

PRODUCTION AND MARKETING OF MILK AND MILK PRODUCTS

IN

UNITED KINGDOM AND WESTERN EUROPE

WITH SPECIAL REFERENCE TO CO-OPERATIVE METHODS

AND THEIR APPLICATION UNDER INDIAN CONDITIONS.

A thesis submitted in fulfilment of the
requirements for the Degree of Doctor of Philosophy
in the Faculty of Science of the University of Glasgow.

The West of Scotland
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Glasgow.

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I N T R O D U C T I O N

I N T R O D U C T I O N

Milk has been termed the "most nearly perfect food" by nutrition experts all over the world. Although it has been used as human food from time immemorial, its high nutrition value has only been recognised and demonstrated comparatively recently by the scientific researches which have shown the importance of milk in human diet. Such experiments have been conducted on a large scale, especially in Great Britain and the U.S.A., and the essence of all of them can be summed up in the words of Sir George Newman (1) "The peculiar importance attached to milk as an item of daily diet lies in its capacity for making good and restoring the balance of the various essential constituents required for adequate nourishment which is so often upset by ignorance or prejudice, or by actual restriction in the matter of choice".

In addition to the general nutritional value of milk, its special importance lies in its ability to provide the "complete proteins" which have been proved to be indispensable for growth and maintenance in human nutrition. The other proteins of animal origin, e.g. those obtained from meat are also 'complete', but cereal and plant proteins are, in general, less complete than these, and therefore

/their

their absence can give rise to a grave deficiency in human diet. It is considered essential that at least one-third of total protein requirements should be provided in the form of animal proteins, e.g. either from milk or meat. From this single nutritional viewpoint, the value of milk is greatly enhanced in considering vegetarian diets which, if milk be absent, are markedly out of balance.

Thus the inclusion of milk in the diet of the Indian people, the majority of whom are vegetarians - chiefly due to religious belief - becomes of great importance if the ill effects of an unbalanced carbohydrate diet chiefly made up of cereals are to be avoided. It can be said that the Indian vegetarian diet - deficient in "complete proteins" due to insufficient milk - is one of the main causes of the poor growth and health of the Indian people when compared to western nations. It will be shown later that the consumption of milk and milk products in India is very low - compared to western European standards - and that the need to increase this is apparent. Wright (2), considering all the material available on this subject, came to the conclusion that according to existing dietary standards, the production of milk in India should be doubled in order to meet at least the minimum requirements for the maintenance of satisfactory growth and health of the people.

The importance of milk has been all the more
/apparent

apparent during the post-war period of shortage in food supply throughout the world and this was fully recognised when the United Nations Conference on Food and Agriculture, at Hot Springs, in 1943, recommended that the production of nutritionally desirable foods (among which milk is the outstanding example) which can be obtained from elsewhere only with difficulty, or not at all, is a special obligation of the home agriculture of every country.

The problem of milk and its use does not end with the achievement of an increase in production. With it are intimately connected the important problems of the marketing of milk which cover not only a planned increase in production but a careful planning as to the ultimate utilization of milk produced for human consumption either in the form of liquid milk or as manufactured products. Again, in countries where more milk is produced than can be consumed by the home market, problems of the export of manufactured milk products have to be faced. Often in such cases the milk industry of a country - exporter or importer of milk products - is vitally affected by the prevailing conditions - economic and political - in other countries. All these problems are of comparatively recent origin and have been tackled in different ways in various countries.

In Great Britain, which is the most important dairy produce importing country, the nature of the milk

/problem

problem has been widely different from that in exporting countries such as Denmark; a greater emphasis having been placed on the utilization of milk in liquid form; the required milk products being mostly imported. Over the years the problems of marketing home-produced milk in liquid form became more acute requiring a greater degree of organization. In other European countries too, where the dairy industry has been of considerable importance in the agricultural economy for the past eighty years, several developments have been effected in the organisation and marketing methods which have been instrumental in placing the dairy industry in these countries in a high state of economic development.

In many of these countries the development of the dairy industry has, to a large measure, been achieved by the application of co-operative methods whereby individual producers - in small units as they generally are - have co-operated for the combined handling of milk for manufacture into milk products and their subsequent marketing at home or abroad. Simultaneously with these have proceeded other co-operative efforts to increase the efficiency of milk production by applying new scientific developments. The extent of the application of these methods in different countries has varied considerably according to their particular circumstances. Thus in some countries, while

/development

development has been achieved by completely voluntary co-operation of producers, in others, State assistance had to be given to foster this in the national interest. The intervention of two world wars and other economic upheavals during the inter-war periods have greatly effected the character of the co-operative developments in these countries, necessitating a greater measure of State intervention, which in itself was a measure of recognition of the importance of dairying.

On the other hand, in India, the importance of the dairy industry - in spite of its absolute necessity there, not only from a nutritional viewpoint but also from its great importance for the agricultural economy - has not yet been so recognised, and compared to Great Britain, the whole industry is still in a very backward stage. Now that the value of milk in human nutrition and its importance in all agricultural economy is being increasingly realized, India also is anxious to make available an adequate supply of milk to her very large population, an object, which if achieved, will confer incalculable benefits on present and future generations. But this is not possible under the present conditions of the Indian dairy industry which according to Pepperall (3) "is to-day being asked to accept the burden of supplying milk on the basis of Twentieth Century nutritional requirements, when, judged by European /standards

standards, it will hardly have passed the Sixteenth Century stage of development".

Can this object be achieved? Is it possible for the Indian dairy industry to be developed rapidly from a "Sixteenth Century standard" to satisfy "Twentieth Century nutritional requirements?" And if so, how can such a reorganisation be effected in the shortest possible time with the minimum of expense? These are the vitally important questions which have prompted this present study of the dairy industry of the United Kingdom and the western European countries where such developments have already been marked and where the dairy industry to-day is in a position to provide fairly adequately for the nutritional needs of the inhabitants of the respective countries.

The study presented contains information gained on the development and present organisation of the dairy industries in the United Kingdom, Eire, Denmark, Sweden, Norway, the Netherlands, and Switzerland. Throughout, the field of study has been restricted largely to the part played by co-operative organisation and State-fostered Schemes in the marketing and distribution of dairy produce. With these definite limits in mind, the production side of dairying has been considered to only a very minor extent and limited to the developments having a direct bearing on increasing the efficiency of milk production by the co-operative

effort of producers.

The investigation involved study of the existing literature on the dairy industries in these countries and this was supplemented by a personal visit to Eire and the western European countries. In addition to considerable travelling in the United Kingdom, two successive summers were spent in visiting Eire and western Europe and co-operative methods of production and marketing were studied at first hand. A list of the various organisations visited has been given in Appendix . Throughout, the main object was to pay special attention to methods which might profitably be applied, after due modifications, to the Indian dairy industry with which the writer is familiar from personal experience. Finally, with this knowledge of British and European organisation, a plan has been put forward for the reorganisation of dairying in India.

The study has been divided into three parts:-

Part I. The Dairy Industry in the United Kingdom.

This deals with the development of the Dairy Industry in Britain and a detailed study has been made of the organisation and marketing methods of the Milk Marketing Boards.

/Part II.

Part II. Co-operative Methods of Production and Marketing of Milk and Milk Products in Western Europe.

In this part the important aspects of co-operative dairying in Denmark, Eire, Sweden, Norway, the Netherlands and Switzerland have been examined and discussed.

Part III. Application of Co-operative Methods of Dairying under Indian conditions.

A brief description of the present day Indian dairy industry is followed by a plan of reorganisation by the application of co-operative methods.

P A R T I.

DEVELOPMENT OF DAIRY INDUSTRY

IN

THE UNITED KINGDOM.

Chapter I.

Development of Milk Marketing in Great Britain

The British dairy industry, at present, is essentially catering for the demand for milk for liquid consumption. Although it has not always been so, for a considerable time the major portion of the milk produced in Britain has been utilized for this purpose and large quantities of milk products, e.g. butter, cheese, have been imported from other countries. Thus in 1921, when the total milk production in Great Britain was 1,220 million gallons (excluding milk used for calf rearing), an even greater quantity (i.e. estimated equivalent quantity of milk as represented by imported milk products) of 1,470 million gallons was imported (4), and the total home production of milk and dairy products represented only 45% of total consumption. In 1939, over 68% of the total production of milk was used for liquid consumption, and since then, during and after the war, this proportion has kept on increasing, so that at present more than 90% is utilized for liquid consumption and even this is not sufficient to satisfy the liquid milk requirements.

The milk trade in its present form and dimensions is an essentially modern development and is almost entirely the result of changes in the dietary of the people and the rapid growth of towns and cities during the last century.

It is interesting to note how different were the milk marketing methods in this country about a hundred years ago. (It will be shown in the section on the marketing of milk in India how the present methods there closely resemble those in Britain at an earlier stage of development).

Until transport by the railway developed, any trade in milk such as is shown in the present highly organised state of the industry was clearly impossible. Supplies could only be obtained from farms within driving distance (by horse transport) of consuming centres, or, more frequently from stall-fed cows kept in "town dairies". As recently as 1865, for example, it is estimated that there were 40,000 cows kept on this system in London alone, while one large owner in the north of the metropolis is known to have kept a herd of 1,000. (5) Indeed, until the beginning of the present century, nearly all fresh milk passed direct from the cow-keeper to the consumer, or passed through the hands of a single distributor who bought from the producer and retailed direct to the consumer.

The problems of the dairy industry in Britain have been largely concerned with the marketing of liquid milk and all developments have been directed to achieve an efficient milk marketing system. But however important as the home liquid milk market has been, it has always been greatly affected by the large quantities of imported

milk products and it will presently be shown the effects which this had had and how the marketing systems have been designed to cope with this aspect of the problem. It may be said, without doubt, that the Milk Marketing System in Britain of to-day, in its highly developed form, shows the highest degree of organisation among the European countries studied. It is the purpose of this section to examine how this has been achieved.

MILK MARKETING IN GREAT BRITAIN BEFORE 1923:

There was practically no organised milk marketing in Great Britain before the first world war (1914 - 18). Arrangements for purchase and sale of milk were made individually by the distributors with individual producers who agreed to supply their production of milk generally for a period of six months (October to March or April to September). Such producers often found it difficult to obtain a buyer for the summer months, on account of the summer flush of production and had to dispose of their production at very low prices, thus bringing about a general price decline. "It was usual for the milk to be bought at a flat price, irrespective of whether it was to be consumed liquid or manufactured" (6). This was possible as there was then much less disparity between the value of milk for liquid consumption and for manufacturing purposes. Although the wholesale price of milk (paid to the producer) was higher in winter than in summer "it was customary for milk to be retailed at the same price all the year round" (7). The distributor thus obtained higher profits in summer than in winter and equalized the price of milk for retail sale throughout the year.

Soon after the commencement of the war important changes in the pricing policy had to be made by the

/Distributors

Distributors. Due to the general rise in price levels and increased costs of labour and feeding stuffs, there was a considerable increase in the cost of producing milk. The distributors now had to pay much higher prices for the winter supplies and it became increasingly difficult to maintain the customary practice of retailing milk at a uniform price throughout the year. Costs of milk processing and distribution were also rising. There was a large number of firms engaged in milk distribution and it was thought that considerable economies could be brought about by eliminating competition between the distributors. This resulted, in 1915, in the formation of United Dairies Ltd., into which merged many of the then existing firms in the London Area. By this arrangement a greater proportion of London's milk supply came under the control of one organisation. This combine and other larger wholesale firms, by means of their factories and milk Collecting Depots in the country occupied a position whereby they balanced supplies throughout the seasons and thus exercised a very considerable control over the milk markets and prices. Producers, however, did not have any organisation which could exercise any influence in determining prices with these organised and large distributors.

War conditions, however, necessitated Government

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intervention, and acting upon the recommendation of the Astor Committee, which was appointed to investigate the problems of milk production and distribution, the Ministry of Food adopted a temporary measure of control by taking over about 800 wholesale firms. The Government fixed different retail prices for summer and winter months; and also the maximum distributive margins for the various sections of the Trade, thus protecting the legitimate interests of the producers, distributors and consumers alike. The Astor Committee had also proposed that the State should have the option to purchase these firms and become the Sole wholesaler of milk in the country. This, however, did not take place and after the termination of war, the controls affecting the milk industry were withdrawn in January 1920. The most important effect of the controls during the war years was to demonstrate most forcibly the advantages of unified action in the marketing of milk. The advantages of fixed prices and margins were beneficial to all sections of the trade, and these could not be obtained, if the industry reverted to the individualistic basis on which it had been conducted before the war.

The lifting of controls in 1920, had an adverse effect on prices, which declined sharply. But as the Wholesale Distributing trade was now in a better position to

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buy collectively, the balance of bargaining power was more definitely than ever in the purchasers' favour and hence it was the producer who had to suffer most by these falling prices.

During the period 1920 - 22 several meetings were held between the National Farmers' Union (representing milk producers) and the National Federation of Dairymen's Associations (representing distributors) to consider prices and conditions for sale of milk, but no agreement could be reached. The main intention of producers was to establish and operate a system of collective bargaining, such as had been in a successful operation in some parts of the United States of America. With this object in view a delegation of producers and distributors visited U.S.A.; and it was on their recommendations that the future of organised milk marketing in this country was based.

MILK MARKETING FROM 1922 TO 1933:

A Permanent Joint Milk Committee was established in 1922, composed of representatives of producers and purchasers of milk. It was to be the function of this Committee to fix the prices and conditions for purchase and sale of milk. Milk producers were represented through the medium of the National Farmers' Union and the milk distributors were represented by the various associations formed to promote their general trade interests: These included (i) the National Federation of Dairymen's Associations composed of local associations throughout the country - the membership consisting of distributors with interests ranging from those of small producer-retailers to those of larger wholesaling and retailing firms; (ii) the Amalgamated Master Dairymen Ltd., which was composed mainly of retailers who purchased their exact requirements of milk either direct from farmers or from larger wholesale firms; (iii) the National Association of Creamery Proprietors and Wholesale Dairymen (Inc.) which represented manufacturing interests. The Milk Trade Section of the consumers' cooperative movement was also represented - as the National Cooperative Milk Trade Association - after 1929. This Permanent Joint Milk Committee was more especially for London Area. In other large centres there were Area Joint Committees, to negotiate regional agreements, with local modifications of the London

/Agreements.

Agreements.

The fundamental principle kept in view in coming to an agreement was the recognition of the fact that milk commanded a different value according to the different channels of utilization e.g. a higher value for milk sold for the liquid market and a comparatively lower price for the milk which was surplus to liquid consumption requirements and had to be manufactured into different milk products e.g. cheese, butter or condensed milk etc.

The First Agreement of 1922:

This agreement introduced a completely new procedure for price determination in milk marketing. Under this agreement a "Basic Surplus" plan was worked out which provided that each producer was to be paid for a certain proportion of his supplies at the higher liquid milk price and for the remainder at a lower manufacturing price. The basis on which the proportion of each producer's supply payable at the liquid milk price was determined took into consideration his average weekly deliveries during the four months November to February (the winter period of lowest milk production). These months were termed the "Accounting Period" and the average weekly delivery during these months was termed the "Standard Quantity". It was estimated that the milk produced during these months approximated closely

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to the requirements of the liquid milk market. According to the Agreement, then, the producer was allowed the negotiated liquid milk price for all his deliveries during the "accounting period"; for 100 per cent of the "Standard Quantity" in October and March; and for 110 per cent of the "Standard Quantity" during the six summer months April to September. For all the other extra milk i.e. more than the percentages as above of the Standard Quantity, a negotiated Manufacturing Price was to be paid. Thus the final payment for the month of October was made complete at a later date, after February, when his "Standard Quantity" had been calculated.

The negotiated price for liquid milk was determined for each month of the contract year and a distinction was made between summer and winter prices. The prices were for milk delivered at the buyers' railway station; the producer paying the carriage and taking the risk of any losses such as souring, spillage or pilferage during transit. The manufacturing price was to be ascertained monthly by a special Sub-Committee of the Permanent Joint Milk Committee. It was calculated on the basis of the average price per lb. of Canadian and New Zealand Cheese, of First and Fine Quality, as recorded in the Official Market Reports of the London Provision Exchange during the previous month. The price per gallon for manufacturing milk was taken as this price

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less 2d. - on the assumption that 1 gallon of milk was required to make 1 lb. of cheese and 2d. represented the cost of manufacture.

The producer had two alternatives for disposing of his milk: (i) he could sell his whole production, in which case the buyer would be responsible for the conversion of supplies in excess of the liquid milk requirements; or (ii) sell on a "maximum and minimum" basis, where the producer was himself responsible for supplies in excess of maximum stated in the contract and if the supplies were to fall below the minimum he was liable to pay a mutually agreed sum for each gallon of shortage. Provision was also made for producers who contracted to deliver milk to a creamery in lieu of direct dispatch to the consuming centre. In these cases, liquid milk prices were subject to two deductions:- (i) a sum equal to the actual railway carriage; and (ii) a deduction in respect of subsequent transit risk taken over by the creamery in sending milk to the consuming centre, fixed at 1d. per gallon in six summer months and 2d. per gallon in six winter months. These deductions were applicable to Liquid milk sales only. The 2d. deduction was considered as an "unduly liberal valuation" by the Linlithgow Committee (8).

The Contract under this 1922 Agreement included

/provisions

provisions which had been customary in agreements between producers and distributors before this time. Provision was made for collection or delivery of milk; payments of accounts and treatment of milk (straining and cooling) by the producer; health and housing of cows; procedure to be followed by employees in milking and cleaning of utensils. The purchaser was allowed to inspect the producer's premises and make reasonable recommendations to ensure a pure and wholesome supply. If the producer would not give effect to these, the purchaser could suspend the contract by written notice until the matter had been set right. The Contract also laid down certain requirements as regards the quality of milk and if the supply was unmarketable for any reason, the purchaser could return it or dispose of it at his discretion, provided he gave immediate notice to the producer. If the milk fell below legal limits for butterfat or solids-not-fat, or was declared unsuitable by the Public Analyst for other reasons, the purchaser was at liberty to cancel the contract without previous notice to the producer.

Changes in the Agreements after 1922:

It is indeed remarkable that although the First Agreement of 1922 was experimental, it worked so well that no alterations were necessary in the fundamental principles for the next seven years. There were, however, some minor

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changes of detail. But after that time, many important changes in principles were made every year from 1929 to 1932. This period was one of economic depression during which the dairy industry and milk production were largely affected. These changes included:- changes in the method of determination of the quantity of milk to be paid for at liquid rates in different months and also changes in the actual prices payable for liquid milk and for the surplus milk at manufacturing prices.

Quantity Payable at Liquid Price: The principle of "standard quantity" was maintained during the first seven years. Minor changes were based on the fact, that the determination of certain months as the "accounting period", stimulated production during those months; and that production had to be paid at liquid prices. It would have been unfair to the purchasers, if having purchased larger quantities of milk at liquid prices, they had to manufacture part of it. Similarly it was of equal unfairness to the producers, if during the accounting period or subsequent months of the contract year, purchasers could buy at lower manufacturing rates, milk which could be sold in the liquid market. Fixing of November, December, January and February as the accounting period caused inconvenience to the producers as their accounts for the months of October could not be settled till the end of February. Hence in

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the later contracts, October, November and December were selected as "accounting periods". The National Farmers' Union had advised producers to increase their production in the accounting period and to approximate it to their average production so that they would obtain the higher liquid prices for a greater proportion of their milk production over the year. A favourable reaction to this advice had adverse effects on the purchasers as they had to manufacture milk for which they had paid the higher liquid prices. Therefore the percentages of quantity payable at liquid prices in different months were varied from year to year in the light of new experiences and response of farmers. The main difficulty under this arrangement of "Standard Quantity" and "accounting period" was the unreliability of the determinations affecting the percentage and periods when milk could be paid at liquid rates. A new method based on the principles of "Declared Quantity" was therefore adopted in the contract year 1929 - 30.

The Declared Quantity: Under this scheme the producer was to state his "declared quantity" which was his estimate of daily deliveries during the current contract year. The deliveries were divided into three classes, each class having a different liquid milk price. Class I allowed 10%, Class II, 20% and Class III, 50% variation in quantity from the "declared quantity; the price was highest

/for

for Class I deliveries and lowest for Class III. Any quantity of milk delivered in excess of the permitted percentage of variation was to be paid for at manufacturing price. The producer was to be penalized 2d. per gallon if supplies fell below the minimum variation. All deliveries, however, in October 1929, and in August and September 1930 were to be paid at full liquid prices. A further important change was made in the method of determining manufacturing milk prices. The principle of computing them with reference to New Zealand and Canadian Cheese prices was abandoned and instead a flat rate of 2d. per gallon less than liquid rate was agreed on. This arrangement was obviously a gamble on the purchasers' part and, as it happened, the manufacturing value of milk fell during the year. Some purchasers had to incur unexpected losses, which forced them again back to recognising the world milk manufacturing price in the next contract.

In the contract of 1930 - 31 another change was introduced. The declared quantity and 10% variation for Class I; 25% variation (instead of 20%) in Class II were retained as in the previous contract; but a new Class, II (b) was introduced. This provided for all deliveries under this Class being bought subject to the payment of a variable percentage in each month at liquid rates; and the remaining payable at manufacturing rate, the latter varying from as

low as 10% in October and the three following months to as high as 35% in the months of May and June, and averaged 20% over the whole year. Thus the payment for each month's supply was independent of that of any other month or of the whole year's supply. The manufacturing price in all classes was to be calculated on the basis of imported Cheese prices. Deliveries under this new Class II(b) proved unfavourable to producers who could not secure purchasers in Class I or II. Even if the producer was a "level" producer - which paid him a better yearly average price in previous contracts - but failed to sell under Class I or II, he was under great disadvantage by selling under Class II(b) as this meant getting the lower manufacturing price for at least one fifth of his yearly production.

The economic position of producers worsened in 1931 - 32, when not only liquid milk prices were lowered, but, in addition, the percentage payable at manufacturing rates was increased from 20% to 25% in Class II(b) over the whole year (average). However, a provision was made whereby, if a buyer sold more than 75% of his total purchases in the liquid milk market during the contract year, he was to refund to the producer the difference between the full liquid price and the manufacturing price in respect of the excess sold under contract. As a result of low prices, there was a shortage of milk during winter, when milk was imported

/from

from Continental countries and the Irish Free State; accordingly the producers' prices had to be raised.

There was a deadlock in negotiations for the 1932 - 33 contract year; a complete hold-up of supplies was threatened by producers who took objection to the retention of Class II(b) and the lower liquid milk prices of the previous year. A compromise was, however, effected where although Class II(b) was retained, the winter price of milk was raised considerably. Furthermore a minimum price of 5d. per gallon for manufacturing milk was guaranteed irrespective of the price of imported Cheese.

VOLUNTARY COOPERATION IN MILK MARKETING: SCOTLAND.

The initial arrangement of milk marketing through the agency of the Permanent Joint Milk Committee was also adopted in the Glasgow area where the prices were fixed by negotiations between the National Farmers' Union of Scotland, the Farmers' Dairy Cooperative Association - on behalf of producers; and the milk distributive and manufacturers' organisations. The agreement known as the "Glasgow Agreement" worked fairly well for several years. But there were two inherent weaknesses in it, firstly that although a price was fixed and agreed by both parties, there was no guarantee that distributors would pay it; and secondly, there was no satisfactory provision for the disposal of surplus milk on an equitable basis. Thus during the operation of the agreement, some distributors exploited producers and consumers by buying milk at prices payable for manufacturing supplies and using it to meet the liquid milk market demand. As there was no control over the sale of milk supplied for manufacturing purposes, the liquid milk market ultimately became so disorganised that numerous producers were left without buyers for their milk at the agreed prices. Many had to sell a greater portion of their production at surplus prices and some had to dispose of their entire output at these low prices. All this resulted in a complete breakdown of the collective agreements in 1926 - 27.

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Under such circumstances, the producers felt the urgent need of reorganising their marketing methods and adopting a co-operative method, whereby they would have much more bargaining power as producers when settling prices with the buyers. With the help of the Scottish Agricultural Organisation Society Ltd.; the National Farmers' Union and the Farmers' Dairy Cooperative Association, a new organisation by the name of the Scottish Milk Agency was formed. It was registered under the Industrial and Provident Societies Acts in October, 1927. The objects of the Agency were:

- (i) To secure a market at suitable prices for the milk produced by its members;
- (ii) To regulate the supply of milk to the Liquid Milk Market; and,
- (iii) To make provisions for the disposal of supplies surplus to the requirements of liquid milk demands.

The Agency commenced operations in the Glasgow area (west of Scotland) on November 1, 1927. The membership of the Agency was open to individual milk producers, cooperative societies, associations and companies. Every member had to enter into a contract with the Agency for a period of three years, to sell through the Agency the whole of his milk production. Every individual producer had to take out at least one £1 share in the Agency, and every

/Corporate

Corporate member, one share for each supplying producer. A Committee of Management was to be constituted consisting of 12 members : 6 representing individual members and 6 representing the Farmers' Cooperative Dairy Association with a neutral Chairman elected annually by the Committee. Producer-retailers were also eligible for membership on payment of 5/- per cow, whereby the Agency undertook to purchase at manufacturing price, any surplus left on their hands. Producers of Graded milk could also become members and were to be paid whatever their milk realized as "graded" less the levy paid by the ordinary producers. Any surplus of graded milk qualified only for the ordinary manufacturing price.

Under the terms of Contract, a member was to receive the basic liquid milk price for all milk "which he normally sold as liquid milk" and for the purpose of the contract a member's normal supply of "liquid milk" was regarded as his full winter supply in winter months and an increase of not exceeding 25% of this during the summer period from 1st. March. For all supplies above this quantity the "manufacturing price" was to be paid. The Liquid Milk price was fixed by the Agency in agreement with the Glasgow and District Dairymen's Association. This Agreement further fixed the wholesale and retail price for one year ahead. Creameries (operated by cooperative societies) which were members of

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the Agency were under an obligation to accept all unsold milk at agreed manufacturing prices. This milk could be manufactured into any product by the creamery, but could not be sold Liquid without the Agency's consent. All accounts for milk supplied by members whether as individuals or through creameries had to be paid to the Agency, which then paid the members after making necessary deductions per gallon - termed a "levy" - to meet administrative expenses and to cover any losses in the marketing and manufacture of surplus milk.

The Agency met with considerable opposition, on its promotion, from the milk distributors in Glasgow, but ultimately as larger numbers of producers became members, the majority of distributors, including the Scottish Cooperative Wholesale Society, also recognised it. The latter took a very sympathetic view of the efforts of the producers to organise their marketing of milk on a cooperative basis. But there were still some distributors and a few producers too, who did not join the Agency. The former included four important Consumers' Cooperative Societies in Glasgow who refused to recognise the Agency. These Cooperative Societies "regarded the Agency's Scheme as establishing an alliance between the producers and distributors, which is a menace to the Consumers" (9). Obviously such could not be as was shown by the support of the Scottish

/Cooperative

Cooperative Wholesale Society - a federation of all Consumers' Cooperative Societies in Scotland.

The Agency started operation in November 1927, with 894 individual members and 235 producers supplying through member creameries. By the end of the first year its membership rose to 1603 individual members and 515 producers through creameries. 19 million gallons of milk were handled, of which almost 4 million gallons were surplus to home liquid demands. A net profit of £20,273 was made, the levy being 1d. per gallon on each member's basic quantity (10). Thus the Agency was very successful in its first year of operation.

In the second contract year, 1928 - 29, representations were made by some members that producers' prices did not give an adequate return over the cost of production and the distributors also demanded a higher margin to meet the growing costs of distribution. Consequently, the producers' price was raised by 3d. per gallon and the margins to the distributors were also increased. Furthermore, for the determination of a member's basic supply a variation of 10% in the winter production was also allowed with a simultaneous reduction to 20% variation over the winter supply in the summer months. These terms proved to be too liberal to producer, resulting in increased milk production with ultimate damages to the producers themselves. There was more surplus

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were less remunerative. Disposal of surplus milk became increasingly difficult, so much so that in August, 1930, the Agency was faced with a daily surplus of 25,000 gallons. This surplus milk realized a very low price as the cheese prices during the year were very low. Nevertheless, most of this milk under the terms of contract had to be paid for at liquid milk prices. This resulted in a great loss and to remedy this a levy of 3d. per gallon had to be imposed. Such a heavy imposition caused grave dissatisfaction among the members, especially when they saw that non-members were in a privileged position of receiving the inflated prices without meeting any deductions. As a result, a large number of members refused to sign contracts with the Agency for the contract year 1931 - 32, and only 569 members remained. It was impossible to exercise any real influence over prices with such a small membership and this attempt at voluntary cooperation for regulating the marketing of milk ended in a failure.

Reasons for the failure of the Milk Agency:

Various reasons may now be given for such an unsuccessful ending of the cooperative Milk Agency. The most outstanding of these was the existence in the Agency's Area of a considerable percentage of non-member producers. The Agency had succeeded in stabilizing the liquid milk market prices, but non-members also reaped these benefits

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without having to share in the liabilities. The responsibility of keeping surplus off the liquid milk market was for the Agency, whose members had to pay a levy to make up this loss. On the other hand, non-members not only obtained better prices than the members (difference being nearly equal to the levy) but also increased their production: this resulted in an increasing surplus which had to be dealt with by the Agency and the consequent loss shared by the members only. Thus the burden of surplus milk became heavier and heavier till the members could not afford to support it. Addressing the meeting of the Agency when its liquidation was under consideration the Manager said of this problem that: "The business of the Agency was to sell its members' milk and not to run an Insurance Society, for the benefit of those who were not its members, the premium for which was paid by the members" (12).

The policy of fixing higher prices for milk stimulated production, and the Agency, while fixing the basic quantities to be paid for at the higher liquid prices, was in no position to calculate whether all these quantities could be sold at liquid prices. Inevitably, the reverse was the case and the liability so encountered could only be met by higher levies. This practice of fixing:- " a price for your produce regardless of your liability and then to rely upon a levy to cover that liability" was referred in the

/Manager's

Manager's address as "To outrage the elementary rules of commercial practice" (13). The difficulty of the Agency in this respect was also increased by low Cheese prices, which encouraged the farmers previously engaged in farm manufacture of milk to sell it on the liquid milk market, either through the Agency or directly to non-co-operating distributors; the latter being only too willing to welcome such suppliers in order to wreck the Agency.

The story of this co-operative venture would have been entirely different had all the producers in the Area co-operated and shared equally the losses and gains. However this effort in the field of co-operative marketing of milk brings out one single fact more clearly than ever and that is that some sort of statutory or other provision is necessary to compel a dissenting minority if any measure of co-operative marketing by the producers is to be made successful. Later this is referred to as "Compulsory Co-operation" as against "Voluntary Co-operation" on which the Agency's operations were based.

Chapter II.

Reorganisation of Milk Marketing

It has been shown how the attempts made by the milk producers themselves to organise the marketing of milk either by collective bargaining by co-operating with buyers or by voluntary co-operation among themselves by forming co-operative marketing organisations, did not succeed in bringing about the desired stability in the milk market, which was essential not only from the producers' point of view, but in the national interest also. Milk production was carried on under a variety of conditions, on farms of varying sizes - a majority of which had less than 12 cows each - and the milk producers could not utilize the milk to their best advantage. These small scattered producing units obviously lacked any coherent plans for production or marketing and individually they were powerless to emancipate themselves from the "scramble" of the market.

This could not be allowed to continue. It was now no longer considered desirable to rely on the voluntary co-operative methods which had been successfully adopted in other dairying countries, where the marketing problems were vastly different. It was evident that some stricter form of organisation than the purely voluntary co-operative type was required which while retaining the principles of self help and co-operation would achieve better results in a short time.

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The State intervened and with the above object in view legislation of great importance - The Agricultural Marketing Act 1931 - was enacted by Parliament. This Act provided a basis of reorganisation - on the principles of "Compulsory Co-operation" - not only for the marketing of milk, but for the marketing of all agricultural produce.

The Marketing Act of 1931 was mainly an enabling measure passed to facilitate the organisation of the sale and distribution of any given commodity by a majority of its producers, a dissenting minority notwithstanding. The principle of compulsion was vital in any policy of reconstruction, for the history of voluntary co-operation for the purpose of marketing of milk had been of repeated failure.

The Act gave power to the producers of any agricultural commodity to submit schemes for the regulation of marketing of their produce. On the following important provision of the Act all the Milk Marketing Schemes have been based.

A Marketing Scheme under the Act of 1931 may be submitted by representatives of the producers to the Minister of Agriculture, who is empowered to make any modifications in the Scheme - either by himself or after holding a public inquiry. The modified Scheme has then to be approved by the Parliament before it can finally come into force.

The Scheme must be administered by a Board and the Act prescribes certain powers which may be taken in a

/Scheme

Scheme. These powers are very wide and are dealt with in the following Chapter dealing with the individual Schemes. The Scheme is also required to contain certain provisions for its reasonable working and enforcement. Thus it is compulsory that no sale of the regulated product can be made by any producer who is not either a registered producer or exempted from registration by the Scheme. The Marketing Board has also powers to impose penalties on registered producers for certain contraventions of the Scheme, and the Scheme has to provide for recourse to arbitration by any registered producer aggrieved by any act or omission of the Board.

The relation of the Board to its constituents is not, however, that of a Board of Directors to the shareholders of a Joint Stock Company. The legal person in this case is the Board itself. It is laid down in the Act that the Board shall be constituted by the Scheme as a body corporate with a common seal. The "Board" accordingly is not incorporated by registration under the Companies Act, but by the Scheme which has the effect of an Act of Parliament.

The Act provides formal guarantees of fair treatment for consumers and other persons whose interests may be injuriously affected by acts of the Marketing Boards or the operation of Marketing Schemes. These are assured in the appointment by the Minister of two Committees - a Consumers'

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Committee and a Committee of Investigation for England, Scotland, and Great Britain. Aggrieved persons may approach a Consumers' Committee directly but they can approach the Committee of Investigation through the Minister only. The Consumers' Committee may report on the effect of any Scheme approved by the Minister on consumers of the product. The Committee of Investigation is closer to a legal tribunal. The reports made by a Consumers' Committee and the complaints to the Minister are referred to this Committee, who after holding an enquiry report to the Minister on steps to be taken to redress such complaints. The Minister can then amend the Scheme or can require the Board to rectify the matter.

Under the Act, the producers of a commodity desiring a Marketing Scheme, are themselves required to take the initiative in submitting such a Scheme to the Minister. But the Act also gives powers to the Minister of Agriculture to appoint a Reorganisation Commission for Great Britain, England or Scotland, which can be charged with the duty of preparing such Schemes. It was under this provision of the Act that a Reorganisation Commission for England and Wales was appointed in April, 1932. This Commission surveyed the conditions of Milk Marketing in England and Wales and submitted its recommendations and a draft Milk Marketing Scheme for England.

The main object of the reorganisation, in the view of this Commission, was to secure a strengthening of the position of producers by enabling them to negotiate as a body and to ensure that the negotiated agreements are universally observed. This was the most important single fact; the absence of which had always resulted, over the previous ten years, in the disorderly ending of all organised marketing efforts by the producers themselves, either by collective bargaining or by voluntary cooperative methods.

It was now possible for the representatives of the milk producers to proceed with the submission of Milk Marketing Schemes. The draft Scheme prepared by the Reorganisation Commission for Milk was very comprehensive and as such could not have been implemented under the 1931 Act. But this was used as a base by the National Farmers' Union of England, who submitted a Scheme. As the 1931 Act had authorized that an Agricultural Society sufficiently representative of the producers of a product could submit such a Scheme to the Secretary of State for Scotland, a Milk Marketing Scheme was prepared by the Scottish Agricultural Organisation Society for Scotland.

The Agricultural Marketing Act of 1931 does not apply to Northern Ireland and although a similar Act was passed there also, no such marketing scheme was promoted under its provisions.

The details of organisation of these milk Schemes in Great Britain and Northern Ireland have been described in this Chapter. There are 5 Milk Marketing Schemes:

1. The Milk Marketing Scheme (England and Wales).
2. The Scottish Milk Marketing Scheme.
3. The Aberdeen and District Milk Marketing Scheme.
4. The North of Scotland Milk Marketing Scheme.
5. Milk Marketing in Northern Ireland.

In the following pages, the expressions "The Milk Marketing Scheme" and "The Milk Marketing Board" refer to the Scheme and Board in England and Wales only. All other Schemes and Boards have been referred to by their specific full names.

THE MILK MARKETING SCHEME (ENGLAND AND WALES):

The Reorganisation Commission for Milk which was appointed under the Agricultural Marketing Act, 1931, had prepared a draft scheme for regulating the marketing of milk in England and Wales. Using this scheme as a basis, the National Farmers' Union submitted a scheme to the Minister of Agriculture in April 1933. According to the provisions of the Act, a public enquiry was held and the modified scheme was then approved by both Houses of Parliament in July 1933. As required under the Scheme, all producers of milk (with certain exemptions) were registered and an initial poll was taken which resulted in 96.42% of the registered producers, (representing 96.61% of production) voting in favour of the Scheme. The Scheme thus came into full operation from October 6th., 1933. The following are the main provisions of the Scheme:- (14)

The area covered by the Scheme, i.e. England and Wales is divided into eleven regions. (1. Northern, 2. North-Western, 3. Eastern, 4. East-Midland, 5. West-Midland, 6. North Wales, 7, South Wales, 8. Southern, 9. Mid-Western, 10. Far-Western; and 11. South-Eastern Regions). In each of these Regions there is a Regional Committee, the members of which are elected by the registered producers in that Region under the Regulations prescribed by

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the Board. The duty of the Committee is to report or to make representations to the Board on the operation of the Scheme in relation to the producers in that region and to advise the Board with respect to any of their proposals as to the desirability of those proposals in so far as they concern these producers.

A Milk Marketing Board administers the Scheme, consisting of 17 members elected as follows: 12 Regional Members (one from each, except North Western which has 2) elected by the producers of the respective regions; 3 Special Members elected by the registered producers at a General Meeting; and 2 persons coopted to the Board by the elected members after consultations with the Market Supply Committee. The Board elects from the members one Chairman and a Vice-Chairman and an Executive Committee consisting of not more than seven members, one of whom should be one of the coopted members.

Every producer who desires to sell milk either by wholesale or retail must first be registered by applying to the Board; his name is then entered in the Register of Producers kept by the Board. Any producer who is neither registered nor exempted from registration cannot sell milk in the area of operation of the Scheme or elsewhere.

Exemption from registration is granted to producers keeping

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not more than four milk cows and also to producers of "Certified" or "Grade A (T.T.)" milk. (These exemptions were later withdrawn). In addition, all sales of milk by registered producer to any farm or domestic servant in his employment are also exempted.

The Board have statutory powers to regulate the sales of milk by the registered producers by prescribing prices at, below, or above which milk of any description may be sold and the terms under which it may be sold to persons authorized by the Board to purchase such supplies of milk. In addition the Board may: (15)

"1. Buy milk;

"2. Produce from milk any of the commodities specified i.e. Cream, Butter, Buttermilk, cultured milk, evaporated and semi-evaporated buttermilk or cultured milk, milk sugar (lactose), cheese, whey preparations, milk powder, condensed whole or separated milk, casein and ice cream;

"3. Sell, grade, pack, store, adapt for sale, insure, advertise and transport milk or commodities produced therefrom by the Board;

"4. Buy and sell or let for hire to any registered producer, anything required for the production, adaptation for sale of milk;

"5. Cooperate with any other person in doing any of

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the things which the Board are empowered to do by virtue of the foregoing provisions of this paragraph;

"6. Encourage, promote or conduct agricultural cooperation among producers of milk or research and education in connection with the production and marketing of milk and milk products."

The terms of contract prescribed by the Board, (and to which it acts as a Third Party), have to be followed by the Producer (i.e. seller) and Purchaser of milk. The contract has also to be registered and approved by the Board, who have powers legally to enforce the provisions of the contract as agents of the Registered Producers. Ordinarily, the responsibility of finding a purchaser rests entirely on the producer, but in cases where "the producer has taken all reasonable steps to find a purchaser for his milk upon the terms of any prescribed contract, but has been unable to do so", then it is the duty of the Board to make arrangements for the disposal of such milk for which the producer will receive the "pool price".

The above procedure of contracts relates to the producers selling by wholesale only; the producers who wish to sell milk by retail i.e. direct to the consumers - known as Producer-Retailers - have to obtain a Licence from the Board to do so. This Retail Licence prescribes all the terms and regulations which are to be followed by the

/Producer-Retailers

Producer-Retailers, as regards the price at which they can sell milk by retail. These retailers are thus brought under the same price control by the Board as the other purchasers and distributors of milk. They are, further, required to keep records of milk sales, as prescribed by the Board and to pay the required Contributions (as described later on Page 56) to the Board. They can, however, also sell part of their production on a wholesale contract and thus a Registered Producer may be a wholesaler as well as a Producer-Retailer. Monetary penalties can be imposed on these retailers if any terms of the licence are violated or the licence may be revoked as and when decided by the Board, after repeated violation.

Pricing Policy of the Milk Marketing Scheme:

The price policy to be adopted under a milk marketing scheme is the most important single factor which concerns the producer and his attention will be concentrated on the basis on which he is to be paid for his milk and on how that price is determined. The chief point in fixing a policy is the fact that milk realizes different prices according to the uses to which it is put. Thus a higher price is commanded for milk sold for liquid consumption than that sold for manufacturing. In absence of any fixed and agreed policy producers inevitably resort to the practice of /undercutting

undercutting the prevailing prices as a temporary expedient in order to secure a footing in the more lucrative liquid milk market. The increased mobility of milk supplies tends to make the position worse, as producers in the remoter producing districts can also supply the distant liquid market. The need, therefore, arises for a system which secures to all classes of producers, having regard to the varying circumstances which prevail in the different parts of the country, an equitable distribution of the proceeds of the liquid milk market. The pricing policy of Milk Marketing Scheme, as discussed below, is based on this broad principle.

The system adopted is based on Regional Organisation of the Board. For each region a price is fixed by the Board, at which milk is to be sold by wholesale to distributors for the liquid milk market. These prices take into consideration the seasonal variations. The price of milk for manufacturing into different products is also fixed by the Board, and this varies according to the product into which the milk is manufactured, allowing a fair margin to the manufacturer for profits. In practice, the manufacturer pays the price fixed for liquid milk and is then allowed a proportionate rebate on the amount of milk manufactured into the different products. All the purchasers - distributors and manufacturers - pay to the Board the value of the milk

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purchased from the producers; there being no direct transactions between the producer and the purchaser. The total proceeds of the sale of milk consigned both to the liquid market and for manufacture are administered Regionally by the Board, and after certain deductions for the Inter-Regional Compensation Fund (described later on Page 49) are credited to the appropriate Regional accounts. A levy paid by Producer-Retailers (discussed later, Page 56) is also paid into this Regional Pool. Level Delivery Premiums (discussed later, Page 51) and any other premiums earned by individual producers for specific services rendered and paid for by the purchaser are credited to producers individually - and thus do not effect the Pool Prices. In calculating the Regional Pool Price - to be paid to the producers irrespective of the use to which their milk has been put - the administrative and other expenses are first deducted from receipts and the balance is divided by the total quantity of milk sold off all farms in the Region during the month. All suppliers of Graded milk and producers earning individual premiums, are paid these in addition. This Regional Pool Price is however only the gross price to the producer, as each producer has to pay an appropriate transport charge on his milk, calculated according to a system discussed on Page 53. The net price thus payable to the producer is the Regional Pool Price minus transport charges.

The Board goes further in determining the subsequent resale prices of liquid milk by fixing minimum retail prices of milk in different Regions. This policy of the Board, while on the one hand directly influencing the distributive margins of the distributor, on the other, prevents undercutting of prices in the retail distribution of milk.

