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FROM

W. J. JENKINS, Esquire, M.A., B.Sc., C.I.E., I.A.S.,  
Director of Agriculture, Bombay Province, and  
Chairman, Expert Cattle Committee, Poona;

TO

THE SECRETARY TO THE GOVERNMENT  
OF BOMBAY.

REVENUE DEPARTMENT :

Poona, 15th July 1939.

*Subject.*—Expert Cattle Committee, appointed by the Government of Bombay under Government Resolution, Revenue Department, No. 8409/33; dated 14th April 1939.

Report of—

Sir,

I have the honour to refer to Government Resolution, Revenue Department, No. 8409/33, dated 14th April 1939, in which an Expert Cattle Committee was appointed by Government to give final shape to schemes under consideration for the improvement, as far as possible on co-operative lines, of the breeding of milch cattle in all parts of the Province. The Committee was instructed in its terms of reference to submit to Government complete and detailed proposals for starting such breeding work in at least five centres in the Province, one of which should be in Gujarat at Anand, one in the Karnatak, one in the Konkan and two in the up-ghat districts of the Central Division. The supply of milk and milk products to urban areas was also to be included in the schemes proposed. Subsequently Government also referred to the Committee for consideration (a) the prevention of slaughter of milch animals (reference Government Memorandum No. 8409-A/33, dated 25th May, 1939), (b) the skim milk powder industry (reference Government Endorsement No. 8409-A/33, dated 5th May, 1939)

and (c) the future development of the Gilligan Cattle Farm, Jalgaon (reference Government Memorandum No. 377-H/33, Revenue Department, dated 24th April, 1939).

2. I have the honour to submit herewith the Report of the Expert Committee for consideration by Government. The Report consists of eight Sections and a Financial Summary and six Appendices and eight Estimates. The particular attention of Government is invited to Section 3 of the Report which sets forth the Committee's detailed recommendations for the establishment of co-operative cattle breeding and milk production societies at selected centres in the districts, the group of societies at each centre being affiliated to a Co-operative Rural Creamery for the collection, processing and distribution of milk to urban consuming centres. The Committee was unanimous in the opinion that such an organization would be the only effective method of encouraging the breeding of milch cattle in the districts and in linking up such work with village milk production and urban milk supply. The areas in which the Committee recommend that such work should be started are (a) Anand, Gujarat, (b) Sophal, Konkan, (c) Belgaum, Karnatak, (d) Mhasavad, Khandesh, and (e) Pandharpur, Deccan. The conditions which the Committee consider necessary for the successful establishment of the co-operative organizations suggested by them are stated in para. 25 of the Report.

3. Section 6 of the Report contains the Committee's views and recommendations on the subject of the prevention of slaughter of milch cattle and Section 7, the skim milk powder industry. The Committee's proposals regarding the future development of the Gilligan Cattle Farm, Jalgaon, are set forth in para. 41 of Section 5 of the Report, which Section deals generally with the policy of Government regarding future assistance to both non-official and official cattle-breeding institutions in the Province. Section 4 contains the general recommendations of the Committee on the future policy of Government with regard to cattle-breeding, especially in connection with milch and "dual-purpose" breeds.

4. The Financial Summary attached to the Report is a consolidated statement of the financial implications to Government in the adoption of all or any of the Committee's recommendations and summarizes the estimates of expenditure contained in Estimates 1-8 attached, many of which must necessarily be approximate at this stage.

5. I have the honour to bring to the notice of Government, as Chairman of the Expert Committee, my appreciation of the valuable assistance and co-operation which were rendered by all members in the work of the Committee which covered a wide range of technical and, in some cases controversial, matters.

I have the honour to be,

Sir,

Your most obedient Servant,

(Sd.) W. J. JENKINS,

Director of Agriculture and  
Chairman, Expert Cattle Committee.

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**REPORT OF EXPERT CATTLE COMMITTEE**  
 appointed by the Government of Bombay (reference G.R., R.D.,  
 No. 8409/33, dated 14th April 1939) to give final shape to  
 schemes for cattle improvement in the Bombay Province.

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# REPORT OF EXPERT CATTLE COMMITTEE

## SECTION I—INTRODUCTORY

1. Under orders contained in Government Resolution, Revenue Department, No. 8409/33, dated 14th April 1939, Government appointed a small expert Committee to give final shape to schemes under consideration for the improvement, as far as possible on co-operative lines, of the breeding of milch cattle in all parts of the Province. The constitution of the Committee was as under :—

- (1) The Director of Agriculture, Chairman,
- (2) The Livestock Expert to Government,
- (3) Mr. K. V. Joshi, Deputy Director of Rural Development,
- (4) Mr. C. B. Huli, Assistant Registrar, Co-operative Societies, and Rural Development Officer, Dharwar,
- (5) Mr. Dinkar V. Pandya.

