in fluid form. Curd or *Khoa*, and other milk products account for 15 per cent, while 58 per cent—nearly two-thirds of our total production—is made into ghee. This reduces the actual amount of fresh milk consumed per person in India to approximately 1.6 oz. per day, a figure which makes our hopes for healthier people sound rather ironical.

—*Indian Press Features; The Hindu*, October 14, 1948.

IMPROVING THE MILK SUPPLY OF TOWNS

By *Zal R. Kothavalla, Dairy Development Adviser, Government of India.*

The present high level of prices of milk and milk products in towns is mainly due to the fact that supply is not able to cope with the demand. The first step is to find out ways and means of augmenting the existing supply. The present system of producing milk by housing cattle in the heart of the town has been universal in the country and has been found to be most uneconomical and unhygienic, besides leading to the gradual destruction of the valuable cattle wealth of the country. Let us therefore, aim at abolishing these stables and for that reason the source for the increased supply of milk would have to be looked for from areas outside the towns. This source may be (i) organization of milk supply from areas surrounding the town, (ii) establishment of creameries in milk producing areas, and (iii) establishment of dairy farms.

Organization of milk supply from areas surrounding the town will divide itself under two heads: (a) Milk supply from villages lying adjacent to the towns or what may be called 'inner belt'—extending up to a radius of about 15 miles of the town, and (b) milk supply from villages lying beyond this radius and extending up to 50 miles, which may be called the 'outer belt'. Of the two, it is desirable that the organization of the milk supply from the 'outer belt' should be taken up first because that will help in actually augmenting the milk supply without disturbing the present supply as the milk is already being brought by various means to the town from the 'inner belt'.

The Inner Belt

Almost every town, whether small or large, derives nearly 50 per cent of its milk requirements through what are called 'milk carriers' on cycles or head loads and distributed direct to individual customers. Their range of work extends even up to 12 miles radius from the town. For some of the larger towns like Bombay, Madras, Calcutta, etc., which are well-provided with local trains, milk is brought from even greater distances by these carriers. Some of the measures which can be adopted for augmenting this supply are:

(i) To organize the producers on co-operative lines and arrange for them to deal direct with the consumers themselves, to the mutual advantage of both, by doing away with the middlemen or the carriers.

(ii) To organize the carriers themselves, on co-operative lines by giving them facilities of a central milk collecting depot or depots from which milk can be economically distributed collectively instead of each individual carrier going round the delivery.

(iii) To open depots for cattle feeds in the producing areas and subsidizing the supply, if necessary.

(iv) To provide milk supply cans of suitable types and at a concession rate as also cycle tyres, tubes, etc., which are very difficult to obtain at present.

(v) In the case of carriers bringing milk by local trains, allowing them concessions in the freight and providing a special carriage or compartment where milk can be put in a clean place during transit.

(vi) For the municipalities to provide special depots well-distributed in the town, from where milk can be distributed to the areas apportioned each set of carriers.

(vii) To give loans to the organized small producers for purchasing cattle and feeding stuffs to effectively increase the production of milk in the zone surrounding the towns. It has been found from experience that by proper feeding and maintenance the milk yield of a village cow can be increased even up to 50 per cent.

The Outer Belt

The producers should be organised for the collection of the milk and its rapid transport to a suitable centre where it can be processed and distributed through a reliable agency so that the quality of the milk is assured and it is sold at a reasonable price to the consumers. Such an organized effort calls for the following:

(i) *Survey*:—A rapid survey of the areas is necessary in order to ascertain firstly the quantity of milk available for collection after allowing for the domestic need of the producers and the wide fluctuations for the different seasons which invariably occur under village conditions, and secondly the disposal of surplus milk and the scope for developing this source.

(ii) *Organizing the producers*:—This will have to be undertaken, preferably on co-operative lines, based on the data obtained in the survey of the area, so that those villages which produce sufficient quantities of milk which can be handled economically, need only be considered in the earlier stages. Each village should be provided with a small milking shed with facilities of water-supply, etc., the cost involved being partly or wholly borne by the Government.

(iii) *Collection of milk*:—This should be done at centres which are so situated that the collection of milk may be done as expeditiously and economically as possible.

(iv) *Rapid transport of milk*:—Quick haulage of milk to its destination soon after production is very essential as the time factor is most important with such a highly perishable food as milk. Motor lorries for this purpose will be required.

(v) *Processing of milk*:—Milk collected from various sources and produced under insanitary village conditions will have to be processed (heated or chilled or both, i.e., pasteurized) and for this a processing centre or pasteurizing station will have to be established, preferably in the consuming town itself, with facilities of cold storage, etc., so that the distribution of milk can be regulated according to the requirements of the consumers irrespective of the time of milking in the villages.

(vi) *Distribution depots*:—The milk collected and processed as above can then be distributed to the consumers over the counter through depots specially provided for the purpose. It is not considered feasible in earlier stages to attempt house to house delivery of milk, particularly in view of the shortages of containers and bottles.

(vii) *Supply of cattle feeds*:—Arrangements will have to be made to supply cattle feeds such as oilcakes, bran, chunni, etc., to the village milk producers so as to give them an incentive for producing more and better quality milk. In some cases this idea of helping the villager can be further developed by arranging for the supply of his daily requirements such as kerosene oil, sugar, cloth, etc., against deliveries of milk.

Co-operative Working

The schemes may preferably be run on co-operative lines.

Conditions governing the selection of a town for the scheme will be as follows:

(a) The town selected for the supply of milk should be surrounded by milk-producing villages or centres lying within 15 to 50 miles of it and the quantity of milk produced by such centres should be sufficient to make its collection, haulage, handling and distribution economic on a consideration of working costs. Each such village or centre should on an average be able to supply a minimum quantity of 2½ maunds of milk a day.

(b) The majority of villages to be tapped should lie as far as possible alongside the roads to be traversed or at a distance not exceeding 2 to 3 miles from the road.

(c) The area should be well-provided with roads which will permit of the haulage of milk by motor transport in all seasons of the year.