Inter-Regional Compensation:

Under the arrangements of the Regional Pool pricing system, a region with a high proportion of sale for liquid milk consumption - because of its having more urban areas - would secure a higher regional price than one in which sales of milk for manufacture bulked more largely. To rectify this to some extent an "inter-regional compensation fund" is accumulated by a levy on all sales of milk for liquid consumption. As the marketing system is devised to protect all producers supplying the liquid market from the undercutting of prices by supplies from other areas; it is therefore on all producers selling to the liquid market that the burden of levy should fall. The essence of the system is to assist areas in which the proportion of manufacturing milk is higher, and this is achieved by distributions from the Regional Compensation Fund, based on the proportions which the manufacturing milk in that region

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bears to the total manufacture. The contribution is thus of the nature of a subsidy paid by milk sold in the liquid market to milk which has to be manufactured. In order to utilize this "subsidy" to the maximum advantage, its payment was limited to those months when the cost of milk was low i.e. in summer months. The contributions were, therefore, accumulated over the winter months and allocated over the months of cheaper production. For the purpose of this "subsidy", there would thus be available - in each of the manufacturing months - the proceeds of the levy in the previous month plus the appropriate allocation from the fund accumulated over the winter months.

The Board has considerable latitude in the allocation of the Fund, but in practice it adopted - in early years - the method of making payments to all regions at a flat rate per gallon of milk sold for manufacture. The result was that those regions selling the largest proportion of manufacturing milk received the largest proportionate allocation from the Fund. The Board is not obliged to pay out each month the whole monthly income of the Fund. During the first year, some part of the income received in the winter months was held up and paid in the following summer, thus tending to reduce producers' return in the winter months in regions selling mainly to the liquid market and to raise them in summer in the regions supplying most of the

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manufacturing milk. Since then, however, it has been the policy of the Board to distribute the Fund each month.

Differences of opinion by regions having conflicting interests arise in deciding the amount of the contribution to the Fund. Regions selling larger proportions of milk to the liquid market naturally desire to see a lower levy, while those with a larger proportion of manufacturing milk wish to increase the levy and so to make returns to all producers nearly equal. A compromise was reached by which it was agreed (in February 1935) that the levy should be of such amount as would secure that over a full year the variation between the maximum Pool Price and the minimum Pool Price should not exceed 1d. per gallon.

This compensation adjustment in favour of regions where manufacture is predominant, would not, however, raise the summer pool price in these regions to equality with the pool price in regions where most of the milk is sold for liquid consumption, so far, as the price of milk for the two purposes remains widely different. Some disparity in price is, however, justified by the lower costs of production in regions in which winter production is low and summer production is comparatively heavier.

Level Delivery Premium:

An individual buyer of milk can purchase his

/requirements

requirements from producers under either of the following two forms of contracts. One is the ordinary contract whereby the buyer has to purchase all milk sold by the producer and has to bear the responsibility for disposal of surplus milk. This contract meets the need of manufacturers or larger wholesalers with adequate facilities for manufacture of surplus into various milk products. There are, however, some distributors who have no such facilities and wish to purchase only their exact requirements. They can do so under a "Level Delivery Contract" (if they can find suitable producers) providing for the purchase of a stipulated quantity each day, with only slight variation, and pay a "level delivery premium" to the producer. This level delivery premium thus secures the advantage of obtaining only the required quantity of milk to the purchaser. The rate of premium payable varies according to the variation allowed above or below the stipulated quantity, and is proportionately more in case of a smaller variation and still more for the delivery of the buyer's exact requirements.

The Scheme provides that a producer selling on a Level Delivery Contract and earning a premium should retain on his farm the excess production over the specified quantity; but he may also sell this excess to any other buyer under ordinary contract. In such a case, then, the responsibility of the producer for the disposal of surplus

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(i.e. the quantity over and above that sold on a Level Delivery Contract) will be much reduced, and in consequence of this, the scheme provided for the retention by the Board of an appropriate portion of the premium earned by the producer. But this latter provision was not put into actual practice, and some producers managed to obtain premiums on part of their output and to dispose of the remainder on ordinary Contract. This question was examined by the Reorganisation Commission (16) 1936, who recommended that buyers requiring level delivery service, should in all cases pay to the Board the appropriate premiums set out in the contract, but the premium should be credited to the producer concerned only if he, and not the Board is, in fact, providing the service; otherwise, it should accrue to the Board for the benefit of all producers generally.

System of Transport Charges:

The broad principle underlying the transport charges under the Scheme is that each producer should be liable for the charges incurred on the transport of his milk from farm to destination. Some special considerations are however necessary concerning the transport charges on manufacturing milk, which is in general consigned to factories or country depots, most of which are situated in the producing districts; consequently the transport charges

on this milk are actually lower on the average than those on liquid milk, as the latter is sent to distant consuming centres. At the same time, since the returns from the sale of all milk, both liquid and manufacturing, are pooled; the gross returns to producers in the same region are equalized (through the operation of Regional Pool Price). Unless, therefore, some allowances are made for this transport charge difference, a producer who sends his milk direct to a distant liquid market would actually get less for it than a neighbouring producer who supplies a nearby factory where the milk is mostly used for manufacture.

The method of determining the amount of each producer's transport charges, therefore, has to be varied according to whether the milk is sold under the contract as "Depot" milk or "Direct" milk. The "Depot" milk is sold to a depot approved by the Board and is used partly for liquid consumption and partly for manufacture. The part which is sold as liquid milk is generally bulked, brine cooled at the depot and reconsigned to one or more of the large consuming centres. "Direct" milk comprises all other milk sold under wholesale contract and includes sales to wholesale and retail distributors as well as to manufacturers.

A producer supplying milk to a depot is liable to transport charges made up of three different items:

- (i) A collecting charge: covering the cost of transport
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from farm to depot; this is not payable by a producer delivering his milk at the depot;

- (ii) "The Standard freight Charge"; being equal to the rail-rate between the depot and a destination stated in the contract and is usually the most distant of the markets supplied by the depot;
- (iii) "The transit risk Charge": a uniform charge representing the payment for risks transferred to buyers when they take the delivery at a point distant from the final destination.

These charges are deducted by the purchaser from his account in settling accounts with the Board; and then the Board in turn debits them against the producers concerned. But some further adjustments have to be made where some of the depot milk is consigned as liquid milk to another destination than that mentioned in the contract, or where some milk is retained for manufacture in the depot. In the former case, if the depot incurs a lower transport charge than the standard freight charge, the difference representing the excess obtained from the producers, is passed on to the Board, and the proceeds of this saving are distributed by the Board among all the producers supplying that depot. If, however, the cost of transport incurred by the depot is more than the standard freight charge, the depot has to bear the extra cost itself. In the second case -

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where some milk is manufactured at the depot - this results in a saving, since the standard freight charge and the transit risk charge, though payable by the producer, are not actually incurred by the depot on this milk. This saving is also passed on to the Board, and is credited by the Board to the Regional pool and thus distributed among all producers in the region.

Producer-Retailers under the Scheme:

Producer-Retailers constitute an important element in the structure of organised milk marketing. The institution of a scheme providing stability of prices in the milk market benefits all the producers of milk. Under the Scheme, producers selling through the Board, i.e. producers selling on a wholesale contract as distinguished from Producer-Retailers who sell direct to the consumer, and receiving a Regional pool price, have to contribute towards the expenses of the Board as well as for equalizing the difference in prices realized from the sale of liquid and manufacturing milk. In order to put all the producers on the same basis, the Scheme requires that all producer-retailers so licensed will pay a "Levy" to the Board, representing their share in the maintenance of stable prices and markets. This contribution consists of a levy per gallon on all milk so sold and is composed of: (a) the inter-

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regional compensation levy for that region (in common with all milk sold liquid in that region); (b) Three-quarters of the difference between the liquid milk price in that region (less the inter-regional compensation levy) and the Pool Price for that region. The basis of this assessment is again the necessity of bringing in producer-retailers on equal terms with other producers who receive a pool price (lower than the liquid milk price by the levy difference). But as producer-retailers do not benefit by all the services provided by the Board to producers in general, their rate of contribution is proportionately lower.

The producer-retailer is also entitled to receive a level delivery premium, if he does not dispose of his surplus through the Board, as like all other producers he is also free to sell on a wholesale contract (which may also be a level delivery contract). This premium, they can themselves deduct from the contributions payable to the Board in respect of their retail sales.

Miscellaneous Provisions:

In cases where any Registered Producer is not satisfied by any decisions of the Board against himself, he is entitled to refer his matter for arbitration whereby an Arbiter, agreed by both parties, (or in case of disagreement, by the Minister,) is appointed, the Arbiter's decision being

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final and binding on both the parties.

Amendment or Revocation of the Scheme:

Any amendment to the Scheme has to be submitted to the Minister of Agriculture by the Board, but before such submission the notice of the amendment is sent to each registered producer. If a general poll is desired to be taken on such amendment, it can be demanded in writing by two hundred registered producers. Similarly any two thousand registered producers can, in writing demand that a poll be taken on the question of a proposed revocation of Scheme.

THE SCOTTISH MILK MARKETING SCHEME:

The system of milk marketing in Scotland prior to the institution of the scheme differed from that in England and Wales in that efforts had been made by producers to organise themselves for cooperative marketing under the Scottish Milk Agency. This Agency was, however, not successful as has already been discussed. The passing of the Agricultural Marketing Act in 1931 gave to the Agency an opportunity of reorganising its marketing on a statutory footing. Working in conjunction with the Scottish Agricultural Organisation Society, a scheme was prepared and submitted to the Secretary of State for Scotland on 10th. June 1932. After a public enquiry had been held and the Scheme modified accordingly, the final Scheme was approved by Parliament in May, 1933. The initial poll of Registered Producers resulted in a majority of 77% of the registered producers voting in favour of the Scheme, which accordingly came into operation from 1st. December, 1933.

The Scheme applies to an area covering roughly the whole of Scotland south of the Grampians and is administered by the Scottish Milk Marketing Board as a single unit. It is based on the same fundamental principles as those of the English Milk Marketing Scheme i.e. the equalisation among all producers of the proceeds of sale of milk

in the liquid and manufacturing markets by means of a Pool Price system. As, however, the area covered is much smaller, only one Pool is operated instead of several Regional Pools. Similarly, the same sort of control is exercised on the marketing of milk by prescribing prices for liquid and manufacturing milk for various purposes; terms of sale and resale and retail prices of milk at various stages of distribution etc., as in the English Scheme. There are, however, a few differences of detail discussed in the following: (17)

1. The Board: The Board consists of 10 persons; 8 elected by the Registered Producers and 2 coopted by the elected members. But the 8 members are not elected directly by the producers as in the English Scheme, instead, first the Registered Producers appoint (by electing) a "Selection Committee" of 50 members at each Annual General Meeting and then this Committee elects the eight members to the Board. A candidate for the election to the Selection Committee must be nominated by at least ten registered producers.

2. Exemptions: Producers whose daily sales of milk do not exceed three gallons and are not made to more than six customers are granted exemption from registration. Registered producer-wholesalers, producer-retailers and producers of Certified milk are not required to sell through the Board. They make their own arrangements for their

/sales

sales, but are subject to the Board's regulations regarding prices and pay an assessed contribution to the Board.

3. Producer-Wholesaler: In addition to producers who sell under ordinary wholesale contracts, and producer-retailers, there is another special class of producers known as "Producer-Wholesaler" - consisting of producers so licensed by the Board to sell milk to small distributors whose daily purchases do not exceed a specified quantity (originally 80 gallons, but then reduced to 20 gallons,) daily. The distributor is required to pay a wholesale price (to the producer) which is in excess of the "standard price" as fixed by the Board. A contribution similar to that paid by the producer-retailer is also payable to the Board by these producer-wholesalers.

4. Joint Committee: A Joint Committee of the representatives of the Board, Distributors, Manufacturers and Haulage Contractors formulates and determines: the "Standard price", which is the price of untreated milk for liquid consumption delivered at the buyer's premises; the manufacturing prices for different classes of milk products; retail prices; haulage rates; and other terms of the contract. In the event of failure to reach a mutual agreement, provision is made for the calling in of a "consultant" for the negotiations, but the duties of the consultant are

/advisory

advisory only. And as the final powers of fixing prices rests on the Board, the other parties if aggrieved can refer the matter to the Committee of Investigation for Scotland.

5. Control over Volume of Production: In the original scheme the Board did not have power to control the volume of production. But later, by an amendment of the Secretary of State for Scotland (18), it was empowered to give a bonus of $\frac{1}{2}$ d. per gallon to producers who undertook not to sell through the Board, in any month of the year any quantity of milk exceeding by more than 10% of the quantity sold in December 1933.

6. Responsibility of the Board: Under the provisions of the scheme the Board is bound to accept all milk tendered for sale by registered producers and pay for it accordingly.

7. Haulage and Transport: The Scottish Scheme exercises a much wider control over the transport of milk than the English Scheme. The Producer is responsible for payment of transport charges from his farm to the distributor's premises. The milk can be transported by road, only by Haulage Contractors approved by the Board and the Board fixes the haulage rates. The approved hauliers are paid by the Board according to these rates and the charges from producers are collected by the Board according to a

universal system of "Standard Haulage Rates". Under this system various "Haulage Centres" are prescribed by the Board (originally there were only 3 Centres: Glasgow, Edinburgh and Dundee, but later, from 1st. January 1935, 12 more were added in the eastern part of the Scheme's area) and a standard haulage rate, graduated according to mileage, is fixed. The haulage charges payable by a producer are then calculated according to the distance of his farm from the nearest haulage centre, irrespective of the actual distance which the producer's milk is carried. The Board assumes the responsibility for paying all expenses connected with transport up to the Buyer's premises or his nearest railway station. Where a registered producer transports his own milk, the Board pays him on the same terms as the other hauliers and on the other hand the Producer has to pay the appropriate standard haulage charges to the Board. Any balance from the Haulage Fund is credited to the Pool receipts.

8. The Pool price: The structure of the Pool and the calculation of the Pool Price is much simpler than in England and Wales. The pool mechanism can be shown as follows:-

/The Pool

The Pool

RECEIPTS

DISBURSEMENTS

(i) From sale of Liquid Milk.	(i) Expenses of Board; provision of Reserves and expenses for encouragement of Agricultural Cooperation, Research and Education.
(ii) From sale of Manufactured Milk.	(ii) Premiums earned by individual Producers.
(iii) Contributions from: (a) Producer-retailers (b) Producer-wholesalers (c) Producers of Certified Milk	(iii) Bonus for control of Volume of Production.
(iv) Miscellaneous Receipts e.g. Premiums earned by individual producers	(iv) Bonuses for quality - on officially Graded milk not sold as such (determined by Board).
(v) Balance from Haulage Fund.	(v) BALANCE. (available for payment of Pool Price.)

The above Balance is finally distributed amongst all producers in proportion to the quantity of milk supplied by them and sold through the Board. This is paid out on the basis of calculated Pool Price per gallon (i.e. the Balance

/divided

divided by the total number of gallons of milk sold) irrespective of the use to which the individual producer's milk has been put. These payments to producers are subject to the deduction of appropriate haulage charges.

9. Quality Control: Although there is a presumptive legal minimum standard of 3% Butter-fat content for Scotland, the Board has fixed a minimum standard of 3.5% of Butter-fat for the months of August to January and 3.4% for February to July. A deduction of $\frac{1}{4}$ d. per gallon may be made from the producer's pool price in respect of every 0.1% of fat deficiency in the milk supplied by him.

10. Arbitration in cases where producers are aggrieved. Provision is made in the Scheme for referring to an Arbiter any matter where a producer is aggrieved by any act of the Board. The Arbiter is appointed by the Department of Agriculture for Scotland. His award is final and binding on both the parties.

THE ABERDEEN AND DISTRICT MILK MARKETING SCHEME:

This Scheme developed from the operations of the Aberdeen and District Milk Agency Ltd., which submitted it on the 17th. February, 1933. It was designed to secure to the Agency, together with other producers in its area, the powers and protection afforded by the Agricultural Marketing Act. The main provisions of the Scheme are based on those of the Scottish Scheme. But there are important differences both from the English and main Scottish Schemes, as the Scheme adheres more closely to the principles of the earlier Milk Agency. After due modification had been made in the original Scheme, (resulting from a public enquiry held in June 1933,), it was approved by Parliament in March, 1934. The initial poll was taken in June 1934, in which 79% of the registered producers (owning 87% of the cows in the Scheme's area), were in favour of the Scheme. It came into operation from 1st. August, 1934.

The Scheme applies to the area covered by the counties of Aberdeen and Kincardine. It is administered by the Aberdeen and District Milk Marketing Board, consisting of 12 members elected by the members of the late Agency (as the Committee of Management of that Agency); 4 members elected by Registered Producers who were not members of the Agency and 2 persons coopted by these elected members. The

/Chairman

Chairman is appointed by the Board and he need not be a member of the Board or even a milk producer. An Executive Committee is set up composed of seven members including the Chairman.

Exemption from registration is granted to producers having total sales of 2 gallons a day sold to not more than six domestic consumers. It was later, (November, 1935), amended to exempt only those with total sales of not more than one gallon daily to not more than four customers. Producer-retailers and producers of Certified milk need not sell through the Board, but have to abide by the Board's price regulations, and contributions on a "cow-basis" (i.e. a specified amount per cow per annum) are levied on them. The Board must dispose of all milk tendered to it by the registered producers and pool the returns according to a predetermined price Policy.

The Price Policy: The Board determines the wholesale and retail prices for milk after consultation with a Joint Committee representing the Board, Distributors and Haulage Contractors, set up under the Scheme. The "Standard price" i.e. sale price of untreated milk for liquid consumption is paid by the buyer to the Board, and the Board makes all arrangements for disposal of any surplus to liquid market requirements. For payment to Registered Producers, the Board determines a "Basic Quantity" for each

/individual

individual producer, with reference to his average sales during November, December and January prior to the inception of the Scheme. The producer is then paid the "Standard price" in each month for such "basic quantities" only, and for any quantity supplied in excess of this a "Surplus price" is paid. This "Surplus price" is determined by the Board as the average price realized from the sale of surplus milk for various manufacturing purposes. A "levy" is then deducted from the sum due to producers, to cover the cost of administration etc., and any loss suffered in selling "basic quantity" milk for manufacture. This latter loss is due to the fact that aggregate basic quantities exceed aggregate sales of liquid milk and the loss is represented by the difference between the actual realization on all basic quantity milk and the amount credited to the producers for the same. This loss is "levied" on producers in proportion to their basic quantity. Thus the resulting composite price varies from producer to producer according to the proportion that his basic quantity bears to his total supplies. The producer is further required to pay the appropriate haulage charges. The "Basic Quantity" is allocated to producer-retailers also, who sell some milk by wholesale too, and they are then paid on the same basis as the other producers for such milk.

The producers are expected to supply milk having

/not

not less than 3.3% of butter fat and the Board reserves the right to refuse acceptance of any milk below this standard or pay for it at a lower rate.

Transport charges based on a "standard haulage rate" prescribed by the Board on a graduated scale according to distance in miles are borne by the producer from his farm to the buyer's premises or to the Board's Creamery in Aberdeen.

THE NORTH OF SCOTLAND MILK MARKETING SCHEME:

This Scheme closely follows the pattern of the Aberdeen and District Milk Marketing Scheme and was submitted by 204 milk producers to the Secretary of State for Scotland on 30th. June, 1933. There were no objections to the Scheme, so no public enquiry was necessary and the Scheme was passed by Parliament in July, 1934. The initial poll taken on 20th. August 1934, resulted in 73% of producers, (owning 76% of the cows), voting in favour of the Scheme, which came into operation from 1st. October, 1934.

The Scheme applies to the counties of Inverness, Ross and Cromarty, Sutherland and Caithness. It is administered by the North of Scotland Milk Marketing Board consisting of 5 members elected by the registered producers and 2 persons coopted by the elected members. Producers selling not more than three gallons per day to not more than five customers are exempted from Registration. This exemption had the effect of removing from the scope of the Scheme over 95% of the milk producers in the area.

Each Registered Producer (excepting producers of Certified or Grade A (T.T.) milk) is allocated each year a "Basic Quantity" in monthly gallonages, based on the average monthly sales of his own production during the months September to December, inclusive, of the previous year, and

/is

is paid at the "Standard" price each month on all such sales not exceeding his basic quantity. On sales in excess of the basic quantity the producer is paid the monthly "Surplus" price as determined by the Board from time to time. Thus the producer-retailer is also brought under the operation of this basic quantity system; and provided he is selling through the Board also, on a wholesale contract and where his retail sales amount to less than his basic quantity, he is paid at the standard price for such sales to or through the Board, of as much milk as is required to complete his basic quantity, and surplus price for any more milk thereafter. The Board determines the Standard, Retail and Surplus prices.

The producers pay a Levy to cover the costs of administration etc., as determined by the Board; producer-retailers are required to pay only 7/10ths. of this full rate for their retail sales and producers of Certified and Grade A (T.T.) milk, whether selling by retail or wholesale, pay only 9/10ths. of the full rate. If the latter class of producer cannot dispose of his full milk supply himself, the Board must accept it and pay for it at the standard price. All producers bear their own transport charges as actually incurred on their supplies. The Scheme provides for standard haulage rates as in other Scottish Schemes.

There are no contracts between the Board and

/Producers,

Producers, and arrangements are made on a monthly basis except for milk prices. At the end of each month the distributor states his requirements of liquid milk for the following month, for which he pays the standard price. Should he require further supplies these are paid for at "accommodation prices" (higher than the standard price for varying quantities), and should he not sell all his supplies he has to deal with his own surplus.

Control over the quality of milk production is exercised by the Board by prescribing a minimum standard of 3.3% butter fat. Deduction on fixed scales can be made for milk having a lower fat content up to the minimum of 3%. (Deduction of $\frac{1}{2}$ d. per gallon for every 0.05% deficiency below 3.3%, but there are no premiums if more than 3.3% fat is contained in the milk).

This Board has some specific powers which are not possessed by any one of the other Milk Boards. One of these is that by which the Board can determine directly the quantity of milk (other than Certified or Grade A (T.T.) milk) that may be sold by any registered producer. Actually this power has not been exercised by the Board. The Board has also authority to carry on the retailing of milk and this was exercised during and after 1936 - 37 when retail distribution depots were acquired and operated in some towns.

MILK MARKETING IN NORTHERN IRELAND:

An Agricultural Marketing Act, similar to the Act for Great Britain was also enacted in Northern Ireland, by which milk producers could initiate similar Milk Marketing Schemes. But the conditions of the milk market in Northern Ireland were widely different from those in Great Britain and a similar Scheme could not bring about all the desired benefits to all milk producers. The fundamental difference was that while in Great Britain nearly 70% of the total milk produced was used for liquid consumption and only 30% for manufacturing purposes, in Northern Ireland it was the manufacturing market which absorbed 70% of the milk production and only 30% could be utilized for liquid consumption. Thus a Pooling system on the English or Scottish model designed to equalize returns to all producers by sharing the burden of the low priced manufacturing milk amongst themselves could not suit Irish conditions as it would have meant that only 30% of the producers had to bear the burden of the overwhelming quantity of manufacturing milk. Another problem of the then existing conditions was that most of the manufacturing was organised in Cooperative Creameries established in the producing rural areas and engaged chiefly in the production of butter. The bulk of the farmers supplying these creameries could obtain only such prices for their milk as were commensurate with the

world market price of butter. During the agricultural depression period of the 1930's, the market value of butter had depreciated to such a great extent that the creameries could not pay their suppliers more than 3d. per gallon of milk, the separated milk being returned to them in addition. In order, therefore, to stabilize market conditions and to prevent this unremunerative manufacturing milk being diverted from the creameries to the towns for liquid consumption, where it would have had a depressing effect on the liquid market prices, some assistance to the Creamery Industry was most essential.

It was for these reasons that special legislation to suit these special conditions was required and the Milk and Milk Products Act (Northern Ireland) was enacted in 1934, designed to organise milk marketing on entirely different lines from the contemporary British Schemes.

Under the provisions of this Milk and Milk Products Act (N.I.) 1934, all milk produced for sale is graded according to the methods and quality of production into 4 grades: the A, B, C, D Grades. Only milk of Grades A, B and C may be sold for human consumption in liquid form and Grade D milk may be sold for manufacture only. Licences are required by the producers as well as distributors of Grade A, B and C milk for which Licence fees are payable. The Act is administered by the Ministry of Agriculture for

/Northern

Northern Ireland and a Joint Milk Council is set up under the Act. The Council consists of 17 members as follows:-

- (a) 3 members appointed by the Minister of Agriculture,
- (b) 3 representatives of Consumers (appointed by Minister of Home Affairs),
- (c) 7 members elected by the Licensed Producers, and,
- (d) 4 members elected by the Licensed Distributors.

The Chairman of the Council is one of the members appointed by the Minister of Agriculture. The duties of the Council are:-

- (i) To fix prices of milk sold by the holder of a Producer's Licence to the holder of a Distributor's Licence,
- (ii) To fix retail prices,
- (iii) To advise the Minister of Agriculture as to the standards of quality to be fixed for the various grades of milk and the conditions for issue of Licences.
- (iv) To prescribe terms and forms of contract.

In fixing the prices and the terms of contract, if the Council members (apart from the members appointed by the Minister of Agriculture) are not unanimous, then decisions are made by the 3 members appointed by the Minister of Agriculture. Neither the Council nor the Ministry undertake any trading functions, but the contracts required under

the Act, between the licensed producers and distributors have to be approved and registered by the Council. It is specially noteworthy that the Council acts in a regulative and advisory capacity only, that it is the Ministry of Agriculture which administers the Scheme, and that all the regulations made in connection with the Scheme have to be laid before the Parliament of Northern Ireland.

The Council does not have any jurisdiction over prices etc., for unlicensed producers, that is those who supply Grade D milk to the creameries. All such producers receive such prices for their milk as the creamery can afford to pay depending upon the world market price of butter. But if any producer holding a producer's licence for the A, B or C Grade of Milk has to send his milk to a creamery, he is paid a Bonus by the Council from the Milk Fund (described below). Further, an "Equalization Payment" is made to all creameries, so that they can pay their suppliers on an average a minimum price of 5d. and 6d. per gallon in summer and winter respectively. This is provided from the "Milk Industry Assistance Grant" given by the Government of the U.K. to Northern Ireland and is similar to the grant given for the Milk Boards in Great Britain.

The licensed producers of Grades A, B and C, who sell milk in the liquid market, in addition to the Licence Fees, have to pay a Levy which is least for Grade A and

/progressively

progressively more for B and C. These sums accruing from these levies are paid into the Milk Fund and are mainly used to pay a bonus to producers of Grade A, B and C milk which is sold for manufacture to the creameries.

A summarised statement of the Milk Fund is as follows:-

The Milk Fund.

Receipts	Disbursements
(i) Licence Fees from: (a) Producers (b) Distributors	(i) Expenses of Ministry and the Joint Milk Council in connection with the administration of the Scheme
(ii) Levy on sales of Butter and Margarine	(ii) Grants towards schemes of eradication of diseases; encouragements of milk consumption
(iii) Levy on sales of Grade A, B, C, milk	(iii) Bonus for A, B or C Grade Milk sold for manufacture
(iv) The Milk Industry Assistance Grant	(iv) Equalisation Payments to the Creameries

The Milk Fund is not Self Balancing.

The Equalisation Payments to the Creameries:-

The Act provided for the payment to creameries of "such sum as will raise the average price of milk hereinbefore mentioned (i.e. milk supplied to creameries for manufacture) to five pence per gallon in summer months and six pence per gallon during the winter months". The amount payable is to be based on the average price paid by ALL creameries and not on the average price paid by each individual creamery. The latter always show a certain degree of variation due to several factors including degree of efficiency and the character of trade, and as such the inclusive (i.e. including the equalisation payment) price paid by various creameries may exceed or fall below the standard of 5d. and 6d. The average price is taken to be the actual price at the creamery i.e. exclusive of transport charges which are to be borne by the producer himself. Further, the creamery is required to distribute the equalisation payment in accordance with the butterfat content of the milk received from each supplier, as also in actual practice the creamery milk price is calculated from the price which the creamery can afford to pay per lb. of butterfat. It is justifiable that a supplier who delivered milk with average butterfat content of say 3.8% should receive a proportionately greater amount by way of equalisation payment than the one whose milk tested only 3% butterfat.

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In addition to the above main differences in the Northern Ireland Milk Scheme, there are provisions for the transport charges on milk which are borne by the producers. Where a distributor collects milk from a producer's farm, he may deduct from the payments to be made to the producer, his collection charges. These charges are prescribed by the Milk Council on a mileage basis between the producer's and the distributor's premises. No other form of control over the transport of milk is exercised by the Milk Council.

The Joint Milk Council also prescribes and publishes retail milk prices. The prices are different for the three grades of milk and a higher distributive margin is allowed for Grade A and B milk - which have to be sold bottled. The differentiation is carried still further in the provision that a much smaller distributive margin - hence a lower retail price - is allowed in cases where a customer himself purchases the milk from the shop, as here the service of delivery by the distributor is not performed.

It is thus seen that in Northern Ireland the Ministry of Agriculture - through the Joint Milk Council - completely controls the marketing of milk, which, in Great Britain, is administered by the producer-controlled Marketing Boards.

CHAPTER III.MARKETING OF MILK UNDER THE MILK MARKETING SCHEMES
DURING 1933 - 1939.

The main object of the reorganisation of the milk industry as effected by various Milk Marketing Schemes in Great Britain was that of "Strengthening the position of the milk producer". This was achieved by the establishment of the four Milk Marketing Boards, under the Agricultural Marketing Acts 1931 - 33, whereby producers were enabled to negotiate as one body with the purchasers and it was ensured that these negotiated agreements were universally observed. This main feature of the Schemes provided a considerable and long desired stability for milk producers, who had till now been handicapped and unable to have a regular plan for their milk production. The advent of the Milk Boards provided for producers a guaranteed and stable market for all the milk they produced. These provisions naturally gave an impetus to milk production in general. The various milk Boards functioned quite independently as empowered by the Schemes from 1933 to 1939, when at the outbreak of the War their functions were very much modified by the intervention of controls of the Ministry of Food. During this period, spreading over six years, when the milk industry was guided by the Boards, great developments and achievements have been effected

/which

which could not have been possible in the absence of these Schemes. It is the purpose of this chapter to consider and discuss the effects of these Marketing Schemes on production and marketing and all other phases of the Dairy Industry in Great Britain.

Statistical information on the Schemes is presented in Tables I to VI.

On considering the sales of milk through the various Boards it appears as if a great increase has taken place in the total production of milk. This is especially noticeable during the first three years of the Schemes. But the volume of production depends more on the size of the cow population and the yield per cow, and since there is no evidence to show that any increase in the above can justify the increase as shown in the Tables I - IV, the only possible explanation supported by data is that the greatly increased volume of milk sales through the Boards was mainly effected by the changes in the methods of the producers in disposing of their milk production. Before the Schemes came into operation large quantities of milk were used on the farm for manufacture into butter or cheese and for feeding to stock. The provisions of security of milk market and a relatively higher level and regularity of returns from the sale of milk through the Boards influenced many farmers to sell their milk through the

/Boards

Table I.

Quantity of Milk sold through the
Milk Marketing Board - 1933 - 39.

October to September	Total	DISPOSAL		
		Liquid million	Manufacture gallons	Per cent Manufacture
1933 - 34	855.62	642.79	212.83	25.1
1934 - 35	980.96	665.26	315.70	32.2
1935 - 36	1,023.96	663.80	360.16	35.2
1936 - 37	989.86	681.05	308.81	31.2
1937 - 38	1,063.13	752.20 ^{\$\$}	310.93	29.2
1938 - 39	1,118.70	766.82 ^{\$\$}	351.88	31.5

\$\$ This large increase in liquid milk sale during 1937 - 38 and 1938 - 39, is due to the inclusion in the Scheme of Producers of T.T. milk and Producers with less than 4 cows from 1st. October 1937.

Table II.

Sales of Milk through the
Scottish Milk Marketing Board.

June to May.	Total	DISPOSAL		
		Liquid	Manufacture	Per cent Manufacture
million gallons				
1933 - 34 ^{§§}	49.06	33.92	15.14	30.86
1934 - 35	113.46	70.34	43.12	38.10
1935 - 36	119.62	72.36	47.26	39.58
1936 - 37	121.18	74.68	46.50	38.37
1937 - 38	121.01	76.68	44.33	36.72
1938 - 39	121.82	77.97	43.85	35.98

§§ The scheme came into operation on 1st. December 1933, hence figures relate to 6 months only.

Table III.

Sales of Milk through the
Aberdeen and District Milk Marketing Board.

April to March.	Total	DISPOSAL		
		Liquid	Manufacture	Per cent. Manufacture
million gallons				
1934 - 35 ^{§§}	5.3	4.9	0.4	8
1935 - 36	8.5	7.7	0.8	10
1936 - 37	9.0	8.0	1.0	11
1937 - 38	9.2	8.2	1.0	10
1938 - 39	9.4	8.4	1.0	10

§§ 8 months only, August to March.

Table IV.

Sales of Milk through the
North of Scotland Milk Marketing Board.

October to September	Total	DISPOSAL		
		Liquid	Manufacture	Per cent. Manufacture.
million gallons				
1934 - 35	1.90	1.77	0.13	7
1935 - 36	1.98	1.89	0.09	5
1936 - 37	2.05	1.93	0.12	6
1937 - 38	1.99	1.90	0.09	5
1938 - 39	1.96	1.89	0.07	4

Boards rather than use it on the farm. The comparatively low prices of milk products e.g. butter and cheese and of store and fat cattle also contributed towards this change in the method of disposal. This is also supported by an increase in the number of producers selling through the Boards.

In Scotland, increases in sales have been less striking than in England and Wales. Although there was a swing from the utilization of milk on farms to selling it through the Board, but as farm manufacture was already less common in Scotland, the effect of this change on volume of milk marketed has not been so pronounced.

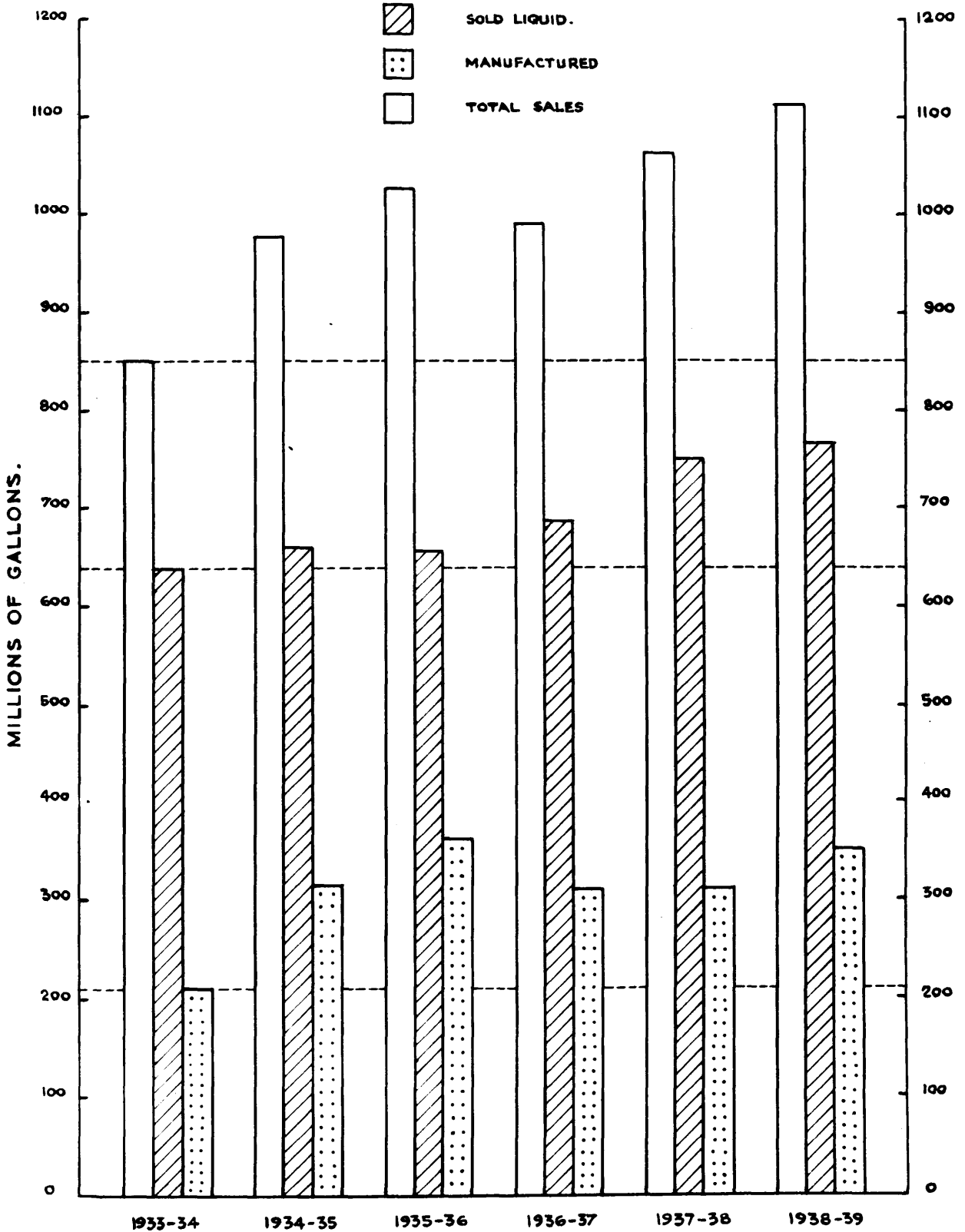
These facts taken together suggest that although the production of milk has continued to increase in Great Britain throughout these years since the Schemes came into force, yet any such increase cannot account for more than a small part of the considerable increase in sales recorded through the Boards. There is no doubt that the Schemes were favourable for the producers; inducing them to produce more milk and the increased sales off farms are mainly due to the organised marketing and pricing.

These additional sales through the Boards could be utilized either in the liquid market or for manufacturing purposes. In England and Wales during the first three years of the Scheme, the total sales through the Board

/increased

FIG. 1.

SALES THROUGH THE MILK MARKETING BOARD.



year of introduction of the Scheme. Similarly the Chairman of Aberdeen and District Milk Marketing Board, while presenting the Board's Report at its Third General Meeting in 1937 had occasion to comment that the quantity of milk handled by the Board had shown a considerable increase - although such an increase was only 6.9% over the preceding year. These misgivings were due to the fact that any increase in the amount of milk utilized for manufacture adversely affected the gross Pool Price of milk received by the producer. Under these conditions any increase in the wholesale price or standard price of liquid milk, although inevitably resulting in a higher price to the consumer, did not necessarily mean an increased Pool Price to the producer. This has been referred to as 'The Burden of Manufacturing Milk'.

The Burden of Manufacturing Milk:

It is seen from Tables V and VI that the price paid for liquid milk by the consumer has increased since the inception of the Marketing Schemes. These increases have been mainly due to two factors: firstly, through the higher wholesale prices which the distributors had had to pay to the Boards and secondly, due to an increased cost of distribution of retail milk causing a rise in the distributors' margin. However, the greater percentage of the increase in the consumer's price, has, no doubt, been

Table V.

Prices under the Milk Marketing Board.

(England and Wales).

Year	Average whole-sale Price	Average ¹ manufac-turing Milk	Producer's Pool Price	Levy	Distri-butur's Margin	Average Retail Price
Pence per gallon						
1933-34	14.01	4.96	11.83	2.18	10.82	24.83
1934-35	15.09	4.81	11.99	3.10	10.99	26.08
1935-36	15.26	4.95	11.48	3.78	10.95	26.21
1936-37	15.26	5.75	11.99	3.27	10.95	26.21
1937-38	16.26 ^{\$\$}	6.88	12.92	3.34	11.22	27.48
1938-39	16.25	6.60	12.95	3.30	11.21	27.46

1 Excluding Government assistance.

\$\$ Specially increased to meet the rise in cost of feeding stuffs and labour.

Table VI.

Prices under the Scottish Milk Marketing Board.

(1934 - 39).

Year April to May.	Average Stand- ard Price	Average ¹ manufac- turing Price	Average Pool Price	Levy	Distri- butor's Margin	Average Retail Price
Pence per gallon						
1934-35	14.17	4.83	10.46	3.71	9.83	24.00
1935-36	14.00	5.06	10.68	3.32	10.00	24.00
1936-37	14.08	5.81	10.38	3.70	9.92	24.00
1937-38	14.67	6.69	11.24	3.43	10.66	25.33
1938-39	14.96	6.64	11.53	3.43	10.37	25.33

1 Excluding Government assistance.

due to the former. But, on the other hand, the increase in the wholesale price of milk charged to the distributor has not always meant a proportional increase in the producers' gross returns. On the contrary, the increase in the producers' Pool Price has not been as much as the increase in the wholesale price of liquid milk. This apparent anomaly arises from the working of the Pooling System employed by the Boards to determine the producers' price for milk whereby the returns on milk sold in the low priced manufacturing market are pooled together with the returns on milk sold in the higher priced liquid market. Considering a position of milk utilization where one-third of the total sales are used for manufacture, it will be seen that out of every 300 gallons of milk sold off farms, 200 gallons will be used for liquid market and 100 gallons for manufacture; the price realized for the latter per gallon being much lower than that of the former. Consequently, in order to pay the producer a fair and remunerative Pool Price for all his milk, the price charged to the distributor for the 200 gallons has to be high enough to make up the loss on the other 100 gallons. It can also thus be realized that the greater the ~~per~~centage of milk sold for manufacture, the greater will be this loss. Some portion of this will no doubt be borne by the producer, but a greater part has ultimately to be passed on to the consumer. That is what happened during the six years of

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the Schemes' operation. The amount of milk for manufacture rose considerably necessitating a substantial increase in prices all round, but without increasing the producers' Pool Price proportionately.

That this "burden" of manufacturing milk on the consumer's retail price is considerable is seen from Fig. 2. showing the "spread" of the consumer's price in England in 1938, when it amounted to 2.22d. per gallon expressed on all milk sold liquid and represented more than 8% of the consumer's price. Thus the price to the consumer is raised above its 'natural' level by this "burden". How much of this should the consumer be reasonably expected to bear is an important matter of policy requiring very careful consideration.

In order to ensure a regular and sufficient supply to the liquid milk market, it is necessary that the supply available should always exceed the normal requirements of the same; in other words a certain amount of reserve has to be maintained. Again, then, whatever be this margin of reserve, owing to a seasonal variation of output, it cannot be possible to maintain the same minimum margin in winter without far exceeding it in summer. It follows from this that the overall annual reserve should be regarded as including the whole of the additional production in summer of the cow population needed to supply

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the requirements of liquid milk market and its necessary reserve during winter, the period of least production. Any loss suffered on account of manufacturing this reserve should naturally be borne by the consumer of liquid milk. This fact was recognised first by the Committee of Investigation for England (1936), who accepted in principle that the liquid milk price charged to the consumer should not take into account any loss incurred on the sale for manufacture of any further surplus (i.e. other than 'reserve'). If such a course were followed and the loss on actual surplus was met from elsewhere, it is obvious that appreciably lower prices could be charged to the consumers. But, in absence of any such arrangement it became necessary for the Boards to raise the price to the consumer.

There are three alternatives to remedy such a situation; Firstly, reduction in the production of milk to a level at which output would balance the requirements of the liquid milk market with its appropriate reserve. This course was, however, completely inadvisable in the national interest, as it had been the policy of the Government to maintain agricultural production for reasons of defence, etc. Secondly - an increase in the liquid milk consumption: any such increase would automatically reduce the volume of milk to be manufactured and thus the loss would be smaller as the consumption increases. Thirdly,

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to provide assistance from some other source for the continued production of milk - in national interest - which is surplus to the requirements of the liquid market. This would mean that the money which is usually provided by the consumer - in paying a higher price - for subsidizing the manufacture, other than requisite reserve, would have to be provided through some form of State assistance.