2. The Committee was instructed, in its terms of reference, to submit to Government complete and detailed proposals for starting such breeding work in at least five centres in the Province of which one should be in Gujarat at Anand, one in the Karnatak, one in the Kopkan and two in the up-ghat districts of the Central Division. The proposals were to include estimates of expenditure, both recurring and non-recurring, including capital investments. The supply of milk and milk products to urban areas should also find a place in the schemes proposed. Subsequently, under Government Memorandum No. 8409-A/33, dated 25th May 1939, the Committee was instructed to advise Government regarding prevention of slaughter of milch animals; under Government endorsement No. 8409-A/33, dated 5th May 1939, on the skim milk powder industry and under Government Memorandum No. 377-H/33, Revenue Department, dated 24th April 1939, on the future development of the Gilligan Cattle Farm, Jalgaon.

3. The Committee met on 9 occasions, viz. 14th May, 5th, 6th, 12th, 13th, 26th, 27th and 28th June and 12th July.

With the exception of Mr. D. V. Pandya, the members of the Committee did not tour in connection with the work of the Committee. Mr. Pandya visited several cattle breeding centres in the Province and, in addition, went to Lucknow, as a representative of the Committee, in order to investigate and report upon the Co-operative Milk Unions and their working in the United Provinces.

4. The Committee is much indebted to Mr. Z. R. Kothavalla, B.Ag., B.Sc., N.D.D., Imperial Dairy Expert, for attending the meeting held on the 28th June and for the valuable advice and assistance which he rendered to the work of the Committee on technical subjects connected with the dairy industry and in the preparation of estimates.

## SECTION 2—CATTLE BREEDS OF THE BOMBAY PROVINCE

5. According to the last Livestock Census taken in the Bombay Province (1934-35) there are almost 10 million cattle in the Province, including over 3 million working bullocks and 2,900,000 milch animals. Of the milch animal population, 1,800,000 are cows and 1,100,000 milch buffaloes. Obviously, therefore, the bullock is the most important draught animal in the Province but, with regard to milk production, the cow, although greatly exceeding the she-buffalo in numbers, has to take a very subsidiary place to the buffalo as a milk producer. Approximately 82 per cent. of the milk produced in the Province is buffalo milk and, in most areas, the cow is disregarded entirely as a source of milk supply, but is regarded solely as the producer of draught animal, i.e. bullocks, and of manure.

6. The cattle of the Province are on the whole not an economical proposition as over 80 per cent. can only be regarded as a drain on the country, being produced and maintained at a loss both to the breeder and the State. The reasons for this state of affairs may be summarized briefly as under :—

(1) The popularity of the buffalo as a milk producer which has resulted in the neglect of the cow which has gone down in milk production and which, as a result of careless and indifferent breeding, is late in maturity and irregular in calving. In most of the rural areas, the female buffalo is given all possible attention whereas the cow is neglected. The cow calf is neglected from birth, the male calf of the cow receiving all care as a potential draught animal. On the other hand, the female buffalo calf is well cared for and the male buffalo calf generally starved from birth. This degeneration of the cow is naturally having a serious effect on the degeneration of draught animals in the Province.

(2) The haphazard and uncontrolled system of village grazing by which large numbers of uneconomic cattle are maintained, including numbers of mongrel bulls which serve village cows and intensify the rate of deterioration of draught cattle and milch cow breeds.

(3) The excess of grazing in certain areas at certain periods of the year has also contributed to cattle deterioration as the cultivators and breeders in such areas have come to rely solely on such grazing for the maintenance of their stock, resulting in the animals being semi-starved for seven months of the year, i.e. when natural grazing is not available. It is most striking that, in areas where grazing is not available to any considerable extent, e.g. in Gujarat, Sholapur and Dharwar districts, the best cattle of the Province are to be found. This is due to such cattle being stall-fed or being taken long distances for grazing purposes to areas where grass is available for longer periods, e.g. along river banks and in low-lying areas.

7. The economic depression of the cultivator in recent years due to general and prolonged fall in prices of agricultural produce, the



growth in the establishment of "city milk stables" as opposed to milk production in rural areas for urban consumption and the replacement of the bullock by motor power for a large proportion of road transport are other factors which contribute to the deterioration of the cattle of the Province. It is only in areas where intensive breeding operations have been carried out by the Agricultural Department and other non-official agencies and where steps have been taken to remove some of the disabilities mentioned above, e.g. by the enforcement of the Bombay Cattle Improvement Act, that progress towards a higher standard of both milch and draught cattle can be noticed.