(d) The producers must be assured of the market for their milk throughout the year at a predetermined price and the milk must be paid for periodically.

Establishment of Dairy Farms

Experience has shown that milk obtained from villages fluctuates widely in quantity according to seasons and that it is at its lowest in summer. Since the supply of milk to the consumers must be constant and assured throughout the year in order to counteract the above drawbacks there should be another and more dependable source of supply of milk for the town. This should be in the form of a dairy farm or farms established as near to the town as possible either by Government or through private enterprise. In the latter case a subsidy may be provided in some form or another preferably by the payment of a certain amount per pound or maund of milk of a guaranteed quality delivered to the town. Such farm or farms should be producing at least 25 per cent of the quantity of milk obtained under the village system to meet the deficit during the scarcity period. The following facilities may be needed to establish and encourage such a supply.

(i) Facilities of land and grazing, (ii) Provision of irrigation water for the cultivation of fodder crops at a concession rate, (iii) Concession in railway freight with the facility of refrigerating vans, (iv) Provision of necessary equipment for the dairy, etc., under priority, (v) Providing subsidy to enable the farm-produced milk to be sold in the consuming areas at controlled rates.

Control and Supervision

One of the greatest handicaps in the proper supervision and control of the milk supply of a town is the existence of the innumerable agencies or channels through which milk is made to pass during its handling and distribution in a town. This also hinders the development of the dairy trade on right lines. The reorganization of the present system of milk supply calls for definite measures to be taken. They may be summed up as follows:

(a) *Creation of a milk supply organization*:—An organized effort will enable the milk-supplying agencies to be reduced to a few selected ones and this will call for the division of the milk-producing areas into zones, so that a zone may be assigned to a particular agency to prevent the various selected agencies from competing with one another unfairly.

(b) *Creation of milk procurement and distribution organization*:—This is necessary for replacing the innumerable individuals employed in distributing milk by a few selected agencies. As in the case of (a) above, the area of trading in the town will also have to be zoned out, so that each agency is allotted a zone to prevent unfair competition.

(c) *Removal of cattle stables from urban areas*:—As more and more milk is imported into the town from the rural areas through an organized effort, the city milch cattle stable will have to be removed. Their removal will call for (i) the prevention of the return to the city of cattle salvaged from the stables when they come into calf again and (ii) the absorption or colonization of the replaced animals from the city at centres away from the town from where milk could be easily obtained for the town.

(d) *Adoption of an effective system of licensing and supervision*:—The introduction of a complete and effective system of licensing of the trade with suitable standards for quality and an adequate and efficient staff for enforcing supervision and the standards of quality will be a necessary adjunct to such a reorganisation.

(e) *Appointment of a milk control board*:—There should be a central independent body which should coordinate the activities coming under the reorganization of the milk supply of a town. It is suggested that a milk control board should be created. Such a board should be constituted of a limited number of members, not exceeding seven; representing government, municipality, producers, traders and consumers. Its primary functions should be the following:

(i) To safeguard the interests of the producers, traders and consumers, (ii) To periodically fix the purchase as well as the sale prices of milk for that area, (iii) To control the marketing and distribution of milk according to the needs of the different classes of consumers, (iv) To control the production of milk and milk products in a consuming area as well as in areas adjoining it, (v) To fix standards of quality of milk and milk products sold in that area, (vi) To act in an advisory capacity in matters relating to the policy to be followed and measures to be adopted for the development of the milk trade.

Whatever be the type of scheme adopted by the Provinces or States for improving the milk supply of a town, technical help and guidance will be needed to solve the difficulties which are bound to arise at every stage with the commencement of the scheme. The prerequisite for the success of such a venture will be the provision of adequate technical staff. No doubt expert help and guidance will always be made available from the Centre but the Provincial Government shall have to maintain a well qualified and well paid staff of their own to be on the spot.

—*Indian Farming*, January, 1948.

IMPROVING MILK YIELDS

Breeding from first-class pedigree dairy bulls by artificial insemination anticipated to raise the yearly milk yield of English herds participating in the scheme by 100 gallons per cow and the percentage of butterfat by 0.2 to 0.4.

The artificial insemination service is provided there by the Milk Marketing Board, at present in 10 centres, but another 18 will shortly be operating. Sub-centres will be established to hold semen from the parent centres, so that no work need be performed over a radius greater than ten miles.

Basis for Insemination:—In normal mating the bull transmits 50 to 100 times as much semen as is needed for the conception of one cow. By using the A. I. technique and the dilution of semen it seems likely that up to 1,000 cows can be bred in a year to one bull. The present figure is about 700, against the 20 to 40 cows which one bull serves by-normal mating in a year. With good management, the A. I. conception rate is now at least as good as that obtained by natural mating. On average, two out of three cows conceive on the first insemination, although individual herds may show higher or lower rates.

—*Westralian Farmers Co-operative Gazette*, June, 1948.

MANUFACTURE AND STORAGE OF GHEE

By N. N. Dastur and B. N. Banerjee.

The production of milk is closely correlated with the quantity and quality of feed given to cattle, for this reason, there is a wide fluctuation in the quantity produced during different seasons. Usually the season for maximum production starts from September, reaches a peak in November and continues till March: the season of lowest production starts from April and lasts till August.

Ghee-making: an ancient industry

Ghee is the pure fat of milk. Commonly it is made from cow and buffalo milk, but in certain isolated areas *ghee* from goat and sheep milk is also prepared. *Ghee* has occupied a very prominent place in the Indian dairy industry from the earliest times and this is continued even to-day. It is estimated that approximately 58 per cent of the milk produced in our country, totalling nearly 3,589 lakh maunds, is utilized for making *ghee*. The value of *ghee* produced was over 100 crores of rupees per year in prewar days. *Ghee* that is produced in the country is to a very large extent consumed in the country. The quantity produced, though so huge, is the joint effort of every tiny village. Any improvement or defect that may be consciously or unconsciously introduced will thus have a profound significance both on the final value of *ghee* and its market value. Even though various other fats, like vegetable oils and hydrogenated vegetable oils, are available in large quantities and at a much lower cost, the demand for *ghee* continues to increase. It is thus in everybody's interest that the best quality of *ghee* be produced. *Ghee* production as mentioned above has been practised from the earliest times and it is not a matter of wonder that during that time bad practices as well as good have entered into the routine of manufacture. It is the intention of the article to analyze in the light of science, such step in the process of *ghee*-making so that the bad ones may be omitted or changed and the good ones confirmed or introduced, the ultimate object in either case being the production of only the best quality *ghee*.