The two latter alternatives were accepted to a certain degree by the Government and assistance was made available in conjunction with the Milk Boards for increasing the liquid milk demand through "Drink More Milk" campaigns and similar Milk Publicity; and through "milk-in-schools" Schemes. Grants were also given to raise the level of returns from the milk used for manufacture. These Government grants are discussed subsequently on pages 113 - 120 .

Producers' Prices under the Schemes:-

The Milk Marketing Schemes of Great Britain have been devised with the object of securing the best possible and practicable returns from the sale of milk for different uses and to spread the loss in the low priced market together with the profits in the high priced market among all producers according to predetermined principles. It has been shown that the price arrangements adopted by voluntary arrangements in large areas in the pre-Scheme period had

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the same aims. But, largely due to price cutting from producers in competing for the liquid market and by distributors who did not carry out these agreements, success was rendered difficult. With the commencement of the Schemes the principles of these price arrangements were firmly established, and all producers and distributors were brought within the planned system. Under this system the high priced market (for liquid consumption) has been separated from the low priced market (for manufacturing milk) and receipts from these have been pooled together to arrive at a Pool Price which has to be lower than the wholesale liquid price. This equitable distribution amongst different groups of producers presents a number of conflicting problems. The chief one of these is that there are a number of producers who have been regularly supplying the liquid milk market because of their privileged position in being situated nearer to the market. Some of these were the producer-retailers who had always received full liquid milk prices for all their production. Thus they and also producers in the older market-milk zones, had a comparative advantage over producers who did not get much share in this liquid market and had either to sell their milk in the low priced manufacturing market or use it on the farm. This geographical separation of markets for liquid and manufacturing milk became much less sharply defined with

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developments in transport and processing methods which made it possible for considerably long distance supplies to reach distant liquid markets and compete with the established liquid milk suppliers. Thus under the organised milk marketing Schemes any differentiation between "near" and "distant" producers was no more compatible and all had to be treated on the same basis. This was the most practical method of extending the benefits to milk producers in general, with of course, the distant milk producer having to bear higher transport charges. There were also districts where the demand for liquid milk was small and milk production was largely utilized for manufacture. These districts also began to receive the Pool Price. In the beginning of the Scheme, these points were looked upon unfavourably by the producers who had been in a better position in the pre-Scheme period. But on the whole, and taking all the producers together, these pricing arrangements ensured a level of price to all producers who came to have a "safe" market for their production.

Two systems of equalizing the returns to all producers were adopted by the Boards. The Milk Marketing Board and Scottish Milk Marketing Board adopted the "Pooling system" while the two smaller Scottish Boards i.e. the Aberdeen and District and the North of Scotland Milk Marketing Boards adopted the "Basic Quantity" plan. There are various advantages and disadvantages of both these systems

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and the adoption of one or the other depended more on the practicability of adoption of the particular system under a particular Scheme.

As production of milk in the country is seasonal, there is a greater surplus of milk in summer than in winter. But this greater surplus in summer is not affected by all producers increasing their summer production to such a level. There are a number of producers, among them producer-retailers, who have always specially catered for a liquid market and their milk production is more "level". On the other hand there are completely seasonal producers whose production of milk in summer is very much more than in winter. Under the Pooling System both receive the same annual average price, although it is the producer with a much larger summer production, who has been responsible for more milk going to manufacture during summer and bringing in lower returns. A small safeguard for the level milk producer is made in the English Scheme and the Scottish Scheme by way of Level Delivery Premiums. Apart from this the Pooling System itself does not provide for any control of this type of seasonal milk production.

Such a method of controlling to a certain extent the seasonability of production by way of pricing policy has been provided by the "Basic Quantity" System. Under this System the seasonal variation of an individual milk

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producer does not appreciably affect other producers' price, as here each producer is allotted a Basic Quantity for which he receives a price related to the wholesale price obtained for liquid market and for any sales in excess of this quota he is paid the lower price realized for manufacturing milk. Thus, if the producer sells much more than his quota, it results in a lower average annual price for his total sales, without seriously affecting the average price received by other producers in the Scheme area. This basic quantity for each producer is based on the production of his milk during the winter months, when the aggregate of all basic quantities approximates to the demands of the liquid milk market. Since a producer will receive a much lower average price, if his summer production largely exceeds his winter production, this system tends to encourage a more level milk production and as such prevents a large surplus production in the summer. It is possible for a producer to obtain highest average milk price if he restricted his milk production within the limits of his basic quantity throughout the year.

One of the disadvantages of this method is that it would encourage a level production by every milk producer regardless of his circumstances. It may be in many cases more desirable and much more economical to produce milk in the summer months compared to winter, but it would be

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detrimental to the producer working under this system and having only a small basic quantity allocation. A further difficulty in operating such a system is encountered in the correct determination of the Basic Quantities of individual producers. Each has to be very carefully calculated so that the aggregate always closely approximates to the liquid milk demand. Any liberal estimate is liable to result in a loss to the producers in general because any amount of the Basic Quantity milk not utilized in the liquid market will have to be manufactured, and the loss thus suffered will have to be made good by a heavier imposition of levy on all producers. Thus the Basic Quantities need annual revision. Such a system is of a very doubtful applicability on a larger scale as it involves determining basic quotas for a large number of individual producers supplying a market where considerable quantities of milk are used for manufacture.

The Boards are empowered to fix prices to be paid to them by the purchasers for liquid milk or for manufacturing milk, and although there is a provision in the Schemes for joint consultation with representatives of distributors, yet the final power to fix prices is in the Boards' hands. In the event of complete disagreement the matter can be referred to the Committee of Investigation. The effect of conferring such a power on the Boards in

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Great Britain is that each one has become virtually a statutory monopoly. This monopoly has always been questioned by distributors on the lines that it is prejudicial to them in practice that such a vital power be vested in an interested party. On the other hand it has been argued that a power to fix prices does not involve power to enforce purchase and in any case if a purchaser does not approve of such prices he is always at liberty to refuse to sign any such contract. But here the difficulty arises for the purchaser as he would be unable to procure any supplies from any source whatsoever, and thus is faced with the alternative of signing a contract on prices fixed by the Board or going out of business. However, as the purchasers are themselves well organised any deadlock could lead to a complete hold up of all distribution. Therefore safeguards have been provided, by the Agricultural Marketing Acts, against any such monopolistic power by the Board, in the shape of the Committee of Investigation. The services of this Committee have been utilized in such circumstances, but the procedure has been a long one in each instance and the decisions have, perforce, been of a retrospective nature. It would thus appear that the monopoly of the Board cannot be applied so as to be detrimental to the interests of the general public. The fact however remains that being the representatives of producers

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the Boards are naturally intent upon obtaining the best possible price for their producers and in the view of distributors, they cannot be expected to give an equal consideration to the interest of the trade or to the interest of consumers. This argument, and the fact that in cases of dispute the services of the Minister and Committee of Investigation have anyhow to be called in for deciding the ultimate price, led the Cutforth Commission on Reorganisation of Milk Marketing in Great Britain to recommend that the responsibility of determining should be undertaken by an independent body appointed by the Government (20). Such an arrangement is already in force in Northern Ireland, where the Joint Milk Council has the power to decide and fix prices. Any such change in the powers of the Milk Boards would be very drastic and producers would be deprived of powers which they claim to be naturally theirs. It may now be said that any fears held by consumers and distributors have been proved to be largely theoretical and up to 1939, there were few disputes requiring reference to the Committee of Investigation. The Boards themselves, fully realized that any policy on their part of not bearing in mind the legitimate interests of consumers would ultimately result in a loss to the producers.

Manufacture of Milk Products under the Marketing Schemes:-

The Milk Marketing Schemes have introduced changes

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which have had a great influence upon the manufacture of milk products. Although manufacture accounted for only 30% of the total milk production, the arrangements effecting its pricing policy were a very important factor in pre-Scheme periods. Manufacture in Britain presents a unique position, in that all its operations and price structures have to be dependent on World manufacture. Great Britain is the most important dairy produce importing country in the world. The home production of two most important milk products i.e. butter and cheese amounted to only 10% and 23% respectively. These products were produced much more cheaply in the great dairying countries like Denmark and New Zealand. The price of the competitive home produce also had to be kept similar and thus any manufacture of these products at home meant a very low return per gallon of the milk to the producer. In many cases it was even difficult to obtain as much as 5d. per gallon of milk used for manufacture into cheese and butter, while the same milk if used for liquid consumption would have realized nearly 14d. per gallon. In the pre-Scheme, period manufacturers purchased milk from producers at a flat rate for the purpose of manufacture, and if during the coming season the world market price of milk-products declined they had to suffer the loss, and if the price increased they retained all the profits without any benefit to the producer. Moreover, as

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the value of different milk products e.g. cheese, butter, milk-powder, condensed milk etc. was different, the different manufacturers received variable values from the manufacture of milk products according to the product manufactured by them, although they all paid the same price for manufacturing milk supply.

Such a haphazard arrangement was completely changed by the Schemes, and the principle of selling manufacturing milk at prices which were related to the selling price of the manufactured product was introduced. This important change has gone far to remove the major difficulties that faced manufacturers in pre-Scheme days. The factories could now make definite provision for the purchase of manufacturing milk as a separate commodity. The system of realization values is thus designed to enable manufacturers of all kinds of milk products to continue in business, while securing to the producers the maximum returns from each class of manufacturing milk. The system has an additional advantage of a full approval and cooperation of all manufacturing interests.

The precise method of applying the principle of realization value is different for all milk products. In England the prices of milk for manufacture into certain products including cream, dried milk and condensed milk for home consumption were fixed in the contract itself and

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normally for the period of the contract. Prices of milk for manufacture into cheese, butter and condensed milk for export, on the other hand, were all determined monthly by means of a formula based on the price of imported cheese. Such formulae were set out in the contract itself under the Scottish Scheme. The Boards also established their own Creameries for manufacture of milk products and this gave them reliable information as to the adequacy or otherwise of their agreed manufacturing prices for different products. All these arrangements had a very favourable effect on factory manufacture and during the first four years of the operation of the Schemes, the output of factory cheese nearly doubled and that of factory butter increased five-fold. The production of condensed milk and milk powder was also more than doubled.

Licences for manufacturing are granted by the Boards to manufacturers who in the first instance purchase all the milk at current liquid milk price, and then rebates are given at appropriate rates to those licensed buyers who are able to show that the whole or part of the milk has been used in manufacture. Under the English and Scottish Schemes this facility of obtaining rebates is confined to buyers who purchase not less than a daily average of 500 gallons, and the English Board made a further condition that not less than 300 gallons a day shall be manufactured.

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Thus buyers of less than 500 gallons per day and in England buyers of more than 500 gallons daily who manufacture less than 300 gallons a day are themselves obliged to bear any loss due to their day to day surpluses, as a business risk. There was thus a complaint from these buyers that they were placed at a comparative disadvantage and they required that some sort of provision was necessary to charge them less for their surpluses by means of any suitable formula.

Another important effect of the Milk Schemes on manufacture has been the encouragement given to Farm-Cheese making. As has already been shown, due to the inception of Schemes there was a trend towards selling all milk through the Board rather than manufacturing it at the farm. Cheesemaking on farms was unremunerative. It was realized that cheese made at the farm may be of much better quality than factory made cheese, therefore it was necessary to take steps to encourage this industry. The Scottish Board was the first to take steps in this direction. In February 1934, arrangements were made to induce farm cheese makers to retain their milk on the farm and the Board agreed to make up to them the difference between the net value of milk if sold off the farm (i.e. pool price less transport charges) and its value if turned into cheese. A similar plan was introduced by the English Board in April 1934. They agreed to pay the difference as above

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to those farmers with at least eight cows (later six) who undertook to keep all their milk on the farm for making into cheese. Grants were made by the Government under the Milk Act 1934, to the Boards, to enable them to pay the extra money to the cheese makers.

Similar arrangements to assist the manufacture of butter on farms were not made, as these presented considerable administrative difficulties and moreover butter could be much more efficiently manufactured in factories.

Milk Distributive Trade and Consumers' position under the Milk Marketing Schemes.

The distributors have gained some very valuable advantages from these Schemes. The most important advantage arises from the power of Boards to prescribe the minimum retail prices. By this all the distributors are now protected from undercutting by each other and by the producer-retailers. The larger distributors have another important advantage in that they no longer have to suffer any losses on any milk surplus to their liquid requirements as they can claim rebates from the Board for all amounts of milk manufactured. All the Boards fix the minimum retail price which is higher than the price paid by the distributor to the Board by a margin known as the 'distributors' /margin'.

margin'. This margin covers the handling of milk from the time it reaches the buyer's premises to the time when it is received by the retail customer. It can thus be seen that this margin should vary according to the amount of service rendered by the distributors to the consumer.

But it is not so. The effect of the Schemes on the margins has been to standardise them irrespective of the services rendered. Some milk is sold retail in its raw state and some is subjected to some form of heat treatment e.g. pasteurisation, but they both retail at the same price. Similarly there is no differentiation between the selling price for milk sold loose (i.e. by measure from an open can) and in returnable glass bottles. Thus where milk is subjected by the distributors to any of the processes e.g. cooling, pasteurisation or bottling, the expense of the process has to be met from the distributors margin. The Milk Marketing Schemes do not provide for different retail prices in cases where one or more of the above services are not provided by the distributor. Such differential prices are, however, provided under the Northern Ireland Milk Scheme where such a principle of differentiation has been recognised and there are different distributive margins to cover various services. Thus if a consumer is prepared to fetch his milk from the distributors' premises, he can obtain it for a lower price, because he is himself

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performing the service of delivery from shop to home. One standing danger of only one fixed minimum price is that goods and services are standardized in such a way and at such a price that the consumer either should pay the higher price for the standard article or go without it. If there were this differentiation in price according to the service given by the distributor, then it can be possible for a consumer to obtain milk at a smaller price if he cannot afford to pay for the costly service e.g. collection of milk from the distributor's premises.

This control of retail price and fixing of the minimum price, thus fixing the distributors' margin, operates directly to the benefit of the distributor and it is open to question whether such a provision would be necessary at all with regard to the general benefits to the consumer. It is seen from Table VII and Fig.2., diagrammatically showing the factors that make up the consumers' price of liquid milk, that of the estimated consumers' average price of 27.28d. per gallon, the distributor took 11.22d., accounting for 41.13% of the total consumers' price and being nearly equal to the net price, 11.44d. per gallon received by the producer. It is noteworthy that such a margin was prescribed by the Board. That such a margin is reasonable and really necessary is a debatable point. The Costs and Profits of Retail Milk

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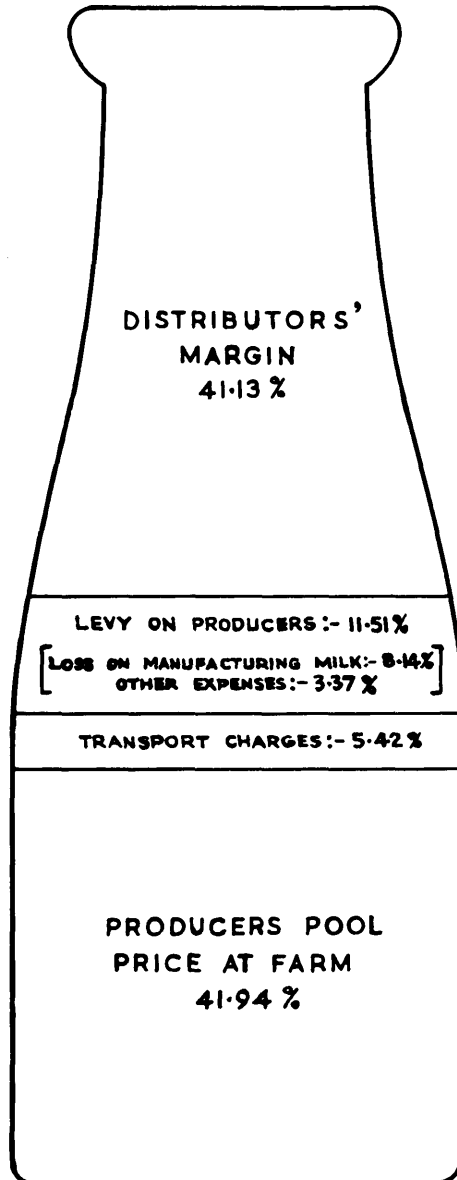
Table VII.

Composition of Final Consumers' Milk Price
Milk Marketing Board.

Items	Pence per gallon	Per cent of total price
1. Net Price at the Farm.	11.44	41.94
2. Transport Charges - from Farm to Dairy.	1.48	5.42
∴ Producers Pool Price	12.92	
3. Loss on Manufacturing Milk.	2.22	
4. Administrative expense, reserve, publicity.	0.18	
5. Cost of "Milk in School" and "cheap milk" Schemes.	0.29	
6. Levy for Quality Premiums.	0.45	
∴ Total Levy on Producers.	<u>3.14</u>	11.51
∴ Average wholesale price.	16.06	
7. Distributors' margin.	11.22	41.13
Total Consumers' average Price for year 1938.	27.28	100.

FIG. 2.

COMPOSITION OF CONSUMERS'
MILK PRICE. (1938)



Distribution in Great Britain were examined during 1937, by the Food Council. One of their conclusions was that, as the price competition among distributors is prevented by fixed retail prices, another sort of competition, that of providing more elaborate and costly services to the consumer is resorted to. Such services are unnecessarily elaborate and add to the operating costs. The distributors who do not indulge in such services necessarily make a high rate of profit.

Apart from giving a rigid protection to the distributive trade this fixed price policy does not afford any benefit either to the consumer or producer. Subject to the proviso that all distributors should comply with whatever minimum conditions are necessary to protect the public health, the choice between relatively cheap milk with a simple distributive service and dearer milk with a more elaborate service should rest with the consumers. Thus it should not be necessary for the Board to fix any such minimum retail prices. There is already a fixed wholesale buying price which is the same for all distributors and a healthy competition can be encouraged in distributors to provide the consumer with the cheapest and most efficient distributive service. There may be a danger that in some areas, particularly urban areas in which large firms predominate, these may make unanimous agreements to prevent

a reduction in retail prices or to raise them. In such cases, the Boards might fix maximum retail prices where such is desirable in the public interest. Such a provision would protect the consumers' interest and would not be harmful in any way to the efficient distributor.

CHAPTER IV .

MEASURES TAKEN BY THE GOVERNMENT AND MILK BOARDSFORTHE DEVELOPMENT OF DAIRY INDUSTRY.1933 - 1939.

With the passing of the Agricultural Marketing Acts 1931 - 33, and the subsequent establishment of the Milk Boards under the Acts, there began a new era in the history of the Dairy Industry in Great Britain, during which keen interest was taken by the Government and financial assistance provided where necessary. A situation in which assistance was required by such an organised industry, arose from reasons which have been explained in the last chapters where references to such assistance have been given. However much organised the milk producers were, there remained certain factors over which they could possibly have no control. One of these was the competition with the home produced milk products by imports from foreign and Empire countries which could export comparatively cheaper milk products, especially butter and cheese. It has also been discussed how these imports had effects not only on the price realized by home milk utilized in manufacture, but also on the consumers' price. Financial help was also needed, not only in the interests of milk producers, but in

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the national interest, to increase the consumption of liquid milk by way of cheap-milk schemes and milk publicity; and to effect long term improvements in the quality of the nation's milk supply. . It has, however, to be kept in view that any such financial help, however generous, could not have been utilized to the fullest extent in the national interest but for the existence of the Milk Boards.

The first step taken by the Government was in the form of the Milk Act 1934, the provisions of which were extended year by year till 1939. The Milk Act 1934, came into force from the 15th. August 1934. Its main objects, to provide the assistance needed by the producers were: the improvement of returns to the producer from the sale of milk for manufacture, the promotion of increased liquid milk consumption; and improvements in the quality of milk supply. Naturally, the Milk Marketing Boards were also required under the Act, to augment the grants so as to achieve appreciable benefits.

Assistance for Manufacturing Milk:-

The price realized by producers from the disposal of their milk in the manufacturing market fell very low on account of low priced imported butter and cheese. The Act was designed to put a "floor" to such a depressed market, and a minimum return to producers was guaranteed by the

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Government. This minimum was set at 6d. per gallon in winter and 5d. per gallon in summer. The amount of Exchequer payments per gallon was limited to the difference between the "standard price" i.e. 6d., or 5d., in winter and summer respectively, and either "cheese-milk price" or the price realised by the Boards, whichever was the greater. The "Cheese-milk price" was calculated in relation to the price of imported New Zealand and Canadian cheese. The price realized by the Boards depended on the products manufactured, the scale of prices being determined by the Boards. No payments were to be made whenever the cheese-milk price equalled or exceeded the standard price. Originally any such assistance was not intended to be in the form of subsidy, but rather as a loan repayable if certain specified improvements in the manufacturing markets took place, e.g. if the cheese milk price exceeded the standard milk price, in any of the forty two months beginning April 1936, i.e. up to October 1939, by more than one penny. However the Milk Act 1938, released the Boards from such repayments as from August 1937. These Acts were also applicable to Northern Ireland.

There is no denying the fact that this assistance did help to tide over the difficult years at the beginning of Milk Marketing Schemes. It is however, open to question whether the producers did not deserve a more generous assistance. Even for those already given under the Acts,
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the English Milk Board contends (21) that this guarantee of minimum price proved to be elusive in practice. The formula for calculating the cheese-milk price was, in the opinion of the Board, very "theoretical" which produced a higher figure than the prices 'actually' realized by the Board and through this the producers were deprived of more than a million pounds which they should actually have genuinely received.

Moreover, these grants received as assistance to the manufacturing milk prices amounted to only 0.403d. per gallon of milk manufactured or 0.124d. per gallon on all milk sold. It can thus be seen that any such grant could hardly bring about any reduction in the consumers' price, or help to reduce the burden of manufacturing milk on the consumers.

The Promotion of Increased Liquid Milk Consumption

Any increase in liquid milk sales through the Boards directly favours the financial returns to producers. The Boards have either independently, in cooperation with distributors or in conjunction with the Government, attempted in a number of ways to increase the consumption of milk. The Boards' own efforts were greatly stimulated by the Milk Act 1934, which provided for contributions towards such expenses incurred by Boards in such efforts. These grants were available to the Boards for Schemes approved by the Government under this Section of the Act. The steps taken

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by the Boards can be considered under two heads: i.e. Milk-in-School Schemes and General Publicity.

(i) The Milk-in-School Schemes:

A Milk-in-School Scheme was already being operated in England and Wales. Promoted by the National Milk Publicity Council, it was started in 1927 and by 1933, nearly $8\frac{1}{2}$ million gallons were supplied during the year to some 900,000 school children. The necessary funds were provided by the producers and distributors and milk was supplied in $\frac{1}{3}$ rd. pint bottles at 1d. each. As a result of the grant by the Milk Acts, the Boards were enabled to supply such milk at a specially reduced rate of $\frac{1}{2}$ d. per one-third pint bottle.

These Milk-in-School Schemes were operated on the same basis by all the Milk Boards. It may be mentioned here that apart from the Government grant, a very valuable cooperation was afforded to the Boards by milk distributors who agreed to accept a comparatively lower margin for distributing such milk. The dairymen received 6d. per gallon in the beginning (later raised to 7d.) and the Board got the remaining money i.e. 6d. per gallon given by the children. Tribute has to be paid to cooperation of school teachers, who supervised the distribution of milk to the children and collected the money from them. The Government

/grant

grant provided for a part payment of the difference between 6d. - the sum received by the Boards - and the Boards' standard price for liquid milk sales. These Exchequer contributions to the Boards in England in each year were at the rate of half the above difference on the first 18 million gallons and a quarter on the remainder. In Scotland these contributions were half the above difference.

In October 1934, the first month of the operation of this Scheme in England, nearly 2 million gallons were consumed in the schools, and the total amount consumed during the first year was nearly 23 million gallons, distributed to over 2½ million school children. Under the Scottish Scheme, over 300,000 children were provided with more than 1½ million gallons of milk. The Schemes were continued in full force till 1939 when nearly 3½ million school children consumed over 29 million gallons of milk.

It can be seen that individual producers, however enterprising and far seeing, could have done little to stimulate consumption of milk on such a scale, and the very successful operation of this Scheme may well be counted as a big feather in the cap of the Boards. It is also proper to note here that the considerable grants made by the Government to the Milk-in-School Schemes, have been utilized solely to the benefit of the school children in the national interest. Any benefits obtained by the milk producers

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thus were only indirect, and although it is customary to include this money as one of the Government's aids to Agriculture, in actual fact it is a grant in aid of the consumer of milk.

(ii) General Publicity and Research:-

To bring about a much needed increase in milk consumption in the country, the consumer had to be made conscious of a fact well known to experts on nutrition, that while milk is a perfect food, it is also the cheapest, and it had to be brought to the notice of the general public in a manner which would impress the housewife, and indeed every member of the family. This could be achieved by Press and poster advertisements and methodically conducted general publicity. For such purposes the Milk Board in England had collected about £ 40,000, by means of a publicity levy during one month of one-eighth of a penny per gallon from distributors, to which an equivalent sum was added by the Board, representing the producers' contribution. This total of about £ 80,000 was entrusted to the administration of the National Milk Publicity Council. Ten percent of this fund was reserved for research purposes. No such special levy was introduced by the Scottish Boards.

The Milk Act 1934, helped the Boards in their general publicity campaign by providing grants so as to

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contribute half the expenses of such approved schemes. The Board met the other half of the expenditure from the fund referred to above. In Scotland, the Board's share of the expenses was provided from the general pool funds.

This general publicity took the shape of press advertisements and poster displays throughout the country, and it was considered that this policy brought about increased milk consumption. The financial advantages to the distributors and producers far outweighed the costs involved. The Government grants were discontinued in 1937 - 38.

The English Milk Board took even more initiative to encourage the establishment of Milk Bars by providing an advisory service to the interests concerned. The first such Milk Bar was opened in London in 1935 and by 1937, these had increased in number to more than 1300 throughout England and Wales.

The grants provided under the Milk Acts were also utilized for research into the problems of the Industry and a Nutritional Inquiry. The Exchequer contributions were half the expenditure incurred, the other half being provided by the Boards.

Improvement in the Quality of the Milk Supply:-

The Milk Act also made funds available for

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improving the quality of the milk supply by eradication of tuberculosis from dairy herds. A Scheme of "Attested Herds" was started in England and Scotland under the Act, which provided for a bonus of a penny per gallon on all milk from such herds, sold through the Boards. High standards were set out to ensure that only such herds as produced this standard of milk were given this bonus. To be registered as an Attested herd, tuberculin tests were carried out by Veterinary Surgeons to detect any reacting animals and only those herds which revealed no reactors after three consecutive tests had been made, could be registered. The Act also provided funds for research into the reliability of tuberculin tests.

In addition to the above quality improvement Scheme, assisted by the Government grants, the English Milk Board, started on its own an "Accredited Producers Scheme". In order to stimulate the production of high quality milk the Board instituted an Accredited Roll - on which were recorded the names of such producers as conformed to certain standards of milk production. The Scheme was begun on 1st. May 1935, and every producer who was able to obtain a Grade "A" licence under the Milk (Special Designations) Order, 1923, became entitled to registration on the Roll. Every producer so registered was given a bonus of 1d. per gallon on milk sold through the Board. The bonus was paid

/from

from the general funds of the Board. The effect of such an important Scheme was that the number of Accredited milk producers increased very rapidly from 800 to 22,711 within the first 3 years of the Scheme, producing over 376 million gallons of milk. Later on the term Grade "A" was dispensed with and The Milk (Special Designation) Order 1936, included in it this standard of production as "Accredited".

All this general policy of improving production standards was afterwards incorporated in a Government plan of assistance to the Dairy Industry. The Boards continued to pay premiums on an agreed scale, operating from 1st. October 1938, to producers of quality milk and the Government augmented these bonuses by grants from the Treasury as provided by the Milk Industry Act 1939. The granting of such Exchequer payments was on the condition that Milk Marketing Boards also made the prescribed contributions. The scale of premiums thus payable is given in table no.VIII.

Table VIII

Payments in Respect of Quality Milk

Grade of Milk	Exchequer	Board	Total
	pence per gallon		
All Tuberculin Tested or Certified Milk, and milk from an Attested herd, which is Accredited or Standard Milk	1½	2¼	3½
Accredited or Standard Milk (not T.T. or Certified and not from an Attested herd)	¾	1½	2
Milk from an Attested herd which is not Accredited, T.T. or Certified	½	1	1½
All T.T. or Certified Milk and milk from an Attested herd, which is Accredited or Attested	¾	1½	2
Accredited or Standard Milk which is not T.T. or Certified Milk and is not from an Attested herd. . .	5/8	1	1.5/8

Source: Milk Industry Act 1939. - Schedule.

CHAPTER V.

WAR-TIME CONTROL OF MILK MARKETING

The outbreak of War in September 1939, brought about a complete change in milk marketing methods, as the powers which the Boards had exercised for the past six years were suspended by a Government Order, known as Milk Marketing Boards (Modification of Functions) Order., under the Defence Regulations. The Ministry of Food which was established to have complete control over all food supplies of the country, had a Milk Division which assumed control over milk marketing. It was the function of this Ministry to purchase all the home produced and imported food, including milk and milk products, and to share this out under a rationing and price system which was so adjusted that everyone would afford to buy their rations. The exigencies of war necessitated close control by the Ministry of Food over all phases of production, processing and distribution of milk. The Milk Boards continued in operation but under the direction of the Ministry of Food. It can be said now, that the Government took the fullest advantage of the accumulated experience and knowledge of the Milk Boards and exercised control over the industry through controlling the firmly established Milk Boards.

The most important fundamental change in milk

/marketing

marketing introduced by the Ministry of Food was to discontinue the system of "Pool" price policy, under which the returns to the producers were affected by the use to which the milk was put. In its place was instituted a policy of fixing guaranteed milk prices for the producer irrespective of the utilization of milk supply; thus there ceased to be any direct relationship between the prices paid to the producer and the sums realized from the sale of milk to distributors and manufacturers. The Ministry also fixed maximum retail prices, as a safeguard to the consumers, and regulated all the margins of distributors and manufacturers. There were the usual seasonal variations of producers' prices and all accounting, though still done by the Milk Boards, was on behalf of the Ministry of Food. In the early stages of war the existing arrangements of purchasers getting their milk supplies from producers were not changed much. But as the war advanced there were considerable population movements and changes in the requirements of consumers, so that it was not very easy to control the entire flow of milk, without effecting a complete change in the whole marketing system. These extensive changes were introduced from October 1942, and have continued in nearly the same manner till now. Only very minor amendments had had to be introduced. The changes were not so extensive in Scotland as in England and Wales, as is explained in the sections following.

/England and Wales

England and Wales

As from 1st. October 1942, when all the then existing contracts between the producers and purchasers of milk terminated, the Milk Board became the purchaser of milk from producers at the guaranteed prices fixed previously, and agreed between the Ministry of Agriculture and the Ministry of Food. The price payable to milk producers is decided each year in advance following a review - held in February - at which all the relevant data of the cost of milk production is carefully examined and discussed by the Ministry of Agriculture and producers' representatives. The data on cost of milk production is provided by the Agricultural Economic Advisory service, who carry out investigations on such subjects in all parts of the country. Simultaneously the Milk was sold to the Ministry of Food at that price, who sold it to distributors and manufacturers. Thus at the first destination the property in milk passed instantaneously from the producer through the Board and the Ministry to the purchaser. The Board was made responsible for carriage to the point of this first destination and made standard haulage deductions from the prices paid to the producer. The prices paid by the Ministry to the Board were calculated to be sufficient to cover the guaranteed prices payable to the producers and the expenses of the Board, less any profits from the Board's Creameries, and

/net

net levies from the producer-retailers; and a contribution towards the cost of transport outwards from country depots. In other words, all the financial responsibility of milk marketing passed into the hands of the Ministry of Food, which made all adjustments wherever necessary, as between the money paid to the producers and money received from the distributors. All the distributors are required to pay for the milk purchased from the Ministry, a price, so calculated, as to allow them the prescribed distributive margin from the fixed price they would ultimately receive from consumers. The maximum retail prices are prescribed by the Ministry, for the non-designated and designated milk (under the Milk - Special Designation Orders). There are different allowances and margins prescribed by the Ministry for different services performed by the wholesalers, distributors, country depots and manufacturers. The Ministry authorizes the use of milk for various manufacturing purposes and allows rebates to the purchasers, appropriate to the class of manufacture, according to a fixed scale.

Premiums continue to be paid by the Board, (who receive full reimbursement from the Ministry of Food) to dairy farmers who produce Tuberculin Tested, Accredited or Attested milk. In order to encourage more winter milk production, a special winter milk production bonus is also allowed on certain quantities of milk produced.

/The

The Milk-in-School Scheme was continued and a new National Milk Scheme was introduced in July 1940, under which the provisions for supply of milk at a specially reduced rate were extended to every child under 5 years of age and every expectant mother. The distributor received the full retail price for milk supplied under the Scheme by making a claim upon the Ministry of Food for the difference between this and the amount paid to him by the beneficiary.

Grants are paid to producer-retailers in order to give them the same increase in remuneration as other producers and distributors. Thus all these extra expenses are met by the Ministry of Food by grants from the Exchequer under the head Food Subsidies.

(Fig.3 shows the milk-flow chart for England & Wales.)

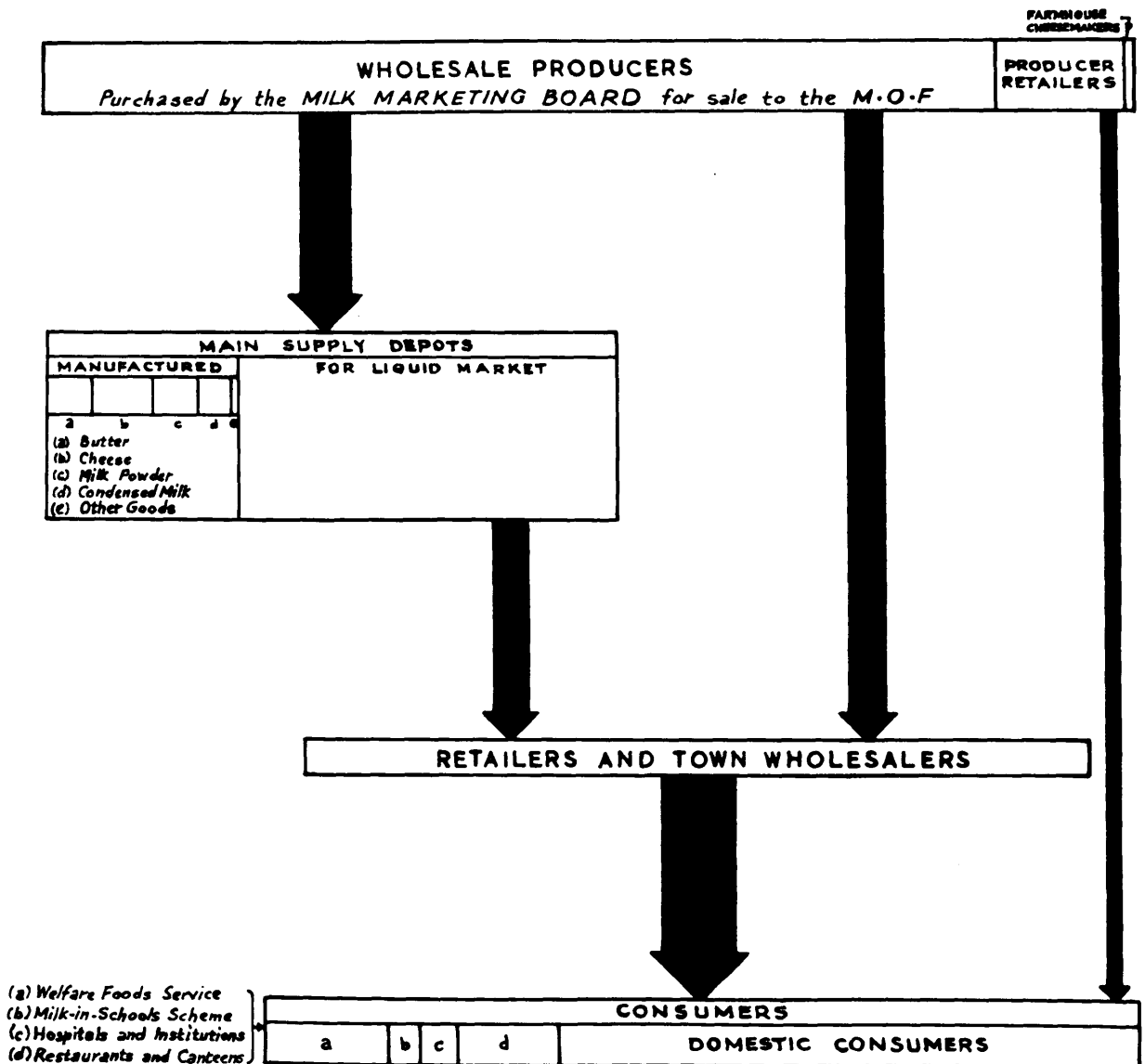
Scotland

The Scottish Boards had more power, even prior to 1939, to control the movements of milk ex-farm, therefore the Ministry of Food did not become the owner of milk as in England, instead, the Boards became the agents of the Ministry to buy milk from producers and sell it directly to the distributors, under the direction of the Ministry. The Boards arranged for the collection of milk from the farms, and standard haulage deductions were made from prices paid to producers. Rates of haulage as paid to the hauliers employed by the Boards, were now fixed by agreements between

/the

FIG. 3.

**MILK FLOW CHART.
(ENGLAND AND WALES.)**



the Scottish Hauliers Association and the Ministry of Food. Creameries - either Board-owned or private - were paid fixed handling allowances by the Ministry. The overall margins of wholesalers and distributors were determined by the Ministry and were uniform throughout the year. Thus the Food Ministry took over all financial arrangements of the Boards, and made good any deficiencies in their accounts.

There were certain areas in Scotland which were outside the scope of any of the Scottish Milk Boards prior to the war. Emergency Schemes were formed to bring some of these areas also under control and these Schemes were also administered by the Boards as agents of the Ministry of Food.

The producers' guaranteed prices are fixed as in England. All the benefits of Welfare Food Services and Milk-in-Schools also apply to Scotland. (Fig.4 shows the milk-flow chart for Scotland).

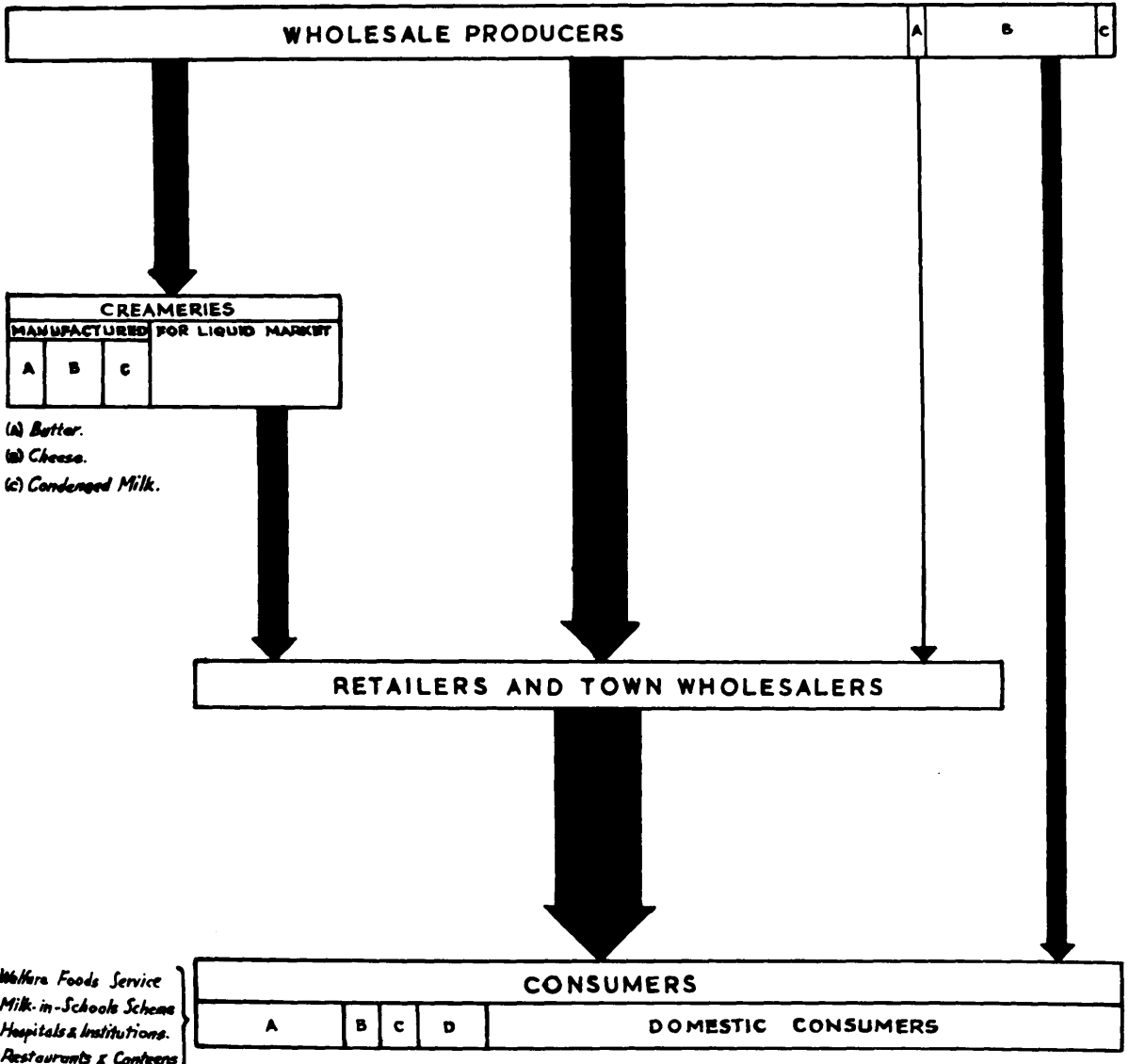
Over all Great Britain when the 'rationing' of milk was introduced - and which continues till now - all consumers were required to be registered with dairymen, and it was on the basis of these registrations that the dairymen obtained their milk supply from the Ministry of Food. Consumers were divided into two classes, - according to their needs of milk - the Priority class and non-priority consumers. The former included recipients of milk under the Milk Welfare Schemes (the former National Milk Scheme)

/e.g. children

FIG. 4.

MILK FLOW CHART.
(SCOTLAND.)

(A) *Producer Wholesalers.*
(B) *Producer Retailers.*
(C) *Farmhouse Cheesemakers.*



e.g. children below 5 years of age, expectant mothers, and other persons so authorized on Medical grounds, and the Milk-in-School Schemes. Rations of milk for these classes were prescribed by the Ministry and their need was first met from the milk supplies available. The remainder of the milk - after providing for some essential manufacture as decided by the Ministry - was available to the non-priority class on a weekly allowance basis. It may be added here that milk has never been "rationed" in the accepted sense of the term. After the demands of the priority consumers are met, whatever is left is received by the non-priority consumers. No minimum is guaranteed as in other rationing systems. The various scales of prices payable by those receiving priority milk were prescribed and the cost borne by the Ministry.

These changes meant that the Ministry of Food became the sole owner and director of supplies and the Milk Boards had no more say in such matters. The pre-war arrangements by the purchasers and distributors had also meant their being free to obtain their milk supply from any producer, under contract, and sell it anywhere to consumers. This entailed unnecessary duplication in transport and distributive services and a new rationalization plan was worked out in two spheres: Farm Rationalization and Rationalization of Retail Distribution of Milk.