Brief notes on the main cattle breeds found in the Bombay Province are given below:—

## 8.

## A. Cow Breeds

*(a) Breeds capable of being used as Commercial Dairy Animals*

(1) *Kankrej Breed*.—This breed of cattle is well-known in Gujarat where it is bred fairly pure in the whole of Ahmedabad district, in parts of Kaira district and, to a lesser extent, in Broach and Surat districts. The breed is large in configuration and is well suited to fast draught work on sandy roads. It is also used for draught work on metalled roads in Gujarat where climatic conditions appear to be specially suitable for the breed. It was originally used, in certain parts of Gujarat, as both a draught and milch breed but, as a result of the work of the Livestock Section of the Agricultural Department, it has now been developed intensively for milk production. The local breeders have followed the example set by the Department at Chharodi Farm and, for economic reasons also, have taken to regular milking of their female stock. Thus, during the past 20 years, a type of Kankrej has been evolved which is capable of yielding, on an average, 2,000 lbs. of milk per lactation (approximately 270 days). Good specimens of Kankrej cows, which are at present scarce, have yielded up to 5,000 to 6,000 lbs. milk per lactation. The butter fat percentage varies from 4.7 to 5.4.

(2) *Gir Breed*.—This breed was originally bred in Kathiawar, but has been imported into all parts of the Bombay Province evidently to supply the lack of a milch breed in the Province. It has been bred to milk for many generations and has proved a good milker. It has the capacity of transmitting this quality to its progeny when mated to country stock. The Gir, in comparison with the Kankrej, is a docile animal. It is a fair draught animal, though slow, and is well suited to heavy draught work in cities—where it is mostly found—on account of its placid disposition and can be found in many towns in the Province. The Gir yields 2,000 to 2,500 lbs. milk per lactation, good milkers reaching 6,000 lbs. The butter fat percentage is similar to that of the Kankrej.

(3) *Red Sindhi*.—This breed is a good milch animal and is used all over India as a commercial dairy cow. It has also been largely

exported to other semi-tropical countries. In this Province, the Red Sindhi has not been used extensively for village cattle improvement as the breed is deficient in draught characters. The milch cows yield 2,500 lbs. milk per lactation and, in this Province yields up to about 5,000 lbs. have been obtained. The butter fat percentage is about 4.5.

(b) *Cow Breeds that are now essentially used as Draught Animals but which have potentialities as milk producers also, if scientifically bred with this object in view, i.e. potential "dual-purpose" Breeds*

(1) *Nimari Breed*.—The Nimari is essentially a hardy draught animal which thrives under very rigorous conditions and is capable of giving fair amounts of milk. From 6—8 lbs. milk per day have been recorded on farms under departmental control but there are indications that this yield could be considerably increased within a short period. The Nimari is known in the Bombay Province as the "Sonkheri".

(2) *Dangi Breed*.—This breed has been developed to suit the conditions which prevail in the hilly or ghat districts of the Province. Possibly, it is the only cow breed that will work under conditions of rice cultivation in heavy rainfall tracts and possesses a strong hoof and very fine tight coat of hair required for work under such climatic conditions. The breed, from its outward conformation, should make a good milker. It resembles the Nimari but is black and white in colour and hence is known as the "Kala Kheri".

(3) *Krishna Valley*.—The Krishna Valley breed is a very heavy draught breed which is used, almost exclusively, in the riveraine territory along the Krishna and Ghataprabha rivers. The breed is of very recent origin and is possibly the outcome of the introduction and crossing of the Gir and Nellore breeds in these tracts. On an average, the cows give from 6—8 lbs. milk daily, a few good specimens going as high as 14—16 lbs. It weighs about 1,200 to 1,800 lbs. in the male and 900 to 1,000 lbs. in the female and, consequently, is an expensive animal to maintain. In general, it is a lazy, sluggish, loosely built animal of limited use and is now going out of favour in its natural home on account of its large size and poor feet. This breed is not likely to be of much use in any other tracts of the Province.

(c) *Cow Breeds that are essentially Draught Breeds*

The following breeds only give a few pounds of milk daily and are generally milked by their owners when suckling a female calf but not when suckling a male calf, i.e. they are developed for the production of draught animals only :—

(1) *Khillar Breed*.—This breed is bred pure and of very high quality in Sholapur and Satara districts, in parts of Belgaum and Bijapur districts and in the adjoining Indian States of Aundh,

**Jath and Kolhapur.** It is essentially a quick, hardy draught animal, well suited to road work and is much hardier and larger than the Amrit Mahal to which it is very similar and, possibly, closely related. The Khillar is used extensively for draught purposes in the Deccan districts and in parts of Belgaum and Bijapur districts. It is also found to some extent in Ratnagiri district where the "Nakli Khillar" or cross-bred is produced. The Khillar is bred under very rigorous conditions and in tracts where there is little or no grazing and where other breeds of the Province could not live and thrive.

(2) *Amrit Mahal Breed.*—This breed has its origin in Mysore State. It is a quick draught animal which needs careful attention and feeding. It is used for draught purposes all over Dharwar district and parts of Belgaum, Bijapur and Kanara districts. The cows are milked when suckling a cow calf and yield 4—6 lbs. milk per day.