Isolation of ghee

Ghee can be isolated from milk by various methods. No one method can be described as the best but, if certain precautions are observed, good *ghee* can be produced by any of them. The different methods followed to-day in the country may be summarized as follows:

1. *Desi method*: Milk is converted into curds, butter is isolated and this is heated to obtain *ghee*. This method is most widely used.
2. *Creamery butter method (Mukhan Ghee)*: Cream is obtained from milk by the use of mechanical separators. Butter is prepared from this cream after souring and then it is melted to *ghee*.
3. *Cream method*: Thick cream is prepared by the use of mechanical separators and, after souring, is heated directly and *ghee* is obtained.
4. *Vacuum pan method*: Creamery butter or thick cream is freed from water by heating under vacuum at a low temperature till pure butterfat is obtained.
5. *Direct from milk*: This is prepared by churning cooled milk after heating it first. This method is used only in rare instances and hence is not of commercial importance.

Under each of the above heads many modifications are practised, e.g. in the *desi* method raw or boiled milk may be used; curds of various degrees of acidity may be prepared; the butter obtained may be stored or at once converted into *ghee*; *ghee* may be first kept as *kacha ghee* and then made into *pucca ghee*; and so on. The modifications are adopted as are best suited to the local conditions and

the market demand. However, if *ghee* of uniformly high quality, i.e. having good keeping quality and retaining all its nutritional factors, is to be produced throughout the country, it will be necessary to modify the methods to some degree. To understand why these modifications are necessary it would be best to understand first the various factors which may contribute to the spoilage of *ghee*.

Spoilage of ghee

A chemical examination of *ghee* reveals that it contains about twenty-two different fatty acids which are held in combination with glycerine. A fresh sample of *ghee* will not contain any free fatty acids. This combination can however be broken up fairly easily by giving favourable natural conditions during storage, e.g. presence of oxygen, light, moisture, etc. When this takes place *ghee* begins to go bad. The same result can be brought about artificially, for example, by the addition of any alkali when the acids are detached from glycerine and soaps are formed. Further, the process of decomposition is catalytic, i.e. once the decomposition has started the products of decomposition further help to decompose good *ghee*. It will, therefore, be readily understood that care must be exercised at every step and any neglect at one point may spoil the whole product. It is extremely difficult to arrest the decomposition process once it has started. Besides glycerine and fatty acids, *ghee* contains other valuable substances in minute quantities like carotene, Vitamin A, etc., which are important not only from the nutritive point of view but also because of their property of imparting additional stability to *ghee*. In *ghee* that is decomposing, these substances are destroyed or converted into entirely different products which do not have any useful purpose.

The spoilage in *ghee* may broadly be divided into two groups—(A) development of free fatty acids and (B) development of rancidity. Each of these will be discussed in detail below.

(A) *Development of free fatty acids in ghee*.—*Ghee* that is prepared under clean conditions and stored carefully will not have more than 0.2 to 0.5 per cent of free fatty acids, expressed as oleic acid. This ideal is seldom realized in market *ghee*. *Agmark* standards allow a free fatty acid content to the extent of 2.5 per cent. In spite of this liberal limit, market *ghee* samples often have an acidity of 8 to 10 per cent, and occasionally such high figures as 19 to 20 per cent oleic acid also been noted. It is doubtful if *ghee* with such degree of acidity should at all be classed as *ghee* and this state of affairs is a serve reflection on all concerned. This will become all the more impressive if it is realized that *vanspati*, a product that is considered much inferior to *ghee*; is allowed to have only 0.2 per cent of free fatty acids.

The main factors which contribute to the development of free fatty acids are undesirable micro-organisms, lipase and moisture.

Micro-organism: Certain types of micro-organisms are known to break up butter-fat rapidly. These organisms are not originally present in milk but gain access through atmospheric contamination, the use of unclean water, and unclean vessels. Having once got access to milk, curds or butter, they multiply very rapidly and secrete a substance called lipase, which is a fat-splitting enzyme. It is a common practice to use raw milk for preparing curds. This is most undesirable and accounts for nearly 50 per cent of the defects found in market *ghee*. If milk is boiled, i.e. brought to first boil and simmered for five minutes, it will destroy almost all the organisms. This milk, after cooling, should be inoculated with a good starter. A rough method of judging whether the starter is of desirable quality is to observe its consistency and flavour. Good starter, formed by the presence of lactic acid organisms, will be solid in consistency with the separation of little whey at the top of the whole mass. A bad starter will not be a solid mass, but will be in two layers, curd at the top and a thick layer of whey at the bottom, and will be full of gas

notes. A good starter added to milk brings about coagulation of milk by the development of lactic acid organisms. These organisms tend to preserve the curd against the intrusion of undesirable organisms from the atmosphere. If the milk is not boiled before curdling, there will be a large number of fat-splitting organisms and the lactic acid bacteria are unable to exercise their full prophylactic effect.

The usual type of containers used for storing milk and milk products are porous and these pores will serve as an ideal hiding place for bacteria. It is desirable that after cleaning the vessels with mud and rinsing with water, they should be sterilized by filling three-fourths with water and bringing to boil, preferably after covering the pot with a lid. Vessels not thus sterilized are a good source of contamination, especially when raw milk is kept for souring.

Lipase: The enzyme lipase is always present in milk and is known to be a great source of trouble to the dairy industry. It is soluble in *ghee* and hence if not destroyed will always be associated with *ghee* at all stages of production. The best and the easiest means of getting rid of lipase is to boil the milk as suggested. In unboiled milk this natural lipase is further augmented by the lipase produced by micro-organisms when very old or unclean culture is used for inoculating fresh milk.