The Farm Rationalization Scheme provided for separate block collection areas from which particular buyers would receive their farm supplies, the transport arrangements being reorganised accordingly. The general effect was to restrict the supply areas of the various consuming centres so as to obtain as much economy in transport costs and materials. It is estimated that such farm rationalization saved 75,000 vehicle miles daily resulting in an annual saving of $2\frac{1}{2}$ million gallons of petrol, and in the elimination of about 20% of the pre-war milk collection transport. This also brought about an orderly system of allocating milk to buyers with centrally organised transport services. It had also the effect of improving the quality of milk on delivery to the buyer, owing to the shorter journey from the farms. These arrangements were continued even after the war ended, so that now the movement of milk from farm to the first destination is fully reorganised.

Rationalization of Retail Distribution of Milk was officially introduced in order to secure the daily delivery of milk to households under war-time conditions with the utmost economy in the use of labour and transport. The exact policy was decided after discussions with all the sections of the trade including the Co-operative Movement, large-scale distributors and small dairymen. There were separate Schemes for all urban areas with a population of

10,000 and over. In such areas all the dairymen were required to form a wartime association and the initial responsibility of preparing such Schemes was placed on the dairymen concerned. The majority of these Schemes provided for the "block" delivery of milk i.e. one private distributor and one Co-operative Society in any street or section of a street. Transfers of Registration were therefore required amongst the distributors to operate such a Scheme with a proviso that all dairymen were to receive the same gallonage as that to which they were entitled before the Scheme. Such Schemes were designed to secure the utmost economy possible, in the use of vehicles, petrol and man-power. It is estimated that by this, over 2 million gallons of petrol per annum were saved and over 7,000 vehicles of all types were taken "off the road". Nearly 11,000 men and women engaged in distribution were made available for other more important work. Considerable financial savings were thus achieved, resulting in enabling the distributors to perform their functions on a smaller distributive margin.

The above milk marketing arrangements, enforced during war, have continued till now and still remain under the supreme control of the Ministry of Food. The most important of these, as already indicated, is the guaranteed fixed price for the milk produced. This policy has now been permanently recognised, and provisions have been made

in the Agricultural Act, assuring a guaranteed price for milk. This policy gives rise to a very important point; that of the scope of the activities of the Milk Marketing Boards, which are at present, nearly suspended. The situation which needed a stable market and safeguard for the producer, which resulted in the establishment of the producer-controlled Milk Boards, is partly removed by the guaranteed price policy of the Agricultural Act. These points on the future of milk marketing are discussed in a subsequent Chapter.

CHAPTER VI.

NEW DEVELOPMENTS FOR THE EXPANSION OFMILK PRODUCTION BY THEMILK MARKETING BOARD.

Emphasis was placed on milk, during war time nutritional policy, and when demand outstripped supply to a great extent, attention was focussed on increasing milk production in the country. Great Britain being very largely dependent on imported feeding stuffs which were difficult to obtain, the most important point for consideration was the efficiency with which the dairy cow converted these feeding stuffs into milk and butterfat. In other words, every step was required to be taken to raise the productivity of the National Dairy Herd. Big developments to achieve this were specially undertaken by the Milk Marketing Board of England and Wales, which as a part of its services to the producers, established a Department of Dairy Husbandry to develop four important movements concerned with such improvements. These are: (i) Artificial Insemination (A.I.) Service, which is organised to provide producers - and especially small herd owners - with the services of superior dairy sires; (ii) National Milk Records by which records of yields of milk and butterfat of individual cows are made and certified; (iii) the Bureau of Records, which collects

/records

records of yields in a form in which they can be used for improved breeding and (iv) Encouragement of Co-operative grass drying, by establishing Co-operative Grass Drying Plants and providing producers with this feeding stuff.

(i) The Artificial Insemination Service

That an efficiently organised Artificial Insemination Service can be outstanding in the opportunities it extends to farmers to reap the benefits of an improved breeding policy, is beyond any doubt, as has been proved by its successful operation in this country for over 4 years, and for a much longer time in other predominantly dairying countries like Denmark. Artificial Insemination offers to farmers a method of breeding which is cheaper than natural service and as efficient in ensuring conception. The Milk Board, being convinced of its benefits, came forward in 1944, with a plan for the national development of this service. The Board was granted powers under the Milk Marketing Board (Extension of Powers) Act 1945, to make this service available for the benefits of all cattle owners.

While the day to day administration is left entirely to the Board, it is guided in its plans for development by the National Advisory Committee on Artificial Insemination, which was appointed by the Minister of Agriculture, and on which are represented the Breed Societies, the National

/Farmers'

Farmers' Union, the Milk Marketing Board, the Veterinary profession and agricultural scientists. The chief functions of this Committee are: (a) to plan the siting of centres in England and Wales; and (b) to see that all operations at these centres are carried out efficiently, by the constant study of quarterly and annual reports submitted in approved form by each centre to the Committee.

The Board opened two A.I. Centres in 1945, and many more were opened during the next years. All those desirous of obtaining A.I. Service become members of the A.I. Centre (in their area) which is managed by the Board. The Board is assisted in the management of each centre by a Local Advisory Committee consisting of 9 members; six elected annually by the members of the Centre, one nominated by the relevant branch of the National Veterinary Medical Association and two nominated by the Board. The Committee advises the Board on all matters relating to artificial insemination in or near the area served by the Centre, and also exercises a general supervision over the work of the staff. An Annual General Meeting of members of each Centre is held each year to receive a report from the Committee of its proceedings during the previous year and to elect members of the Committee for the ensuing year.

Each Centre operates in a 10 mile radius and is designed to take 15 - 20 bulls at the outset. The typical

/Centre

Centre is built on part of a site of approximately 10 acres of land and consists of a bull block, an administration and laboratory block, an isolation block and a pair of cottages. In the majority of cases, clean sites are purchased and buildings to the Board's own design are erected. A qualified Veterinary Surgeon who has made a special study of A.I. supervises the Centre and has working with him a team of Inseminators who have been trained in A.I. methods and after examination so licensed by the Ministry of Agriculture. In addition, there is a stockman who is responsible for the care of bulls, and also necessary clerical staff.

Any member in need of A.I. Service for his cows, notifies the Centre by telephone immediately the cow is properly in season. All such calls are required to reach the Centre by 10a.m. when the Veterinary Surgeon and the Inseminators start on their rounds with 'semen' and inseminating apparatus to inseminate these animals. After the service has been performed, the Inseminators give a written statement to the owner in respect of each cow inseminated; it includes the date, identification of the cow and the name of the Bull from which semen is used. The insemination fee is 25/, and if the cow does not conceive a maximum of two additional inseminations are provided free of charge. An additional fee of 5/ is payable if a certificate for the purpose of pedigree is required. A member may ask for semen from a particular Bull and for this a nomination fee /of

of £3, which includes the basic fee, is payable. Full records of insemination are kept at the Centre.

A very careful selection is made for the bulls to be used at these Centres and a long and thorough procedure is followed to ensure that best possible bulls of several breeds are obtained. Licence is granted by the Ministry permitting the bull to be used at an A.I. Centre. Some idea of careful selection is given by the fact that more than 500 bulls were "screened" to get 66 bulls to be used for A.I. at the Board's Centres up to January 1947. The bulls are examined every six months by the Ministry of Agriculture inspectors.

Financial assistance was rendered by the Government under a special Agricultural (Artificial Insemination) Act 1946, which provided for Treasury grants to meet any deficiencies incurred by the Board in operating Artificial Insemination Centres during the periods from the 1st. January 1945 to the 31st. March 1950.

The A.I. Service expanded very rapidly during the last three years. The progress is shown in Table IX.

Such a rapid expansion of A.I. Service has been possible because of its efficiency and cheapness. In England and Wales, two-thirds of the dairy herds from which milk is sold have 14 cows or less and one half of the herds have 11 cows or less. This predominant class of dairy

/farmer

Table IX.

Milk Marketing Board

Progress of Artificial Insemination Service 1946-49.

Year ending 31st. March	1946	1947	1948	1949
1.No.of Centres	4	9	11	18
2.Membership	922	4,420	12,766	33,249
3.No.of Bulls	25	69	182	303
4.Inseminations	6,401	25,535	90,173	256,054
5.Fees and sub- scription receipts. £	8,626	33,969	119,137	333,043
6.Government Grant. £	5,657	10,348	---	---

Source: Reports of Milk Marketing Board.

farmer has benefited most from the service, wherever it has been possible to provide. In the past such producers were never able to buy or obtain services of a good pedigree bull; with the A.I. Service, a producer having 12 cows is sure of obtaining the services of a really first class bull for as little as £15 per annum - this sum is far less than that required to buy or even feed a bull - even a third-rate bull. The Board is at present very optimistic about the improvements to be achieved by the A.I. Service, and it forecasts an average increase in quantity of 100 gallons per cow per annum, and in quality, of from 0.2% to 0.4% in the butterfat content. This is put forward as a conservative estimate for the first generation of A.I. cattle. (22)

(ii) National Milk Records

Milk recording had been practiced in England and Wales since 1914, by leading breeders - organised in local Societies and sponsored by the Ministry of Agriculture. These local Societies had organised a Central Council of Milk Recording Societies. Although much fine work was done in the early years by these Societies it had always been on a limited scale and the service was confined largely to a small circle of pedigree breeders, so that by January 1943, there were only 4,120 herds, recording only 125,390 cows representing 5.3% of all cows. During war-time it was realized that if production of the national herd was to be

/increased

increased rapidly, greater attention should be paid to records of performance in dairy herds and particularly to the ancestry of the bulls being used for breeding dairy cattle. As an organisation of milk producers, the Board agreed to organise milk records on a national basis and opened a campaign to extend the milk records service to a much larger number of milk producers. The Board was supported by the Ministry of Agriculture who was to provide financial assistance. The National Milk Records thus came into existence from 1st. January 1943.

The Board is responsible for organising and operating the service and all members - i.e. producers recording their herds - take a prominent part both locally and at the centre in controlling the Scheme. Like all other activities of the Board, this service is also organised on a regional basis. The eleven regions of the Board are divided into several branches, and each branch has its Branch Committee, elected by the members themselves. These Committees have duties to see that all operations within the Branch are carried out efficiently. The Board supplies a Milk Records Officer and a number of trained milk Recorders for each branch. These Branch Committees, associated with the Board's regions, elect representatives to a National Advisory Committee for Milk Records which guides all the operations of the National Milk Records. The Committee

/consists

consists of 29 members, with representatives from:-

Ministry of Agriculture and Fisheries	-	4
National Cattle Breeders' Association	-	4
National Farmers' Union	-	2
Branches of National Milk Records	-	12
Agricultural Scientists (co-opted)	-	3
Milk Marketing Board	-	4

Any registered producer of milk can become a member of the Milk Records Branch in his area. From the inception of the service till September 1948, two types of Schemes were in operation: a Senior Scheme and a Junior Scheme; the latter has been withdrawn as from October 1948, so at present there is only one Scheme of Milk Records. There was also a separate Sample Testing Scheme, to provide the members in the Senior Scheme with facilities for having their milk tested for butterfat. This has also been incorporated in the new Scheme, but is not compulsory for all members. The new Scheme is divided into two parts:-

Division A - Milk Yields and Butterfats.

Division B - Milk Yields only.

Charges on the following scale are payable to the Board:-

Division A - 10/6d per cow with a minimum of £8. 10/ a year for which the member is entitled to eight visits a year by the Recorder; Division B - 6/6d. per cow with a minimum of £5 a year for a maximum of six visits a year by the Recorder.

All records in both divisions are certified as official. There are extra charges payable if more service of the Recorder is required as for extra visits - permitted only for Division A -, recording of three times a day milking and for entering the records in the members' register.

The Board supplies to each member, free of charge, weighing sheets and herd register, and the members have to provide an approved type of pail and spring balance. The member may choose to weigh the milk yield of all his cows either daily or once a week, throughout the year. The weight of milk so obtained must be entered on the appropriate weighing sheet, which must also have the name and earmark of each cow - as tattooed by the Board. The weighing days in the case of the weekly weigh are the same throughout the year. Visits are paid at regular intervals by the Recorders to the member's farm, when the weighing and recording of milk is done in his presence. The weekly total for each cow is calculated by the Recorder and entered in the register. In the beginning of Milk Records, the yields of the cows were calculated on an annual basis, but since 1946 it was modified to a lactation basis i.e. each cow's milk yield was calculated on recorded data for a standard lactation of 305 days.

In the Sample Testing Scheme, those members of the former Senior Scheme who were participating could have either individual tests for certain cows or a herd test only, but

/no

no certificate was given for results of herd tests. The Board arranged for a Recorder to take samples eight times a year at intervals of not more than eight weeks and to have them tested in a laboratory. The Board also established a Central Laboratory at the head-office for the purpose of testing samples under the Scheme. The Board publishes every year an Annual Report of National Milk Records; the performances of the leading herds being included.

Table X. shows the progress made by the National Milk Records in the past 6 years. The Board is convinced that the most important single factor in the efficient production of milk is an increased yield per cow, and such an object can be achieved by the service of Milk Records which assist the producer by measuring performance to improve yields and efficiency in dairy industry. Milk Recording has been able to demonstrate by its progress and by the fact that average yields in a recorded herd are much above the average of the country as a whole, what can be achieved by adopting modern and scientific methods in the breeding and management of dairy cows. There is yet a very considerable scope for the extension of Milk Records, because in spite of good progress the percentage of recorded cows in England and Wales is only 19.5% - much less than in many other dairying countries, such as Denmark.

Table X.

Milk Marketing Board

Progress of the National Milk Records.

Year Oct. - Sept.	1943-44	1944-45	1945-46	1946-47	1947-48
Senior Scheme herds	11,765	14,535	17,320	18,876	20,496
Junior Scheme herds	3,105	2,888	1,765	1,253	789
Total	14,870	17,423	19,085	20,129	21,285
% of Total milk selling herds	10.3	11.1	12.2	12.8	13.6
% of Total milk selling cows	16.2	17.0	18.2	18.8	19.5
No. of Butterfat tests. '000	853	1,242	1,677	1,994	2,514

Source: Reports of Milk Marketing Board.

(iii) The Bureau of Records

The operation of National Milk Records made available valuable information on the performance of a large section of dairy cows. Such information, if left solely on the registers of members on their farms, could not be utilized to the best interests of milk producers in general. To make the fullest possible use of these records, the Board established The Bureau of Records in October 1946, the main object of which is to bring to bear on the breeding practices all scientific knowledge and information now becoming available in the National Milk Records. This could be done by using this information Centrally, to make available the largest possible number of accurate records of performance of the Nation's dairy stock, and subsequently this could be used in providing a service of progeny testing of bulls. On assembling these records the Bureau could carry out investigations which would yield results of immediate practical value to breeders and milk producers. A mission from the Board visited Denmark during August 1946, to study the very advanced milk recording movement there, and much valuable information was obtained.

The Bureau, stationed at the head-offices of the Board, is divided into a Lactation Section, a Progeny Testing Section and an Investigational Section.

The Lactation Section forms the basis of the Bureau.

Here the basic data - recorded in the first instance by the Recorder and checked by the Branch Office on a Lactation Record Card - are assembled. These cards are filed and from this File of Records it is possible to deal with any inquiry in regard to individual animals. Here also is the basic material required for progeny testing and investigational work.

Progeny Testing Section:- A complete progeny test of a bull is the object which the Bureau desires to achieve. This begins with the identity of the bull at birth, followed by the identity of his offspring at birth and finally leads to an assessment of the performance of the offspring. But all this information is not yet available to the Bureau, thus in the main, a bull first becomes known through the receipt of a Lactation Record Card for one of his daughters and by that time he is nearly four years old. However, the Bureau can obtain more comprehensive information about bulls used in the Artificial Insemination Service and bulls used in herds which are specially co-operating with the Bureau in a Calf Marking Scheme.

Investigation Section:- This is primarily concerned with the assembly of statistical data for the Regional and National Records Reports. The analysis of the material included on the lactation record card, and investigational work for the Board and its Advisory Committee are also handled here.

/The

The Bureau now has been in operation for over two years and it will be some years before the records assembled can form anything approaching a history of recorded cattle in this country; the Bureau, however, will be the main source of information on milk production. The Board, as being the representative of milk producers, considers all means of providing the producers with the advantages of a good breeding policy based on the use of proven sires and good cow-families. The Ministry of Agriculture is an equal partner with the Board in the financial assistance given to the recording movement, and endorses the Board's efforts in those directions.

(iv) Grass Drying

The War imposed restrictions on the importation of feeding stuffs into the country, and more interest had had to be taken in utilizing the resources available internally to a greater extent. One of such feeding stuffs is dried grass, the high feeding value of which for milk production, has been increasingly recognised. Realising the importance of dried grass the Board undertook to operate an experimental grass drying centre, during the summer season of 1947. The Centre was operated in conjunction with the Imperial Chemical Industries Ltd. The Board wished to develop such centres on a co-operative basis, and at the experimental centre, 38 producers co-operated, each of whom contributed

/the

the grass from one or two fields. In all, about 303 acres were involved, and the Board paid the producers a rental which varied according to the classification of the grassland, returning the dried grass to those participating, at a price based upon its protein content. The Board was responsible for the supply of labour and for all operations including the manuring of the fields, the cutting, collecting and drying of the grass, and the delivery of the dried grass in bales to the producer. The Manager of the plant was assisted by a small Advisory Committee elected by the participating producers. This was not a profit making undertaking, but an experiment carried out to ascertain the practicability of co-operative plants being established. The results obtained were sufficiently encouraging and the scheme was extended in the 1948 season.

The Board set up, altogether, 12 grass drying centres. The centres are operated on a co-operative basis and for practical reasons, participation in the scheme is restricted mainly to producers whose farms are situated within a radius of five miles from the plant. There is an Advisory Committee for each centre, elected by the producers participating, including representatives of the National Farmers' Union, the County Agricultural Executive Committee and the Board. An important feature of the Board's grass drying service now, is that it is being operated with the co-operation of the Ministry of Agriculture, whereby the

/Government

Government contributes towards the capital cost of establishing grass drying centres to operate on a non-profit making and communally run basis.

Grass drying will probably take a permanent and important place in the sphere of British farming and milk production, and the Board expects that not only this service will provide a much needed and important feeding stuff to the milk producers, but as a natural outcome of the development a much better management of pastures will result, proving of a great value to milk producers.

CHAPTER VII.

THE TREND OF OPINION REGARDING THE
FUTURE OF MILK MARKETING IN GREAT BRITAIN.

The war of 1939 - 45 brought about a marked change not only in the actual marketing methods adopted by the Milk Boards but it also created an entirely new situation in the field of milk marketing due to completely changed conditions in the milk market of to-day. There does not exist any resemblance whatsoever between the milk market of 1933 - 39 and of to-day, nor is there any likelihood of a return, in the near future, to pre-war conditions. The main changes which require to be considered when dealing with any future policy of milk marketing are as follows:

(i) At present (1949) the complete control of milk marketing is in the hands of the Ministry of Food. The Ministry decides the quantities of milk to be manufactured and the categories of manufacture. It is responsible for the pattern of distribution, through the various wholesalers; and fixes the margins to be paid for the various services given by the wholesalers concerned. It also fixes manufacturing and consumers' prices and administers the Priority Schemes. In the pre-war period all these functions except the last one were performed by the various Milk Marketing Boards.

/(ii) During

(ii) During and since the war there has been a marked change in the methods of utilization of milk so that nearly 90% of total production is now used for liquid consumption compared to only 68% in the pre-war period. This means that while this continues producers' prices are not affected by the amount of milk manufactured as they were in the pre-war period.

(iii) The most important of these changes, however, has been that the Government under the Agricultural Act, 1947, has guaranteed the price payable to producers for milk irrespective of its utilization - so that as long as these guarantees operate, the condition referred to in (ii) above cannot arise. These minimum prices are fixed in advance following an annual Price Review at which all the relevant data on the cost of milk production and the financial returns from dairy farming are examined and considered between the Treasury, the Agricultural Departments, and the producers' representatives. (It may be noted here that since these Price Reviews were inaugurated, the National Farmers' Union, and not the Milk Marketing Boards, has become the leading negotiating body for the producer).

The above changes have meant that the whole outlook on milk marketing is now different and it has yet to be decided how the functions of the Milk Marketing Boards - which are at present more or less suspended as regards their

/actual

actual marketing powers - can be reconciled to the changed conditions. With these points in mind, the Government appointed a Committee under the Chairmanship of Lord Lucas (referred to as the Lucas Committee) to make recommendations as to the organisation of agricultural marketing best adapted to the needs of the country's future economy in view of the Government policy (e.g. as embodied in the Agricultural Act). Another Committee - the Williams Committee - was appointed to examine the distribution of liquid milk and to advise on any changes which would be necessary to ensure an efficient milk delivery service.

The main conclusion of the Lucas Committee is that "The authority to which, in future, should be entrusted the primary responsibility for marketing strategy in Great Britain is neither a Government Department as at present nor a statutory board set up and controlled by producers as was provided for in the Agricultural Marketing Acts, but an independent body which, for want of a better name, we shall refer to as the "Commodity Commission" and which should be financed from public funds" (23). It is envisaged that the Commission would be jointly appointed by the Minister of Agriculture and Minister of Food, and would acquire control over the produce i.e. milk, at a point to which the producers' guaranteed price relates and would retain a general control over milk through all the subsequent stages of handling and /processing.

processing. Thus the functions of the Milk Marketing Boards would be restricted, as regards marketing, to negotiations with the Commission on certain minor points such as agreements on behalf of the producers on the basis of a contract which would set out complete price schedules - within the guaranteed price limits - for seasonal variations etc., and provide full details as to terms and conditions of sale generally. The Commission would then take delivery of milk in accordance with the contracts made with producers through the Boards, and arrange for the disposal of the whole supply in the most efficient and economical manner. If the Boards wished to carry on some marketing activities, e.g. operation of creameries, they could do so, but they would have to purchase the supplies from the Commission on the same terms as any other trading interest. The Boards would also be free to take measures designed to improve the efficiency of production at the farms.

The Williams Committee also recommend that the whole of the control and authority for the marketing and distribution of milk should be vested in a new independent Milk Commission appointed by the Government and excluding any members having any sectional interest in the milk business. This Commission would work under the overall policy direction of the Government Departments concerned, but it would not be subject to day to day control. The producer controlled Milk

/Boards

Boards could, it is suggested, be retained to exercise functions in the fields of assembly and production.

In arriving at these conclusions, both these Committees were no doubt influenced by two important factors: firstly that under the present conditions the Milk Marketing Boards have lost, what, - in the views of the Committees - were the main reason for promoting them and what in practice had been their main function, i.e. the negotiation and fixing of producers' prices: secondly that it is not advisable to place the responsibility and complete control of milk marketing in the hands of a section of the trade, i.e. producer controlled statutory Boards.

The recommendations of the Lucas Committee have been bitterly opposed by the producers on the grounds that not only is an independent Commission composed of persons appointed by the Government not the most suitable organisation to handle the strictly business matters of agricultural marketing and distribution, but that the fundamental principle on which these recommendations are based, i.e. that of the guaranteed prices, is not of a permanent nature and could be called into question by a later Government; or simply that the fact that this present Government guarantees prices is no reason why the efforts of producers should not continue to work towards those very objectives which the producers themselves, in common with the Government, desire.

/Criticising

Criticising these recommendations Mr. Foster, General Manager of the Milk Marketing Board, said that "Under these proposals, you (i.e. the producers) will have to produce what the Government asks you to produce, and to sell to the Government that which it will buy. You will have no right to sell to anyone except the State: if you do so, you will be subject to penalties by the State. Agriculture will then be the first industry in this country to be completely dominated in production and marketing by the State" (24). The producers were so emphatically against these proposals, that the following unanimous resolution was passed by them: "This Meeting of Regional Committees of the Milk Marketing Board for England and Wales, representing 150,000 milk producers, declares its unrelenting opposition to the recommendations of the Lucas Report on the working of the Agricultural Marketing Acts; insists on the retention of the Agricultural Marketing Acts embodying the principle of producer marketing control; and requests the Board, in conjunction with the National Farmers' Union to give all agricultural producers a lead on the means to make this opposition effective". (25).

It can be appreciated that exercise by the Boards of their powers to regulate prices, margins and conditions of sale would be incompatible with Government policy of assured markets and guaranteed prices embodied in the

/Agricultural

Agricultural Act. So that as long as these conditions remain, the Government should, in the national interest, be entitled to take measures to ensure that the methods of production, assembly, processing and distribution are as efficient and economical as possible. In the meantime there still exists an unsatisfied demand for milk and it cannot be doubted that the Milk Marketing Boards have played a great part in achieving a notable increase in milk production. But what actual marketing powers could be given to the Boards under present conditions is a matter of great importance not only to the Boards but to all sections of the dairy industry. It seems very unlikely that the Boards will regain all their pre-war powers. However, this year Parliament has already passed the Agricultural Marketing Act 1949, which provides for a slight change in the constitution of Marketing Boards by introducing more Government nominees. The Act also makes the decisions of Marketing Boards to some extent subject to Government consent and direction. The Boards have been involved in discussions of these important points with the National Farmers' Union and they are satisfied that this new Act will still enable them to function satisfactorily on behalf of the producers, if and when their marketing powers are restored to them.

P A R T II.

CO-OPERATIVE METHODS OF PRODUCTION AND MARKETING

OF MILK AND MILK PRODUCTS

IN WESTERN EUROPE.

CHAPTER VIII.

IMPORTANT ASPECTS OF CO-OPERATIVE DAIRYINGINWESTERN EUROPEAN COUNTRIES.Introduction.

Dairy farming and the production of milk has been of great importance in the agricultural economy of many European countries such as Denmark, Eire, Sweden, Norway, the Netherlands and Switzerland. In some of these dairying is the mainstay of the national economy and dairy produce forms the most important export of the country. Co-operation has played a very important part in the development of the dairy industry in these countries and it may be said that, but for co-operation, the dairy industry could not have developed to such a great extent. In all these countries - compared to Great Britain - the size of agricultural holdings is much smaller and their pattern is on the peasant proprietorship basis; to such, co-operation has been very advantageous.

The great advantage of co-operation for the peasant is that it secures to the small man many of the benefits of large-scale organisation in all the fields of his operations. Peasants in a district can combine to

/form

form a co-operative society and although each can contribute only a small amount of capital (or personal security only) the total becomes sufficient to command respect at the bank. The society can erect a factory and pay a manager and staff, where produce can be received, graded, processed and sold by salesmen who know where the most suitable markets are and can sell on most favourable terms. The profits can either be "ploughed back" to improve the business or be shared out as dividends among the members. The peasant thus obtains not only a fair price for his produce but, given an efficient organisation, some share of wholesaling profits which would not have normally come his way. The producers co-operative society by adopting scientific production and grading methods can market the products which are most lucrative and can send instructors and inspectors round the peasant holdings to show how faults can be rectified, and to demonstrate ways in which products of higher quality can be obtained. So the cycle of improvement begins: better prices for existing products; gradual improvement of products and a greater certainty of marketing and prospects of still higher prices; the knowledge that the best prices obtainable are actually being obtained; all these advantages begin to accrue once co-operation is well started.

Denmark was the pioneer country to adopt

/co-operative

co-operative methods in dairying and the same fundamental principles have been applied in all other countries, so that the organisation of co-operative dairying in these countries is more or less similar to that in Denmark, except for minor local variations. The important principles of co-operative dairying are as follows:-

Co-operative dairy societies are formed in the particular districts by milk producers who agree to deliver their milk production to the society. A dairy is then established (known variously as Co-operative Dairy, Creamery, Dairy Factory, Cheesery etc.) where all milk is received for processing and manufacturing into various milk products. Members are generally bound by contracts to supply their total milk production (except as required for household needs) to the society.

The capital for erecting the co-operative dairy is obtained either completely by loan from a bank (on joint liability in Denmark) or partly from members contributing shares according to the number of cows and partly by loan. But in all cases, the voting rights of all producers are equal. Irrespective of the number of cows or size of the share-holding, each member has one vote only.

The General Meeting of the Society is the final authority and it elects a Committee of Management which

/is

is responsible for the management of the society. The day to day administration is carried on by a Manager appointed by the Committee and directly under the supervision of the Committee of Management. As the milk is utilized mostly for manufacture into butter or cheese, payment for all milk is made on a butterfat basis, and arrangements are made for testing the milk supplied by members to ascertain the contents of butterfat in it.

The most important co-operative principle is concerned with the distribution of any surplus accruing in the business transactions of the society. This surplus represents the difference between the receipts from the sale of milk products and the payments to members for milk, plus working expenses. The first charge on the surplus is part repayment of loans, interest on loans and a fixed interest on all share capital. The remainder is distributed among all members strictly in proportion to the amount of milk (i.e. calculated as butterfat) supplied by each member.

The dairy societies co-operate together to form Provincial Associations and these in turn form a National Federation. However, the local society remains completely independent. Prior to 1930, all these societies had been completely independent of Governments also, but since then, due to the agricultural crisis, Government help was

/required

required by them and this entailed a certain amount of State control on the financial arrangements of the co-operative societies. The extent of State control has varied from country to country, ranging from Government help in framing a sound financial policy to a large degree of control through some State organisation.

The agricultural crisis of 1929 - 32 had a severe adverse effect on the dairy industry in these countries, when not only the prices of dairy produce, but also the volume of exports fell considerably. There was one milk problem common to all these countries, namely, that milk sold for liquid consumption always realized a better price than that sold for manufacture into butter and cheese for export, as the price of the latter had to be dependent on world prices. This disparity was increased by a fall in the prices of manufactured milk products, and in the absence of any orderly control of marketing, this would have resulted in complete disorganisation of the milk market. Governments had to intervene to keep a balance and in some countries, e.g. Sweden, Norway and the Netherlands, new co-operative or State organisations were set up involving a certain degree of control over the financial arrangements of the dairy industries. In others, e.g. Denmark, Eire and Switzerland, the State had to assist the existing co-operative organisations.

An economic position had arisen which necessitated that all co-operative efforts had to be buttressed by the Governments.

The intervention of the war, 1939 - 45, resulted in an all round decrease in the volume of milk production in all these countries. This was chiefly due to the character of European dairy farming which depended largely on the importation of feeding stuffs for milk production. This largely ceased due to the war and the effect was intensified in enemy-occupied countries, i.e. in Norway, Denmark and the Netherlands. In other neutral countries too, e.g. Sweden, Switzerland and Eire, restriction on such imports had severe effects on milk production.

Further, closer control by the Governments on all phases of milk production and distribution became necessary: the price paid to the producer and paid by the consumers had to be controlled in the national interest in all countries. These controls have continued till now, so that in the present circumstances all prices being under Government control, the rôle of the co-operatives is not the same as pre-war, when they had to try to obtain the best possible prices for their members. The character of co-operative dairying has been gradually changing - and the changing pattern has meant a greater reliance on
/Governments

Governments which have to endeavour to maintain a stable balance in the agricultural economy of the countries.

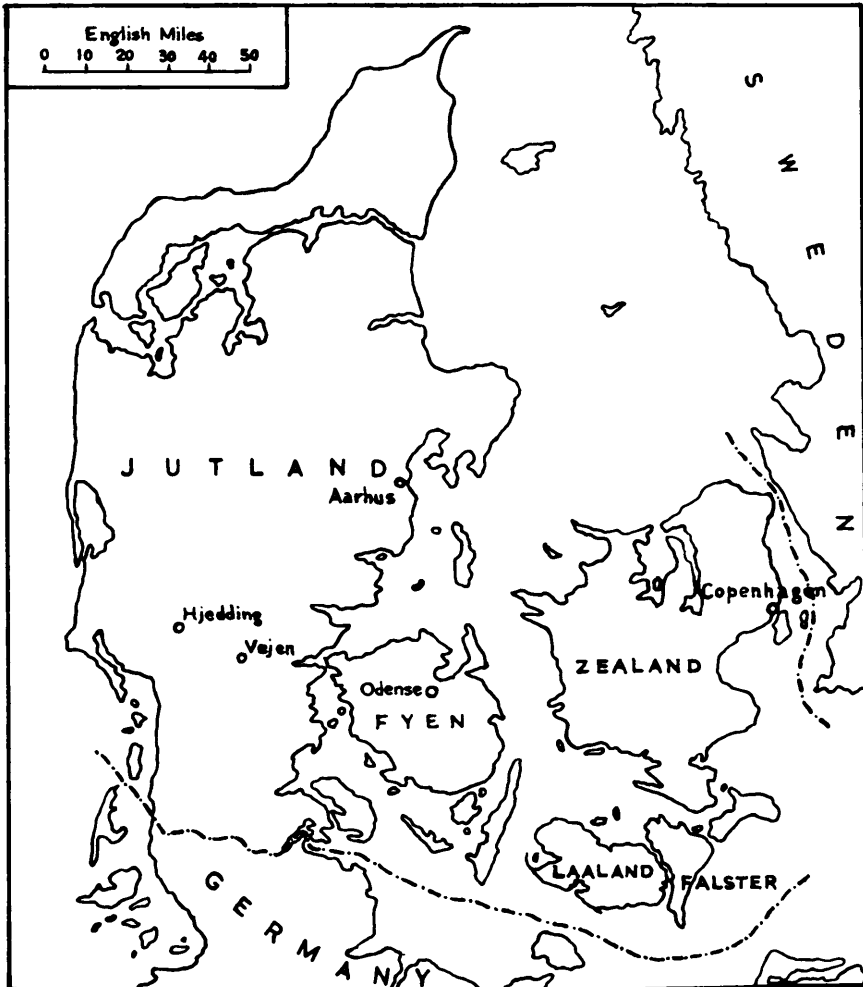
This Chapter describes the important aspects of the co-operative methods employed in the production and marketing of dairy produce and their recent developments in the following countries:-

1. Denmark.
2. Eire.
3. Sweden.
4. Norway.
5. The Netherlands.
6. Switzerland.

FIG. 5.

MAP OF DENMARK.

INDICATING THE PLACES AND DISTRICTS MENTIONED IN THE TEXT.



D E N M A R K

Denmark has always been predominantly an agricultural country and farming provides the livelihood for one-third of the population of nearly 3.8 million. Absence of any mineral wealth, e.g. coal, iron etc., has been instrumental in making it necessary to obtain the best possible results from the agricultural land; so that nearly 75% of the whole area has been taken into agricultural use, of which 87% is under the plough. Agriculture developed to such a great extent that in addition to providing sufficient food for home consumption at a high level, the half a million agriculturists managed to export over £100 worth of food per head per annum. This high achievement becomes more admirable when it is realized that all this was attained within a period of 50 years - 1880 to 1930 - and that, also, in the face of competition from other food exporting countries in the most important import markets of the world, where Danish products always competed very favourably with others. Denmark produced commodities of very good qualities at low prices, yet made profits and enjoyed a good standard of living. It becomes still more remarkable when it is noted that Denmark is a country of numerous small farmers (compared to Great Britain) where 52% of the farmers have holdings of under 25 acres of land

/and

and another 46% have family farms of 25 to 125 acres; the large farms of over 125 acres being only 2%. On all these farms, small or big, the most important branch of agriculture developed is animal husbandry, whereby large exportable surpluses of butter, bacon and eggs are produced.

One of the most important factors leading to such a development was the spirit of self-help expressed through co-operative production societies. The widespread establishment of these made it possible to combine the advantages, and counter-act the disadvantages, of small scale intensive farming with those of large scale machinery for production and marketing, and relieved the farmer of business responsibilities while permitting him to give full attention to the production of agricultural livestock produce. The typical features of Danish agriculture, i.e. the production and importation of raw material for feed (to the livestock) and the exportation of finished products in the shape of butter, bacon and eggs, have been very closely linked with the co-operative movement.

Production of milk and manufacture of butter for export have been of great importance in the livestock industry in Denmark, and the skimmed milk obtained in the manufacture of butter has formed the basis of the pig industry for the production of bacon for export. The corner stone of Danish agricultural economy thus became, and has

/since

since continued to be, the dairy cow; and the progress of the dairy industry has been mainly due to the extensive application of co-operative principles in both the production and marketing fields.

The rapid development of the Danish dairy industry until the outbreak of war in 1939 is shown in table XI . It is seen that the last 30 years of the last century were the years of great improvement during which the number of dairy cows was increased by 30% accompanied by an increase of over 60% in the average yield of milk per cow, resulting in an increase of over 120% in the total production of milk and over 600% in the exports of butter. This progress continued to remain so till 1939, when these increases were 2 times, $2\frac{1}{2}$ times, 5 times and 12 times respectively, of 1870.

The system of Co-operation in Danish agriculture, in the highly developed form in which it is found today, embraces almost every branch of agriculture and has its ramifications in practically every parish in Denmark.

Co-operative organisation can be broadly divided into 2 types:-

(a) The agricultural societies (and small holders' societies) which promote the technical, scientific and educational interests of agricultural production. The State has for many years recognised the great advantages to be gained from improved technique in production, and has encouraged agricultural societies in their work by direct

/provision

Table XI.

Development of Dairy Industry in Denmark

	1870	1900	1939
1. No. of Dairy Cows.			
'000	808	1,075	1,642
2. Average yield of milk per cow. (kgs.)	1,360	2,100	3,261
3. Total production of milk. (million kgs.)	1,000	2,200	5,300/678
4. Total exports of butter (million kgs.)	15	70	183

provision of funds for projects such as Cattle Breeding Societies, Agricultural Shows, and Milk Recording Societies; and also by contributing to the salaries of agricultural advisers employed by the agricultural societies.

(b) Co-operative Societies, which deal more specifically with the business of production and marketing of agricultural products, purchasing and selling farm supplies etc. These organisations, in contrast with those in (a), are business organisations developed independently of State aid and influence. In common, however, with the agricultural societies, they are characterized by strong local development. Common interests, since early days, have prompted the local societies to federate into district, provincial and national associations along commodity lines.

The present state of the highly developed dairy industry has been achieved through these agricultural and co-operative societies. The most important of the former group are the Milk Recording Societies, and Cattle Breeding Societies of which the Artificial Insemination Societies are the latest development; and of the latter are the Co-operative Dairies. For several decades the Danes have pursued a well conceived plan of cattle breeding coupled with milk recording and accompanied by rational feeding of the dairy stock. This has greatly increased the milk and butterfat production per cow. On the other hand the Co-operative

/Dairies

Dairies have been steadily improving the technical aspects of handling milk and butter manufacture. This combined effort has taken the Danish dairy industry to a high degree of efficiency. The organisation, methods of working and development of these societies are discussed in the following pages.

The Co-operative Dairy Societies

Although the production of butter in Denmark has been practised since ancient times, there was no large scale production of butter till the thirty's and forty's of the last century when it was introduced there largely by dairymen from Holstein (in Holland), who employed Holstein dairymaids on large Danish estates, purchased or taken on lease for this purpose. The Royal Agricultural Society of Denmark from 1860 onwards, helped to effect improvements in the manufacture of butter in estate dairies and at the peasants' farms. But the peasants' butter, made as it was in small quantities and on numerous farms, was not suitable for export by itself and its quality was also poor compared to the 'estate butter', so that even the finest of peasant butter was of less value than the estate butter which commanded good prices in the export market in Britain.

The invention of the mechanical cream separator in 1878 and 1879, altered the conditions in the dairies, which began to purchase the milk from neighbouring farms. Such
/arrangements

arrangements were not beneficial to the peasant dairy farmers in general and after much thought, the Danish peasants found a practical way of developing the dairy industry by introducing the co-operative principles already adopted by the Co-operative Distributive Societies on the Rochdale ('English Weavers') model. It is interesting to note that just as the first principles adopted by the Rochdale Pioneers in England in 1844, have since then formed the basis of all development of co-operative distributive societies, similarly the rules framed by a few farmers to start the first co-operative dairy society in Denmark served as models for the co-operative dairy movement.

The first Co-operative Dairy was started at Hjedding in south-west Jutland in 1882. A number of farmers having 400 cows among them formed the Society which was to start a dairy where all the milk from these farms was to be brought for manufacture into butter, under the supervision of a competent dairyman. The dairy started its operations in 1882 and at once realized a good price for its butter, a matter of great importance for the success of the movement. The success of the Hjedding Dairy brought home to the farmers the advantages of co-operative methods so that during the following years, such dairies were started almost everywhere, and by 1900, i.e. within a period of 18 years, there were 1029 Co-operative Dairies and another 500 private collective and estate dairies.

The rules of the Co-operative Dairies, which have been modelled on those of the Hjedding dairy are very simple and fundamentally co-operative in character. They provide for the co-operating together of dairy farmers in a particular parish with the object of establishing a Dairy where all could send their milk production to be manufactured into butter. The initial capital is generally procured through a loan from Banks on the security of real property and for which all the members are jointly and severally responsible. This principle of joint liability is a characteristic of the Danish co-operative movement, and possesses a significance over and above that of a basis for loans, since it has been an expression of the members' confidence in each other. These loans are obtained for a period of 10 to 15 years and the members contract to supply their entire milk production to the dairy for such a period. At the end of this period, a fresh loan, if necessary, is raised and new contracts are made. The supreme authority of the dairy is the general meeting, at which each member has one vote, irrespective of the size of his herd. The dairy is managed by an elected Committee of 8 to 10 members, who also elect a Chairman. The Chairman follows the daily working of the dairy and is in close contact with the manager who is responsible for the technical management, while the Chairman, on behalf of the Committee, makes the decisions on policy. The Chairman and the members of the Committee work as a rule in an /honorary

honorary capacity. General meetings are held twice a year. The income of the dairy is distributed every second or fourth week to members in relation to milk supplied on a butterfat basis, after deductions of an amount per unit of butterfat to cover working expenses. At the end of the year the eventual surplus is paid back to the members in proportion of the total butterfat supplied by them.

The typical Danish Co-operative Dairy is a factory with modern equipment under a dairy manager, and a staff of efficient, technically instructed helpers. The milk from individual suppliers is examined carefully and samples are taken to ascertain the percentage of fat and all milk is paid for according to its butterfat content. After separating the cream for manufacturing into butter, the skim milk is returned to the members in proportionate quantities. All skim milk so returned has to be pasteurised to prevent any spread of contagious diseases.

The establishment of Co-operative Dairies was virtually complete by the end of the nineteenth century, when nearly 1029 had been built. It has, however, to be noted that from then until now, these have undergone great technical developments necessitating rebuilding and constant renewal of machinery and plant. At the end of 1947 there were 1367 Co-operative Dairies in Denmark and out of these 967, i.e. over 70% had been in being in 1900. Simultaneously

/with

with the increase of milk production in the country, it was found more practicable in many places to build a new dairy, instead of altering the old ones in order to reduce the average distance from the farms. But these new dairies also handled more and more milk so that whereas in 1914, 33% of the dairies handled less than 2 million kg. of milk each, in 1938 only 18% were below this limit. However, statistical evidence had shown clearly that larger dairies paid better prices to the farmers and had lower operating costs, so that at the end of 1938, there were discussions on proposals for closing down nearly half of the then existing dairies which were too small or where plants needed complete renewal. The war stopped this and at the end of 1946, the "average" Co-operative Dairy had 142 members, owning in all 1070 cows, each yielding 2705 kg. of milk annually. The "average" dairy handled about 3 million kg. of milk yearly of which over 83% was utilized for the manufacture of butter. (26) .

These Co-operative Dairy Societies have joined together for the protection of their common interests, into district Dairy Associations of which there are 24 to cover all the country. They have further combined to form 3 provincial Unions of Dairy Associations and a National Federation of Danish Dairy Associations, with its head-office called "The Dairy Office" in Aarhus. (De Danske Mejeri-foreningers Faellesorganisation). This Federation watches
/over

over the general interests of the dairy industry and represents it in relation to third parties, e.g. the State and legislative authorities. It undertakes to collect and collate the dairy statistics, schemes of account keeping for the dairies, various works of instructions such as hygienic production of milk, agreements as to working arrangements and wages at the dairies, propaganda for increased consumption of milk and dairy produce etc. - in short, everything connected with dairying. During and after the war also, the Federation, by arrangement with the Ministry of Agriculture, administered various Schemes for the economic control of the Danish dairy industry.