*N.B.*—The Khillar and the Amrit Mahal are noted for the tight sheath, fine tails, small dewlap and fine horns. All these characters are essential to quick, fast draught. If milked continuously, the sheath and dewlap enlarge, and the tail and horns become coarse. Thus these essential draught qualities are lost if these breeds are milked extensively.

(3) *Malvi Breed.*—The Malvi bullock is used extensively for draught purposes in the Province. Bullocks are brought into the Province by professional dealers from Central India who sell them to the cultivators on easy terms. There are two types of Malvi, one, a large animal, as big if not bigger than the Kankej, which are bred near Jasalmer in Rajputana and the other, a small or medium sized type, bred in Central India. The cows of both types are poor milkers. The prevailing colour of both types is grey with fore and hind-quarters almost black.

9.

## B. Buffalo Breeds

### (a) *Buffalo Breeds capable of being used as Commercial Dairy Animals*

(1) *Soorti or Gujarati.*—The Soorti or Gujarati buffalo is highly domesticated and is practically totally stall-fed. It is bred by the cultivator of Gujarat who takes his buffalo to his fields and there it is tethered on the head lands for grazing. It is attended to by the females of the household. In each cultivator's house will be found an earthen pot continuously simmering on a slow fire in which the daily concentrates are partially cooked. The Soorti is a very docile animal; its average milk yield may be taken roughly as 3,500 lbs. per lactation. It is available all over Gujarat, the best specimens coming from Charotar. During the year 1937-38, the milk yield of 66 Soorti buffaloes was recorded and it was found that 45 buffaloes yielded milk over 3,500 lbs. The highest milk yield in 10 months was 5,860 lbs. There is a great danger of this very fine breed being spoilt by the return of Murrah, Jaffarabadi and other breeds of buffaloes from Bombay stables to

Gujarat. In Ahmedabad district, there is a large influx of the Sindhi Murrah and the Malvi buffalo. The Rabari in particular is taking to keeping these breeds, his contention being that these outside breeds are in milk when the Soorti milk is getting short. The males of the Soorti are poor workers.

(b) *Buffalo Breeds capable of being used as Commercial Dairy Animals but which also produce fairly good Draught Animals.*

(1) *The Pandharpuri.*—This breed has been bred in the Bombay Province by professional gowlis who have settled near large villages and towns in the Central Deccan and the Karnatak.

The Pandharpuri, unlike the Gujarati or Soorti, is essentially a forager. It is taken miles daily for grazing and exercise. It consumes the roughest of forage and thrives on it. The Pandharpuri is very highly and systematically bred. It is the only animal that is weaned. It will milk without the presence of the calf.

The males are good draught animals and are extensively used in the Konkan districts. The average yield of the Pandharpuri is about 3,000 lbs. of milk per lactation.

During the year 1937-38, 111 Pandharpuri buffaloes were tested for milk and it was found that 60 buffaloes yielded more than 3,000 lbs. milk in a lactation\*. The highest milk yield was 6,738 lbs. It is an ideal animal where grazing is resorted to, as in the Central Deccan and in the Karnatak where all classes of breeders depend a good deal on grazing to maintain their stock. Very pure specimens of the breed are to be found in the Pandharpur taluka and Kasegaon village of Sholapur district. In Bijapur and Bagalkot of Bijapur district and at Hubli and Ranibennur of Dharwar district, really good specimens of the breed are not obtainable for Rs. 300 and Rs. 400 each, as the breeders are loath to part with really good stock. The breed is also very docile. The males are inclined to be more spirited.

There are many other breeds of buffaloes, not indigenous to the Province, but which are brought in by dealers. These, like cows of outside breeds, have left very little impressions on the indigenous stock, except perhaps in Ahmedabad district.

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\* Lactation period is approximately 270 days.

**SECTION 3—SCHEME FOR THE ESTABLISHMENT OF CO-OPERATIVE ORGANIZATIONS FOR CATTLE BREEDING AND MILK PRODUCTION IN THE BOMBAY PROVINCE**

10. The Committee considered in detail the scheme already submitted to Government for the improvement of milch cattle and for the development of milk production in the Province. These schemes included the scheme for the establishment of "Supplementary breeding centres" prepared by the Livestock Expert to Government and submitted to Government under letter No. S. 118, dated 15th March, 1938, from the Director of Agriculture and Mr. D. V. Pandya's scheme for co-operative cattle breeding and milk production which was referred to the Director of Agriculture for opinion under Government Memorandum No. 5383-A/33, dated 7th February, 1939, Revenue Department. The Committee also had before them a draft scheme prepared by the Director of Agriculture with the object of amalgamating the two schemes mentioned above. In addition, all the members of the Committee furnished notes on this subject as a basis for discussion.