Moisture: The presence of water or butter-milk increases the development of acidity in *ghee*. Butter should, therefore, be stored for as short an interval as possible. The presence of butter-milk also serves as a source for bacterial contamination. Compared to the presence of butter-milk, water alone is less harmful. It is, therefore, essential that butter should be given at least one and preferably two washings with clean water, especially of the butter is not be melted into *ghee* at once.

It will be noticed that butter made from raw milk curds develops acidity nearly two and a half times as rapidly as similar butter obtained from boiled milk curds. When this butter with initial high acidity is stored, there is a further development in the acidity. On the other hand butter made from boiled milk shows very little acidity. This shows that much harm is done by storing butter and it should be converted to *ghee* as early as possible.

As it is necessary to boil butter to *ghee* as rapidly as necessary, it is equally necessary not to store the curds for any length of time but quickly churn out the butter and convert the latter into *ghee*. With raw milk curds, the acidity in *ghee* keeps on rising the longer the curds are stored. Boiling milk initially safeguards against the development of acidity. *Ghee* of very low acidity is obtained even if for some reasons it is found necessary to keep the curds. Thus by using boiled milk a reasonable safeguard can be provided for obtaining a good *ghee* at the end.

(B) *Development of rancidity in ghee*.—Rancidity is quite a distinct phenomenon from development of acidity. A sample of *ghee* may have high rancidity but still will have low acidity. On the other hand a sample of high acid *ghee* is very likely to have high rancidity also. There are many factors which are responsible for the development of rancidity, the chief of which are air, light, heat and certain metals. Fats normally contain certain properties of resisting the onset of rancidity but once this resistance is destroyed rancidity will develop very rapidly. A sample of *ghee* with high acidity may pass unnoticed by taste and odour but development of rancidity even in initial stages, will be easily detected organoleptically. *Ghee* prepared under best conditions will develop rancidity if stored under bad conditions. *Ghee* should be kept away from air which contains oxygen. As far as possible use of porous pots should be avoided. Glazed pots, porcelain jars, aluminium pots, tinned containers are the best for storage. These containers are impervious both to air and light. When *ghee* is to be stored, the container should be filled right to the top so as not to leave a big air gap which will supply oxygen for the development of rancidity. Hot

ghee should not be left open exposed to air. Light is a very powerful agent in developing rancidity. Open *ghee* tins should not be kept exposed to light. The place where *ghee* is prepared or packed should be well-shaded. The action of light is rather persistent. The rancidity does not develop at once but once it has been initiated, though only in a very small measure, the *ghee* will go bad even though stored afterwards in closed containers. Certain metals act as powerful catalysts for the development of rancidity when present in very small quantities. Iron and copper are the chief amongst those which are likely to be encountered in everyday practice. Use of brass and bronze vessels which contain copper should be avoided not only for storing *ghee* but also for keeping milk which is to be used for preparing butter or *ghee*. If they are used, they should be heavily tinned. Tin cans with any rusty spots should not be used for storing *ghee* at any stage.

It will be noticed that *ghee* stored in glass bottles, glazed porcelain jars, tin cans and aluminium vessels keeps good for a long time without showing high rancidity. The use of such containers both under household and trade conditions is recommended. A word may be added about glass. Glass, apart from being fragile, allows light to pass through and hence its use should be discouraged.

Undesirable factors in actual practice

Having studied the theoretical causes of the spoilage of *ghee*, it may be well to enumerate here from actual practice instances wherein undesirable factors do come into play. In some parts of the country raw milk is regularly used and souring with undesirable strains of bacteria which break up *ghee* into free fatty acids. In these circumstances *ghee* is exposed to ideal conditions to go bad and develop high acidity. Curds are sometimes churned in naked brass pots. Brass contains copper which easily goes into solution under the influence of acid contained in curds and butter-milk. This copper, though in very minute quantity, will be carried along with the *ghee* at all the subsequent stages and enhance the rate of spoilage. If churning is carried out in the open, the butter may get contaminated with dust particles which may be carrying undesirable bacteria. Further, light is a very powerful agent in developing rancidity and when churning is done in the open, butter may be unduly exposed to light. The butter in many instances is not given any washing with water. The butter-milk carried along with the butter provides a very favourable source of infection and medium for the further development of micro-organisms. Butter should always be given one or two washings with clean water. Butter obtained should not be placed very near the kitchen fire as high temperature greatly reduces the keeping quality of the *ghee* prepared.

Butter is usually melted first into *kacha ghee*. This *ghee* contains quite a good deal of butter-milk. Such *ghee*, when stored in kerosene tins, which are usually old ones, starts attacking the tin. The iron that goes in solution induces greater spoilage than copper does. In many instances the tins are not properly covered. They are plugged either with rags or covered with dry banana leaves, etc. and thus *ghee* is freely exposed to the atmospheric oxygen. *Kacha ghee* is then passed on to the village merchants. The containers used for collection also suffer from the same defects as mentioned above. Further, this *kacha ghee* when it reaches the town merchants is stored for an indefinite time till required for the market. The practice of producing *kacha ghee* requires to be discouraged but, if at all it is produced, care should be taken to melt it and bring it up to the final stage as early as possible, i. e., within about a month. For remelting *kacha ghee*, the tins of *ghee* are kept round a fire to melt the contents which are stirred from time to time with a naked iron rod. The *ghee*, is usually transferred to iron *karais*. When the day's work is over, the normal practice is to wipe out the *karais* with old gunny bags. As a result, most of these vessels have a heavy lining of old *ghee* on which new *ghee* is poured. The refined *ghee* is packed in tins which are not quite

new. Sometimes in order to recover as much *ghee* as possible, the *ghee* residue is exposed to direct sunlight when, due to the heat of the sun, a little more *ghee* comes out. The *ghee* is mixed with the amount already collected. As explained, light is a powerful auto-catalyst and once the *ghee* is exposed to light the deterioration progresses readily even after the tins are filled.