The existence of the Danish dairy industry has been dependent throughout on the export of butter, as nearly 80% of the total milk production is used for manufacture of butter and about 80% of this butter is for export. To maintain such a position all possible methods of quality control, including strict State legislation to ensure that only the best and uniform quality of product of the famous 'Lur' brand could be exported, have been in force. The Co-operative Dairies originally confined themselves to the production of the best quality of butter and marketing was usually done through private merchants who bought the butter at the rates quoted on the Copenhagen market and sold it for export. These arrangements did not work to the benefit

/of

of the dairies; therefore the dairies themselves set up a number of Co-operative Butter Export Societies in their respective districts, and undertook joint responsibility for the liabilities of these Societies in proportion to the quantities of butter delivered. In 1939 there were 11 such Societies and together they accounted for 51.4% of the total Danish exports of butter. However, during and after the war, a Butter Export Committee under State control has been managing all butter exports.

Milk Recording Societies.

With the establishment of Co-operative Dairies throughout the country, added interest began to be taken by farmers in measuring the performance of their dairy cows and feeding them accordingly, and for this purpose, Milk Recording Societies were formed. Denmark is the pioneer of milk recording, the world's first Milk Recording Society being started in Vejen by 13 members in 1895. Since then their progress has been as spectacular as that of Co-operative Dairies, so that at present there are nearly 1,785 such Societies recording the milk yield and testing the milk quality of more than 50% of the total dairy cows.

A Milk Recording Society is the basic administrative unit consisting of a number of members whose herds can be recorded by one recorder (i.e. it corresponds to the 'circuit'

/in

in Scotland). The size of the Society thus varies from ten members (200 cows - the minimum which qualifies for a State grant) to about forty members, where the small herds receive only alternate visits from the recorder. The formation of the Society is sponsored by the agricultural or small holders' society in the district, and is managed by a small Committee of 3 to 5 elected members. A trained recorder is employed, who acts as Secretary, and visits the farms of the members at prescribed intervals - usually 21 days - to weigh and record the milk yield of individual cows and test the milk for butterfat content. Each Society manages its own finance and is responsible for the collection of fees from its members, as so much per cow per annum.

All these Societies, like the Co-operative Dairies, have organised to form Associations of Milk Recording Societies to which they submit a report on the yield, pedigree and food consumption of every cow recorded, in addition to a summary of yields of all herds recorded. These Associations each publish an annual report. Except for the submission of reports, the Local Societies are entirely independent of each other and the Associations.

Cattle Breeding Societies

Simultaneously with the development of Co-operative Dairies and Milk Recording Societies, Cattle Breeding
/Societies

Societies (also known as Bull Clubs) grew up. Since the end of the last century the movement has developed rapidly and the State has taken considerable interest and given financial support through such enactments as the Law for Improving the Breeding of Domestic Animals in 1887. By the formation of these Societies, the improvement of cattle, instead of being restricted to the larger herds belonging to the best individual breeders, was fully shared even by the smallest farmers in that their cows were served by the best bulls.

In the 'thirties there were 1,545 official Cattle Breeding Societies, with 43,000 members owning 2,200 bulls. (There are many unofficial societies of 2 - 5 farmers combining to use a bull, but no statistics are available for these, as they are not affiliated to any organisation and do not receive any State grants.) These Societies receive an annual grant from the State which is conditional on 50% of the cows in the Society being officially recorded, and the bulls used being of certain standards as shown by appearance and performance. The link between milk recording and cattle breeding is thus kept closer. Danish authorities are unanimous in their opinion that the Cattle Breeding Societies and the Milk Recording Societies operating together, have been the principal means by which progress in Danish cow yields has been achieved.

/Artificial

Artificial Insemination Societies

Artificial insemination of cows is the latest development in cattle breeding. In Denmark the first society was established in 1936 and since then this movement has also been steadily progressing, consequently there has been a decline in the original Cattle Breeding Societies. All the Artificial Insemination (A.I.) Societies are small (averaging 10 - 12 bulls) and do not have sub centres as in England. In many cases there is no proper "Centre" and the bulls are "lodged" on farms. Each Society covers an area of a 10 mile radius with an average density of 23,000 to 25,000 cows, and is managed on co-operative principles like all other co-operative societies. There is also a Federation of Danish A.I. Societies. During 1946 there were 112 A.I. Societies owning over 900 bulls and inseminating about 500,000 cows (i.e. nearly 38% of the dairy cattle population).

Side by side with the above organisations, i.e. milk recording, cattle breeding and artificial insemination, progeny testing of cows and bulls is also carried out. In short, all the available scientific methods have been employed in Denmark, and all on co-operative lines to ensure the fullest development of Danish dairy cows and the dairy industry.

/Marketing

Marketing of Liquid Milk in Denmark

In a country such as Denmark where the dairy industry is largely organised on co-operative lines for the manufacture of butter and cheese, it is strange to see that the influence of the co-operative movement has not extended, either in its type of organisation or in the control of processing and distribution, to the liquid milk industry. Liquid milk consumption accounts for only about 10% of total milk production in the country and the co-operative dairies command only a small part of this market in some towns near which they are situated. Otherwise most of the city milk supplies are met from private dairies which purchase milk from nearby farmers by independent private contracts.

The largest concentration of liquid milk demand is in Copenhagen - Capital of Denmark - where in 1947 nearly 43 million gallons of milk were so sold. Before the war in 1939, there were about 80 dairies in different parts of the city all operating independently and obtaining milk supplies from wherever available. A rationalization scheme was effected in 1941 when a "Greater Copenhagen (Storkobenhavns) Municipal Milk Board" was established under State control and the number of dairies was reduced to 16 by amalgamation methods and the City of Copenhagen was divided into several districts where each dairy supply company had a sort of monopoly of distribution. All these arrangements were made

/by

by an association of all these companies. These dairies are independent and free to receive milk by contract from farmers. One of the three large dairies in Copenhagen is organised on co-operative principles having several Branch Depots in the country, where milk is received from members, some utilized for manufacture into butter and cheese, and remainder sent as required for liquid consumption in Copenhagen.

All milk sold for liquid consumption has to be standardized to 3% butterfat content and close control over the quality of milk supply from all farms is exercised by the State Veterinary Department. The dairies make their own arrangements for retail distribution, but all are subject to price control of the Board which also decides the prices to be paid to producers.

Conclusions

The above brief description of Danish co-operative methods in the field of dairying brings out clearly that these co-operative methods have been the guiding factors for the development of the dairy industry. It will be shown in the following chapters that many of these methods have been adopted by other dairying countries; what remains to be discussed is why it was that such co-operative methods were adopted in the dairy industry and to such a great extent.

/It

It has been shown that the Danish dairy industry has been completely dependent for its existence on export markets, having to hold its own in the face of fierce competition. This single factor can be said to have been the chief reason behind the co-operative development of dairying in the country. It has been rightly said that "Co-operation was practically forced on the Danish farmer" (27). How true that is can easily be seen. During the early stages of dairy development, the Danish dairy industry was faced with the task of producing a uniform high quality of product, i.e. butter, with a steadiness of supply to an export market where the competition was keen and prices had to be kept as low as possible. Under such circumstances the Danish dairy farmer - on a small scale as he was - had the choice between handing his milk to a commercial firm for manufacture into butter and receiving whatever price could be obtained, or forming his own dairy by co-operating with other farmers, thus avoiding altogether the middlemen's profits and getting the fullest possible benefit of the price obtainable from the export market. It was as clear as that, and it can be understood that he rightly chose the second alternative. The faith of early co-operators brought success and there has been no looking back since then. Milk Recording and Cattle Breeding Societies followed as a natural corollary and the State too took interest in these.

/But

But where no such conditions existed, as in the liquid milk industry, which was of comparatively small dimensions and importance, no such co-operative development took place. However, the general education of the Danish farmers, combined with the influence of Folk High Schools which not only supplied the pioneers of the co-operative movement but educated the whole peasantry to an understanding of their problems and the importance of co-operation, has also been to a large extent responsible for the growth of the co-operative movement not only in the field of dairy industry, but in all the widespread movement in Denmark.

E I R E

Eire too, like Denmark, is an agricultural country and likewise the dairy industry is of great importance in the economy of agriculture. Not only is it the source of supply of home requirements in milk, butter, cheese and other dairy produce; it also forms the basis of the cattle trade and beef supplies and is an important factor in the bacon, poultry and egg industries. In 1939 - 40 the estimated value of cattle and dairy products was 44.5% of the total agricultural output and the value of these exports was 50% of the total Irish exports of all kinds. From an organisation and marketing point of view the dairy industry can be considered in two separate parts, i.e. creamery industry and liquid milk industry. There are the producers, who, situated as they are in the vicinity of small or large urban centres, dispose of their milk production for liquid consumption either by wholesale to distributors or by retail directly to consumers. Secondly there are the producers who cannot do so and they sell the milk for manufacture into butter and other products. There is, in addition, a small number of producers - belonging to the latter group - who have their farms in the more remote hilly districts, and their livelihood also depends on the sale of milk. The first group of producers having been fortunate enough to be

/nearer

nearer the liquid market have not organised to any extent either co-operatively or otherwise, while the second group has, since the end of last century, adopted co-operative methods. Thus most of the milk produced by these rural producers is disposed of for manufacture which is carried out in Co-operative Creameries. The organisation and method of working of these creameries, though following the Danish system, are somewhat different in certain respects which are discussed. A special type of organisation on a small scale - that of Travelling Creameries - has recently been instituted for the benefit of small hillside milk producers.

Co-operative Dairy Societies (Co-operative Creameries)

The main organisational differences between the Danish and Irish Dairy Societies are as follows: One of the differences is that the Irish Societies have to be registered under the Industrial and Provident Societies Acts 1893 - 1936, (there is no similar legislation in Denmark) under which they have to observe certain regulations. Thus these Societies have all "limited liability" and the principle of joint liability of Danish Societies is not followed. Consequently the capital of the Society has partly to be provided by members having to hold a number of shares of a value related to the number of their cows, and only partly by loans. Moreover, the members are not allowed to hold

/more

more than £200 in share capital each. The voting rights are, however, not in any way proportional to share capital and each has only one vote. Another difference is that, while in Denmark a Dairy Society restricts its activities to managing a Co-operative Dairy only, in Eire most of the Co-operative Dairy Societies are combined Co-operative Dairy and Agricultural Societies, thereby performing the functions of fulfilling the needs of the members for their agricultural requirements. On the whole, the average of the "agricultural" trade of these Societies comes to about 25% of total turnover. Then again, each Society is not restricted to one parish or village and may have one Central Creamery to which are attached several Auxiliary Societies (not separately registered) in various parts of the county. The function of these auxiliary societies is simply to act as 'milk separating stations' and the members from neighbouring farms - say within a radius of 5 to 6 miles or so - bring their milk to be separated, the skimmed milk being returned to the farmers and the cream sent to the Central Creamery. For administrative purposes the auxiliary societies do not exist separately as such, and all members belong to the Central Society which arranges for the collection of cream from there and for payment to all members. Thus, one of the biggest Societies has as many as 9 such auxiliary societies having a total of 1700 members and handling about 5 million gallons of milk annually.

/Apart

Apart from the above organisational differences, the method of working of these creameries is similar to Danish dairies, and is on strict co-operative principles as regards the management and distribution of surplus according to the amount of milk delivered by the members. The co-operative dairy and agricultural societies keep separate accounts for dairy produce and for agricultural goods, and there is a different dividend for these separately. All milk is paid for on a butterfat basis and the price paid to members depends on the efficiency of technical operations in the particular creamery, as well as on the nature of the society's trade. Some creameries are engaged entirely in the production of butter, while some also undertake the manufacture of other milk products, e.g. cheese, condensed milk and milk powder. In the latter cases, no skimmed milk is returned to farmers and the price paid to them is comparatively higher.

There is no separate national federation or association of Irish dairy societies and all are affiliated, in common with other agricultural co-operative societies, to the Irish Agricultural Organisation Society which, since its formation in 1894, has been responsible for all development and organisation work connected with co-operation in the dairy industry.

The importance of co-operation in Irish dairying

/has

has been fully recognised by the State and it has been its policy to encourage co-operative creameries, so much so, that there are now no proprietary creameries at all in Eire. This stage has been largely attained by State help whereby a Dairy Disposal Company Ltd. was established in 1926 under State control. The main object of this Company was to acquire the proprietary creameries from funds provided by the State, with a view to handing them over to co-operative societies when the latter were in a position to purchase and manage them. Until then, the requisitioned creamery was managed by the Dairy Disposal Company.

There were in 1924 two very large proprietary dairy companies, namely, the Condensed Milk Company of Ireland Ltd., and the New Market Dairy Company Ltd., having many branch collection depots in the country. These two and many others were acquired and although the management of the former and many others is still in the hands of the Company, the ultimate object is to turn them into co-operative creameries.

Policy of Price Stabilization in the Creamery Industry

The State has also recognised that the maintenance of dairying at a high level is of cardinal importance from the national point of view and that the co-operative creamery is the suitable medium on which a plan for the maintenance

/and

and improvement of dairying may be based. The principal creamery product is butter and the price obtained by the milk producer depends directly on the price of butter obtained by the creamery. During the 1930's, the price of butter, being dependent on the world market, was declining, resulting in very low returns to the producer. To assist the creamery industry and to render it independent of the export price and thereby ensure a better average price for producer, the State enacted a Dairy Produce (Price Stabilization) Act 1932, under which a minimum price was guaranteed to milk producers supplying milk to creameries. Suitable subsidies were given on all butter manufactured in creameries for export and the level of the butter price to home consumers was kept artificially higher, to provide for such a subsidy. When the exports of butter ceased from 1941, and for economic reasons the price to the consumer could not be raised in proportion to the increase in cost of milk production, steps had to be taken to control the prices of butter for home consumption and to increase the subsidy for butter manufacturing directly. The rate of State subsidy to be paid to creameries for milk utilized for butter making is arrived at by taking into account the value at the appropriate guaranteed price of the quantity of milk required to make 1 cwt. of butter, the cost of manufacture and the controlled price of butter. The subsidy is paid direct to the creamery. Thus, one of the important features of the Irish creamery industry

/before

before the war and especially during and after the war, has been the operation of a guaranteed price for the milk supplied to creameries for manufacture.

Travelling Creameries

The collection of milk from the hill districts in some parts of the country, for manufacture into butter, presents a peculiar problem, namely, that while to establish many small auxiliary creameries so as to be within reach of all milk producers would be very uneconomical, yet if only one central creamery was established, the distance to it from the farms would be so much increased that farmers would not be able to supply their milk there, as the only method of slow transport is by pony or donkey carts. To overcome this difficulty, travelling or mobile creameries have been used and at present are being operated by the Dairy Disposal Company. Such "creameries" are portable, being 13 feet by 7 feet vans, built on a long wheel-base lorry chassis. In the van is installed the usual creamery equipment for separating milk and storing cream, and the power for it is derived from the engine driving the van. The creamery functions as an auxiliary creamery and travels from predetermined place to place, halting off the road at a concrete parking ground large enough to accommodate the van itself and to allow 3 or 4 carts around it. Neighbouring farmers

/bring

bring their milk every morning to these places, where in the van the milk is separated, cream stored, and the skimmed milk returned as usual to the farmers in a very short time. The amount of each farmer's milk is recorded in a register and after serving 3 or 4 such centres, the creamery returns to the central creamery by noon.

These travelling creameries handle up to 2,500 gallons of milk daily from 3 or 4 small valleys dispersed over 20 miles or more of hilly roads. Each is capable of handling 1,100 gallons of milk per hour at full load, and the cost of such operation compares very favourably with the conventional type of auxiliary creamery, while all such facilities are provided to the outlying farmers. During the winter season, when production of milk is at a very low level, the creamery pays only 2 or 3 visits each week. The company operating the creameries also supplies its producers with feeding stuffs for the cows and fertilizers for the fields as required.

Liquid Milk Marketing in Eire

Like Denmark, the liquid milk industry in Eire is of much less importance compared to the creamery industry, and likewise, there is no co-operative organisation for the marketing of liquid milk for consumption. The large-scale demand for liquid milk is of an urban character and is

/concentrated

concentrated especially in the two big cities of Dublin and Cork. In other smaller towns, the demand for the liquid milk is met mostly by producer-retailers situated within short distances from the towns and a few small dairies purchasing milk from other neighbouring producers. Prior to 1936 the marketing of liquid milk in the big cities, too, was uncontrolled and unorganised. In Dublin the milk supply was undertaken partly by a few large wholesaling firms who collected milk independently from farmers in the neighbouring counties and partly by producer-retailers, many of whom were cow-keepers carrying on milk production within the City of Dublin area. In that year, legislation to enable the Minister of Agriculture to regulate the supply and price of milk was enacted - the Milk (Regulation of Supply and Prices) Act 1936 - under which some organisation of milk marketing in Dublin and Cork was effected.

Provisions are made in the Act empowering the Minister of Agriculture to set up particular areas as Sale Districts and as Production Districts for the supply of milk to the former. A District Milk Board is established for the purpose of administering the Act in the scheduled districts. The Dublin District Milk Board was thereby established, its organisation and methods of operation being discussed below. A similar Board was also established in Cork.

The Dublin and District Milk Board (referred to as the Board in further discussions) ordinarily consists of seven representatives of milk producers, three representatives each of retailers and wholesalers - elected by the producers, retailers and wholesalers respectively - and a Chairman appointed by the Minister of Agriculture. The Board appoints its Secretary and other staff. All producers of milk in the Production and Sale District, as well as all retailers and wholesalers wishing to sell milk in the Sale District, are required to be registered with the Board, for which licence fees are payable (5/- by producers and 10/- by retailers and wholesalers). All such producers, retailers and wholesalers must, in addition, be registered under the Milk and Dairies Act, 1935. (This Act deals mainly with the hygienic quality of milk sold for liquid consumption).

Producers and purchasers, i.e. retailers or wholesalers, make their own arrangements for purchase and sale of milk, but this has to be done in accordance with a contract approved by the Chairman of the Board. The Board determines from time to time the minimum prices which must be paid by the registered retailers and wholesalers to the registered producers. It is provided that if members of the Board do not reach a unanimous decision, the determination may be made by the Chairman. The decision is forwarded to the Minister of Agriculture who makes an order fixing such

/minimum

minimum prices. The Board is responsible for ensuring that these minimum prices are paid and prosecutions can be enforced for breaches of these regulations. The Board is not authorized to determine retail prices of milk which can only be fixed - as maximum retail prices - by an order of the Minister of Agriculture after consultation with the Minister for Industry and Commerce.

The expenses of the Board are met by means of a levy on every gallon of milk sold in the Sale District calculated on the monthly returns submitted to the Board by the registered persons. The rate of levy is fixed by Order of the Minister. In the early years the levy was kept at a higher rate than was necessary to meet the normal administrative expenditure, in order to enable the Board to build up a Reserve Fund. The Board is authorized, with approval of the Minister, to bear the whole or part of cost of any schemes designed to secure an increased consumption of milk in the Sale District.

Apart from the above regulative powers the Board has no authority to exercise any control over production, collection and distribution of milk. The result has been that although some reorganisation has been effected in the marketing of milk in the Dublin area, this has not been sufficient to provide an adequate service of milk supply to the city. The main reasons for this are discussed below.

/Under

Under the present system each of the large wholesalers (together responsible for about 50% of the milk supply) who collect the bulk of their milk from registered producers has a virtual monopoly of his own area, which means that the producer lacks freedom to choose his market and is tied to one purchaser. He has no redress if he is not treated equitably, as the wholesaler is in a position to refuse to take his milk on any day on which he desires to curtail his wholesale supplies. There are no proper arrangements for the disposal of surplus milk during periods of maximum production in the summer and, only limited quantities of this are taken by the wholesalers and the producers are left with large quantities of milk on their hands. It is also impossible to devise in the existing circumstances any machinery for the orderly disposal of such surplus milk, as there is little or no co-operation between wholesalers and consequently no means of foreseeing the extent of a surplus or of organising its orderly collection or disposal. The problem of surplus milk arises due to the seasonal production of milk in the country, so that while in the winter months there is a shortage of supply and additional milk is obtained from creameries (so licensed by the Board) outside the Production District, in the summer months the supplies from registered producers are more than sufficient to meet all requirements. The problem is made more acute by the producer-retailers and cow-keepers who are generally able to

/dispose

dispose of their milk by sales direct to consumers, there being no control on their sales. Thus the major burden falls on registered producers situated outside in the Production District. In short, the milk supply to the Dublin Sale District has relied on an unco-ordinated system of production and distribution comprising a number of different methods quite unrelated to one another.

In 1945, a Tribunal was appointed by the Minister for Local Government and Public Health to enquire into the matters of milk supply to Dublin, and its report, published in 1947, has made recommendations for a reorganisation of milk marketing in the Dublin Sale District to remedy the above defects in the existing methods. No reorganisation, however, has yet been effected.

S W E D E N

The development of co-operative dairying in Sweden can be considered in two stages, i.e. the first up to 1931 and the second from 1931 onwards. While the first stage is marked by the establishment of co-operative dairies on Danish lines and their unco-ordinated development, the second period is of more importance as during it a collective comprehensive programme for the systematic organisation of co-operative dairy industry was undertaken. Thus the modern Swedish co-operative dairy industry is mainly the product of the latter period.

At the end of the nineteenth century, following the successful examples of co-operative dairies in Denmark, somewhat similar societies were started mainly in South Sweden and these spread rapidly to other parts of the country. Their chief object was butter-making for export, and there were only a few dairies engaged in butter and cheese making, for the home market, and in retailing fresh milk to towns. An association for the export trade was also established, but on the home market there was no co-operation at all among the co-operative dairies, and they competed freely with each other as well as with private dairies. One of the biggest combines of co-operative dairies near the capital city of

/Sweden

Sweden was the Stockholm Milk Central established in 1915, but this too had to compete with milk from other co-operative dairies. At the end of 1930, out of the country's 1600 dairies, only 715 were co-operative and these handled about 70% of milk delivered at all dairies. These arrangements worked fairly well till 1930, but the agricultural crisis during that year presented a very bleak prospect for the dairy industry. The price of export butter was falling rapidly and therefore everyone: co-operative dairies, private companies and individual farmers wanted to sell more milk to the more remunerative liquid milk market with resulting disorganisation. Moreover, at the beginning of the 1930's the Swedish dairy industry was in need of rationalization from the economic, technical and distributive points of view. "The industry was generally carried on in small, badly situated, badly equipped dairies and unnecessary haulage was frequently a feature of the transportation of milk to the dairies and the transportation of the products from the dairies" (28).

To overcome the above a reorganisation of the dairy industry was essential and this was achieved by voluntary co-operation as well as by State assistance. A "Swedish Dairies Association" was formed in 1932, and a milk marketing scheme embodying the principle of levies and subsidies was initiated by the State and administered by the Association.

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(The Swedish Dairies Association is called "SVENSKA MEJERIERNAS RIKSFORENING or S.M.R. for short, and is so referred to, in this Chapter).

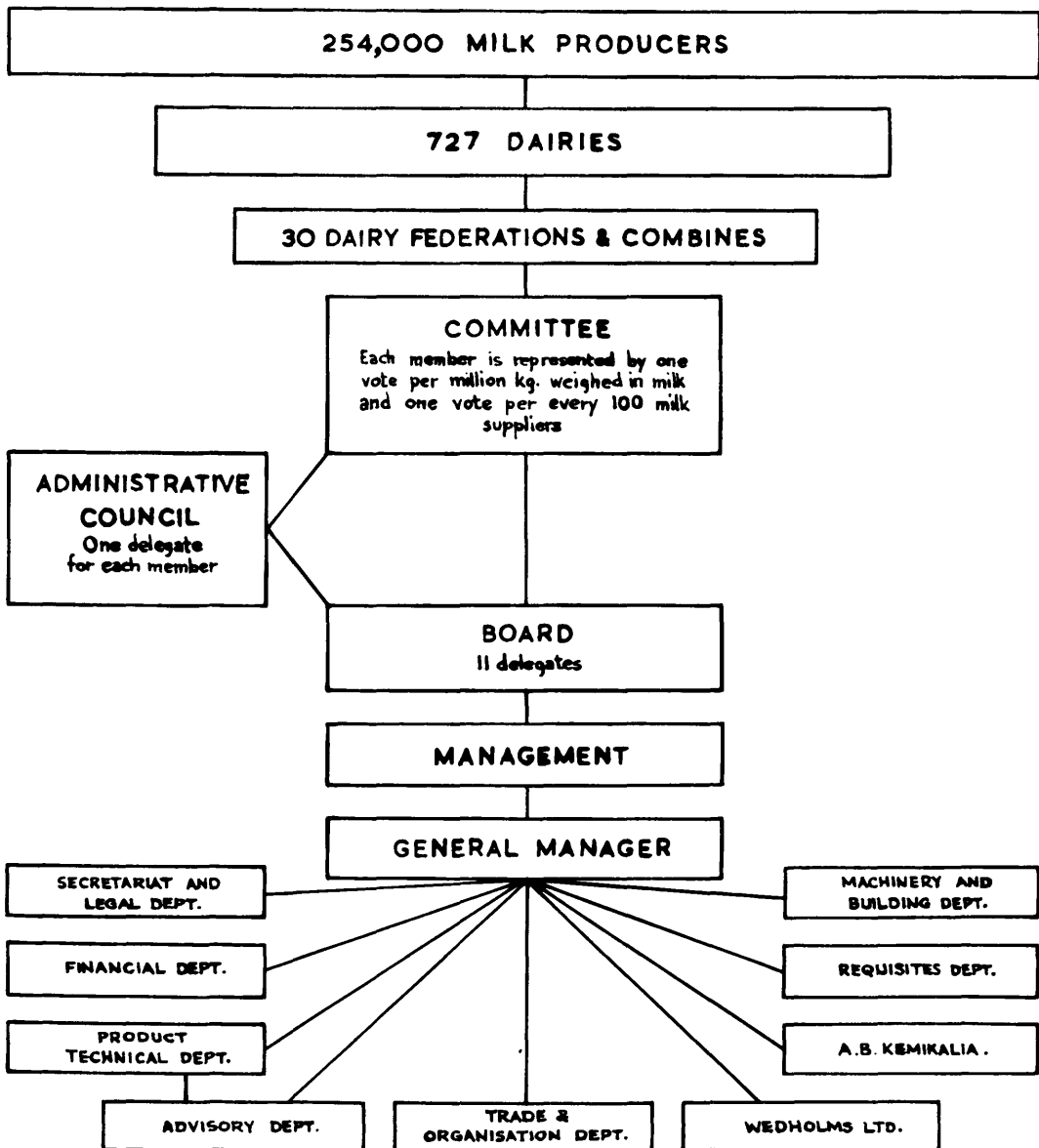
The main object of the milk marketing scheme was to equalize the receipts from the sale of milk for liquid consumption and for manufacture into butter and milk products for home consumption and export. The export price had to be kept low to meet the world price. Levies were imposed on all milk sold for liquid consumption; these were collected by the S.M.R. and distributed among all other dairies in proportion to the amount of milk manufactured by them into various products, so that they were enabled to give a uniform remunerative price for all milk to the producers whether the milk was sold liquid or manufactured. All surplus butter production was eliminated by export under controlled conditions which did not upset price determinations within the country.

The organisation of each local co-operative dairy is on the Danish pattern. All these dairies are combined into federations of which there are 32 over the country and these federations together combine to form the S.M.R. The structure of co-operative organisation of the S.M.R. is shown in Fig. 6 . The close co-operation reigning throughout the entire dairy organisation enables the S.M.R. to fulfil its task of the economic, technical and distributive

/rationalization

FIG. 6.

STRUCTURE OF ORGANISATION OF THE
SWEDISH DAIRIES ASSOCIATION.



rationalization of the dairy industry. One of the most important tasks contemplated by S.M.R. was a technical rationalization and centralization of the Swedish dairies of the 1930's. This was achieved by an intensive modernization of the dairies both architecturally and as regards creamery equipment. A special technical department was established which deals solely with the building and engineering aspects of the dairies. To provide for the technical equipment and machinery requirements of the dairies, the S.M.R. took over an existing dairy equipment factory (The Wedholms Ltd.), and also started a Requisites Department to supply the dairies and producers with their requirements for the dairy trade. In addition, S.M.R. bought a business (known as 'A.B. Kemikalia'), manufacturing dairy preparations, e.g. rennet, cheese and butter colouring, etc. Thus at present most of the dairy requirements are produced and supplied by S.M.R. to the co-operative dairies and member producers.

In the centralization process the number of dairies was reduced from 1,672 in 1934 to 1,056 in 1939 and to 817 in 1946. Simultaneously with this, a stable market resulted in an increase of milk suppliers to the enlarged dairies, so that the average quantity of milk received per dairy was also considerably increased. The Swedish dairy industry was fortunate in that the country was not involved in the war of 1939 - 45, so that the development work started in 1932 was

/continued

continued during these years and this has resulted in Swedish dairies to-day being the best equipped and most technically advanced dairies in the Western European countries.

Co-operative dairying in Sweden is all embracing and in this way it is even one step ahead of Denmark in that here all milk produced is co-operatively handled whether for manufacture or for liquid consumption in cities. The rationalization of the dairy produce trade has been generally based on the principle that each co-operative dairy should supply the consumer requirements of its delivery district. In practice this amounts to the provision of milk and milk products within a certain consuming area being supplied by a single dairy serving as the natural supply unit of the area. The necessary functions of an intermediary in the distribution of products rest with the major local organisation, e.g. the dairy federation or Milk Centrals. Any surplus or deficit is arranged through the S.M.R. One of the most important federations of co-operative dairies in Sweden is the Milk Central of Stockholm and a brief description of its organisation and methods of working is given below as typical of the organisation of the dairy industry in Sweden.

The Milk Central - Stockholm

The Stockholm Milk Central is a federation of co-operative dairies in five counties around Stockholm. The
/area

area covered by its activities is divided into 8 districts. At one time there were as many as 360 dairies in this area, but on rationalization their number has now been reduced to 57. These dairies have a total membership of 29,000 producers owning on an average 8 dairy cows and each member contributing a share of 100 kroner (ca. £7) per cow. The organisation and management of each dairy is on co-operative principles, but all financial matters are handled centrally. Milk from members is received in the respective dairies and the use to which this is put is decided by the Central. All these dairies sell as much as is required in their respective areas for liquid consumption, and of the remainder, some is sent to Stockholm according to the Central's requirements there, and the rest is manufactured in the dairies into various milk products as decided Centrally. Some of these dairies are specialized in the manufacture of butter, cheese or milk powder etc., so that the best equipment of the latest design, e.g. the instantaneous butter-making equipment etc., can be profitably employed. Most of the dairies are newly built and have modern equipment.

In Stockholm, the Milk Central operates 5 dairy plants (in 1933 there were 35 separate plants) to which milk is consigned from the various dairies in the country as required. These plants handle milk only for liquid consumption and for manufacturing milk products, e.g. ice-cream,

/only

only for local consumption. Milk for liquid consumption is standardized to 3% butterfat content. Requirements of butter and cheese to be sold in Stockholm are obtained from the country dairies. By means of extensive laboratory testing and an elaborate quality control system at all stages of milk handling, the Milk Central is able to ensure that consumers are supplied with the highest grade of milk products.

The price payable to producers through their respective dairies is arrived at by the Milk Central by taking into consideration all receipts from the sale of milk and milk products together with any levies payable or subsidies receivable under the State's marketing scheme through the S.M.R. These are all pooled and after deducting all the expenses of the Milk Central and the dairies, the balance is distributed to all members in proportion to the milk supplied by them. Thus the price received by the producers is similar throughout the area, as all transport is arranged and managed by the Milk Central. During 1947 more than 135 million gallons of milk were handled by the dairies of the Milk Central. (These pricing methods bear a close resemblance to the pricing policy of the Milk Marketing Boards in Great Britain).

Generally speaking, the Milk Central or its dairies do not engage in the retail distribution of milk direct to

/the

the consumers, but confine their activities to selling by wholesale to retail distributors and to restaurants, hospitals and schools, in bulk. The complete retail distribution of milk and milk products to the consumer is in the hands of private shops and Consumers' Co-operative Societies. In Stockholm, the largest retailer of milk is the Stockholm Co-operative Society (Consumers' Co-operative Society having over 125,000 members) which purchases all its milk requirements wholesale from the Milk Central and distributes it to the consumers from its 450 shops spread all over the city. Thus, a complete co-operation exists between the producers and consumers of milk through their respective co-operative organisations in the field of milk marketing.

N O R W A Y

The development of co-operative dairying in Norway has been on lines similar to Sweden. The industry was faced in 1929 - 30 with the same problems due to agricultural depression, viz. of stabilizing prices for milk used in the manufacture of butter and cheese. It is interesting to discuss here how the Norwegian co-operative dairy industry was reorganised in such circumstances.

An Agricultural Marketing Act was enacted in 1930, having as its main object, the promotion of the marketing of all agricultural produce at reasonable and remunerative prices by a system of levies and subsidies imposed nationally. Under the Act an Agricultural Marketing Board was established, on which were represented the various national federations of agricultural producers on commodity lines. The application of the Act as regards the dairy industry was mainly that of a price adjustment system. The whole country was divided into 8 districts, in each of which a marketing organisation, viz. Milk Central, was established. These Milk Centrals differ from the Swedish Centrals e.g. the Milk Central, Stockholm, in that they do not actually engage in handling any milk and milk products, and their function is primarily that of price regulation. All the co-operative
/dairies

dairies - which already handled most of the milk produced in the country used for manufacture and a greater proportion of milk sold for liquid consumption - in the particular district, together with any individual producer-retailers operating on a large scale, were affiliated to the Central. All the 9 Centrals were together combined to form a National Federation of Norwegian Milk Producers which was represented on the State Agricultural Marketing Board.

The organisation and management of the dairies is carried out on recognised co-operative principles but they are advised from the Central as to how the milk, apart from that sold for liquid consumption, should be utilized for manufacturing purposes. Each month all dairies send a report to the respective Milk Central showing the utilization of milk received by them from all members. The price to be paid to the producers is then calculated by the Central taking into account the proportion of milk sold by the individual dairy in the liquid market and manufactured into various milk products. A levy is payable by the dairies on all milk sold for liquid consumption, and all these levies are administered by the Federation which with the approval of the Marketing Board appropriates these to the various dairies through the Centrals, in proportion to the milk manufactured into butter and cheese. All sale prices of the latter are fixed by the State on the recommendation of the

/Marketing

Marketing Board.

Simultaneously with these arrangements the dairies, as well as the milk distribution channels in towns, were rationalized. How this rationalization of milk distribution in OSLO, had by 1939, benefited producers and consumers can be seen from the fact that there were "thousands of wholesalers and retail shops" (29) throughout the city, before the scheme came into force, and consequently the turnover of individual concerns was small, expenses were high and equipment generally inadequate. The overlapping in the delivery of milk and milk products greatly increased the costs of milk distribution to the disadvantage of both consumer and producer. The rationalization whereby most of the milk received into Oslo was processed in two large dairies and distribution reorganised "brought down the distribution cost of milk in Oslo, just before the war to six öre per litre (i.e. $3\frac{1}{2}$ d. per gallon) for both wholesale and retail trade" (30). Thus, without adversely affecting the consumer, the returns to producers could be bettered.

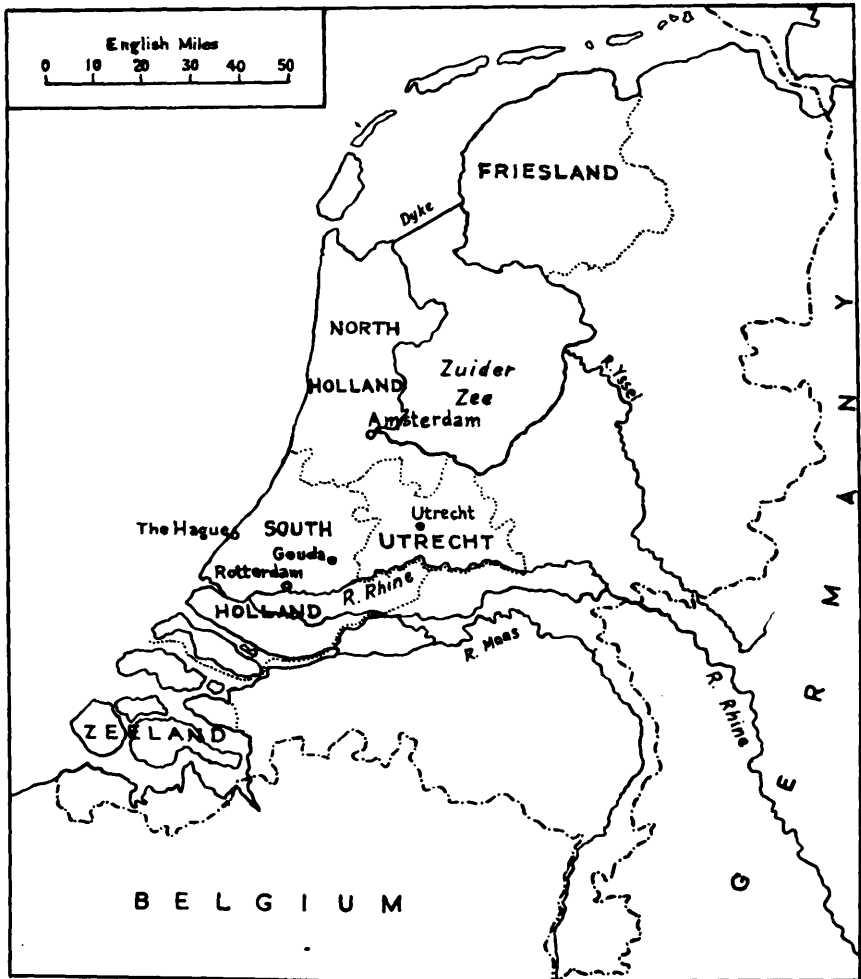
The Federation also established cold storage warehouses to store cheese and butter in the summer months when the production was excessive, so that the market could be supplied at economic prices all year round. Four central laboratories to keep rigid control on the quality of all manufactured products were also established.

The Norwegian dairy industry was very badly affected by the war, when the country was occupied from 1940 to 1945. Not only could no development work proceed but the production of milk in the country also decreased by more than half due to cessation of feeding stuff supplies. Since the war, the Federation and the Centrals have again taken over the work of developing the dairy industry.

FIG. 7.

MAP OF THE NETHERLANDS.

INDICATING THE PLACES AND DISTRICTS MENTIONED IN THE TEXT.



T H E N E T H E R L A N D S

The Netherlands is a country about four-fifths the size of Denmark yet with more than double its population, while agriculture is only one of many industries and thus does not occupy the same overwhelmingly important position as in Denmark. But in agriculture, the livestock industry is the principal branch, and of this, dairying is the most important. The development of the dairy industry has not been along such markedly co-operative lines as in Denmark. A larger population has meant that the home market absorbs a greater proportion of the total milk production in the form of liquid milk and milk products. Before the war of 1939 - 45 nearly 24% of the total was consumed as liquid, and of the rest 48% was used for manufacture into butter, 20% into cheese and 8% for condensed milk etc. Of the manufactured products also a considerable proportion was used in the home market. These factors have influenced the character of the organisation of the Dutch dairy industry to a great extent and this has a greater variety than in Denmark which is essentially dependent on the manufacture of butter for export. This diversity has also influenced the character of co-operative dairies (which are called "dairy factories" in the Netherlands), but here too, not unlike

/Denmark

Denmark, the dairy industry can be divided into two distinct sections:- viz. the manufacturing side and the liquid milk side. Of these, the former is organised to a large extent on co-operative methods, while the latter - of much greater importance than in Denmark - has been left to private enterprise in the large consuming centres.

Organisation of Co-operative Dairy Industry

Co-operative dairy factories handled about 74% of the total milk production (in 1939) utilized for manufacturing purposes. In 1939, 442 such factories handled about 2,723 million kgs. of milk or on an average 6.3 mill.kgs. per factory (nearly double the Danish dairies). The co-operative dairy societies operating these factories are all organised under Co-operative Law and their methods of organisation and management follow much the same co-operative principles as in Denmark; the societies confining their activities to one purpose only, e.g. dairy societies do not engage in agricultural trade as in Eire and there are separate societies for milk recording or cattle breeding. All the dairy factories are affiliated to form "Provincial Associations of Co-operative Dairy Factories" of which there are now 8 over the country and which have in turn formed the "General Netherlands Dairy Union" (established in 1900). The objects of the Union are to further the interests of the

/ co-operative

co-operative dairy factories by giving technical, legal and other advice, keeping and publishing statistics (in addition to those published separately by the Provincial Associations), promoting co-operative ideas by propaganda and publicity. Thus this Union does not have so much influence on the whole dairy industry as is exercised by the Federation in Denmark and the S.M.R. in Sweden.

One of the most important of Provincial Associations is in Friesland, which has 77 dairy factories as members (in 1947). In addition to forming this Association, most of the factories have joined to establish an organisation for selling the manufactured products in the export and home market. This is called the Fresian Co-operative Dairy Export Company (Frico). Also some materials for use in the dairy factories, e.g. such as rennet and colouring material, are manufactured in a "Co-operative Rennet and Colouring Matter Factory" and other raw materials and equipment are obtained through the Purchasing Department of the Association. There is even a separate "Co-operative Dairy Bank" to look after the financial interests of all Fresian dairy factories as well as other agricultural co-operatives. Most of the dairy factories are also affiliated to a "Co-operative Condensed Milk Factory, Friesland" to which they send milk for manufacture into condensed milk as required.

An important aspect of the Dutch dairy industry is

/the

the manufacture of cheese on farms, which has still continued in spite of factory developments. Factory-made cheese is not necessarily of better quality than the farm product and this traditional farm cheese making - carried on more especially in the Gouda district, famous for its Gouda Cheese - produces a superior quality. The average "Gouda" farmer has 10 to 15 cows (about 20 in the pre-war period). All milk produced is utilized for making Gouda Cheese, which is then sold either to cheese-factors or to co-operative organisations which collect it from the farms. One such important co-operative organisation having its warehouse at Gouda is "De Producent" which receives cheese from over 600 farmers (as well as from several dairy factories). The price paid to farmers depends on the value realized by their cheese after proper grading. However, these farmers do not have any say in the management of "De Producent" which is in addition a co-operative dairy factory and receives milk from over 1,250 members direct at the Gouda factory as well as at other branch factories in the province of South Holland.

Price Stabilization Policy of Dutch dairy industry

The Dutch dairy industry was affected by the agricultural crisis in the 1930's during which the value of its exports was greatly reduced due to low prices and increased import duties in the importing countries. (Germany

/was

was the principal importer of Dutch dairy produce). Steps, therefore, had to be taken by the State involving a considerable degree of control over the financial matters of the industry. A State Dairy Industry Commission was set up which administered a system of subsidies and levies to stabilize and increase the producers' return from the milk manufactured. A heavy tax (1/- per lb.) was imposed on all home consumed butter and to check any increase in the consumption of margarine, this was also taxed heavily (6d. per lb.), while in addition during 1932 - 37 all margarine factories were forced to include a certain proportion of butter (10 to 40%) in all margarine. The tax was refunded to the dairy factories on all butter exported. The income from these taxes was used in a complicated way to increase the price of milk used in dairy factories. A small levy was imposed on cheese also and a cheese control scheme was inaugurated with intricate arrangements for the farm cheese makers. As regards liquid milk, no tax was levied on milk used for liquid consumption, but minimum prices were introduced in the large consuming centres in the west. Thus, two markets: a high priced home market and a low priced export market existed side by side for the manufactured dairy produce and a balance was maintained. The subsidies payable to milk producers were all distributed through the dairy factories and were on the basis of butterfat content in the supplier's milk.