11. The Committee undertook the examination of this subject under three main heads which are given below :—

*A*—Cattle improvement and milk production in village.

*B*—Milk collection and processing.

*C*—Transport of milk and milk products to consuming areas and distribution.

The findings of the Committee under each of the above-noted main heads are given below :—

*A.—Cattle Improvement and Milk Production in the Village.*

12. The Committee is of the opinion that steps should be taken to organise a group of Co-operative Cattle Breeding and Milk Production Societies in suitable tracts in the Province. Such co-operative societies should be based upon a single village as unit and each group should consist of not less than five villages within a radius of not more than 10 miles from a central collecting centre (reference para. 18 below). To begin with, each such group of villages selected should be capable of producing a minimum of 3,000 lbs. milk daily with potentialities for increasing this quantity to 6,000 lbs. daily. As roads and transport facilities improve and specialized draught breeds become less important, the radius in which milk can be produced and collected should be extended.

13. The work of these village societies will consist of—

(a) breeding of improved milch cattle,

(b) production of milk on a co-operative basis,

(c) cultivation of suitable fodders and their conservation as silage etc., and management of grasslands and grazing areas.

14. With regard to (a) above, each group of five or more villages will be supplied by Government with—

100 milch cows of the breed selected as suitable for the tract (reference para. 23 below) and

5 breeding bulls,

This supply should be completed within as short a period as possible depending upon (a) the availability of suitable animals of the breeds required and (b) the allocation of funds by Government for the purchase of the stock. The purchase should be spread over the year to avoid all animals becoming dry at the same period.

*N.B.*—With regard to the Gir breed of cattle, it will be necessary to obtain permission to purchase and export suitable stock from the Kathiawar States as the supply of suitable animals in the Province is very limited.

[Reference Estimate (1) attached]

Thus each village, included in a group of "Co-operative Cattle Breeding and Milk Production Societies" will receive 20 milch cows and one breeding bull which will form the nucleus of what is termed hereafter the "Society's Herd".

*N.B.*—No other breeding bull will be allowed in the village to which the provisions of the Bombay Cattle Improvement Act (1933) should be applied. If the total number of cows in the village exceeds 50, additional breeding bulls of the type required will be supplied by the Livestock Expert to Government.

The "Society Herd" of 20 milch cows per village will be supplied through the Village Society to reputable cultivators in the village who are members of the Society, and who are prepared to look after the animal properly and observe the bye-laws of the Society.

*N.B.*—The number of milch cows which it is suggested should be supplied by Government to each village "Co-operative Cattle Breeding and Milk Production Society" i.e. 20, is taken only as a unit and may be increased in accordance with the funds which Government may desire to make available for this purpose. The amounts will ultimately be recovered by Government through the Societies.

The supply will be made on one or other of the following conditions:—

(1) On payment to the Society of the cost price of the cow delivered at the village or

(2) On payment to the Society of the cost price of the cow by instalments, free of interest, spread over a period of 3—5 years according to the economic position of the recipient.

The members of the Society who obtain milch cows from the Society under conditions (1) and (2) above, must agree not to dispose of the female progeny obtained outside the village without obtaining the previous consent of the Managing Committee of the Society and to give the Society the option of purchasing any such female progeny at current market rates. In the case of members who are provided with milch cows on the instalment system, until the full price has been recovered, all progeny sold must be sold through the Society and 50 per cent. of the sale price obtained would be retained by the Society against the amount due for the milch animal supplied. The cows taken under condition (2) will remain the property of the Village Society until all instalments of the purchase price have been paid.

Male progeny of cows of the "Society Herd" will be the property of the cultivators to whom the cows have been handed over by the Society but the Society will retain the right to purchase any of these male progeny from 1 to 3 years before which they must not be castrated or disposed of elsewhere without the permission of the Society.

The breeding bull or bulls supplied to each Village Society by Government will remain the property of the Society and will be entrusted to a reputable cultivator for maintenance who will be paid a monthly allowance of Rs. 7 to 12 by the Society on this account.

The Managing Committee of the Village Society will arrange for the maintenance of service records in the "Society Herd" and for the correct marking of the animals and their progeny in accordance with the system prescribed by the Livestock Expert to Government.

The "Society Herd" will, in all cases, consist of cows only, i.e. excluding buffaloes.

15. With regard to (b) above, i.e. production of milk on a co-operative basis by Village Co-operative Cattle Breeding and Milk Production Societies, the "Society Herd" plus approved milk animals, including buffaloes, belonging to members of the Society, will form the "Milk Herd" of the Village Society.