The temperature to which *ghee* is exposed before final packing varies widely. In western India it is usually melted to 70° C. and then allowed to settle for about two hours. By this process most of the moisture and other impurities will be removed. If carefully carried out, this method will no doubt give good *ghee*; and it has the added advantage of imparting lactic flavour which is liked by certain classes of people. In other parts of the country *ghee* is melted to much higher temperatures ranging from 100° to 120° C. The process of heating must be carried out slowly so as to give time for moisture to escape and the temperature should not be raised too suddenly. Sometimes it happens that heating is carried out to an excessive degree, temperature going up as high as 150° C. This is very undesirable because *ghee* loses its vitamin A content very rapidly when the temperature goes above 120° C. At 120° C. the residue at the bottom, which is composed of casein, will just begin to go brown but it should not become dark brown.

Methods of obtaining good *ghee*

We shall now proceed to describe how good *ghee* can be obtained by different methods. As maintained before each method is capable of giving good *ghee* and should be selected as per facilities available. Special features of each method will be described under each method.

Desi Method:—The recovery of *ghee* by this method is not good. As high as 15 per cent of butter-fat may be left in the butter-milk. This is the most widely followed process and if the butter-milk that is produced is consumed entirely by the producers, it cannot be considered as loss. All the appliances are procurable under village conditions and the method yields a by-product the disposal of which is not a problem. This method is ideally suited for small producers but cannot be applied on a factory scale.

Milk to be used for the preparation of *ghee* should be brought to boil and simmered for five minutes. The vessel used should be clean and if mud pots are used, they should be sterilized by boiling water in them. Naked brass and bronze vessels should not be used. After the milk is cooled, a little of a good quality *dahi* should be added and the milk allowed to curdle. For getting this seed culture it is preferable not to use previous samples of *dahi* or butter-milk, but a small quantity of *dahi* should be prepared in another vessel using only boiled milk. When adding the seed care should be taken that it is compact and has agreeable odour. If there is a separation of whey at the bottom or there are gas holes, this culture should be discarded.

After allowing the curd to stand for say 24 hours, it should be churned, either in the same vessel or by transferring it to a larger vessel with the desired amount of clean water. This vessel should also be cleaned as described above. The paddles used for churning should be made from good wood and should not contain any nails or other iron connection. Butter-milk will easily take up minute quantities of metals which will react adversely on the keeping quality of *ghee*. The churning should be carried out in shade, avoiding direct sunlight as far as possible. Preferably the ground where churning is carried out should be watered to avoid contamination with dust.

The butter should not be over-churned and when ready should be given one or two washings with clean and cold water. It is advisable to convert this butter at once into *ghee*. If for some reason this cannot be done, the butter should be dipped

in clean cold water and preserved in a closed vessel. The water should be changed at least once in a day. The storage period should not exceed three days at the most.

For melting butter into *ghee* a clean vessel should be selected. The stirrer should be either of aluminium or some tinned metal. It is preferable to make *pucca ghee* at once, instead of first making *kacha ghee*, and further heating it later. When it is not desired to make *pucca ghee*, butter after melting should be allowed to stand sufficiently long to allow *ghee* to separate out. When transferring *ghee* to the vessel in which it is to be stored, care should be taken not to allow any bottom aqueous layer to pass. *Ghee* should be stored in good tins, aluminium vessels or tinned brass vessels with good lids and kept in a cool place. As far as possible the vessel should be filled right to the top to give as little air space as possible. If *ghee* is required for daily use, the required quantity that will last for three or four days should be taken out in a smaller container so that the whole bulk of *ghee* does not come in contact with air often.

Sometimes *ghee* is not directly made into *pukka* for the fear that it will lose its flavour before it is sold. This is quite true if during storage *ghee* is exposed to air, rusty spots and other destructive agencies. *Ghee* that is well-prepared and carefully stored can be preserved without any fear of rapid deterioration. Containers, in which *ghee* is stored, should not be exposed to direct sunlight.

Creamery butter method :—This method is adoptable under factory conditions because the volume of products to be dealt with is small. To recover *ghee* from 100 lb. of milk containing 5 per cent fat, only 12 lb. of cream will have to be handled, whilst in the *desi* method all the 100 lb. of milk will require to be stored. The method requires special appliances like a cream separator, a butter churn, butter worker, etc. It can thus be adopted by moderately big producers and it is expected that the process will be carried out under more hygienic conditions as all the necessary facilities are available. The process yields separated milk as a by-product. This is not relished to the same extent as butter-milk by human beings. Sometimes it is given to cattle but it is also very often wasted. This separated milk contains two valuable constituents of considerable commercial value, viz. casein and lactose. Casein is sometimes recovered but the method used is so crude that the sale of the product obtained barely covers the cost of production. Lactose is not recovered. The advantage of the creamery butter process will only become evident when people learn to utilize the separated milk properly.

Fresh milk should be used for separation. For maximum efficiency the temperature of the milk should be near about that of the animal body (110°F.). The cream screw should be so adjusted as to give about 40 per cent fat in the cream. This fresh cream should be pasteurized by heating it to 145° to 160°F. and holding it at that temperature for 30 minutes and afterwards cooling it to below 45°F. ; or heating it to 180°F. or above for five seconds and then quickly cooling it to 45°F. Pasteurization ensures complete destruction of all undesirable micro-organisms, thus assuring a better keeping quality both for butter and *ghee*. This cream is inoculated with a clean healthy starter as mentioned under the *desi* method and allowed to ripen for about 12 hours at 40 to 50°F. The cream is churned after diluting to the desired consistency. The butter obtained is given two washings with clean water. Over-churning and over-working should be avoided as they tend to make butter soft and 'greasy'. If cold water is used, butter with a moisture content of 16 per cent can easily be obtained. Butter to be used for making *ghee* should not be salted.

Butter obtained should be melted into *ghse* as outlined under the *desi* method above.