In addition to the above "levy-subsidy" system, steps were taken by the Government to reduce the total milk production in the country by reducing the size of the national dairy herd which had increased by one-fifth within 3 years from 1930 to 33. Over the next three years, the Government bought up 250,000 head of cattle (nearly one-fifth of the total cattle) for slaughter and special regulations were imposed restricting the number of calves that could be reared on farms. While these arrangements decreased the total number of cattle, the average yield of the remaining cows was noticeably increased as only the poor yielders were culled by the farmers, and thus there was no overall decrease in the total milk production of the country. The position at the outbreak of war in 1939 was still far from satisfactory as, in spite of all the above measures, milk producers received only 6d. per gallon for their milk (31). Although unremunerative for the dairy farmer, it still remained his only source of livelihood, as he could not change his basic farming system.

The dairy industry was severely affected by the war and the German occupation. During this period the cattle population was reduced by about one-third and together with a considerable decrease in the milk yield per cow the total milk production was reduced by nearly half. Rigid control over all phases of dairying was exercised by the occupying
/power

power, but the methods of co-operative dairy factories were only slightly changed.

Since the war, the Government has retained a considerable measure of control over the dairy industry. The powers of the Dairy Commission have been much enlarged (thus it now corresponds more to the Milk Division of the Ministry of Food in the United Kingdom). All milk for liquid consumption is standardized to 2.5% butterfat content, and present financial arrangements include those levies and subsidies (but to a greater extent now) which had been introduced prior to the war. The level of price received by the producer is determined by the Government, thus the function of the co-operative dairies is confined to the manufacture of dairy produce; marketing being controlled by the Government.

S W I T Z E R L A N D

Milk production has been of great importance in Switzerland for centuries as it has been the most profitable method of utilizing the grass which grows very luxuriantly on the mountain-slopes and on plains where other types of farming methods are not practicable. In the 1880's when Denmark was only changing her farming methods from corn growing to milk production, Switzerland already had highly developed dairy farming and the average of 500 gallons (32) of Swiss cows was probably twice as high as that of any other continental country. Apart from the milk used for home liquid consumption, most of the remainder was utilized for making cheese for export. Swiss producers have always been very small units, yet they have attained efficiency and strength by co-operation through their butter and cheese making co-operatives, cattle breeding societies and milk selling co-operatives.

The co-operative organisation of the dairy industry in Switzerland is different from the Danish system or from that of any other European country. There are many kinds of co-operative dairy societies which are all very small and most of the milk production is handled by co-operatives of various kinds, some of which are cheese factories - known as
/cheeseries

cheeseries - some butter factories, some co-operatives for retail distribution, but the greater number are merely collecting depots from which milk is sold to co-operative cheeseries or dairies for the distribution of milk. Nearly every village has one of such co-operatives. The organisation and management methods of these small co-operatives are very simple. Each is managed by a Committee of Management elected by the peasants of the village. In case of cheeseries there are two types of organisations- in one the producers owning the cheeseries employ a skilled cheese maker, and sell the cheese themselves through their Union (described later) or secondly, the cheese maker himself buys all milk from the producers, pays a rent for the cheesery, and sells the cheese independently to the Union. Many such cheeseries which are situated in the vicinity of towns sell some of the milk to the co-operative dairies for liquid consumption. Some co-operatives act merely as separating stations where milk from the members in the villages is separated, skimmed milk returned to the members and the cream sent to a co-operative butter factory or a Butter Central (a co-operative organisation). Other co-operatives merely collect milk from members and send it to the co-operative dairies in the towns. There is no great problem of transport as the most of such villages are situated in valleys near to the towns.

All these Co-operative Societies, which numbered

/more

more than 4,320 in 1946, had 141,000 members owning 693,000 cows. Thus the average Society has only 33 members with 5 cows each. (33) The Societies are combined into 17 Co-operative Dairy Federations which are affiliated to the 'Central Union of Milk Producers in Switzerland'.

Although the Swiss dairy industry did not depend on exports to such a great extent as the Netherlands or Denmark, the 'Agricultural Crisis' did have effects on it, as both the price and the volume of cheese exports declined very considerably after 1929. But as in the interest of the Swiss agricultural economy it was essential to maintain milk production at a certain level, the Government inaugurated a system of price control to maintain producers' returns at economic levels by means of levies and subsidies. As in other countries, all milk sold for liquid consumption fetched a higher price than milk which was utilized for manufacture into cheese. In spite of being an exporter of cheese, for which good prices were obtained, Switzerland was a net importer of butter before 1929. The State price stabilization scheme took this into consideration and encouraged butter production so that the extra milk, now not being utilized for cheese manufacture for which there was no market, could be manufactured into butter. This was secured by a heavy import duty (£3 per cwt.) imposed on butter, with equivalent duties on margarine and cooking fats, so that

/Switzerland

Switzerland became self-sufficient in butter, although the level of butter prices for home consumption had to be kept very high.

The price stabilization policy was put into effect through the Central Union of Milk Producers. Its main object was to raise the level of price to those milk producers whose milk was utilized for manufacture into cheese. All milk producers were guaranteed a minimum price. A levy termed "crisis centimes" was imposed on all milk sold for liquid consumption by the co-operative dairies or by producer-retailers, all of whom had to send in returns to the Union. A special levy was also imposed on all imported feeding stuffs (in addition to the ordinary import duties). Two-thirds of the feeding stuff levy together with the "crisis centimes", plus a substantial amount of Federal Government subsidy was utilized to raise the cheese-milk price. The Union purchased all the cheese made by the co-operatives at a guaranteed price and sold it to the Swiss Cheese Union (co-operative export agency) at substantially lower prices so that cheese exports could be maintained at world prices. During 1936 -37 the total subsidy for milk production amounted to 35 million Swiss francs (i.e. £1½ million) and represented about 1d. per gallon on all milk sold.

In spite of these subsidies, the Union could not afford to pay a stated price for unlimited supplies, as milk

/production

production was rising. Therefore another step had to be taken to restrain the production of milk in the country. A "quota system" was introduced whereby each district was allotted a "quota" of milk production, based on the summer output of 1932, for which minimum prices were ensured and all surplus milk, in excess of this quota was paid for at a lower price. The scheme had to be revised in 1938, on the basis of 1936 - 37 output. On commencement of the war in 1939, the quota scheme was suspended.

Although Switzerland was not involved in war, milk production was affected by the restriction on amounts of feeding stuff available. But there were no changes either in the organisation or the co-operatives or in the sphere of the Union's activities, except for a change in the amount of the subsidies given by the Government. Thus, Switzerland presents an example of co-operative organisation, which with Government help has very successfully assisted the dairy industry through the agricultural crisis and the war.

C O N C L U S I O N S

Co-operative methods and their importance in the development of the dairy industry in the western European countries has been discussed. It is evident that these methods have been responsible for a large part of such developments, but it is also evident that during the periods of agricultural depression, and during war-time, voluntary co-operative efforts could not succeed unaided and State assistance had to be provided in all cases. Governments were obliged to introduce price supporting schemes because of the temporary collapse of prices during the depression over which the co-operatives could exercise no control. With such State financial assistance came a measure of State control, so that strictly speaking the co-operative societies have not been so 'free' in their financial and marketing activities as they would theoretically have desired to be. Indeed, during the last eighteen years from 1930 onwards, the economic trend in all the countries has been towards a greater dependence on the State for such purposes, normally outwith the scope of co-operative effort, and the war has nearly completed the trend. It has become increasingly common for Governments to protect the home producers from severe economic hazards.

Nevertheless, this new state of affairs has meant

/that

that the importance of co-operatives for their primary purpose - i.e. apart from getting the best possible returns to the members - of increasing efficiency in manufacture (i.e. of butter, cheese, etc.) as well as in the primary production field (i.e. increasing the efficiency of milk production) has been enhanced. It cannot be doubted that the co-operative efforts of milk producers - through their co-operative organisations - have been of immense value in this direction, and will remain so, irrespective of changes in the economic structure.

It is interesting here to compare the co-operative methods of western European countries with those of the Milk Marketing Boards in Great Britain. It is true that the latter cannot strictly be called co-operative organisations, but in practice they have definitely been of a co-operative character in all their spheres of activities - i.e. apart from their statutory powers of control over all milk producers and over milk marketing in general. These methods have been referred to as being "compulsory co-operation" or more mildly as "disciplined co-operation" methods and looking back, these indeed have proved to be more beneficial to milk producers than the purely voluntary type of co-operation methods. The pre-war co-operative character of the Boards cannot be questioned as far as the returns to the producers were concerned, as the pricing was managed on

/the

the strictly co-operative principles of 'Pool Price'.

These Boards were established in 1933, at a period when other dairy co-operative organisations in European countries had to seek State assistance and to attempt reorganisation. From then onwards, the mechanisms of "levy-subsidy systems" adopted in all these countries, under State regulation, though operated through the producers co-operative organisations, to bring about some equalization between the returns from the sale of milk to the liquid market and for manufacture and generally to stabilize producers' prices, have been essentially the same as those of the British Milk Marketing Boards. Indeed these Boards were in a better position to bring into effect these mechanisms, although, no doubt, this was mainly due to the privileged position of the British dairy farmer in being able to dispose of a much larger proportion of his milk production in the liquid market.

As regards the functions of the co-operative organisations and the Milk Marketing Boards in the field of milk production efficiency, e.g. by milk recording and Artificial Insemination Services etc., the Boards (although they have entered this field very late) have followed co-operative principles and the measure of success achieved during a short period of 5 years has been very encouraging. These functions which have been undertaken and organised

/'from below'

'from below' in co-operative dairying countries such as Denmark, e.g. through the local co-operative societies, have been undertaken centrally 'from above' by the Milk Marketing Board for the benefit of the producers. Although, here, there is a close control and supervision by the Board, of technical and especially financial matters, the organisation is on a local and regional basis, e.g. Milk Records Branch or the Artificial Insemination Centre, where the members do exercise some measure of local control. It is evident that this method has achieved in a short time what could hardly have been achieved by isolated groups of farmers operating separately. In fact, there was not even a tendency to "get together" on a local basis, and although whatever be the reasons for this, it cannot be denied that in countries where co-operative organisations have not developed of themselves, it is possible to gain the advantages of co-operative methods, in a short time, by organising 'from above', as has been done by the Milk Marketing Boards.

P A R T III.

APPLICATION OF CO-OPERATIVE METHODS OF DAIRYING

UNDER

INDIAN CONDITIONS.

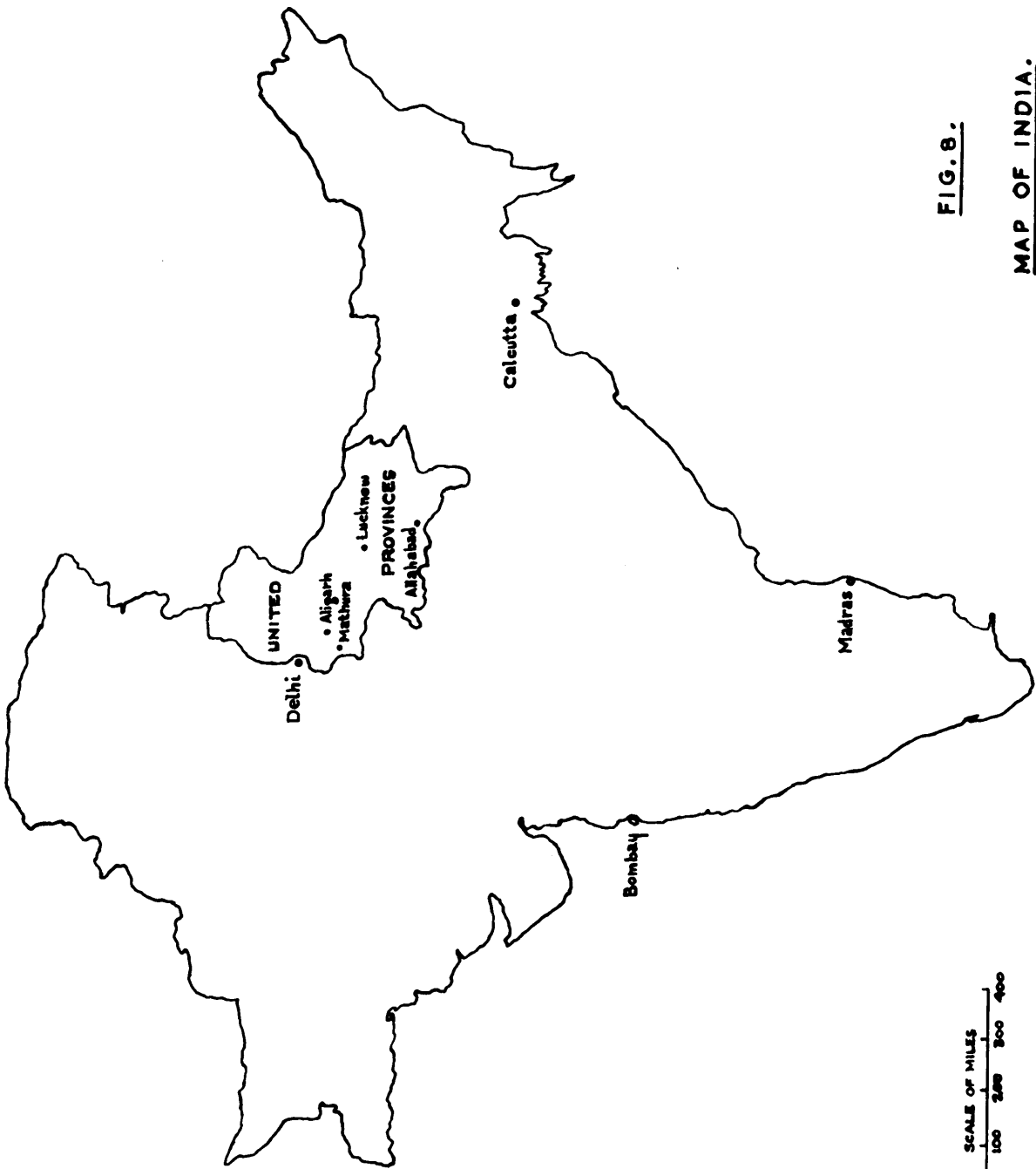
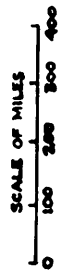


FIG. 8.

MAP OF INDIA.



CHAPTER IX.

DAIRY INDUSTRY IN INDIA.

India is predominantly an agricultural country where nearly 70 per cent of the vast population of 400 million people is engaged in agriculture. Milk production and cow-keeping has been one of the most important and most ancient of agricultural pursuits. To the outside world, the cow in India is known only as an object of worship, by a majority of population - the religious Hindu. While such an element of worship of the cow cannot be denied, there are vital and very important reasons for any such tendencies to exist, and which have remained so for the past thousands of years. In no other country of the world, has the cow played such an important part as in India. Not only are cows important for the supply of milk and milk products to supplement the vegetarian dietary of people, their still more important function lies in the supplying of 'bullock-power' required in almost every phase of Indian agriculture. This importance of 'bullock-power' in Agricultural India is very much more than that of 'horse-power' - both animal and machinery - so vitally necessary in European countries. The very existence of life in India has thus depended for centuries on the cow, and it can well be appreciated how the cow became such an 'object' as it is considered to be. This bullock-power, in addition

to being the backbone of agricultural operation also played a vital part in transport, and even now - in a contemporary machine age in Europe - bullock-power is the most important means of transport and traction in rural India. The preservation of cattle wealth in India has thus been possible over the past centuries by an observance of a religious attitude towards cow-keeping. This attitude was also accompanied by efficient methods of dairy-husbandry - as it is now termed. The prominent area of milk production in India - also associated with which is the Indian mythological figure of Lord Krishna, portrayed as 'gowala' or cow-keeper, and known to the outside world as originator of 'Bhagvat-Gita' or 'Song of God' - the Western part of United Provinces, around the city of MATHURA, was also referred to as a 'land of honey, butter and milk', in the olden times. A written account that cow-keeping was carried on, on scientific lines in India more than four centuries ago, is provided in the "Ain-i-Akbar". The following has been quoted by Pepperall (34), present Secretary of the Milk Marketing Board - England and Wales:-

" "The Ain-i-Akbar" written nearly four centuries ago by his Prime Minister, Abul Fazal, describes in the clearest possible manner the economic position during the reign of Emperor Akbar. His regulations for the maintenance of cow stables (possibly attributable to his Finance Minister,

/Todar Mal)

Todar Mal) provide the basis of sound dairy practice as adopted within the last few decades by the world's foremost dairy countries. They include:-

Careful selection of dairy stock.

Scientific standards of feeding to promote milk production.

Feeding of concentrates in proportion to milk yields.

Maintenance of individual records of milk production .

Tests of quality - a specific number of 'Chhataks' (ounces) of fat were expected from a stated quantity of milk.

Fortnightly inspection of stock with the object of ensuring that the allotted ration had actually been fed. Certain scientific tests were applied to reveal any loss of condition which would indicate misuse of fodder."

Pepperall goes on to add "If this great trio, unquestionably India's ablest administrators, could be called into judgement of succeeding administrations, what a sorry picture they would find."

This last phrase sums up the present position of Dairy Industry in India.

MILK PRODUCTION.

The Cattle population of India is nearly 200 million, which is approximately one-third of the world total. This includes cows, she-buffaloes, bulls, bullocks, young stock and calves. The proportion of animals kept for breeding and milk production is much smaller, there being only 49 million cows and 25 million buffaloes kept for this purpose. The milking animals are not distributed equally all over the country and neither is their milk yield similar. The important dairying tracts in India lie in the Indo-Gangetic plain, i.e. north and north-western area. From the milk production point of view some breeds of Indian cattle are good - only comparatively - but the average is very poor. Some idea of the productivity of Indian cattle can be drawn from the fact that although India has about as many milch cattle as Europe including Russia, its annual production is only 6,100 million gallons of milk, which is only a fifth of that of Europe. But the quality of cattle within India varies very extensively, and thus no such comparison on the basis of 'Indian Cattle' can be made with European Cattle, in countries which are specialized in milk production. Thus although the approximate yield per cow per annum is only 486 lbs. - less than 50 gallons - there are certain dairying areas where - as in Punjab and Sind - the average is about 145 and 120 gallons annually respectively

In United Provinces - having the largest number of cows i.e. 5.7 million milch cows - the average is 62 gallons, slightly above the all-India average but much lower than the best dairying districts. Even in the United Provinces, the western districts have a much better quality of cow.

In addition to cows, buffaloes play a very important part in milk production. Their milk production is much higher than cows, the all-India average being 123 gallons yearly, with the best areas (same as for cows) having an average of 232 gallons. In United Provinces (U.P.) the average is 124 gallons yearly. Thus, although buffaloes are much smaller in number, due to their higher production they provide nearly 50% of the total production of milk. The buffalo is again predominant in the North and Western parts of India.

Another noteworthy feature about Indian milch cattle is that they yield a much richer (i.e. with more butterfat content) milk than most of the European breeds. Compared to British breeds with a fat content of 3.3 to 4% (except Jersey and Guernsey with more than 4%) in their milk, the Indian cow always yields a milk with 5 to 5.5% butterfat, and even up to 6% in some cases. The butterfat content is much more in the case of buffaloes, being 7%, with individual animals going as high as 8 or 9%. Thus on a butterfat basis the Indian buffalo, with its higher and

/richer

richer milk yield, can be compared very favourably with British cows. This higher butterfat content of Indian milk can be attributed to the fact that the breeders in India always paid more attention to quality than quantity, because the milk was mostly utilized for the manufacture of 'Ghee' (clarified butterfat or butter oil), and an animal was judged on the amount of 'ghee' it could produce. Even now in remote areas, where 'ghee' is the main consideration, the productivity is measured in the number of tins of 'ghee' (1 tin of 36 lbs. each) produced during one lactation.

The goat also plays a part as a milk producer. They number about 9 million and, yielding on an average about 16 gallons of milk yearly, produce about 3% of the total milk production. At many farms, however, some selected breeds of goats have yielded an annual average of 48 gallons (in a lactation of 150 days), many giving above 40 gallons and one individual 100 gallons in a lactation. Production of goats' milk is also localised in the same areas as for cows and buffaloes.

Production of milk in India is mainly a rural industry, and nearly 95% of the cattle are kept there. Thus the major portion of milk is produced in the villages. A village in India is a unique thing, nothing like it being found in any of the Western European countries studied. They are mainly agricultural in character, varying in size

/from

from a hundred or so to about 2000 population - there are some with population up to 5000 also - scattered all over India they number more than 700,000. In the United Provinces alone, with an area of 106,248 sq. miles, there are 105,640 villages. The houses of the farmers are usually clustered together in one place and are surrounded by the agricultural holdings on all sides. These 'holdings' apart from being very small - the average is less than 5 acres - suffer from a further disadvantage of fragmentation, i.e. each complete holding is not all in one piece. One field of an acre or two may be as much as a mile away from another field of similar area, both being a mile or so from the house in the village. There are however, some 'big' holdings also, of 20 to 30 acres - all scattered and fragmented, and a few 'very big' holdings belonging to landlords - of 100 acres or more. There is nothing comparable to even a small holding of Denmark extending to a few acres, all in one place, with suitable farm buildings for cows etc. The dairy farm - as known in Great Britain - with a herd of 10 cows, with holding of land, suitable buildings and a dairy, does not exist in India. There are a few big dairy farms which belong to the Army or a few private owners, Agricultural Colleges and Agricultural Departments. They are, however, not typical at all and thus cannot be considered under Indian conditions generally.

Most of the milk is thus produced by very small farmers, working on very small holdings and keeping on an average 1 or 2 cows or buffaloes. As there is not much demand for the sale of liquid milk in rural areas, most of this milk is utilized for the manufacture of 'ghee' and the by-product, buttermilk, is locally consumed by the household. There are, however, some specialized milk producers in the rural areas outside big towns who supply milk to the urban population. Apart from these, the small number of milch cattle kept on very small holdings, combined with the low productivity of the animals, make the average production of milk per unit of land area very small indeed. This is only 90 lbs. per sq. mile on an all-India average, and 226 lbs. per sq. mile in the United Provinces. Here again in the western dairy districts e.g. ALIGARH, as much as 416 lbs. per sq. mile is produced. It is evident from table no. XII. that even the best dairying districts in India do not produce even as much as one-fourth of the quantity of milk per sq. mile, as in Holland and Denmark.

The main reason for this has been the fact that dairy farming has been an unremunerative enterprise in the past, and is only a part-time occupation of farmers in general, the main occupation being arable farming for production of grain. The high capital cost and heavy overhead charges required for specialized milk production cannot generally

be covered by the sale price of milk which has to be at par with that produced by petty 'gowalas'- (cow-keepers) keeping a few cows, maintained on purchased fodder in unsatisfactory surroundings as is shown later. Another stumbling block has been the lack of any proper market or marketing facilities for the milk produced on a small scale in small villages.

Table XII.

Intensity of Milk Production in India.

	per sq. mile		
	no. of milch cattle	Production of milk per day lbs.	Human Population
1. All-India average	45	90	247
2. Aligarh district	107	416	705
3. Holland	109	2,241	639
4. Denmark	97	1,856	226

Source: Report on Marketing of Milk in India: 1942.

Apart from this very scattered milk production in India, there is some concentration of milk production in and around the areas of heavy liquid milk demand in towns and cities. In the villages surrounding these towns there are specialized milk producers - though not on the systems of western dairy farms - who maintain large herds for the

/specific

specific purpose of milk supply to towns. Many of them produce as much as 80 to 100 gallons of milk daily. In addition to these, there are producers situated within the boundaries of the cities. These urban milk producers are very characteristic of city milk supplies in India and are responsible for about 60% of the milk sold in liquid market in cities. They present a very special problem in any system of milk market reorganisation as will be discussed later.

Utilisation of Milk in India:-

Table XIII shows the utilisation of milk in India. It is seen that only 28% of all milk produced is used for liquid consumption. This %age varies greatly in different parts of India, thus in the United Provinces it is only 19% and in Delhi Province as much as 61% is used for this purpose. This proportion is on the basis of total milk production, but if only cows' milk is considered, then nearly half of the total of cows' milk is consumed as fluid, while buffalo milk which contains a higher percentage of butterfat is mostly used for manufacture. The liquid milk is generally consumed as such after boiling - the processing of milk e.g. pasteurisation, being of very insignificant importance, and only in few very big towns.

Of all the milk products manufactured in India,

/'ghee'

Table XIII.

Utilisation of Milk in India

Utilisation	All-India Average		United Provinces	
	Percent of Total Production	Percent of Manufacture	Percent of Total Production	Percent of Manufacture
Consumed as fluid.	28.0	--	19.4	--
Manufactured into				
1. <u>'Ghee'</u>	57.0	79.2	47.0	58.4
2. <u>'Khoa'</u>	5.0	6.9	11.6	14.4
3. curd	5.2	7.2	7.0	8.7
4. butter	1.7	2.4	3.0	3.7
5. ice-cream	0.3	0.5	1.0	1.2
6. cream	0.4	0.5	1.0	1.2
7. other products.	2.4	3.3	10.0	12.4

Source: Report on Marketing of Milk in India, 1942.

'ghee' is by far the most important as nearly half of the total milk production is used in its manufacture and 'ghee' accounts for nearly 80% of total manufactured dairy products. Ghee is pure butterfat or clarified butter from which practically all moisture has been driven off. The chief reason for its extensive manufacture is that 'ghee' can be stored for long periods even in the tropical climate of India in ordinary storage and packing conditions. Well made 'ghee' can remain good for about two years and can be reconditioned by clarification. No other indigenous milk product keeps so well and for such a long time. From an economical point of view the manufacture of milk into 'ghee' provides the producer with a much smaller return (about 60%) compared to the liquid milk price. (The position is analogous to the manufacture of butter and cheese in European countries). There is, however, no such 'loss' in the manufacture of other milk products which are more especially manufactured for ready consumption in the urban areas and their prices are directly related to the price of liquid milk.

'Ghee' is produced mostly on a small scale by producers keeping only 1 to 3 or 4 milch cattle. Thus there is no concentration of its manufacture under large factories conditions. The 'desi' (country) method of manufacture is fairly uniform throughout the country and consists of first converting milk into curd (heating milk to high temperature

/for

for some time, cooling it and then adding 'starter' - or previous day's curd) - similar to the process of manufacture of 'culture milk' or 'lactic milk' in Great Britain. This curd is then churned by a wooden paddle rotated in the curd in an earthenware vessel, when 'butter' is formed, which is gathered by hand and kept aside. The daily yields of this butter are collected, usually for a week, when enough is gathered for making it into 'ghee'. The butter is melted, and boiled to evaporate the water. When all water has evaporated, 'ghee' remains, which is heated further to about 110°C, when all curd remaining in the 'ghee' becomes brown, and 'ghee' can be decanted off or filtered for storage. In this method of manufacture all the butterfat in the milk cannot be recovered as much remains in the buttermilk, which is usually consumed by the producer's household. The yield of 'ghee' is very important from the small producer's point of view as his cash returns from the sale of 'ghee' depend on it. 'Ghee' is generally marketed by the producers individually to various merchants who bulk and in some cases grade the 'ghee' in their premises in towns, for sale there.

Second in importance to 'ghee' is the milk product 'KHOA'. It is manufactured by evaporating moisture from wholemilk in an open pan over a fire. The product contains 75 to 80% total solids and 20 to 25% moisture, and is usually finished in the form of small pats weighing 2 to 3 lbs.

/However,

However, there is no standardized process for manufacture nor are there any legal standards of composition. 'Khoa' is not consumed as such, but is made into various kinds of sweets for which there is a great demand in cities. 'Khoa' by itself does not keep well, and fermentation soon sets in in a day or two, according to whether it is summer or winter, but sweets made from it can be kept for longer times - 4 to 5 days in summer and about two weeks in winter. Unlike 'ghee', 'khoa' is generally not made in villages but in towns by small or big sweet shops in small lots. Use of 'khoa' is confined mostly to northern and western parts of India, most being made in the United Provinces. There is no known process of manufacturing 'khoa' on a large scale.

Curd or 'dahi' is third in importance of the milk products. This is also the first stage in the manufacture of 'ghee' in the villages, but in towns it is specially prepared by milk shops for sale as such. It corresponds to the 'lactic milk' or 'Yoghurt' in this country and is made similarly, except that it is never made on a big factory scale. It is sold usually in small lots - in fractions of lb. or lb. lots - retailed direct from the shop where it is manufactured. Curd is universally popular in India.

The manufacture of other Western types of milk products such as butter, cream and ice-cream, is of very minor importance, compared to 'Ghee', 'Khoa' or curd. However,

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the use of cream-separators is known in India and in certain important dairying districts, their use has become widespread. This is made possible by a few butter-factories - established on most modern lines - which purchase cream from such separating stations as are opened in such areas by them. Ice-cream is also manufactured in many big towns, but its use is not widespread as it is limited only to such urban areas and there too, among people with a comparatively higher level of income. There is no manufacture of condensed, evaporated or powdered milk in India and whatever is required is imported.

Per capita consumption of milk and milk products:-

The average daily per capita consumption of milk in India works out at only 5.8 oz., including the quantity consumed both as liquid and as products. On account of the divergence between the distribution of cattle and human population and widely differing milk yields of different breeds of cattle in different parts of India, this average varies considerably. Lack of inter-provincial trade in liquid milk and of milk products (especially 'ghee' on a large scale) means that the consumption in an area mainly depends on the local supplies and density of population. Thus it is observed that areas which possess a better quality of milch cattle producing more milk per sq. mile have a much

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higher consumption than other areas. There is therefore a maximum consumption of 18 oz. per day in SIND and a minimum of 1.3 oz. only in ASSAM, the eastern province of India. Even in United Provinces the consumption is only 7 oz. per head per day. Some adjustment to these figures is necessary in order to make them comparable with European countries. As has been said before, the butterfat content of Indian milk is more than that of European milk. The average of the former can be taken as 6% (50% buffalo milk with 7% and 50% cow milk with 5%) as against the 3.8% of the latter. Compared on this basis of 3.8% butterfat, the Indian per capita consumption of 5.8 oz. becomes 9.2 oz. and that of United Provinces 11 oz. These figures are greatly below those of the countries under study. There are several factors responsible for such a low consumption, the main ones being the comparatively low income of the population as well as a low production of milk.

This low per capita consumption of milk and the fact that it depends largely on the income of the consumer, brings to light the very wide disparity in milk consumption by different classes of population. Usually, the income of urban consumers in cash is much more than that of rural population. Besides this, in towns there are a large number of business people, government employees and people engaged in different industries who can spare more money

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for the purchase of milk. These factors taken together result in the per capita consumption in urban areas being much higher than that in rural areas, in spite of the fact that the milk is produced in the latter area. A survey of milk consumption in cities revealed that in the United Provinces, where the average per capita consumption is only 7 oz. of milk including milk products, it was 17.3 oz. in three important cities. This is nearly 2.5 times the average provincial consumption. There is yet another factor which conduces to an increased consumption of milk in towns and cities. This is the facility for purchasing milk and milk products in small quantities at all times, as the small milk shops are very numerous in all cities, while such facilities are generally absent in rural areas. This higher per capita consumption in towns, coupled with their large population, presents an important problem when any scheme of reorganisation of milk marketing is under consideration.

Marketing of Milk in India:-

From a marketing standpoint the effective demand for milk and milk products is entirely urban in character, in spite of the fact that nearly 95% of milch cattle are in the rural areas and over 80% of Indian population live there. The rural demand for milk is relatively poor in the sense

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that there are not many purchasers of milk in the village. The reasons are that many of the consumers are themselves producers, while due to comparatively low income many cannot afford to purchase milk. On the other hand there is a regular demand for milk and milk products not only in greater quantities but from a larger section of the population living in urban areas. It has been shown that the per capita consumption in important cities is nearly 2.5 times the provincial average, and therefore this concentrated demand for liquid milk and milk products is very large compared with the total milk consumption in India. It was estimated that (35) nearly half of the total liquid milk consumed was required for city milk supply. Since then, the urban population has been increasing relatively much more than the total population and hence the problem of milk supply to this increased concentration of demand has been becoming more and more acute and will become more and more acute as the expansion of industries in India takes place. The gradual uplifting of the national income and purchasing power of the population, both rural and urban, would mean a still more increased demand from towns and this will be enhanced by the reason that more milk will be retained in rural areas also, for consumption there. Actually such has been the trend of development during and after the war, so that at the present moment the position of milk supply in cities is very precarious indeed. It

can thus be seen that while the problems of rural consumers can be comparatively easily solved by an increased production of milk, the problems of urban consumers are beset with many difficulties of marketing milk in large quantities. The latter actually requires a complete reorganisation of the present methods of milk marketing in order to ensure any reasonable improvements badly needed. Any such effective improvement in city milk supplies will be simultaneously accompanied by corresponding improvements in the milk production of areas supplying such milk - thus bringing about a general development of the Milk Industry in India.

A brief survey of the present position of milk marketing - with special reference to city milk supplies - is given in the following section. It shows the picture in true perspective and indicates the various reasons for the present position in a matter of such vital importance.

Present arrangements of Milk Marketing:-

Before attempting to describe the present arrangements of milk marketing, it is necessary to indicate some important factors which affect such arrangements and which are peculiar to India only in that they do not exist in Great Britain and the Western European countries. The chief one of these is the effect of the tropical climate of the country. The perishable nature of milk and the

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warm climate of the country make it necessary to collect, transport and distribute milk within a few hours of its production. Thus a great restriction is placed on the area from which the daily requirements of a city milk supply can be obtained, unless, of course, use is made of expensive refrigeration services. It may be noted that the hottest month, June, has the maximum temperatures in the shade reaching up to 115°F., the temperatures being rarely below 90°F. throughout the 'cooler' parts of the day. During the other summer months, the temperatures are also high, and under these conditions the effective life of "sweet" milk can only be a few hours. Even during the winter months, November to February, when the minimum temperature may go down to 45°F., the maximum reaches to 80°F. A further effect of these conditions is that milk must be collected twice a day from the producers, as no facilities for the safe storage of milk can possibly be provided for the small quantities of milk. Such conditions are entirely absent in European countries, but even there, short high-temperature spells or lack of proper refrigeration facilities on farms, reduce the keeping quality of milk and milk-souring is not unknown.

Another factor is the low intensity of milk production. It has been shown previously that this is only about 226 lbs. of milk per day per square mile in United Provinces. Out of this some milk is retained for domestic /consumption

consumption by the producers, thus reducing the marketable supply still further. This means that even to collect the small quantity of 1,000 gallons of milk, as many as 50 villages have to be visited (taking 1 village = 1 sq. mile as in U.P.) twice daily, involving a considerable distance, and what is worse, collecting from a large number of small producers. Thus while, on the one hand, climatic conditions require a speedy collection and transport of milk to the consuming centre, on the other, the above conditions have the opposite effect. Both these conflicting conditions are further aggravated by lack of transportation facilities. As a rule the villages are not served by road transport services, hence speedier transport cannot be effected. Slow transport, e.g. by "head-loads" for small quantities or sometimes on bicycles, is provided to the first assembling point at a roadside from where the milk may be comparatively speedily transported to the city.

All the above factors taken together, have the cumulative effect of reducing the supply of milk which can be brought into towns and this has resulted in the establishment of cow-keepers inside the city boundaries. These cow-keepers are responsible for the production of more than half the quantity of liquid milk requirements. Of the other half, a greater portion is obtained from within 5 miles of city boundaries, and the remainder from farther distance.

The existing arrangements whereby the urban consumer obtains his milk supply are shown diagrammatically in Fig. 9 . There are a number of independent agencies engaged in the collection, treatment and distribution of milk in the urban area, all operating on a small scale. There is a complete absence of any sort of organisation except in the case of small Co-operative Milk Supply Unions.

The following is a summary of the functions performed by these various agencies:-

1. Urban producers: To sell raw milk ex-stables and by retail to consumers, and also by taking milch cattle to the consumers' residences.

2. 'Halwais' or Milk Shops: To receive milk from collectors, or direct from producers, and sell it generally ex-shop as raw, boiled, sweetened or unsweetened. Also to make and sell 'khoa', curd, and milk sweets.

3. Milk Collectors: To collect and assemble milk from village producers, transport it to cities and sell it there wholesale to milk shops, dairies and other milk retailers.

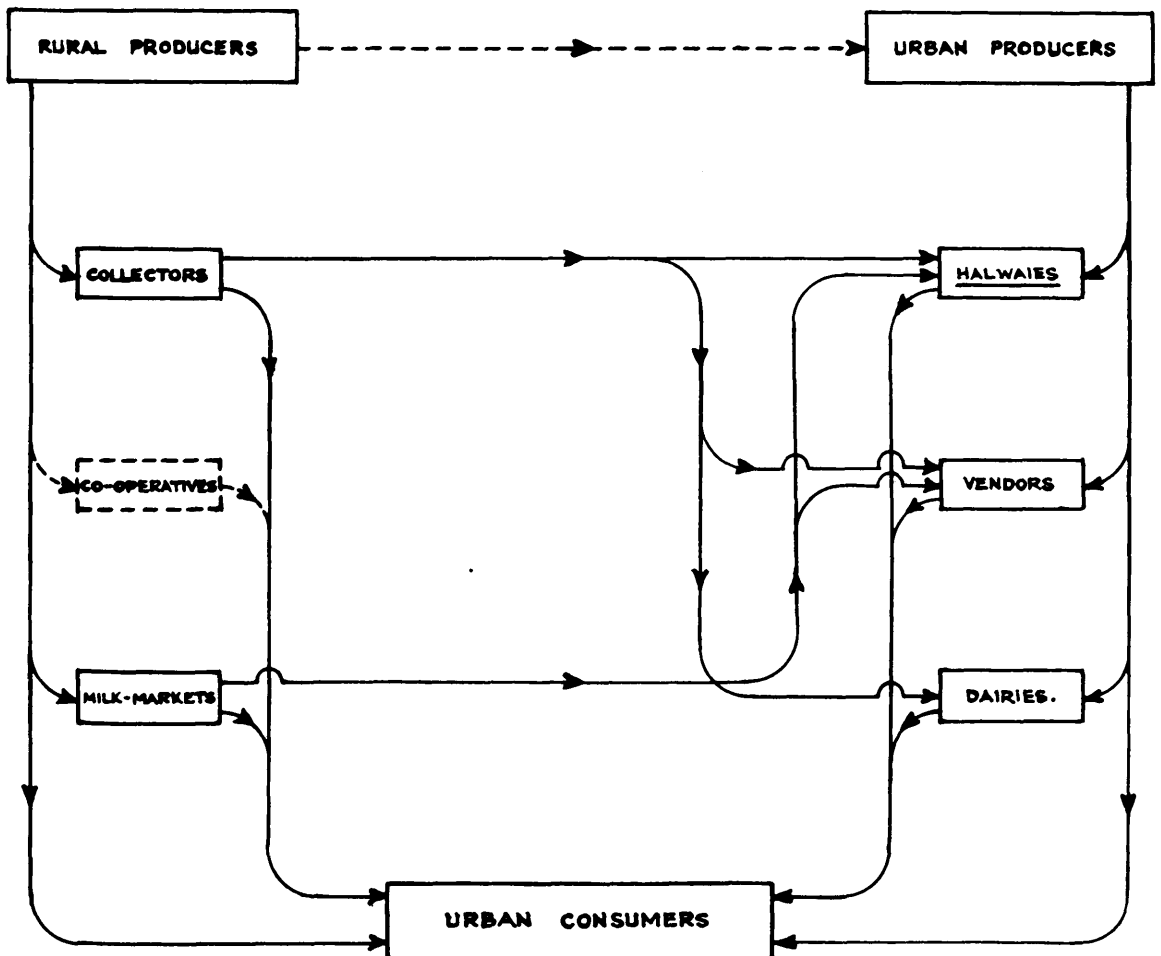
4. Dairies: To receive milk from collectors or producers, and sell it by retail, raw or processed to consumers, by delivering at house doors.

5. Dairy Farms: To produce milk from animals kept

FIG.9.

COMMON CHANNELS OF ASSEMBLING
AND DISTRIBUTION OF MILK FOR
MEETING THE URBAN DEMAND.

(LESS IMPORTANT CHANNELS. - - - -)



at farms, and to deliver it to consumers, and institutions, raw or processed.

6. Co-operative Societies and Milk Unions: To collect milk from producer members and deliver it by retail to consumers, raw or processed.

The modus operandi of these agencies is discussed below in order of their importance:-

1. Urban milk producers or cow-keepers

As has been shown, urban producers are responsible for more than half of the city milk supply requirements. The reasons for their existence have also been shown. The amount of milk produced by the individual may vary considerably according to the number of milch cattle kept. Usually buffaloes are preferred by them on account of their higher milk production. The animals are housed in small stables, generally forming part of the producer's house. The comparatively higher rents prevailing in cities necessarily impose a restriction on the area of the stables, and in order to keep it to a minimum, overcrowding of the stables is a very common feature. As the producer cannot grow the fodder for his cattle, this is purchased from the nearby villages and all the concentrate requirements are also purchased. Freshly calved animals are frequently purchased

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to replace dry ones and usually these find their way to the slaughter houses and are never used for breeding purposes. These methods necessarily increase the cost of milk production by such producers compared to their rural counterparts. But they have the advantage of being able to sell all their milk in a fresh condition in the higher priced city market. The method of disposing of their milk production is very simple. No treatment whatsoever of milk, is required, as the milk is sold immediately after production. Usually the producer himself, after milking his animals, takes the milk round for retail delivery to households. Generally quite a number of consumers prefer to collect their own milk requirements from the stables every morning and evening to ensure a pure supply. The animals are universally hand-milked and the consumer collecting his own requirements may have the choice of getting cows milk or buffalo milk from the stables. There is yet another method of milk-sale by the urban producer and this is very characteristic of Indian city milk supply. This is the sale of milk direct from the animal milked under the consumer's supervision at the latter's premises. For this purpose the producers move their milch cattle with the calves (weaning of calves is not practiced) from door to door. Usually the price of such milk is higher than the normal retail price of milk, but the consumer considers that he is getting the

/best

best possible article. The consumer generally takes all precautions to see that the milk is not adulterated with water by the producer during the process of milking and this is ensured by a preliminary turning upside down the milking vessel, to see that there is no water in it. The consumer is however unaware that he may be obtaining an inferior quality of milk, as the quality of all portions of the milk as drawn from the animal is not the same. This practice is more common with cows as these can be more readily milked from place to place, compared to buffaloes. These producers are usually quite ignorant of the fundamental principles of clean milk production and pay no attention to the cleanliness of the stables or the animals. No data, however, is available of the bacteriological quality of such milk: it can be guessed and inferred from the conditions of the congested stables, that it would be very very poor indeed and as a matter of fact cannot be expected to be any better. Any improvement in the direction of a better city milk supply cannot possibly be effected without dealing first with these urban producers.

2. 'Halwais' and Milk Shops

'Halwai' means a manufacturer and seller of sweets, his function being to sell milk also. While some of these may sell milk only, all milk selling 'Halwais' do not

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necessarily also deal in sweets. The chief characteristic of a 'halwai's' shop is that it has a hearth for boiling milk and for making 'Khoa'. Though the word 'milk-shop' does not actually convey the idea of a 'halwai', this has been used for this purpose in the following discussion. As a group these shops are very important for retailing the milk mostly ex-shop, although at times they may arrange to deliver raw milk at the residence of consumers also. These shops are kept open throughout the day and late in the evening to sell boiled milk, curd, 'Khoa' sweets etc. This type of shop is very common throughout the northern part of India and very specially so in the United Provinces cities. They are literally hundreds in number according to the population of the city and are scattered all over the town in practically every small or big street or lane, at railway stations and in the main markets.