In each village where a Co-operative Cattle Breeding and Milk Production Society is established, a central milking site will be arranged for by the Managing Committee of the Society to which the "Milk Herd" of the Society will be brought by their owners for milking twice daily. Cows' milk will be kept and recorded separately from buffalo milk. *All members of the Village Society must bind themselves to deliver all the milk and milk products produced by their animals, less their own domestic requirements to the Society at the milking site twice daily.* Here the milk of each animal will be weighed and a receipt for the amount handed over to each individual owner. The Society will take over the milk of each animal in the "Milk Herd" to the nearest complete seer, the balance being retained by the owner for domestic consumption. The milk produced by the "Milk Herd" of the Village Society will be despatched twice daily by the Society staff to the "central collecting centre" (reference para. 18 below) or collected by the "central collecting centre" staff. The payments for milk supplied by members will be made to members weekly by the Society, less the Society's commission for working expenses, etc. Advances may be made by the Society to its members against the proceeds of milk sales which may be due to them.

16. The above paragraphs indicate very briefly the objects for which the Committee suggest the establishment of groups of Co-operative Cattle Breeding and Milk Production Societies in selected tracts and the general functions which such Societies will perform. In addition, the Committee suggest that the Societies should arrange for the co-operative purchase of concentrated and feeding stuffs which would be available to members at the lowest possible prices. Such feeds of concentrates etc., could be given to members' animals, on an optional basis, at the times of milking, the cost thereof being deducted from the member's weekly bill for payment on account of milk delivered by him to the Society.

A copy of model bye-laws for such Village Co-operative Cattle Breeding and Milk Production Societies, prepared by Mr. C. B. Huli and approved by the Committee, is attached (Appendix A).

*B.—Milk Collection and Processing.*

17. The Committee is convinced that the future development of milk production in villages, especially cows' milk, is primarily dependent upon adequate organization for the collection of an adequate supply of milk at a central collecting, processing and distributing station, prior to marketing to consumers. This is particularly true in areas where the individual supply of milk from producers to consumers is difficult, i.e., at distances from urban centres and in rural areas. To begin with, such central stations may merely be collecting and distributing organizations dealing with fresh milk only but it is obvious that the ultimate development must be in the direction of rural "creameries" where milk can be processed, i.e., cooled and/or pasteurized for subsequent distribution in urban areas and where surplus supplies of milk from the producing centres can be manufactured into milk products, e.g. butter, ghee, skim milk powder, etc.

18. Accordingly the Committee recommend that, wherever a group of village Co-operative Cattle Breeding and Milk Production Societies is established, such societies should be affiliated to a central co-operative agency for the collection, processing (if and when necessary) and distribution of the milk supplied by these unit societies. In other words, "Co-operative Rural Creameries" should be organized in conjunction with groups of Village Co-operative Cattle Breeding and Milk Production Societies which may be established throughout the districts. The estimated cost of the establishment of a "Co-operative Rural Creamery" to deal with 6,000 to 12,000 lbs. milk daily is Rs. 60,000 capital expenditure (non-recurring) and Rs. 22,500 per annum recurring expenditure [reference estimate (2) attached], and the Committee is of the opinion that Government should undertake the financing of such institutions by loans (free of interest) in selected tracts where conditions are favourable for the organization of an adequate number of supplementary Village Cattle Breeding and Milk Production Societies. The Committee desires to emphasize that, in their opinion, the organization suggested above, i.e. a central "Co-operative Rural Creamery" supported by a number of primary village "Co-operative Cattle Breeding and Milk Production Societies is the only practical method whereby village milk production can be linked up with urban milk consumption with profit to both producers and consumers, the former in the shape of increased returns for their milk produce and the latter in an enhanced supply of pure milk and milk products at a reasonable rate. The same organization is the best method of encouraging the breeding of milch cattle by cultivators under village conditions. This opinion is supported fully by the experience in other countries in the satisfactory development of city milk supplies from rural areas. The Committee desire to recommend further that the "Co-operative Rural Creameries", when established, should be utilized as the main agencies for the



extension of better milch cattle (cows) in the districts and that each institution of this type should be given a recoverable grant, not exceeding Rs. 10,000 per annum, by Government in order to make advances to approved members of constituent village "Co-operative Cattle Breeding and Milk Production Societies" for the purchase of additional milch cows on the conditions laid down in para. 14 above. Each "Co-operative Rural Creamery" should undertake the organization of an annual cattle show at which good milch cows could be bought and sold under the guidance of the Creamery management. It should also organize periodic "Dairy Days" when the full working of the institution would be demonstrated to cultivators and cattle-breeders, improved methods of the manufacture of milk products, e.g. butter, ghee, etc. demonstrated and propaganda carried out for better village milk production.

To begin with, the Committee is of the opinion that it may be necessary for Government to undertake the establishment of these "Rural Creameries" in selected areas and to run them for two or three years until they can be handed over to the proposed "Co-operative Rural Creamery" organization. Pending the formation of such co-operative organization, Government might lease the "Rural Creameries" on short term leases to private firms or individuals but the ultimate object must always be the establishment of such institutions on a co-operative basis, each supported by its supplementary group of village "Co-operative Cattle Breeding and Milk Production Societies" (reference paras. 12-18 above). Government should continue, however, to assist the "Creameries" by technical advice in management, etc., and in the work of education, demonstration and propaganda.