Cream ghee: The preparation of butter by the creamery process and then melting it to *ghee* is a lengthy process requiring extra equipment and labour. The process can be shortened, reducing the cost of production at the same time, by directly heating cream to obtain *ghee*. The method then becomes greatly simplified and can be used even by small individual producers. *Ghee* of good quality is obtained and the process may be adopted both for small and large scale production. As cream is directly melted into *ghee*, the chances of its contact with water, etc., are considerably reduced enhancing the quality thereby.

Fresh milk is separated in a cream separator adjusted to give high percentage of fat (at least 60 per cent). For ease of separation milk is heated to about 100° F. before passing through the separator. The cream obtained is diluted with twice the amount of clean water and re-separated. This re-separation helps to remove most of the casein and other impurities. This process facilitates quicker separation of the fat and also minimizes the loss of *ghee* by reducing the quantity of *matha*. The cream obtained is inoculated with a good culture and soured for 6 to 8 hours at a temperature of about 50° F. The cream is then melted into *ghee* as outlined under the *desi* method described before.

To obtain *ghes* naturally more fuel will be required but this increase in cost will be amply compensated by saving in the cost of equipment, labour charges and improved quality of *ghes*. When heating cream, the vessel used should be bigger than that normally used for melting butter as there is a tendency to foam. Heating should be carried out on a steady, nonsmoky fire, with frequent stirring.

Blending of ghee: Almost all the *ghee* that is produced under village conditions is brought to urban centres and blended. This is carried out with a view to attain three objectives: (a) to get rid of any impurity in *kacha ghee*, (b) to obtain *ghee* of a uniform quality acceptable to local market conditions and conforming to local legal specifications, and (c) to repack loose *ghee* in proper tins.

This type of work is naturally carried out by merchants with substantial means. Still it is regrettable that in most cases the work is carried out under very crude conditions and leaves scope for much improvement. The packing centres are housed in old buildings sometimes without a proper roof. Melting is carried out in big iron *karais* which are not tinned, nor cleaned with soda and water at the completion of each day's work. When the day's work is over, these are left uncovered and in the morning just wiped with some old gunny bags. When *ghee* is put in, these *karais* are never covered but are left open exposed to light with every possibility of being contaminated with dust. Bare hands are freely dipped in *ghee* to judge the temperature. Persons attending to this work are not provided with clean clothes and the nature of the work is such that clothes get soiled easily.

The tins used for packing *ghee* are not always new. They are usually used *ghee* or *vanaspati* tins which are not given a thorough washing with soda and water. After *ghee* is transferred to these, they are left overnight in the open to cool slowly.

It is thus evident that there is a considerable scope for improvement in our present methods of handling *ghee*. What is important for the *ghee* merchants is to realize that they are dealing with a very delicate product which can meet certain nutritional requirements of the nation if elementary care is exercised. It is no exaggeration to state that at present the public at large is very sceptical about the quality of market *ghee* and if this state of affairs continues they will look more and more to other sources for fats. *Ghee* is sold at a high cost and naturally the public expects it to be superior to other fats like vegetable oils and *vanaspathi*. Hence every special effort should be made to carry out blending with the best quality of raw *ghee* under most hygienic conditions.

It should be insisted that *kacha ghee* also should be brought only in new tins. This *ghee* should be melted and packed for market without delay. The refining should be carried out in a specially constructed building with cement roof and floor and inlaid with white tiles on the sides. Every care should be taken to exclude flies. The room should be well ventilated and sufficiently lighted without any sunlight entering in directly. The vessels used for melting *ghee* should be heavily tinned. For melting it is better to use steam-jacketed pans with lids. If *ghee* is to be refined by the sedimentation process, the vessels used for melting should be preferably of a cylindrical shape with a tap about six inches away from the bottom. After melting, *ghee* should be maintained for 2 to 3 hours at 60° C. to allow all moisture to settle out. If *ghee* is recovered by the boiling process, shallower pans will be more convenient as they allow the moisture to escape rapidly. The temperature of boiling should never exceed 115° C. A tap should be provided three inches away from the bottom; and the residue settles down below this level when the *ghee* is allowed to cool. This *ghee* should be then filled directly into new tins which have been given a good washing with soda and water. After filling the tins to a height of about six-eighths, loose lids should be put and the mass allowed to cool down over-night. Next day fresh *ghee* should be added to fill the tins completely and then they should be soldered. These tins should then be stored in a cool place. It is advisable to have special rooms for this purpose which can be maintained at a lower temperature. The present practice of marketing *ghee* only in bulk packings should be extended by the use of smaller packs so that *ghee* is not sold loose and is thus protected completely from the time it leaves the refinery till it reaches the consumers. As a means of guiding the public it would be better if the *ghee* trade by common consent uses tins of a particular shape, say rectangular, which may be easily distinguished from the tins used for selling other edible fats.

In India there are a few refineries which do tend to approach the ideal conditions laid down above. What is now required is the multiplication of such places all over the country. It is hoped that at no distant future, before licensing a *ghee* packing station, it will be insisted that it fulfils certain minimum requirements.

By the use of seaming machines any possibility of hand contact is avoided. Now-a-days cheap small hand seaming machines are available which can be used for packing tins of smaller sizes. The system of heating cream of butter under vacuum to obtain *ghee* has recently been developed in New Zealand and Australia and the process can be applied under Indian conditions without any difficulty. It is desirable to develop factory method of producing *ghee*, starting from the initial cream or even milk stage. This alone will ensure an uniformly high quality for the product and incidentally lower the cost of production.

From the text it will be evident that the preparation of good *ghee* does not require very special skill. Use of plain common sense will solve nearly half the troubles encountered at present before *ghee* is finally put on the market. The first essential is cleanliness in the method of preparation and storage. The second essential is protection against the destructive action of air, light, water and micro-organisms. Both these can be achieved by simple means as explained before if everybody concerned is willing to play his or her part. Every care should be taken in the preparation of a product like *ghee*, which is so highly prized by all consumers and which gives good returns to the producers. Preparation of good *ghee* is so simple that the same results can be obtained both by small producers as well as large scale factory owners.