These milk-shops receive their milk supplies from 'collectors' (described in next section), who collect milk from rural milk producers direct from the neighbouring villages. There is usually no written agreement between them and prices are fixed in advance for a season. In many cases the milk-shop owner gives an advance of money to the producers or the collector for the purchase of concentrates required for the feeding of the animals. This ensures a regular supply of milk and gives the additional

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advantage of securing milk at a comparatively cheaper rate according to the amount of such advance involved. The advance is repaid in instalments from the money payable for the milk supply. The individual shop has its own method of ensuring a good quality of supply; generally it is contracted that a certain percentage (usually 25%) of 'Khoa' should be obtained from the milk. The 'Khoa' is made in the presence of the 'collector' or the producer and if there be any deficiency, a proportionate reduction in the price payable can be made. This system of quality control is not fool-proof or even fair from the seller's point of view as the milk-shop can always manipulate the yield of 'Khoa' in his favour.

An average milk-shop handles about 16 to 20 gallons of milk per day. The milk required for liquid sales is boiled and then kept in an open pan on a fire to keep it simmering at a temperature of about 170°F. This boiled milk is usually sold in small 1lb. or $\frac{1}{2}$ lb. earthen pots (specially made for use once only) generally sweetened, to individual consumers who drink it at the shop or carry it home. There is no problem of surplus milk at these shops as all remaining milk is manufactured into 'Khoa', curd or various types of milk sweets, which usually give a greater margin of profit to the shop. Not much equipment is needed in these shops, the only important thing being a hearth or

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charcoal stove, pans for boiling milk, and making into 'Khoa' or sweets, and milk measures. These equipments and methods of milk-shops have remained unchanged for a long period and there are many very old shops who take pride in their long establishment. Many of these shops have ill-designed hearths built in the centre and making it all very smoky and unhygienic.

3. Milk Collectors

The milk collector performs a very important function in the arrangements of milk marketing in cities. He is the intermediary between the rural milk producer and the retailer who may be 'Halwai', a dairy or milk vendor. He is responsible for assembling small quantities of milk from small producers in small or big villages with poor transport links with the towns. He even induces milk producers to keep more milch cattle and often gives advance loans for the purchase of such cattle or for the purchase of feedings stuffs. In turn he may obtain a loan or advance from the milk-shop or dairy to which he is supplying milk. He is the one intermediary who endeavours to find a market for the village milk by meeting the needs of city milk retailers. His great importance is enhanced by the fact that any irregularity in the performance of his twice-a-day duty can "bottle-neck" the milk supply handled by him.

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The methods of assembling the milk from village producers and its subsequent transport to the city vary according to the size of his trade and the situation of the village. The following three methods are found according to the above circumstances:

(i) By foot: i.e. assembling milk in village in vessels which are carried to the town on head load or by suspending them over shoulder slings. This can be practiced only when the distance to town is not more than 3 to 4 miles, such being covered in 1 to $1\frac{1}{2}$ hours, or when milk is sent to some assembling point on roadside for subsequent transport to city. The quantity of milk so carried has to be limited to about 50 lbs. or less.

(ii) On bicycles: This method is more popular because of its speed and also because more milk can be carried by one collector. Generally about 60 to 80 lbs. of milk can be carried with ease per trip at a speed of 5 to 6 miles per hour, thus the operation can be extended to include villages up to 8 - 10 miles from the town.

(iii) Horse carts ('Tongas'): these are used by collectors operating on a large scale, carrying up to 300 lbs. of milk per trip. The carriages are of a special pattern drawn by a single horse or a pony.

The collector makes his own arrangements for

/assembling

assembling and transport. But these methods limit the quantity of milk that could possibly be handled by a collector per day so that a large number of men are unavoidably required for assembling and transporting milk to cities. The collector also makes his own contracts with the producer and the purchaser in town and the price paid by him to the producer in the village is fixed by his taking into account subsequent expenses and the ensuring of a profitable margin. The producer generally does not have much say in this matter for fear of losing the contract and as a result not being able to sell his milk at all.

4. Dairies

Some big cities with populations of 100,000 or more usually have a few dairies. These dairies always handle purchased milk which they receive from the collectors or large producers in neighbouring villages. They have installed refrigeration service and also use some sort of pasteurising methods. Roundsmen are employed by them to deliver milk at consumers' houses, usually from a can, but in bottle also, in some cases. A few dairies have modern milk pasteurisation plants also, but their number is very small. The retail price of such milk is necessarily higher than that obtained from milk shops or cow-keepers, thus their operation is limited. Many such dairies manufacture some cream and butter also and retail it along with milk

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especially to the richer class of people. Such dairies are becoming more popular where they are in existence as they can create a greater confidence, as to their quality of milk, in the consumers. The competition from milk-shops and cow-keepers is however a very serious problem for them.

5. Dairy Farms

There are not many dairy farms which specialize in supplying milk to the towns. There are, however, a number of Military Dairy Farms, in practically every big city having a cantonment area. These are primarily designed to supply the requirements of Indian Army and Military Hospitals, and were specially established on modern lines to provide the British troops in India with a regular supply of milk, butter and cream. Some dairy farms are by private owners also, at the outskirts of big cities. They, however, handle milk purchased from collectors as well as milk produced on the farm and their methods of handling, treatment and retail sales are the same as those of dairies, described previously. These dairy farms may have special contracts with hospitals and other institutions for the supply of milk.

There is yet another type of 'dairy farm' in India, known as 'gowshala' and 'pinjrapole', which can be defined as "home" and "asylum" for "disabled, destitute and old cows". These are run by the philanthropic support of

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the general public and some of these have a section run as a dairy farm to sell milk in the town. Their existence, however, solely depends on charity.

6. Co-operative Societies and Milk Unions

Co-operative marketing of milk is as yet in an undeveloped state and does not play any significant part in the city milk supply in general. This subject is discussed in detail in a subsequent section.

Quality of Market Milk and Milk Legislation in India

It has to be admitted, much to the discredit of Indian dairy industry, that milk is one of the most adulterated foodstuffs available at present to the consumer in the market. Still more incredible is the fact that this is so, not because of lack of any legislation affecting the quality of market milk; on the contrary, the public health authorities in India are fully empowered to control the quality of milk put on the market. But these powers have not been utilized and the superficial nature of official control over the quality of milk for the past 35 years, has resulted in the present state of affairs. Neither is it that the health authorities are unaware of the inferior quality of market milk; they know it from personal experience and the facts are brought home to them by various reports

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and investigations; still little has been done and it is very difficult to tender any reasonable explanation for this official apathy.

The most common adulterant is water, next in order of importance being skimmed milk and other ingredients like flour etc., used to prevent detection by lactometers. The extent of adulteration done by producers (in rural areas) is relatively less than that practiced by other intermediaries in the trade, e.g. collectors, milk-shops, distributors and roundsmen. In many cases the producers resort to adulteration, when they are entirely in the hands of milk collectors or purchasers from whom they have received an advance of money in return for selling the milk at a cheaper price. In other cases too, the producer is always pleased to make a little more money, for nothing, knowing well that no harm can befall him by doing so. The collector in turn cheats the milk-shop, who finally exploits the consumer. The whole structure of the milk market has become so corrupt, that it is very difficult to lay the blame on anyone in particular. Moreover there are so many of these small retailers, cow-keepers and milk sellers, that even if a system of taking samples could be operated, it would prove a formidable task.

The legal standards for milk quality themselves, leave much to be desired, and scope for improvement. It

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cannot be understood, on what basis, if any, these were drawn up. Thus in the United Provinces the legal standards for minimum percentage of butterfat in cows milk is 3.5 and for buffalo milk 5.0. It is well known that all Indian breeds of cows yield milk with not less than 4.5% butterfat, and of buffalo not less than 6.5% butterfat; these leave a margin of 1 to 1.5%, allowing the extraction of at least one-fifth of the total fat from milk, before it will be officially declared adulterated. Buffalo milk may be adulterated up to 80% or even 100% with a judicious mixture of water and skimmed milk, and be 'officially' passed as pure cows milk.

The above relates only to chemical purity. Milk is liable to bacterial contamination also, but there are no bacteriological standards and very little or no attention is generally paid towards the production of "clean milk" as understood in the European dairy industry. This can to some extent be explained by the fact that generally speaking, milk in India was not meant to keep longer than a very few hours, it being invariably boiled after production either for consumption as such or for manufacture. The practice of not paying attention to details of cleanliness has thus prevailed. Even now the milk received for the market by milk-shops and by the consumers is kept for boiling and consumed. The disadvantages of unhygienic production

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methods only make themselves manifest in long distance transport as in the case of Milk Unions. These Milk Unions have made many endeavours to ensure cleaner milk production and have achieved some measure of success, but as any such improvements cost money and necessarily increase the price of milk sold by them the practice has to be restricted to keep prices down to the price levels of other milk of inferior standards.

The existing laws affecting the production and sale of milk, though quite elaborate, have not been formed according to the prevailing conditions of India. "Very likely they were initially copied from some of the regulations or orders passed in other countries" (36). The power of making the necessary rules and regulations and prescribing legal standards for milk rests in the hands of the Provincial Government and every Province has Municipal Acts and Food Adulteration Acts of its own. The former have included Model Bye-Laws for the guidance of local bodies who are responsible for their observance in their respective areas. These include bye-laws on dairy matters e.g. on the construction and maintenance of milch cattle sheds, dairies, milk-shops etc., and on the cleanliness of milk-shops, and milk vessels. Many rules under these bye-laws are clearly impracticable, though of ideally high standard. To cite one example only; in the Model Bye-Laws under the United Provinces Municipalities Act, 1916, it has been laid down

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'that no dairyman shall sell or permit to be sold milk of any animal suffering from any contagious disease (including tuberculosis of the udder)'. Such rules betray the ignorance of the actual conditions of the trade in the country, for no tuberculin tests are ever made on any of the village cattle, nor is it possible for the city milk-shop to discover whether its milk supply is derived from animals suffering from any contagious diseases. With the present standards of education of cattle owners or milk producers, (not to speak of 1916), such a rule can hardly be expected to be observed by them. Many such instances can be quoted from practically all the dairy bye-laws made under the various Municipal Acts. Similar is the tale of the Food Adulterations Acts which "provide for prevention of adulteration of food for public". The first Act of this kind was enacted in the United Provinces in 1912, but there was no Public Analyst to examine the samples collected under its provisions until 1933. Furthermore the above Act was amended in 1925 and in 1930. The position has not improved since, so that by 1939, while 717 local bodies including 85 Municipal Boards had adopted the above Act, there was only one laboratory to examine milk samples, and it is easy to see how little check could be exercised on the Provinces' milk supply. This discussion need not be prolonged to show that the mere enactment of legislation is not sufficient to ensure any reasonably good quality in the market milk supplies.

/Co-operative

Co-operative Dairying in India

The present stage of development of the dairy industry in the most important milk producing countries of Europe e.g. Denmark, Sweden, Eire, Holland and Switzerland, (as well as in Australia and New Zealand) is to a great extent due to the application of co-operative methods of handling and manufacturing milk and milk products. In India, on the other hand, such has not been the case and co-operative efforts for any development of dairying have been very limited and, as far as fluid milk handling is concerned, have been entirely confined to organisation for collecting milk from villages and supplying it to a few big towns. Even this has been practiced on a small scale and, taking for example the United Provinces, this venture has been adopted in two cities only, i.e. LUCKNOW and ALLAHABAD, and even in these places only a small fraction of the milk trade is handled by co-operative organisations. The various reasons for this slow and ineffective movement are discussed later. Another characteristic of the co-operative movement in India has to be borne in mind when considering its extent and present position - namely that the movement has been entirely dependent - as far as co-operative milk marketing is concerned - on guidance and assistance - both technical and financial - provided by the Co-operative Department of the Provincial Governments. This is completely in contrast to the

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above-mentioned countries where milk producers themselves adopted co-operative methods, considering them to be best suited for their needs. Such a lack of interest on the part of the Indian producer can, of course, be readily explained and attributed to the comparative illiteracy of the masses and their ignorance of co-operative principles. Producers have not understood what co-operation is, and what it can achieve for them. That the Co-operative movement has so far failed to raise the standards of dairy industry in India does not show in the least that something is wrong with co-operative principles, on the contrary, it makes it necessary that more be done on the recognised lines, to bring about the much needed improvements. It is for this reason only that in considering the reorganisation of the dairy industry in India on co-operative lines, much importance has been placed on Government assistance, at least in the initial stages and more especially for legislative action. Such assistance had to be forthcoming even in an advanced country like the United Kingdom, while in Northern Ireland, the Ministry of Agriculture had to assume a complete control of the industry to ensure its fullest development.

The main object of co-operative milk marketing in India has been to develop the production of milk in certain rural areas and to market it to the consumers in the nearby cities. Attempts have been made to achieve this

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object by starting co-operative milk Societies in villages and as these village Societies cannot function economically in isolation, they are affiliated into Co-operative Milk Supply Unions. These Societies and Unions are registered under the Co-operative Societies Act of 1912. The first co-operative dairy Society in India was established at ALLAHABAD in the United Provinces in 1913, but even after 25 years existence it handled only about 85 to 90 gallons of milk per day. Another Co-operative Milk Supply Union was established in LUCKNOW in 1938 and this has been operating since then with some measure of success. Similar Societies and Unions have been functioning in other parts of India also; their methods of operation being almost similar to each other. The following account gives a description of the organisation and methods adopted by one of the premier Milk Unions in India. (The photographs shown here are reproduced from "Indian Farming" June 1941.)

The Lucknow Co-operative Milk Supply Union Ltd.

Lucknow is the capital of the United Provinces and has a population of about 400,000. The milk requirements of the city are met partly by the city cow-keepers and partly by milk brought into the city from a 10 mile radius by milk producers and collectors. As the milk resources up to 10 miles from the city had already been tapped, the Union extended its activities in areas situated more than 10 miles

/from

from the city. Co-operative Societies were established in the villages in these areas and all Societies were affiliated to form the Milk Supply Union. Thus the unit of milk production is the Village Society composed of members undertaking to sell their milk through the Society. In the initial stages the Union purchased some buffaloes and cows of good milking breed and distributed them to the various village Society members at cost price. A substantial loan for this purpose was obtained from the Government. To carry on the day to day administration of the Society a small Committee was formed; a part-time secretary-recorder and a 'carrier' forming the staff of the Society. The duty of the Committee is to supervise the milking of the animals, the weighing of milk from each producer and the bulking of the milk in cans for its subsequent transport to a collecting depot at the roadside. For milking purposes the animals are collected at a convenient centre, where facilities for cleaning the animals and the hands of milkers are provided. The producer brings his milk to a platform where it is weighed in his presence and the weights recorded in the Society's register. (Photo 1.)

The milk is bulked in cans holding 40 lbs. and transported to the collecting centre by the most convenient method depending on the situation of the village, by head-load or bicycle. The distance to the collecting centre does not usually exceed 3 to 4 miles and the village Society's
/carrier



Photo. 1
Measuring and recording the
milk of each village producer



Photo. 2
Transfer of milk by tonga to urban centre

carrier is responsible for the safe transport of milk to the centre. The collecting centre, situated at a convenient roadside point, receives milk from several village Societies. At the centre, the milk cans are opened by employees of the Union, who check the correct weight of the milk. The amount of milk from each Society is entered in a register, all milk is then bulked into large 8 gallon milk churns ready to be transported to the Union Dairy in the town. Whether any processing of the milk is necessary in order to prolong its keeping quality till it reaches the central dairy, depends on the distance of the centre from the city and method of transport available. During the earlier years of operation, the milk at the collecting centres was heated (by immersing the milk can into a larger vessel of boiling water), to a temperature of 165⁰F, and transported hot to the central dairy. Later experiments however showed that, if reasonable care was employed during production and speedier transport provided during the cooler parts of the day i.e. before 10 am. and after 6 to 7 pm., village milk could be brought in "sweet" condition to the central dairy.

The collecting centre also provides facilities for cleaning the milk cans brought from villages, with hot water and detergents. Provision of mechanical refrigeration has not been possible due to its high cost and running expenses in relation to the amount of milk handled at the centre, which may be only 50 - 60 gallons at a time. Moreover
/electricity

electricity is also not available at these centres. From the centre, milk in cans is transported to the central dairy by a motor van owned by the Union. Horse drawn carriages ('Tonga') were used for this purpose in the early days. (Photo 2).

The milk from the various centres is received at the Union's central dairy situated in the heart of the city. Although every care is taken to bring the milk to the dairy as early as possible from the centres, during the summer months considerable quantities of milk are sour by this time. This milk is separated, the skimmed milk sold as such at a cheap price and the cream used for manufacture into 'ghee'. The milk on arrival is tested for quality and samples are taken for chemical and bacteriological examination in the dairy laboratory. If the milk was heated at the collecting centre, it is only cooled, by mechanically refrigerated cooler and stored in the cold store, but "raw" milk is heated to 165°F, and similarly cool-stored till required for retail distribution. There is no proper pasteurisation plant, as it was considered too expensive for handling only up to 400 - 500 gallons of milk per day in two lots. The heating of milk is carried out on specially designed hearths. There is no water boiler and the cans etc. are cleaned with hot water and detergents only. The milk processing methods are not very satisfactory, but have to be tolerated in order to keep the cost of processing as low as possible.

/Distribution

Distribution of milk is done direct from cans on bicycles by roundsmen employed by the Union (Photos. 3 and 4), who deliver milk to the residence of consumers. The Union has opened some depots in the various parts of the city, where milk is sold direct to consumers at certain times of the day. Milk is retailed from the dairy also. A roundsman can usually distribute only 15 - 20 gallons per day, while at a depot nearly double the quantity can be handled in a smaller time, thus bringing about a reduction in the cost of distribution.

The Management of the Union is vested in a Board of Directors composed of 11 members of which one is the Deputy Commissioner of Lucknow, 5 are representatives of milk Societies, one represents individual shareholders, 2 are nominated by the Registrar of Co-operative Societies and 2 are co-opted by the Board of Directors. A qualified manager having a dairy diploma is in charge of the dairy.

Milk is purchased from members at prices fixed by the Board of Directors, usually varying according to season and taking into account the market price of milk in the city. The Union bears all expenses of collection, transport, processing and distribution, as well as any losses suffered on account of soured milk. Money due to producers is paid fortnightly, and at the end of the year any balance from the sale of milk and milk products after paying all producers

/and



Photo. 3
Roundsmen setting out to deliver milk



Photo. 4
Roundsman delivering milk to a customer

and meeting the expenses, is disbursed by the Board. Of profits, 25% has to be placed in a reserve account and the rest can be distributed as a bonus to producers - through the Societies - in proportion to the milk supplied by them.

Considerable difficulties had to be faced and overcome in organizing the Union. These difficulties were both technical and financial. On the technical side great care had to be taken to safeguard the keeping quality of milk and to teach the producer the fundamentals of clean milk production. On the financial side the Union had to keep down its costs of processing etc. to an absolute minimum as the milk had to be sold in competition with the local cow-keepers and milk-shops. Thus over all these years and in spite of Government support through loans and technical advice, the Union has not been able to expand its activities to a point where it can operate on a scale large enough to warrant the use of modern methods of milk processing and distribution. On the whole, though the Union can be said to have inaugurated a system of Co-operative marketing, it cannot exercise a large influence and achieve its object of developing production and marketing of milk under its present form of organisation.

The position of the other milk Unions is similar. Several are operating on a larger scale and have proper dairy plants, but they are in larger cities like Calcutta

/and

and Madras, so that their proportionate influence is small. Various reasons can be given for this very slow progress of Co-operative milk marketing in India. The main ones are:-

All the attempts to further the Co-operative organisation of milk marketing have been very limited in their scope. As already stated, the major portion of city milk supplies is produced either in the city itself or within a few miles of it, and as no effort was made to organise or control this source, the Co-operative venture has always had to compete against this. Long distance transport of milk with its attendant high costs of transport and necessary processing has had to compete against this raw milk supply. Moreover, as there is no strict control of the quality of city milk supply by the local authorities, the milk sold by small cow-keepers and milk-shops has invariably been of a very low standard compared to the Co-operative milk. In spite of this, consumers, unaware as they are of the superior quality of processed milk, do not patronize it. This has been chiefly brought about by the unchecked and widespread prevalence of the practice of adulteration which has lowered the standards of the milk business in the country to an extent which has made the average consumer indifferent to the quality within wide limits. They always try to purchase as cheaply as possible.

Even in the area of Unions' operation, it could not

/exercise

exercise any control over milk supplies. The Union or the Society do not have any legal control over their members, who can break their pledges to the Society if they can obtain even a little extra money by selling their produce elsewhere, though only for a short time. Thus while sometimes the Union could not fulfil its obligation to the consumers, on the other hand, it had to dispose of a surplus at a lower rate, by making it into 'ghee'. Neither did the Unions make any effort to spread knowledge on Co-operative principles and of their ultimate benefits to the members.

Lack of finance prevented the Unions from undertaking development work to help producers to increase their milk production. Merely purchasing a few animals and distributing them to members could not bring about any appreciable increase, while any large scale help to producers by way of cheap concentrate feeding stuff, veterinary aid etc. were not available.

The handling of milk on a small scale not only entails a higher overhead expense, but as better equipment for processing cannot be provided, the quality of the milk when it reaches the consumer often leaves much to be desired. The co-operative milk, though better in quality both chemically and bacteriologically than most of the other milk supplies, often proved to be of an inferior keeping quality especially in the summer months, when, in spite of

all possible precautions, it could not be delivered to consumers at its best. Also, in common with the other milk sellers in the city, the roundsmen employed by the Union generally do not possess the high integrity and honesty desirable. Thus, in spite of the honesty of the processing staff at the dairy, the milk could be tampered with by the roundsmen, bringing a lowering of the reputation of the co-operative milk.

All these factors taken together have retarded the growth of Co-operative milk marketing in India and made it as unprogressive as it is today. However, these organisations have produced valuable data and brought to light the weaknesses of the system as it is organised today. Such piece-meal co-operative efforts cannot possibly bring about any desired improvement in the milk industry. The experience gained through these organisations is, however, of value in considering future policy for the reorganisation of the dairy industry in India.

CHAPTER X.

REORGANISATION OF MILK MARKETING
UNDER INDIAN CONDITIONS
BY APPLICATION OF CO-OPERATIVE METHODS.

The present condition of the dairy industry in India and the mechanism of milk marketing in cities has been described. This shows that until now this vitally important industry has not been recognised as such either by the public or by the State. Efforts made here and there by the Co-operative organisations under state guidance have been too few and on too small a scale compared with the extent of the problem. In a progressive world where most other countries have taken steps to improve their dairy industry during the past 50 years and more, the time is now more than overdue when India should also recognise the rightful place of this industry in her plans for development.

It is remarkable to see what an important role has been played by Co-operative methods of organisation in developing the dairy industry of the main dairying countries of the world. The same basic principles of mutual help have been adopted in different parts of the world, and only the methods employed under them have been modified to suit local conditions. Denmark has been the pioneer Co-operative country and in all the other countries where her example has been followed, improved organisation has resulted.

/Another

Another important point is that not only has the value of the dairy industry been recognised by milk producers; the various Governments also have recognised it and have done much to ensure its full development. It is evident that in many cases progress on the scale achieved could not have been possible without such help. The result is that today, in most countries, the respective Governments have a considerable measure of interest in the dairy industry.

The long neglected dairy industry of India is at present in no position to reorganise itself even on Co-operative principles without State help, but it is highly possible that, once started, it would attain a considerable degree of development.

The study of Co-operative methods of milk production and marketing in European countries has revealed that although these methods have brought about the development of dairying in these countries, any wholesale adoption of such methods cannot be practicable under Indian conditions, which are quite different. However, there are certain principles of reorganisation adopted by the various countries which merit close study as to their adaptability for Indian conditions after modifications. Keeping all these points under consideration a Scheme of reorganisation of milk marketing in India is put forward wherein many such principles have been adopted. As explained earlier, the problem of

milk marketing in India is mainly that of organising the city milk supplies, which entails the simultaneous development of milk production. It is however very difficult to achieve marked results all at once. The problems of the Indian dairy industry are many and diverse and an all embracing reorganisation Scheme would be beset with considerable difficulties. An attempt has therefore been made in the following Scheme to consider the most important problem first i.e. that of the city milk supplies. When this has been successfully implemented, subsequent Schemes could more easily be framed. The suggested Scheme is, however, all embracing in the sense that it takes into consideration the full development of the dairy industry in an area by Co-operative efforts. It would be an entirely new structure nothing similar to which at present exists, though the various developments aimed at have been separately attempted in different countries under varying conditions ranging from completely Co-operative methods to a complete control by the State.

(Throughout the following pages, the expressions, 'Society', 'Union' and 'Board', mean "the village Co-operative Dairy Society", "Co-operative Milk Supply Union" and the "District Milk Board" respectively).

The Scheme put forward here is based on the following broad principles:-

/1. The

1. The Scheme would confine itself to the organisation of production and marketing of milk in one particular area only, i.e. a city area would form a Sales District, the total milk requirements for which would be produced within an area termed the Production District.

2. Such Sales and Production Districts would be so scheduled after survey and investigation by the Local Government; and the administration of the Scheme over the joint districts would be vested in a "District Milk Board" to be established for this purpose under an Act of Legislature.

3. There would be comprehensive Milk Legislation providing for a supervision of milk supplies from the producer to the consumer and laying down adequate standards for milk quality.

4. The development and organisation of milk production in the Production District would be entirely by Co-operative methods and would be the responsibility of a Co-operative Milk Supply Union which would take all necessary steps to achieve these objects.

5. No production of milk would, ultimately, be allowed in a Sales District and all milk for sale in the Sales District would be subject to control by the Board.

6. All milk for liquid sale to the consumers would be a standardized product i.e. with a standard minimum percentage of butterfat.

/7. The

7. The processing of all milk in the Sales District would be entrusted to the Co-operative Milk Supply Union and/or other bodies authorized by the Board.

8. The distribution of milk to consumers in the Sales District would be through the existing channels e.g. milk-shops and retailers etc., and also by the Union. All distributors would be licensed by the Board.

9. All expenditure in connection with the administration of the Scheme would be met from levies imposed on all milk sales and also through Government grants for this purpose.

It is obvious that any such reorganisation Scheme cannot be put into operation without approval from the State, as special legislation would be necessary. Milk is a most valuable human food, hence its quality, distribution, sale and consumption are of great importance from the public health point of view and it becomes incumbent on the Government to ensure an adequate supply of milk for the population. It would be necessary to provide legislation for the following purposes:-

(i) For the regulation and control, from the point of view of public health, of production, processing, distribution, sale and consumption of milk, and for laying down standards for milk quality. Some legislation for this

/purpose

purpose already exists in the Municipal Acts and Food Adulteration Acts, but as already explained, this is not adequate and a complete amended consolidation of such legislation would be necessary.

(ii) Special legislation to enable the provisions of the Scheme to be put into operation, as described in the following pages. This would mainly include the Scheduling of Production and Sales Districts for the city under consideration, the conferring of the necessary powers on the District Milk Board (which would thereby be established) and the necessary financial arrangements.

The Scheme, described in detail in the following pages, can be considered in two parts:-

1. Organisation and development of milk production in the Scheduled Production District. This would be based entirely on Co-operative methods whereby 'Co-operative Dairy Societies' would be established in villages within the Production District. All these Societies would be incorporated into a 'Co-operative Milk Supply Union' with whose help the Societies would concentrate on developing the milk production in their areas. The milk produced would be sent to the Central Dairy of the Union in the Sales District through Collecting Depots established by the Union in the Production District.

2. Organisation and Control of milk marketing
/in

in the Sales District. Here the District Milk Board would be the authority for all organisation and control of milk marketing. It would derive its powers from special legislation enacted for this purpose. There would be a Central Dairy of the Union where all milk received from the Production District would be processed for distribution. Special attention has been paid to the problems of the city milk producers during the interim period till they are transferred to the Production District.

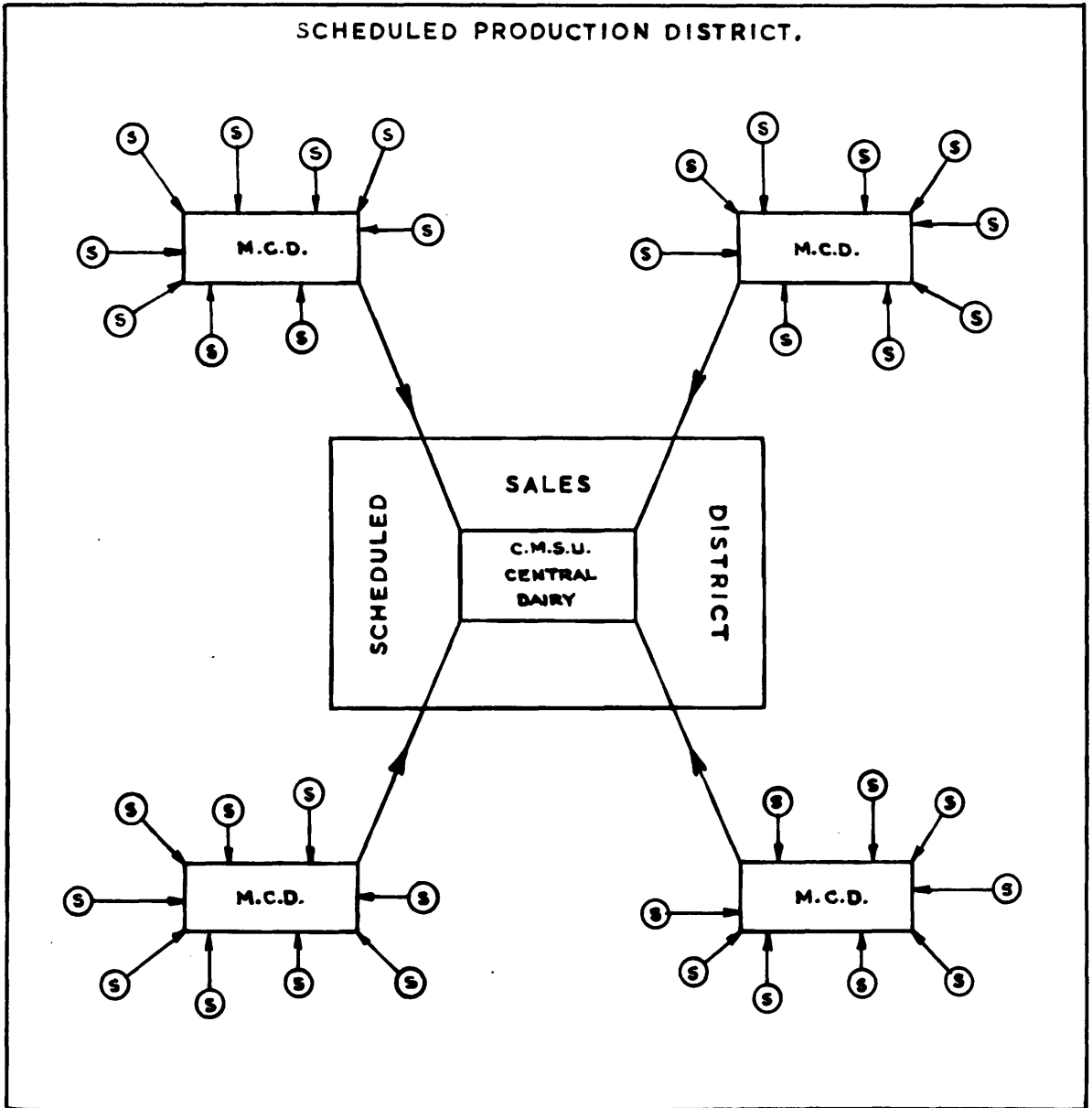
Co-operative Organisation in the 'Production District'

(diagrammatically represented in Fig.10)

As the majority of the milk producers represent very small units, considerable advantages could be secured by organising them into Co-operative Societies to be known as "The (name_of_village) Co-operative Dairy Society Ltd." - registered under the Co-operative Societies Act - in each of the villages in the scheduled Production District. The membership of the Society would be open to all milk producers in the village who wished to sell milk for the city market and were prepared to abide by the rules, regulations and standards prescribed by the Board. The main object of the Society would be to secure an efficient and increased production of milk for sale in its area. (That the production of milk can be considerably increased by scientific feeding, breeding and management of the existing milch stock itself, has been amply demonstrated by /the

FIG.10.

CO-OPERATIVE ORGANISATION OF MILK PRODUCTION
IN THE SCHEDULED PRODUCTION DISTRICT.



C.M.S.U. = CO-OPERATIVE MILK SUPPLY UNION.

S. = CO-OPERATIVE DAIRY SOCIETIES IN VILLAGES.

M.C.D. = MILK COLLECTING DEPOTS.

—> = FLOW OF MILK.

the higher milk yields obtained from such animals in the Military Dairy Farms, Agricultural College Farms and other farms of the Agricultural Departments). These improved methods of dairy husbandry could easily be adopted by the Societies - with technical help and advice available from their Union - by providing facilities for such developments. The functions of the Society in these respects are explained in detail below; and it is envisaged that by taking full advantages of these facilities, the producer members could increase their milk production with the assurance given by a Co-operatively organised and remunerative milk market with a pricing policy designed to encourage milk production.

Individually, these Societies would still be small units and therefore proposals have been put forward to form a "Co-operative Milk Supply Union" in the Sales District, incorporating these Societies. The Union would be responsible for helping and guiding its constituent Societies in all spheres of their activities. The functions and scope of the Union's activity are detailed in a later section.

The administration of the Society would be vested in a 'Committee of Management' elected by the members, and the Committee should be empowered to coopt one person (not necessarily a member) whose services could beneficially be utilized for the advancement of the Society. The Society would provide (in collaboration with the Union) the

/following

following services for its members:-

1. Facilities for Cattle Feeds

The Society would make provisions for the supply of suitable amounts of 'concentrates' to the milk producing members, calculated according to the milk yields of their animals. Expert advice on the computation of rations would be available from the Union. These feeding stuffs required in large quantities by the various Societies affiliated to the Union would be purchased for them in bulk and distributed to them by the Union, according to their requirements. (It might be added here that at a later stage of development, the Union might find it more profitable to engage in the production of these cattle feeds for its members). The Society would undertake the distribution of feeds to its members and collect payments for purchases by deduction from the milk sales.

In addition to 'concentrates', arrangements for the supply of fodder during periods of scarcity should also be made by the Society. This could be accomplished by:-

(i) Purchase of 'Bhoosa' (crushed straw of wheat, barley etc.) and 'Karvi' (dried stalks of Sorghums) §§ - during their seasonal production period and storing these for the future use of the members. The purchases might be made locally or otherwise according to availability and /prices.

prices.

(§§ 'Bhoosa' and 'Karvi' are staple cattle fodder roughages in the absence and in place of green fodder in India. Their nutritive value is very low.)

(11) Co-operative Silage: The value of silage for increasing milk production cannot be over-emphasised and it could be the greatest single factor for maintaining summer milk production when, due to the hot and dry weather, it is at its lowest. (The ensiling of green forage crops would have another great advantage besides its effects on increased milk production, namely the early cutting and removal of green crops would give scope for the cultivation of the same piece of land for a second (winter) crop of cereals or fodder. By proper manuring - available from the cattle - and cultivation, this land could be utilized to far better advantage, thus providing an increased food production simultaneously). Two possible methods might be employed to operate this Scheme:-

(a) During the months of green fodder production - July, August and September - members might bring their surplus green fodder to the Society who would make arrangements for ensiling it. No payment for this would be given as the members would receive in return the proportionate amount of silage in the following summer. The cost of making the silage would be payable by the members concerned.

/Any

Any silage not required by these members could be sold to other members at calculated prices.

(b) Additional supplies of green fodder might be purchased from non-members in the village or nearby areas and the Society might even engage in the production of green fodder itself by taking on lease agricultural land for one season only. Cultivation could be done on contract. The silage prepared from this, could, in the next summer, be sold to members according to their requirements at carefully computed prices on a non-profit making basis.

(iii) Co-operative cultivation of green fodder grasses e.g. 'Berseem', 'Lucerne' etc:- Either the Society itself or one (or more) of the members might undertake the cultivation of these grasses in areas where proper facilities for irrigation are available, to augment the green fodder supply for milk production. Proper accounts could be kept to assess the cost of production of such fodder, which would then be sold to members for the primary purpose of feeding to milch cattle. If, however, there was some surplus, it could be sold to non-members or for feeding to bullocks and other stock, at appropriate prices.

All the above methods, if properly administered by the Society, with complete co-operation (which is aimed at) of the members, would ensure an adequate supply of feeding

/stuff

stuff for the milch cattle. The Union, through its advisory services, would keep producers informed of the proper and economic use of such feeding stuffs. As feeding constitutes a major percentage of the cost of milk production, its efficient supervision and provision would not only ensure a reduction in such costs, but also give reliable information as to the cost of milk production, which could be utilized by the Union and Board in arriving at a fair price for the producers' milk.

2. Breeding Arrangements

The Society would secure for the use of members, good breeding bulls of known milk production pedigree, by the help and guidance of the Union. The bulls could be obtained from the Agriculture Department's Breeding Farms. Such bulls are already being made available in certain areas by an existing Scheme of the Department, and an extension could be requested by the Union. It might not prove to be an economical proposition to provide one bull for each single Society, but arrangements could be made for the housing of the bulls at one of the bigger Societies, for use in an area with 2 to 3 miles radius from such Society, according to the number of cattle in the area. It would be to the obvious advantage of the producer to make a full use of these arrangements. It would also be necessary to seek State aid in the form of legislation for the licensing of bulls in

Production Districts, along lines that only approved bulls could be used for breeding purposes. Castration of stray bulls has long been discussed in the Province, and with the commencement of the Societies' breeding arrangements, this could profitably be launched. Bulls would be maintained by one of the members of the Society who would be reimbursed such expenses. A nominal fee might be instituted for the bulls' services or alternatively a levy on all milk sales might be imposed to accumulate a Fund for the upkeep of the bulls. A record of the bulls' services would be kept, so that a suitable supply for the future, of young bulls, might be available from the male stock reared by the members.

The Artificial Insemination Service as provided by the Milk Marketing Board in England and Wales and by Artificial Insemination Societies in Denmark, could not possibly be adopted under the present conditions of the dairy industry of India, where not only is the communication system insufficient for an efficient operation of A.I. service, but the intensity of dairy cow population would not warrant expensive organisation. However, experiments now being carried on in India on the applicability of A.I. service, will provide results which might help the Union to consider whether such service could be adopted. In the meantime, the suggested arrangements would be very useful.

3. Milk Recording

Elaborate organisations for recording the milk yields of dairy cows exist in dairy countries like Denmark, Scotland, England and Wales and others where the great importance of such a service in increasing milk production has long been recognised. These organisations are all based on various kinds of co-operative effort and all have been generously helped by financial assistance from the State in the initial stages. All these grants have undoubtedly been repaid in the form of increased national milk yields. Under the system of Co-operative organisation envisaged here, it could be possible to obtain all the benefits of milk recording without having to incur any top-heavy administrative expenditure. It is shown later that every producer's milk has to be weighed and recorded in the Societies' register daily, before being bulked for despatch to the collecting centre. But many producers would have more than one animal and their milk, under normal circumstances would be weighed together. Arrangements however can be made in such cases to weigh the milk separately on predetermined days. Thus a ready source of milk records would automatically exist in the Society and the only necessary extra service required would be that of an official Milk Recorder who could supervise the weighing of milk at each Society once in 21 to 25 days (as under the Scottish Milk Recording /procedure),

procedure), and enter the results in the Society's herd register. Such Recorders could be provided by the Union either assisted by specific grants for this purpose from the State or from a special fund created by a levy on all milk sold. It might be mentioned here that all such records would indicate only an estimated milk yield by the animals of hand-drawn milk, as the weaning of calves is not practised in India and calves are invariably allowed to suckle before actual milking is done. However, the suggested records would give very valuable information on the performance of individual dairy animals, and this could profitably be utilized in forming a breeding policy on records basis.

4. Veterinary Service

It is being taken for granted that some form of Veterinary assistance to all farmers, including milk producers, would be provided by the State. This could be arranged to operate so as to be most beneficial for milk production, it being incumbent on the State also to see that the public milk supply is derived from healthy animals. However, the Union would do well to make arrangements for the proper care and maintenance of the health of the members' cattle in close collaboration with services already provided. This would create more confidence in the Co-operative activities of the Union from the members. Such a service would be all the more essential if the proposals put forward in the next

/section

section regarding cattle insurance are adopted.

5. Cattle Insurance

Nothing could be more reassuring to a farmer than the knowledge that protection from natural calamities can be made available by mutual help. "Cattle insurance" could bring this about on a wide scale. After all, if a milch animal dies of a natural disease or unavoidable circumstances over which the owner could possibly not exercise any control, it seems very cruel that only he should suffer all the losses by himself. Cattle insurance could be the remedy to a certain extent. There thus arises the necessity of cattle insurance which could be organised on mutual Co-operative insurance principles by the Union for the benefit of all milk producers. Under such a Scheme all the milch animals belonging to members of the Societies would be insured at values decided by the Committee. Premiums payable would have to be actuarially computed according to risk covered, and the amount could be collected from the sales of milk. Any profits should go to form an Insurance Reserve Fund and for a period of 5 years the State could guarantee to make good any losses sustained in this venture. This insurance would also prove of a great value in cases where loans had been advanced to the members for purchase of cattle. It would be very hard to expect the unfortunate farmer to pay back the loan in the event of his animal's

/untimely

untimely death. The cattle insurance might be operated as a separate department of the Union and arrangements for reinsurance of the risk might be made with other commercial insurance companies.

6. Loans for the purchase of milch animals

It would be found necessary in many cases to provide financial assistance to farmers so that they could purchase more milch animals for increasing milk production. These loans could be arranged through the Union from the Provincial Co-operative Bank. During the currency of the loan the Society would have full legal ownership of the animal which would have to be compulsorily insured. Repayment of the loan could be spread over a period of time and be deducted from the receipts of milk from the producer.

7. Production, collection and transport of milk
to the Collecting Depot

The Committee of the Society would undertake to make arrangements for the production of milk by its members' animals under clean and hygienic conditions (as required under the rules and regulations prescribed by the Board for production of milk for sale in the Sales District) and for its collection for subsequent transport to the Union's Collecting Depot. The necessary equipment would be provided by the Union in the first instance, and payment of its cost
/would

would be made by the Society. It might be necessary for the Society to provide facilities of a central milking site, where all animals could be milked under supervision and where facilities for washing both the animals and hands of milkers could be provided. The Society would employ a paid secretary who would be responsible for weighing and recording each producer's milk in the Society's register. The secretary would also collaborate with the Milk Recorder of the Union on his visit to the Society, and help to prepare the necessary records. A carrier would be employed by the Society to transport the milk to collecting centre. The method of transport employed would depend on many factors e.g. distance from collecting centre, quantity of milk, and condition of local transport facilities, if any. The carrier would be responsible for transporting the milk safely to the Collecting Depot at particular times every morning and evening. Any information to or from the Union could be sent through the carrier via the Collecting Depot. The carrier would also clean the milk utensils properly at the Collecting Depot after they had been emptied.

Collecting Depots in the Production District

The Union would establish Collecting Depots at suitable points in the Production District where milk from the Societies would be received for subsequent transport to the Union's Central Dairy in the Sales District. Such

/depots

depots would be situated on main roads to serve an area with a 3 or 4 mile radius. It might be possible to locate the depots in already existing villages, preferably where electricity and good water supply are available. The quantity of milk received at any depot would depend on the number and size of the Societies sending milk to such depot, but it might be assumed that sufficient quantities would be collected to warrant the use of a mechanical refrigerator. Such an installation is very important and is justifiable for the sake of improvement which would be brought about by it, in the keeping quality of milk. Facilities for cleaning of utensils would have to be provided and the depot would be under the management of a Supervisor appointed by the Union. All expenses would be borne by the Union. After checking the weight of milk received from Societies, bulking and cooling it, the milk would be transported to the Central Dairy. All such arrangements for transport would be made by the Union and a time schedule for collection, treatment and despatch for milk to the Dairy would be worked out to ensure a speedy delivery to the Dairy.