A copy of model bye-laws for a "Co-operative Rural Creamery" prepared by Mr. C. B. Huli and approved by the Committee, is attached (Appendix B).

#### *C.—Distribution of Milk and Milk Products in Consuming Areas*

19. In view of the reference to the Committee that the supply of milk and milk products to urban centres from village producing areas should find a place in any scheme suggested, the Committee investigated thoroughly the practical methods of milk distribution from the central collecting organizations, suggested in para. 18 above, to urban consuming centres.

To begin with, the Committee interviewed Mr. G. Azrilenko who has undertaken the work of milk processing and transport in Bombay Province on a commercial basis. Mr. Azrilenko has the rights over a patented process for cooling milk and for transporting it in cooled cabinets for considerable distances and over long periods of time. A copy of Mr. Azrilenko's letter in which he has stated the terms upon which he is prepared to undertake such work in connection with schemes for the co-operative production of milk in villages is attached (reference Appendix C). In short, he offers to take over milk at a collecting centre, e.g. Anand, to

process it and transport it to a consuming centre, e.g., Bombay and to keep it in cold storage for a period of twenty-four hours at a flat rate of Rs. 1/8 per maund, excluding the railway freight rates. The only alternative method which the Committee consider to be feasible is that the central collecting organization, i.e. "Co-operative Rural Creamery" should install the necessary pasteurizing, cooling and homogenizing plant on its own premises and, after processing, transport the milk to the urban consuming centres in insulated railway wagons. The Committee consider that the co-operation of the railways concerned in the provision of insulated wagons—not necessarily refrigerated wagons—for milk transport from the collecting centres to the consuming centres should be secured by Government. The Committee agree that the actual distribution, including retailing, of the milk in urban consuming centres might most suitably be entrusted to agents who would take over the milk on arrival in the city from the "Co-operative Rural Creamery" and arrange for its distribution to consumers.

20. The Committee has considered very carefully the two alternative methods mentioned above, i.e. (a) the Azrilenko process and (b) the pasteurizing and cooling process, carried out at the collecting centre, i.e. the "Co-operative Rural Creamery" and discussed both these systems of disposal with the Imperial Dairy Expert. The final decision arrived at is that the second alternative is much to be preferred although it implies higher initial expenditure in the setting up of the necessary pasteurizing and cooling plants at each collecting centre. The comparative costs of the two methods are 3.5 pies per lb. of milk treated by the Azrilenko process and about 1.5 pies per lb. by the pasteurizing process. In addition, the pasteurizing of the milk reduces to an absolute minimum any risk of the introduction of disease into urban consuming centres through pathogenic bacteria in the milk which is always possible in any system such as the Azrilenko process, where such bacteria, if present, are not destroyed in processing. The Committee consider this advantage of the pasteurizing method to be of primary importance, especially in dealing with milk produced under village conditions. The Committee accordingly recommend the adoption of the pasteurizing process to be carried out on the premises of the "Co-operative Rural Creamery" before the milk is despatched to the urban consuming centres. Mr. Pandya is of the opinion that there is no need for pasteurizing the milk at the collecting centres but that it should only be cooled and kept at a temperature of 40°-42° and pasteurized on arrival in the city.

21. The Committee also recommend that Government should take steps to ensure that all Government institutions, e.g. hospitals, jails, schools, etc., should give preference in obtaining their milk requirements to milk produced under the co-operative organization suggested in paras. 12-18 above, and to cows' milk, and, if found necessary in the initial stages, subsidize such institutions to the extent of the difference of price between such milk and the locally produced product of good quality.

22. In addition, the Committee is of the opinion that Government should assist the organization proposed in this section of the Report by the following means:—

(a) the provision of a supervisor (Graduate) for each group of village "Co-operative Cattle Breeding and Milk Production Societies" centred round a "Co-operative Rural Creamery", for a period of three years, after which time, such work should be arranged for by the "Co-operative Rural Creamery" from its own resources;

(b) the granting of free land in villages for the establishment of "milking sites" (reference para. 15);

(c) the provision of a sum of Rs. 3,000 annually as a loan, free of interest, to each "Co-operative Rural Creamery" to be utilized by the Managing Committee of each Creamery in giving assistance to their constituent village societies in the development of sanitary milk production.

The Committee also recommend that Government should provide a "Dairy Development Officer" in the Rural Development Department in the grade of an Assistant Registrar, Co-operative Societies; i.e. Class II Bombay Agricultural Service, to supervise and direct the working of the scheme at all centres in the Province where the organization proposed in this Section of the Report is established. The necessary technical advice regarding cattle breeding, etc., will normally be given by the Livestock Expert to Government and his staff.