When describing the methods of preparation of *ghee*, a word about its adulteration will not be out of place. Natural *ghee* no doubt varies a great deal in its composition and hence people are tempted to resort to adulteration. The methods of detecting adulteration have now been so perfected that adulteration even with 5 per cent of vegetable oils and *vanaspati* can easily be detected. With such

sensitive methods available for detection any resort to malpractices undermines the confidence of the public and should never be resorted to.

In the past great importance has been attached to such physical properties as grain structure or colour or flavour of *ghee*. These properties have no doubt their value of giving a quick indication of the quality but they should never be regarded as the sole criteria, as they are subject to artificial manipulation. *Ghee* enjoys superiority over most of the other natural fats because of its vitamin A and carotene content. In no other respect has *ghee* been proved to be superior to other common edible fats. Hence, it is to be expected that *ghee* coming to the market and when delivered to the consumers should have a maximum quantity of vitamin A content. Unfortunately our present legal standards do not take into account this important nutritive property of *ghee*, but it is suggested that the *ghee* trade itself should take a lead in the matter to assure the consumers the quantity of their product. A minimum quantity of vitamin that should be present in *ghee* should be laid down. The presence of natural vitamin A will also assure that the *ghee* has been prepared and stored under proper conditions and is fresh. Now-a-days artificial products like margarine are expected to contain a specified amount of vitamins A and D and so the above proposal cannot be regarded as too severe. On the other hand most of the samples of *ghee* bought in the market hardly contain any vitamin A.

It has also been reported that the development of acidity in *ghee* is a controllable factor. There is, therefore no justification for any high acid *ghee* appearing on the market. It is preferable that normally *ghee* should not contain more than 1 per cent oleic acid, but in exceptional cases this may be extended to 2 per cent. The present tendency of allowing a liberal margin for free fatty acids is to be deprecated: there is no justification for such lax standards.

The composition of *ghee* can be varied by several factors. The most important of these in feed. By adjusting the quantity and quality of food of the animals, *ghee* of any desired consistency can be produced. It is well-known that during certain seasons of the year *ghee* produced in certain areas shows wide fluctuations in composition. This is attributable to feed. It is customary to feed oilseeds or oil-cakes when available in very excessive amounts and this upsets the normal composition of secreted fat. *Ghee* obtained from such sources fails to come up to legal specifications and as a remedy it is customary to allow special grades for different areas. This opens up possibilities of adulteration by unscrupulous dealers. The best course would be to teach the primary producers to balance the feed given to the cattle all round the year. Then only *ghee* of uniform quality will be produced without any difficulty. If *ghee* below standard legal specifications is produced, it would be in the interest of everybody concerned to restrict its sale to the particular area of production. It would be best, however, to undertake all measures to avoid the production of such *ghee*.

Finally, 'dos' and 'don'ts' about good *ghee* production are summarized below:

1. Use only boiled milk;
2. Use clean vessels for storing milk, butter and *ghee*;
3. Use a clean, healthy starter;
4. Always wash the butter with clean water to remove butter-milk;
5. Do not make *kacha ghee*. Remove all moisture from *ghee* before storing;
6. Store *ghee* in new tins porcelain jars or aluminium containers;
7. Do not use naked iron vessels for heating *ghee*;
8. Do not leave a big air-gap in the container when storing *ghee*;
9. Do not expose *ghee* to direct sunlight;
10. Keep *ghee* containers tightly sealed;
11. Where possible, make *ghee* directly from cream;
12. Do not adulterate your *ghee*. It can be easily detected. You will be the loser in the long run;
13. Make the best possible *ghee*. Science is at your service and make the best use of what knowledge is already available.

—Indian Farming, July 1948.

PRODUCTION OF GHEE IN INDIA—PROBLEMS OF PRICE AND GRADING

Report of the Directorate of Marketing and Inspection, Government of India.

The annual production of ghee in India is estimated at over 5 lakh tons valued at Rs. 77 crores [calculated at a flat rate of Rs. 55 per maund (1940)]. Of this quantity nearly 62 per cent is produced in Indian Provinces and the balance in States. In order of importance the main ghee producing areas are the Punjab, U. P., Madras and Bihar which account for 15.7, 13.8, 9.8 and 5.4 per cent of the total production respectively. Thus 3/5ths of the ghee production is concentrated in Northern and Western India and the remaining two-fifths is scattered in the rest of the country. Taking the country as a whole India produces 8.9 maunds of ghee per square mile, 21.4 maunds per village, and 3.6 maunds for hundred persons. The annual per capita consumption of ghee in India is highest in Gwalior and Sind with 15.5 and 11.2 seers respectively and lowest in Hyderabad and Bengal with 1.1 and 1.3 seers respectively.

Of the total ghee production nearly 30 per cent is retained by the producers for domestic consumption and 70 per cent is marketed. These percentages, however, vary from tract to tract, depending upon various factors like the type and status of the producer, proximity to a ghee market, kind of diet in a tract.

India imports about 66,000 maunds of ghee mostly by land-frontier routes from Nepal, but the trend of imports has, during the past few years, shown a slight downward tendency.

India also exported about 66,000 maunds valued at a little over Rs. 30 lakhs mainly to the Straits Settlements, Burma, Federated Malay States and to Africa. It is stated that there are possibilities of expanding the export market for ghee when normal conditions return. But this should be encouraged when present production is increased to a level beyond self-sufficiency and only graded ghee of good quality should be exported.

The quality of ghee and its prices vary widely. The latter depends on the physical characteristics of the product, its purity, type, grade, variety and intensity of demand, but by far the most important factor affecting price is purity.

Even before the commencement of the war prices of ghee showed a steady, upward tendency but in 1943 the prices registered in some cases, a 100 per cent rise over the 1938 prices. This increase was in sympathy with a general rise in the prices of food articles as a result of abnormal conditions created by the war.