By establishing the organisation referred to above in the Production District, certain other aspects of rural development could also be tackled which would be of additional benefit to the Society. Of course, these could not be undertaken by the Society without the active help of local /authorities

authorities and the District Boards. One of the most important of such developments would be the improvement of rural transport roads. The object would be to link to the Collecting Depot all villages having a Society to ensure speedier transport of milk (in all seasons) - a vital point in the unfavourable climatic conditions for the keeping quality of milk.

In the initial stages of development the Society would restrict its activities to milk production and the supply to members of feeding stuffs, but at a later period it could develop into a multipurpose Agricultural and Dairy Society to supply other requirements of the agricultural community in the village. Such Societies have elsewhere been very successful and form a very important section of the Co-operative movement, especially in Eire. The main object would still be milk production, but this could form the basis of other agricultural trade. In other Co-operatively advanced dairy countries like Denmark, there are separate Societies for each specific purpose, e.g. milk recording, breeding, artificial insemination, manufacture of milk products and supply of requisites. Such a stage of development could not be adopted under present Indian conditions and there the best possible advantages could be achieved by the formation of multipurpose Co-operative Societies initially based on the primary function of milk production. These would prove to be of immense value in
/raising

raising the standards of the agricultural community by Co-operative efforts.

Organisation of Milk Marketing in the Sales District

After a Sales District had been so scheduled by the Local Authority, it would arrange for a survey and investigation with a view to ascertaining the demand for milk in the area and to schedule an area of Production from which supplies could be obtained to meet such a demand. In doing so, the production of milk within the Sales District by the city milk producers would be taken into consideration. A District Milk Board would then be established under the provisions of the special legislation. The constitution, powers and functions of the Board would be as follows:-

Constitution of the District Milk Board

The Board would consist of members representing:-

1. Producers:- The Union would represent the interests of milk producers in the Production District.
Separate representatives would be elected by the producers, so licensed by the Board to supply milk to the Sales District whether producing milk in the Sales District or outside it.
2. Distributors:- Elected by all the licensed distributors in the Sales District.
- /3. Consumers

3. Consumers:- Nominated by the Local Authority i.e. the Municipality or the Minister for Local Self Government.
4. Ministry of Agriculture, Public Health Department and the Co-operative Department - to be nominated by those concerned.

The Chairman of the Board would be a nominee of the Minister of Agriculture who would also appoint a Secretary. The chief Executive Officer of the Board would be the Chairman who would be responsible for the day to day administration, with the assistance of the Secretary.

The Board would derive its powers from the special legislation under which it had been established and by those powers vested in it, it would control the marketing of milk in the Sales District by the following methods:-

All producers whether in Production or in Sales Districts who wished to sell milk for consumption in the Sales District would have to obtain a Producer's Licence from the Board. A licence fee, as prescribed by the Board, would be payable. The Board would also prescribe any such regulations as it deems necessary to ensure a hygienic and wholesome supply of milk for human consumption. These regulations would be derived from the Legislation affecting the production of milk for sale. The licence would be

/subject

subject to cancellation if such conditions were not observed to the satisfaction of the Board. In the case of producers in the Production District who have been organised by the Union, the individual Societies would be so licensed. (The special case of city milk producers has been discussed separately).

All milk offered for sale in the Sales District would be sold to licensed dairies, who would be required to satisfy the Board that they can undertake the processing of milk for sale to consumers as prescribed by the Board. The Union's own dairy would be the main such dairy under this provision, but any other organisation such as a City Milk Producers' Co-operative Society (discussed later) might also be so authorized.

Milk for sale to consumers would be a "Standard" product i.e. milk having a prescribed minimum of butterfat content (4% or as decided by the Board) and of solids not fat; any sample falling below these limits would be considered as adulterated. Standardization of milk for liquid consumption presents many advantages. It is known that in India cows milk contains 4.5 to 5% or more, and buffalo milk more than 6.5%, of butterfat. Thus considerable economies can be obtained by standardization of milk whereby a guaranteed quality of milk at a cheaper price can be provided for the consumer, as the extra fat extracted can be

/manufactured

manufactured into butter or 'ghee'. A uniform standard would also help to simplify the problems of quality control. This would, however, not mean any prohibition of the sale of pure buffalo milk, which would still be made available in special cases under permission from the Board. An adoption of the principle of 'standard' milk would have to be accompanied by the provision of facilities for such processing and standardizing of milk. These would be provided at the Central Dairy of the Union or other authorized dairy, to which all ordinary milk would be sold.

Distribution of milk either by retail to consumers, or by wholesale to institutions, hospitals and restaurants, would be through licensed distributors. A Licence fee would be payable to the Board, which might also decide whether any reasonable amount of money by way of security should be deposited by such distributors; the security being subject to forfeiture if any conditions of sale as prescribed by the Board were not observed.

A 'levy' determined by the Board would be imposed on all sales of milk in the Sales District to cover the administrative expenses of the Board. In the initial stages it might be necessary to provide some State assistance towards meeting part of the expenses, e.g. by way of salaries of technical officers etc., but eventually the Board would require to be self-supporting. These levies, together

/with

with all licence fees and State grants receivable by the Board, would be paid into a Special Fund administered by the Board. All expenses of the Board would be paid out of this and any balance carried to a Reserve Fund.

The Board would determine the price policy of the Scheme (as described later on page 318) and exercise control over the quality of milk and milk products sold in the Sales District.

The problem of city milk producers

It has been shown that milk for consumption in the Sales District would be produced in the Production District under the organisation of the Union. There would be, however, a number of milk producers inside the Sales District, and it becomes very important that they also should be organised in some way. The best solution would be to establish a colony of milk producers just outside the Sales District, where milk production could be carried on under hygienic conditions. This would depend upon the availability of suitable agricultural land in such vicinities. It is considered that retention of such cow-keepers inside the Sales District is objectionable from many points of view, including Public Health and the economy and organisation of production:-

1. Public Health: The presence of cattle stables

/in

in residential areas is undesirable from the public health point of view. Under such conditions as those prevailing now at the stables of city milk producers, it is not possible to produce milk of an acceptable hygienic standard. The utterly unhygienic and congested accommodation, inadequate water supply, etc., all confirm this conclusion.

2. Economy of production: It is recognised that the cost of producing milk in these city stables is higher than in villages where a cheap and comparatively abundant supply of fodder is available. The city milk producer has to purchase all the feeding stuffs for his milch animals, including bulky green fodder; the higher cost of these, coupled with high stable rents, tend to increase the cost of milk production. The only course - other than going out of business - open in order to compete with the cheaply produced milk from the nearby villages is to adulterate milk and this practice is widely prevalent. It might be possible to enforce a strict check on such practices, but the fundamental problem of high cost cannot be ignored. Another serious item is the cost of herd replacement under this system. The producer generally keeps animals as long as they give him a fair return and as soon as they stop giving milk, the problem of maintaining them in the unproductive period arises. Generally this dry period is fairly long as the owner is apt to delay the servicing in order to keep the animal in milk for a longer time. In all these circumstances it is often

/more

more profitable for the owner to sell the animal for slaughter and buy a new one in its place. The fate of the calves is still worse as they can never be properly fed on the milk - the source of ready cash - and ultimately perish; thus another source of future adult milch cattle is lost to the country. It would not be prudent to blame the owner for all this, as he is compelled by circumstances to adopt practices never necessary under rural conditions.

3. Organisation: Under the proposed system of milk marketing organisation in the city, the existence of such producers presents intricate problems. The importance of controlling the total milk supply of the city need not be stressed. While the complete control on all milk entering a Sales District is comparatively easy, it would be more difficult to control cow-keepers situated in different parts of the District and disposing of their milk by various means. Moreover, as discussed later, it is proposed to "Standardize" all milk, and complications would arise if these producers were left out of the organisation, as they cannot be expected individually to standardize their milk.

It would not be possible to effect a change such as of the cessation of milk production and evacuation of city milk producers, all at once. It depends on many factors which might require a long time for solution, e.g. procurement of land suitable for the transference of such

/milk

milk producers to that place, and provision of buildings etc., there. However, once this principle was recognised, then various methods could be adopted - in the interim period - for the control and organisation of these producers to fit into the general scheme of the city milk supply. The following alternatives, or a combination of them, present themselves for consideration:-

(i) The producers might be allowed to continue milk production under a new form of Licence from the Board, whereby a stricter control over milk production could be exercised. The Licence would be subject to revocation if conditions were not adhered to. A further Licence would be required if it was desired to sell milk by retail to consumers and to observe the price regulation and quality control of the Board. It would be for the Board to decide if a producer could charge a special price for milk of a higher quality e.g. buffalo milk, provided he could get customers for his high quality produce. If milk could not be sold by retail or otherwise, it could be disposed of by contract to the Central Dairy of the Union. The price payable for such milk would be especially decided, taking into consideration that no expense by the Union for collection, transport and pre-treatment would be incurred as in the case of milk collected from Societies.

(ii) Co-operative organisation for the city milk producers:-

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A "City Milk Producers' Co-operative Society Ltd." might be organised, the membership of which would be open to all licensed producers. This Society could be affiliated to the Union on the same basis as village Societies. The members would be entitled to the same benefits as provided by the Union to other village producers. However, a special price structure, as explained above, would be required. In addition, if these members so wished and obtained a Distributor's Licence from the Board, they could purchase milk from the Union and sell it to their customers like other retail distributors.

(iii) The above 'City Milk Producers' Co-operative Society' could establish a processing dairy plant of its own, where milk could be properly handled and standardized, under the regulations of the Board. The success of this would depend upon the quantity of milk available and the additional capital required.

The Co-operative Milk Supply Union

It has been shown that a Co-operative Milk Supply Union Limited would be formed by incorporating all the village Co-operative Dairy Societies, and that this body would be responsible for organising and developing the production of milk in the scheduled Production District. The management of the Union would be vested in a Board of

/ Directors

Directors elected directly by milk producers exercising their votes through the Societies. The Board would consist of (a) members elected by the Societies, (b) 2 persons nominated by the Registrar of Co-operative Societies. The Board would elect a Chairman and appoint a General Manager and a Secretary for the Union. There would be an Executive Committee of 5 members and the day to day administration of the Union would be carried on by the General Manager with the assistance of the Secretary. All other staff would be appointed by the Executive Committee and General Manager.

As has been shown, the milk producer members of the Union are too poor to provide any appreciable Share Capital for the Union; on the contrary they would require financial help in several forms. Thus it would be necessary to obtain most of the Capital required by the Union on long term loan, either from the Government, or from Co-operative Banks. However, there would also be a Share Capital of the Union provided by shares to be held by the constituent Societies, who would take out shares and pay for them in instalments whenever possible. It is hoped that eventually the Union might be self-supporting in this respect, after the long term loan has been duly repaid.

The main objects of the Union fall into two sections:-

1. Development and Organisation of milk production

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in the Scheduled Milk Production District; and 2. Processing and Distribution of milk in the Scheduled Sales District.

The former would be achieved by the establishment of Co-operative Dairy Societies in the villages. It was shown that the Union would require to play a very important part in guiding these Societies in all the spheres of their activities. For this purpose the Union would establish a Dairy Husbandry Department under the expert guidance of a Dairy Husbandry Officer assisted by a Milk Production Officer and the necessary field staff. It would be the responsibility of this department to advise the Societies on methods to be employed in the development of milk production. These would be on the following points:-

(i) Feeding and management of milch animals - including computation of balanced rations according to milk yields of animals; methods of making silage and cultivation of green grass etc.;

(ii) Clean milk production methods;

(iii) Breeding, including selection of bulls and framing of breeding policy for the Societies, based on milk records;

(iv) Milk records of milch animals by the Recorders of the Union in collaboration with the Societies' Secretaries;

(v) Health of milch stock: in collaboration with the veterinary services provided by the Veterinary Departments

of the Province.

This department would also carry out investigations on the cost of milk production and any other problems relating to efficient milk production.

The Union would also arrange for the supply of cattle feeds for the benefit of milk producers through the Societies. In addition to the above, the Union would also make arrangements for securing loans for the producers for the purchase of milch animals and for insurance of the producers' animals as already described.

For processing and distributing milk in the Scheduled Sales District, the Union would establish there a Central Dairy, where all the milk received from the Production District through the Collecting Depots and city milk producers would be standardized and processed in accordance with the regulations of the District Milk Board. The processing might consist of pasteurization (in modern dairy plant) of Standard milk and of cooling only for buffalo milk for delivery to milk-shops as such (for manufacture into milk products as discussed later). The processed milk would be cold-stored till required for distribution. The system of distribution to be adopted is discussed later (under 'Distribution'). Provision would also be made at the dairy for manufacture of milk products whereby any milk surplus to the requirements of the Sales District could be manufactured.

/The

The problem of 'surplus' milk is not of much importance in city milk supply in India. Although there is a seasonal variation in the production of milk, its effects are counterbalanced by many factors. One of these is that the periods of highest production of milk by buffalo and cows are not the same; thus while in the case of buffalo the periods of highest and lowest production in the United Provinces are October and June respectively, in the case of cows these are in the months of March and August respectively. Another factor is the elasticity of the demand for milk which again is of two types, e.g. for liquid milk and for milk for manufacture. Here again, from a financial point of view, there is no loss incurred if more milk is manufactured, as usually the price realized from the sale of the manufactured products in the Sales District, e.g. curd, 'Khoa' and milk sweets, is in proportion to the price of milk for liquid consumption. Thus, by a judicious control over the quantity of milk used for manufacture, and over prices of manufactured milk products, a fair balance could be maintained between the demand and supply of milk, and the problem of surplus or deficit could be avoided.

The above discussion does not take into consideration the manufacture of butter or 'ghee' which would have inevitably to be undertaken from the extra butterfat obtained in the process of standardizing milk for liquid consumption.

/Generally

Generally speaking, the realization value of milk if sold liquid is much more than when utilized for manufacture of butter and 'ghee'. But in this case, whatever is realized from the sale of butter and 'ghee' would ultimately be utilized for bringing about a reduction in the price of the consumers' standard milk.

The whole pricing structure and control of prices by the Board is discussed later and here consideration need only be given to profit distribution. Such profits would represent the difference between the receipts realized from sales of standard milk, wholesale or retail, and from sales of milk products; and the money paid to producers plus the expenses of the Union, including interest payable on loans. After 25% of these profits are taken to a Reserve Fund (as required by the Co-operative Societies Acts) and an equal amount kept aside for repayment of loans, the remainder would be distributed by the Union as a bonus to milk producers in proportion to their milk deliveries, and as a bonus on wages and salaries of Union employees. The Annual General Meeting of the Union would be the final authority deciding the distribution of profits.

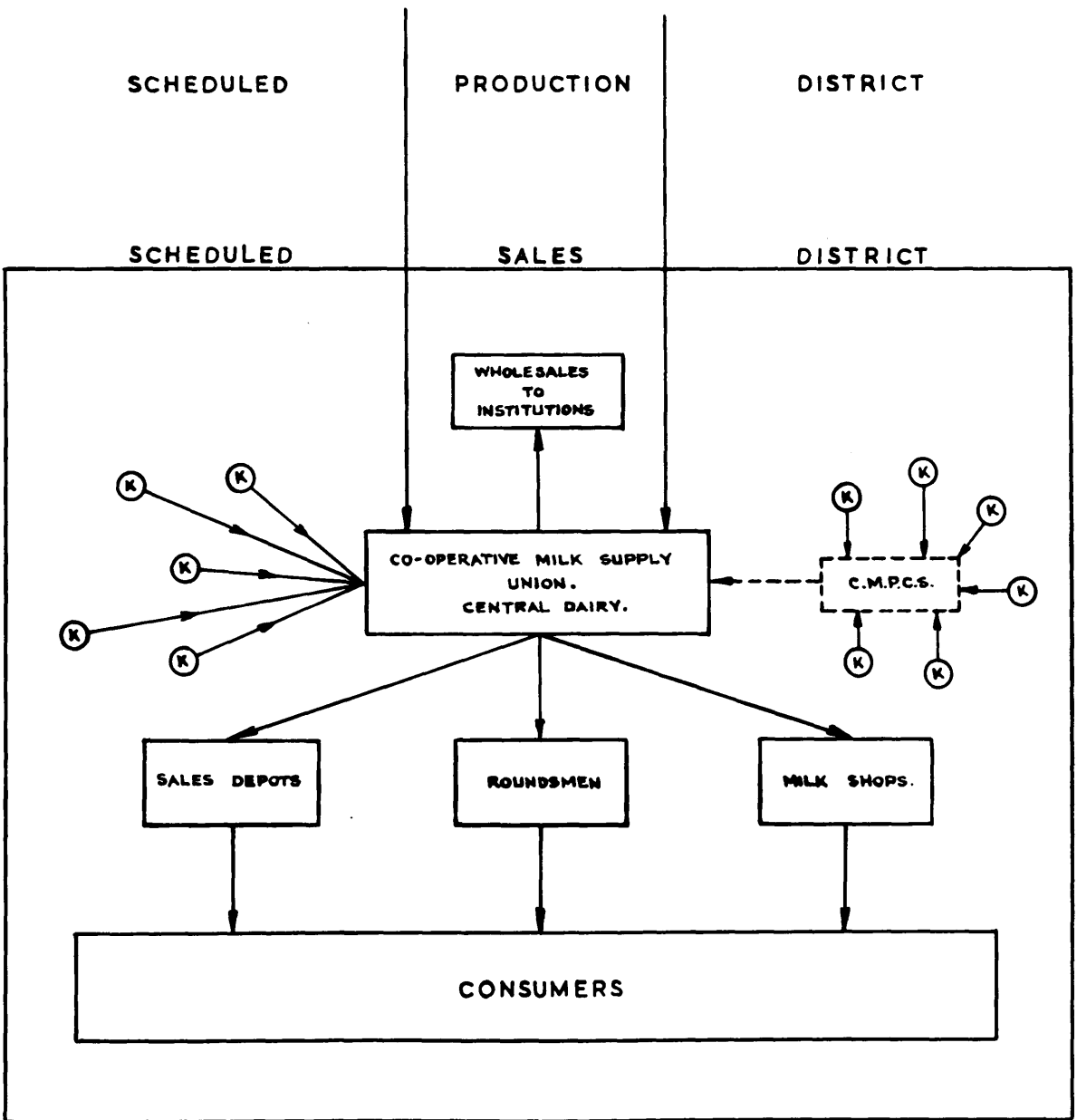
Distribution of Milk in the Sales District

A diagrammatic representation of the organisation of milk distribution - wholesale and retail - is given in

/ Fig. 11 .

FIG.II.

ORGANISATION OF MILK MARKETING IN
THE SCHEDULED SALES DISTRICT.



C.M.P.C.S. :- CITY MILK PRODUCERS CO-OPERATIVE SOCIETY.

K. :- COW - KEEPERS.

----- :- LESS IMPORTANT CHANNELS.

Fig. 11 . 'Standard' milk for sale to consumers after processing in the Central Dairy of the Union, would be distributed through the following channels:

Wholesale Sales would be made from the Central Dairy as follows:-

1. To milk-shops (i.e. 'Halwais') for resale by retail to consumers as processed hot, (sweetened or otherwise), or 'raw', i.e. as received from the Dairy, and for manufacture into 'Khoa', curd or other milk sweets. The retail price of such manufactured products is generally related to the purchase price of milk plus a margin of profit to the milk-shop. Thus, no question of any loss to the shop on account of conversion of milk products would arise, and all milk sold to the shop would be at the same standard price. The ultimate use of the milk, i.e. either for sale as liquid milk or for manufacture, would be left entirely to the shop. The wholesale deliveries would be made at the shop by the Central Dairy or alternatively the shop could arrange to collect its supplies, either from the Central Dairy, or from one of the Union's milk distributing depots in the Sales District. The milk-shop would make its own arrangements for distributing milk by retail to consumers, either by selling ex-shop or by making delivery at house doors. All sales of milk to or from the shop would be subject to the price regulations of the Board.

A special point of technical interest arises here with regard to all sales to these shops. All milk received by these shops is invariably boiled either for sales ex-shop to consumers, or before being used for manufacture. Thus, while it would be necessary for the shop to obtain 'Standard' milk for sale to consumers, no particular advantage would be obtained by purchasing standard milk for manufacture, for which a richer quality of milk, e.g. buffalo milk, is preferable. Moreover, in both these cases, there would not be any advantage to the milk-shops if the milk received by them, either ordinary or standard, was subjected to the prices of pasteurisation at the dairy. In such cases, and it can be assumed that there would be many such cases, it might be more advantageous to adopt the following methods of sales:-

(i) Milk required for manufacture into milk sweets by the shops, could be sold to them in the form of pure buffalo milk, if so preferred by them. There would be a special price for such milk. It has been assumed that the city milk producers would (for the time being) send their milk to the central dairy and it would be possible to sell this milk after testing, direct to the shops. Alternatively, it might be possible to arrange that these producers deliver their milk direct to such shops under a contract approved by the Board. The milk-shops would pay as usual to the Dairy,

/which

which would later pay the producer after necessary price adjustments.

(ii) 'Standard' milk could be supplied to the shops unprocessed, i.e. after receiving milk from city milk producers, it could be standardized at the Dairy and then delivered to the shops. There would be a special price for this milk.

All such arrangements under (i) and (ii) between the Dairy and the milk-shops would, however, be subject to the Board's approval.

2. To institutions, e.g. hospitals and schools under a 'Milk-in-Schools Scheme'.

3. Semi-retail Sales to hotels and restaurants, provided a certain quantity (minimum to be prescribed by the Board) per day was purchased. The delivery of milk in bulk might be made at the purchasers' premises, or arrangements could be made for collection by the purchasers themselves from the central depot or any other depot in the Sales District.

Retail Distribution of Milk by the Central Dairy

All the retail distribution of Standard milk to consumers - except that through the milk-shops, and in special cases as authorized by the Board - in the Sales

/District

District, would be the responsibility of the Co-operative Milk Supply Union. For this purpose the Union would divide the entire Sales District into several zones, and would be in a position to ascertain approximately the demand for liquid milk in these areas after having taken into consideration, the existence of shops licensed for retail sale in those zones. Retail deliveries by the Union in these areas could then be organised by two methods as follows:-

(i) The Union would establish several Sales Depots in each of the zones at convenient points from which retail sales would be made direct to consumers who collected their milk requirements ex-depot. These depots would be kept open only for a few hours each morning and evening. Milk would be sent to these depots in sealed cans from the Central Dairy, which would arrange for such transport and for the return of empties and unsold milk to the Dairy. One such depot would be operated at the Central Dairy also. In addition to sales of Standard milk, other milk products manufactured by the Union could also be sold at these depots.

(ii) Simultaneously with the establishment of the above Sales Depots, the Union would organise 'milk rounds' also in the various zones of the Sales District, whereby 'roundsmen' would be employed to deliver milk to consumers' houses. The method of such deliveries would depend on whether the demand in the particular rounds was for milk 'loose' from the can,

/or

or in bottles, (as the price for the latter would be higher to cover such a service). The transport employed by the roundsmen would depend on the amount of milk distributed in each round. If bicycle was used, it would have to be provided by the roundsman himself, who would be entitled to receive a 'cycle-allowance' from the Union. Such a practice is more useful under Indian conditions where the cycle would also be employed by the roundsman for his personal use. In cases where the quantity of milk delivered was sufficient to warrant the use of a bigger vehicle, e.g. tricycle, these would be provided by the Union and after daily use would be deposited in the garages of the Union. The roundsmen would obtain their milk supply requirements either from the Central Dairy or arrangements could be made to supply from the various sales depots of the Union. Empties and unsold milk would be returned to such places respectively.

In both the above systems of retail milk distribution, the Union might institute any suitable method of payment by the consumers for milk delivered to them. A coupon system whereby consumers could purchase 'coupons' exchangeable for particular quantities of milk and dairy produce sold by particular methods, e.g. delivery at door 'loose' or bottled, or collected from sales depots; presents many advantages. Not only are credit sales avoided: there is less handling of cash by roundsmen and depots. Such

/coupons

coupons could be obtainable by consumers from the Central Dairy, the Sales Depots or the roundsmen. It would be a further advantage if the Union could detail one of its employees to sell such coupons at consumers' houses; thus in addition to increasing sales of milk, he could also find out from the consumers direct if they had any complaints about the quality of milk or the service of delivery provided by the Union. However, milk and milk products would also be obtainable on cash from the Sales Depot and roundsman for the benefit of consumers who could not purchase the coupons in advance.

The suggested systems of milk distribution in the Sales District both by the milk-shops and the Union involve an element of competition between them. Such competition is, however, advantageous, as both would try to give the best possible service to the consumer, who would have the final word in deciding as to which system was preferable. From a nutritional point of view however, it would be to the advantage of consumer to consume and cultivate a taste for pasteurised milk as supplied by the Union, as the boiling and constant simmering of milk for long periods at the milk-shops brings about a reduction in the nutritional value of milk.

In the suggested organisation of milk distribution in the Sales District, any profits accruing from the distribution business would go either to the milk-shops or to the

/Union

Union (i.e. to the producers). There is no provision whereby the consumer of milk could exercise any control over milk distribution except in a very small way through representation on the Board. In other countries, e.g. Great Britain, and in Denmark and the Netherlands to some extent, where the milk distributive trade is not organised on producers' co-operative lines - as proposed above - the consumers' interests are looked after to some degree by the Consumers' Co-operative Movement. There are "consumers" Co-operative Societies which command a considerable share of milk distribution. These Societies purchase milk from producers (from Milk Marketing Boards in Great Britain) and after processing it, distribute it to their members. Any profits earned are refunded to the consumers by way of 'dividends' on purchases. Societies are managed democratically by consumers themselves, and in addition to milk they handle many other types of merchandise. There is no consumers' co-operative movement in India on anything like the same scale, and what there is does not deal with milk distribution. From a consumer's point of view, such a movement is of great interest. Milk distribution on co-operative principles (consumers' co-operation) can be easily organised. It can be argued in its favour, that, just as the producers co-operate together to market their milk with advantage, the consumers can also do so, and organise a milk distributive

/service

service for their benefit. The following describes briefly an organisation which could be set up for the benefit of the consumers by the consumers.

A "City Milk Consumers Co-operative Society Limited" could be organised and registered under the Co-operative Societies Acts. This Society could take over the entire milk retailing business of the Union which would restrict its activities to wholesale and semi-retail distribution only. The organisation of milk retailing by the Society could remain on the same lines as described before under 'Retail Milk Distribution by the Union' e.g. through depots and by roundsmen. The Society would purchase all its milk requirements wholesale from the Union (on the same terms as the milk-shops). Membership of the Society would be open to all milk consumers who purchase milk from the Society and agree to abide by its rules. The Capital of the Society would be raised by shares of a value determined by the Society and each member would be required to hold at least one (or any other number as decided) share which might either be paid on entering the Society or by instalments to be deducted from the dividend. The management of the Society would be vested in a Committee of Management elected by the members, who would appoint administrative and other staff.

Profits or surplus of the Society would be represented by the difference between the amount realized from

/sales

sales of milk by retail and the amount paid for such milk to the Union, plus expenses of the Society, e.g. salaries, wages and depreciation etc. These profits would be distributed as follows:-

- (i) 25% of profits to a Reserve Fund (as required under the Act)
- (ii) Any other Fund, and such amounts as authorised by the Rules of the Society.
- (iii) From the balance of the surplus, i.e. after providing for (i) and (ii), there would be paid (a) such dividend (or patronage refund) per 'Rupee' on members' purchases as might be agreed upon at the General Meeting of the Society; and (b) Bonus on wages and salaries of workers and staff at the same rate per 'Rupee' as that of members' dividend - subject to certain conditions of service being observed by them.

Being an experiment in the field of retail milk sales organisation, its success would depend on expert management and more especially so on the honesty of the roundsmen and persons in charge of sales depots. The policy of giving a bonus to staff would assist in attaining such an object. Such a marketing organisation provides a close link between the producers and consumers where both are organised co-operatively and co-operate with each other to mutual advantage.

Price Policy of the Milk Marketing Organisation

The most important and fundamental principle recognised in determining the price policy for a milk marketing organisation is that all milk purchased and sold in the Production and Sales District would be on a butterfat basis. This is the only sure way of preventing any adulteration of milk and although this would entail some additional administrative expense, any expenses incurred on it would be worthwhile. Moreover, such an arrangement would also be necessary in order to sell "standard" milk to consumers. Another essential of a sound price policy is that it should ensure a fair price to the milk producer commensurate with his cost of production and also sell to the consumer at the lowest possible price that could be charged for a guaranteed quality of milk.

The District Milk Board would determine the minimum price payable to producers. This would be fixed separately for cow and buffalo milk of a minimum butterfat content, and it would be left to the Union to devise any scheme of testing milk whereby the producers would receive prices calculated according to the butterfat content of the milk supplied. These prices would be announced in advance for one year and could vary seasonally. It would also be left to the Union to devise a scheme to encourage clean milk production, e.g. clean milk competitions etc., by giving

/bonuses

bonuses to the producers of clean milk. The price paid to the producer would be "net price", i.e. collection and transport charges to the Dairy would be borne by the Union. Thus higher prices would be payable to city milk producers in which cases such expenses would not be incurred by the Union provided the milk was delivered at the Dairy, otherwise appropriate collection charges would be deducted from such price.

The Board would determine the maximum price of standard milk (with a minimum butterfat standard) sold by wholesale, semi-retail and retail. In doing so the Board would take into consideration the expenses of collection, transport and processing as well as standardization of milk by the Union; of distribution of milk by the Union, licensed milk-shops and other licensed distributors, and the levy payable to the Board on sales of all milk in the Sales District. A fair working margin would be allowed for each of these services, and thus there would be different prices of milk sold, according to the extent of services provided by the seller:-

1. Wholesale and semi-retail prices:-
 - (a) delivered at purchasers' premises
 - (b) collected by the purchaser from Central Dairy or Sales Depot.
2. Retail prices:- for standard milk

/ (a)

- (a) collected by the consumer from Sales Depot or milk-shop,
- (b) delivered 'loose' at consumer's house,
- (c) delivered in bottle at consumer's house,
- (d) consumed ex-shop, hot, sweetened or unsweetened.

There would thus be a price to the consumer according to the service desired by him, e.g. he could obtain milk much cheaper by himself performing the service of delivery to his house.

It should also be noted that these prices are "maximum" prices and not "fixed" prices, so that the milk-shops or any distributor would be free to charge a lower price if he considered that he could provide any of the above services to the consumer cheaper than the other.

The Board would also determine the maximum prices of such milk products, e.g. curd, 'Khoa' and milk sweets as are manufactured by the milk-shops and this price would be according to the price of milk payable by the milk-shops to the Union.

The Board would make arrangements for wide and continued publicity for all current prices which would have to be displayed at every milk-shop or Sales Depot, and any infringement of these would be an offence under the regulations of the Board which could impose penalties on the

/offenders

offenders, and in cases of habitual infringement, revoke licences.

Quality Control of the City Milk Supply

Proper control of the quality of milk with a view to ensuring the best possible supply to the consumer in the Sales District would be exercised by the Union and the Board. The Union would be responsible for quality control over all milk production in villages, during transport, processing and standardization at the Central Dairy, and for the quality of milk supplied to milk-shops or delivered wholesale or retail to consumers. The Board would exercise control over the quality of milk production in the Sales District, and over all distribution by retail whether by Union or by milk-shops and other distributors.

The main quality control would be that of butterfat content, but consideration would also be given to the keeping quality of milk, and the chemical and bacteriological standards would be laid down by milk legislation.

All milk received by the Union and issued by it to distributors and consumers would be tested according to a scheme of quality control - approved by the Board - in the Union's Laboratory established for this purpose. The Union would be held responsible if any sample of milk, taken by Inspectors of the Board, from the Union's Sales Depots,

/roundsmen,

roundsmen or consumers, was not up to the standard.

Similarly, samples would be occasionally taken by the Board from milk being retailed by milk shops and other distributors. The Board would establish a Central Laboratory where all such samples would be tested.

Consumers could complain to the Board against the quality of milk supplied to them by any distributor and the Board would arrange for samples to be taken from such distributors. Similarly, distributors and milk-shops could complain against the quality of milk received from the Union and have samples taken from the Union to be tested in the Board's Laboratory.

In addition to the above control by the Board and by the Union, the Public Health Department of the Local Authority would still exercise the usual control over all milk distribution under the provisions of the Food Adulteration Act. This would serve as an additional safeguard for the milk supply.

An important part of the quality control scheme would be that all regulations and penalties laid down by the Food Adulteration Act would be very strictly enforced and in case of the habitual offenders, in addition to the usual punishment through legal authority, the Board might also take steps, including cancellation of the licence and the forfeiture of the security deposited by the distributors.

Increasing the Consumption of Milk

The Scheme for a reorganisation of milk marketing as discussed has so far dealt with only the problems of developing milk production and its efficient distribution to the urban consumer. However, there still remains a problem which is of great importance to the dairy industry, namely, the problem of milk consumption. As has already been shown the per capita consumption of milk in India is very low, even in the urban areas, and dependent as it is mainly on the income of the consumer, it can be seen that a vast part of the population (in the lower income groups) consumes next to nothing of this most important food. To them, any such reorganisation scheme, however effective in bringing to the consumer the best quality of milk service, would be of little interest because they would still lack the means to purchase milk.

It might, however, be assumed that with a general rise in the standards of living and purchasing power of people, the demand for milk would increase. But it cannot be expected to rise to the desired level automatically, as even in economically developed countries such as Great Britain, it was found necessary to take measures to secure increased milk consumption, not only because the level of milk consumption was low, but also in order to utilize as much as possible of the national milk production in the liquid state. It is

/noteworthy

noteworthy that there also, in spite of the fact that milk producers were highly organised, they were helpless by themselves when it came to creating an increased demand for milk consumption; State financial help had to be sought and it was provided in the national interest. Thus in the year 1937, a total sum of £ 80,000 was spent on Milk Publicity alone. This represented an expenditure of only 0.025 pence per gallon of milk sold for liquid consumption. Half of the expenses were provided by a Government grant and the rest by the producers and distributors through the Boards. There is every indication that the policy of active publicity and advertising of milk does bring about an increased milk consumption. The necessity of such a step is all the more pressing under Indian conditions where the public needs to be educated to cultivate a "milk sense". With the inauguration of a milk marketing organisation such a scheme could very profitably be launched provided Government assistance was available.

There are other schemes of more importance which have been adopted in practically all countries, as they aim at improving the general level of health. The most important among these is the 'Milk-in-School' scheme. It is not necessary to enumerate here the great advantages of this, but it might be mentioned that the Government would do well to recognise the importance of such schemes and as finances

/permit

permit, a scheme could be developed. It is easy to see that under organised milk marketing, such schemes can be operated with a greater chance of success. Similarly, other Welfare Milk Schemes could be launched in collaboration with the Boards as financial circumstances permit.

Provincial Co-ordination of Milk Marketing.

As had been stated, the scheme for reorganisation envisaged here would bring about a development of the dairy industry on a regional basis, i.e. such schemes could be inaugurated for all large towns in a Province. Following this, co-ordination would be necessary so that all development work could proceed according to a predetermined plan for the Province as a whole. It is suggested therefore, that a Provincial Milk Board be set up, with members having an expert knowledge of the dairy industry. The Provincial Milk Board would have an advisory committee on which would be represented the various District Milk Boards. This Provincial Milk Board would be responsible for advising the Government on matters relating to the industry and would also act on behalf of all interests for the implementation of any national policy within the Province. The main functions of the Board are outlined below:-

1. The Board would report to the Government annually and would advise the Government on matters requiring

/Government

Government attention or consideration as regards the development of the dairy industry.

2. The general function of the Board would be that of advising the various District Milk Boards on matters of common interest and generally assisting in the formation of new District Milk Boards wherever necessary.

3. It would have power, in co-operation with the various interests concerned, to carry out all necessary steps to stimulate a gradual increasing consumption of milk, by Milk Publicity throughout the Province.

4. The Board would advise on means of reducing the cost of milk production and distribution, and seek solutions for the various difficulties that generally arise between the different sections of the industry.

5. The Board would collect and collate the statistics relating not only to the costs of production, collection, processing and distribution, but also to general statistics concerning the industry.

However, nothing that has been proposed here would mean that the Provincial Milk Board is intended to police all the activities of the various District Milk Boards. The existence of the Provincial Milk Board is intended chiefly with a view to co-ordination of the development of the dairy industry.

C O N C L U S I O N S

The scheme for a reorganisation of milk marketing as put forward has envisaged means by which the development of dairying in India can be accelerated. Co-operative principles for such a reorganisation have been adopted as far as possible and particularly in the fields where these could be most valuable, namely milk production and, to some extent, in milk marketing. While there can hardly be any doubt that milk production could be developed by efficient adoption of co-operative methods, it has been realized that the entire sphere of milk marketing could not be left entirely to a co-operative organisation of milk producers, as the interests of other parties, e.g. distributors and above all consumers are of equal importance. Thus, for the welfare of the nation as a whole, it is essential that the Government should take more interest than has hitherto been the case; and if so, this is bound to be accompanied by a certain degree of State supervision and intervention for the general welfare, including that of co-operatively organised milk producers.

In most countries to-day the economic trend is to attempt to ensure fair treatment in the matter of prices for all, producers and consumers alike, and to prevent any sectional interest exploiting others by reasons of better

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organisation. This principle has been fully recognised in the suggested scheme under which the authority for price fixing has been placed in the hands of a District Milk Board - and not in the hands of the organised producers - on which producers, distributors and consumers are all represented and the balance between them is maintained by the State. No possible alternative to this arrangement appears to be tenable and as has been apparent from the study of milk marketing in other countries, where various methods have been in vogue, and they have all finally - no doubt due to interference of economic hazards and of war - led to some arrangement whereby the State has been obliged to maintain a proper balance among the various trade interests for the common good.

Under the suggested scheme, in the co-operative organisation of milk production considerable emphasis has been placed on the fostering of co-operative development 'from above' and for generous State assistance in the initial stages. This is considered to be absolutely essential under the present Indian conditions where not only is the financial position of the peasant milk producers far from satisfactory, but the level of intelligence in the understanding of co-operative principles is also low. But there can be no doubt that they can be made to understand

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such principles and benefits will certainly accrue when the movement is properly started and if efficient guidance is given in the early stages.

It is considered that the Scheme put forward would bring about an overall development of the dairy industry and represents the only possible way by which India can produce sufficient milk, efficiently distributed, to fulfil 'Twentieth Century' nutritional demands.

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A P P E N D I X
AND
R E F E R E N C E S

A P P E N D I XList of Organisations visited in various Countries.Great Britain

The Milk Marketing Board (England and Wales).
 The Scottish Milk Marketing Board.
 The Aberdeen and District Milk Marketing Board.
 The North of Scotland Milk Marketing Board.
 The Scottish Agricultural Organisation Society.
 Milk Department of the Scottish Co-operative
 Wholesale Society.
 And numerous Dairy Farms, Milk Depots, Creameries
 and Dairies throughout the country.

Northern Ireland

Milk Division of the Ministry of Agriculture.
 The Ulster Agricultural Organisation Society.
 Several Dairy Farms, Creameries, and Dairies
 throughout the country.

Eire

The Irish Agricultural Organisation Society.
 Milk Division of the Ministry of Agriculture.
 The Dublin and District Milk Board.
 The Cork and District Milk Board.
 Several Co-operative Dairy and Agricultural Societies
 and Co-operative Creameries.

Denmark

The National Federation of Danish Dairy Associations.
Numerous Co-operative Dairies, Milk Recording Societies,
Artificial Insemination Centres and Dairy Farms.
The Central Co-operative Committee.
The Greater Copenhagen Municipal Milk Board and several
Dairies in Copenhagen.
The International People's College, Elsinore.

Sweden

The Swedish Dairies Association.
The Milk Central - Stockholm.
The Milk Central - Nykoping.
The Western Swedish Dairies Association - Goteborg.
The Wedholms Ltd.
Various Co-operative Dairies and Dairy Farms.
The Swedish Co-operative Union.

Norway

The Agricultural Marketing Board.
The National Federation of Norwegian Milk Producers.
The Milk Central - Oslo.
The Central Sales Organisation of Norwegian Dairies.

The Netherlands

The General Netherlands Dairy Union.
The Association of Co-operative Dairy Factories
in Friesland.
The Friesland Co-operative Dairy Export Company.

The Netherlands (Contd.)

The Co-operative Dairy Bank - Friesland.

Several Dairy Farms and Dairy Factories in Friesland.

'De Producent' - Gouda.

Several Cheese-making Farms in the Gouda district.

The State Dairy Industry Commission.

Several large Dairies in The Hague.

Switzerland

The Central Union of Milk Producers in Switzerland.

The Butter Central - Lucerne.

Laiterie agricole de Lausanne.

Laiteries Reunies de Genève.

Emmental Ltd. - Zollikofen.

Numerous Cheeseries, Co-operative Dairies and Dairy Farms.

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R E F E R E N C E S

- | | | | | |
|-----|---|--|---------|------|
| 1. | Newman | in Milk Production and Control
by Harvey and Hill. | 1946 | 8 |
| 2. | Wright | Development of Cattle and
Dairy Industries in India. | 1937 | 20 |
| 3. | Pepperall | The Dairy Industry of India. | 1945 | 7 |
| 4. | Linlithgow Committee: | Interim Report on
Milk and Milk Products. | 1923 | 12 |
| 5. | | Ibid | | 13 |
| 6. | Report of the Reorganisation Commission
for Milk. (H.M.S.O.) | | 1933 | 174 |
| 7. | | Ibid | 1933 | 174 |
| 8. | Linlithgow Committee: | Interim Report on
Milk and Milk Products. | 1923 | 26 |
| 9. | Report of Committee on Agricultural
Co-operation in Scotland. (H.M.S.D.) | | 1930 | 19 |
| 10. | T.G.Henderson: | Article in "Transaction of
Highland and Agricultural
Society of Scotland". | 1929 | 89 |
| 11. | Report of Committee on Agricultural Co-op-
eration in Scotland. (H.M.S.O.) | | 1930 | 17 |
| 12. | Journal of Ministry of Agriculture | Vol. XXXVII | 1930-31 | 1138 |
| 13. | | Ibid. | | |
| 14. | Milk Marketing Scheme: England & Wales | (H.M.S.O) | | |
| 15. | | Ibid. | | |
| 16. | Report of Reorganisation Commission for
Milk for Great Britain | | 1937 | 138 |
| 17. | The Scottish Milk Marketing Scheme. | (H.M.S.O.) | | |

18. Amendment in the Scottish Milk Marketing Scheme. S.R.& O. 1934, No.1437 & 1438.
19. Ibid.
20. Report of the Reorganisation Commission for Milk for Great Britain. 1937 192
21. Milk Marketing Board: Five years Review of Milk Marketing Schemes. 1938 43
22. Milk Marketing Board: Reports on Artificial Insemination Service. 1947
23. Lucas Committee: Report on Working of Agricultural Marketing Acts. (H.M.S.O) 1947 58
24. Foster The Home Farmer. Vol.14, No.12 1948 7
25. The Home Farmer. Vol.14. No.12 1948 7
26. Dairy Statistics: Denmark 1947
27. P. Manniche: Denmark a Social Laboratory. 1939 70
28. Swedish Dairies Association: Dairy Industry in Sweden. 1946 23
29. A. Fjelstad: Article in Year Book of Agricultural Co-operation. 1946 85
30. Ibid.
31. P.L. Yates: Food Production in Western Europe. 1940 161
32. Ibid: Quoted from L'Agriculture Romande. 351
33. Reports of Central Union of Milk Producers in Switzerland. 1947
34. Pepperall: The Dairy Industry of India. 1945 24
35. Report on the Marketing of Milk in India. 1943 61
36. Ibid. 216