To enable consumers to obtain supplies of pure ghee the Directorate of Marketing and Inspection inaugurated its 'Agmark' scheme in 1937 which has progressed steadily. In 1944 the total number of grading stations in the country was 59 and the total value of the ghee graded was Rs. 5,70,00,000 as against Rs. 15,00,000 in 1938. Even so only 4.5 per cent of the marketable surplus is agmarked. To be of greater benefit to producers, grading should be undertaken on a co-operative basis. Some of the other main recommendations are :

1. The production and consumption of ghee should be accelerated by increasing milk production and by the introduction of improved methods of milk fat extraction under village conditions.

2. The units of sale should be standardised by a rigid enforcement of the Weights and Measures Act.

3. A regular system of controlling ghee markets should be introduced by the establishment of Regulated Markets and cheap credit facilities should be provided to producers by organising co-operative ghee sale societies.

4. To ensure uniformity in the different provinces in the enforcement of food control laws, Provincial Government should promote central legislation for the hygienic control of food production distribution and sale.

CO-OPERATIVE SOCIETIES AT WORK IN INDIA

CO-OPERATION IN MYSORE—1947

A Note by the Co-operative Department.

Introductory.—The co-operative movement was started in Mysore in 1905. The movement began with the aim of providing credit to the agriculturists, as credit then was, and still is, the pressing need of the bulk of people. The business habits gained in co-operative credit societies provided the training for other forms of co-operation. Co-operation was successfully applied to non-credit business and was recognised as being a potent instrument for agricultural and industrial progress.

There are at present 2,549 co-operative societies in the State with a total membership of 2,26,596 and a total working capital of Rs. 3,68,88,094. Of these 4 are Central Co-operative Banks, 75 Land Mortgage Banks, 46 Marketing Societies, 27 Agricultural Supply Societies, 29 Housing Societies and 151 Consumers' Societies. As many as 430 Credit Societies both in urban and rural areas also undertook stores work.

Land Mortgage Credit.—In April 1928 Government sanctioned the establishment of the Mysore Central Land Mortgage Bank as a Provincial institution independent of the Mysore Provincial Co-operative Apex Bank. The working of the Bank has been satisfactory from the beginning. Its sphere of operation has expanded practically over the whole State through 75 Primary Land Mortgage Co-operative Societies, which are affiliated to it, and it has sanctioned long term loans in 3,874 cases to the extent of Rs. 45,56,422 from the inception of business. As it is not the object of helping the proprietors of big estates who raise commercial crops for which more capital is required the maximum credit limit for an individual who borrows from Land Mortgage Societies is fixed at Rs. 10,000. The Bank has not found much difficulty in obtaining money for its task; its debentures floated already in 8 separate series are all taken up at a premium. The total debenture borrowings of the Bank amount to Rs. 29,18,800.

Co-operative Marketing.—The Malnad Areca Marketing Co-operative Society of Shimoga, The Cardamum Co-operative Society and the Bee-keepers' Co-operative Society of Saklespur, The Cocomanut and Copra Marketing Co-operative Society and the Cotton Marketing Co-operative Society of Arsikere call for special mention as they are positively helpful to the producers and minimise the evil effects of the local middlemen's practices, such as the manipulation of scales, weights and measures, charging for services of brokers and agents arbitrarily, deducting moneys towards contribution in the name of charity, religious functions etc., taking large 'samples' of produce which is neither returned nor paid for, and creation of circumstances perpetuating the growers' bondage. The Paddy Marketing Societies which have temporarily ceased to function during the last few years owing to the Government monopoly in respect of procurement are expected to prosper as soon as the restrictions are removed. The Mysore Provincial Marketing Co-operative Society, which is of recent origin, has been serving as a link, to the existing marketing societies and also consumers' societies. It also caters to the needs of the consumers' societies by procuring wholesale consignment even from outside the State. It made timely supplies of coffee seeds and pulses to several consumer societies. It is also intended to serve as a clearing house and an intelligence bureau so as to ensure proper returns to producers and to explore possibilities of wider marketing both inside and outside the State. It made purchases to the extent of Rs. 4,58,322 last year and effected sales to a total extent of Rs. 5,83,657.

Multipurpose Activities.—At present, many of the rural credit societies have combined non-credit activities such as the distribution of rationed and non-rationed articles and the sale of agricultural implements and iron materials with their credit business. 27 societies supply agricultural implements to the villagers. As these societies were scattered, the feasibility of having the implements and manure distributed through the Hobli Headquarters Societies was thought of in consultation with the Director of Agriculture and the proposal submitted to Government regarding the transference of Agricultural Depot work to Taluk Headquarters Co-operative Societies has since been sanctioned. The Hobli Headquarters Societies will be provided with facilities to draw their supplies from the Taluk Headquarters Societies on indents and distribute them to the inhabitants of the villages. The transference is being effected and the details of the methods of work and of accounting have since been worked out. This co-ordinated programme in the sale of the agriculturists' requirements through co-operative societies is also expected to serve as an aid in the expansion of the activities of rural societies in supplying all the requirements of members, such as credit, articles of consumption, agricultural implements, artizan's appliances and raw materials, besides arranging for the sale of agricultural produce. A scheme has been prepared and submitted to Government for reorganising the rural movement by the formation of multipurpose societies—one for each hobli, federated into Taluk Societies, which are in turn federated to District Wholesales. This is under the consideration of Government.

Rural Development Work.—Intensive work is being done in the hoblis selected for rural development with a view to improving rural credit and creating facilities for marketing of agricultural produce. Land Mortgage Scheme is being made more popular and the credit societies are also being induced to render assistance to members in arranging for the collective sale of their produce by elimination of middle-men. There are 1,098 societies in the selected hoblis with a total working capital of Rs. 36,66,540.

Small Savings Scheme.—The Small Savings Scheme, sanctioned in February 1944, was given effect to in August 1944. Wide publicity about the importance and benefits of the scheme is given by displaying attractive coloured posters in places of public resort and putting up printed boards at 22 important railway stations on the Mysore State Railway. About 40 slides advertising the scheme are being displayed in 40 selected cinema houses in the State.



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