[Reference Estimate (3) attached.]

23. The Committee considered the question of suitable tracts in the Province for the establishment of "Co-operative Rural Creameries" (reference para. 18 above) and groups of subsidiary village "Co-operative Cattle Breeding and Milk Production Societies" together with the cow breeds which could be recommended for establishment at such centres.

The Committee recommend, to begin with, the under-noted areas:—

(1) *Anand, district Kaira, Gujarat—*

Cow breed ... Kankrej.

*N.B.*—It is suggested that the Government of India might be approached with the request that the existing buildings—or part of them—of the Government Creamery, Anand, might be made available for the purpose of the "Co-operative Rural Creamery" at this centre.

Milk markets ... Ahmedabad and Bombay and intervening towns on the B.B. & C.I. Railway.

(2) *Dharwar, district Dharwar, Karnatak—*

Cow breed ... Gir.

Milk markets ... Dharwar and Hubli, Belgaum.

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### ESTIMATE 7.

Expenditure involved in supply by Government of qualified Manager to be in charge of the combined Gilligan and Gangapur Cattle Farms for the development of the Nimar breed of cattle.

*(Reference paragraph 41 of the Report.)*

It is suggested that an experienced Agricultural Overseer, trained in cattle-breeding and Management, should be deputed to this appointment for a period of five years.

The additional expenditure required would, therefore, be the replacement of the experienced officer mentioned above by a new recruit in the grade of Rs. 60-60-70—5—100 and the cost thereof, over a five year period, would amount to Rs. 4,140.

### ESTIMATE 8.

Expenditure involved in the deputation of an officer from the Bombay Province abroad for training on the technique of the manufacture of skim milk powder.

*(Reference paragraph 53 of the Report.)*

This estimate can only be very approximate until the class of officer to be deputed, the country to which he should be sent and the cost of fees, etc. for training are definitely ascertained. Assuming that a senior Agricultural Overseer (Graduate) is sent, the approximate costs would be as under to (a) United States of America, (b) New Zealand for a period of six months:—

	United States of America.	New Zealand.
	Rs.	Rs.
(a) Fares ... ..	2,400	1,200
(b) Deputation allowance ... ..	2,400	2,400
(c) Miscellaneous, including fees, etc. ...	2,000	2,000
Total ...	5,800.	5,600

25. The Committee consider that the under-noted conditions are essential to the successful establishment of the organization of a "Co-operative Rural Creamery" with supplementary village "Co-operative Cattle Breeding and Milk Production Societies" and recommend that particular attention should be given by the officer deputed to make a detailed survey of possible areas to these points—

(a) The price at which milk is available at present in the rural areas selected should be at least 25% less than the present price of milk in the urban consuming centres which such rural areas would be required to serve under the scheme.

(b) The total milk production of the group of villages selected for the organization of "Co-operative Cattle Breeding and Milk Production Societies" should not be less than 3,000 lbs. daily in order to enable the central "Co-operative Rural Creamery" to work economically and satisfactorily. There should also be a reasonable possibility of increasing the total production of milk from the village group to 6,000 lbs. daily within a period of three years by the addition of milch animals to the existing village herds and/or by the inclusion of other nearby villages within the co-operative group.

(c) The villages selected should have adequate grazing lands for their cattle or should be situated in areas where grazing facilities can be amplified with Government assistance. They should also have facilities for growing green fodder throughout the year and/or be in a position to prepare and stock a sufficient supply of silage to last six months with an adequate stock of dry fodder. Preference should be given to villages which have some source of artificial irrigation, if possible.

(d) In the areas selected, the villages chosen for the organization of "Co-operative Cattle Breeding and Milk Production Societies" should not be situated at more than two hours' journey from the site of the "Co-operative Rural Creamery" by whatever method of transport is available, e.g. head-load; cycle, tonga, motor-bus or train. The communications between the villages and the central collecting site must be such as will permit milk to be transported at all seasons irrespective of seasonal, climatic and environmental conditions, e.g. monsoon rains, intervening rivers, floods, etc., under normal conditions.

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**SECTION 4—GENERAL RECOMMENDATIONS WITH REGARD TO FUTURE POLICY OF GOVERNMENT IN CATTLE BREEDING.**

26. The Committee are of the opinion that it is essential for Government, under existing conditions, to encourage the better breeding and care of (a) the milch cow, (b) the buffalo and (c) the various breeds of draught cattle, indigenous to, or bred in, the Province. Each of these main types of cattle has its own place in the economy of the country-side, their relative importance depending largely upon the environmental conditions and the type of agriculture practised by the cultivators.

27. The Committee considered the general policy with regard to the encouragement of cattle breeding in the Bombay Province and recommend to Government that, in future, Government should devote all its energy and resources to the improvement of the milking capacity of cows by (a) the introduction, where possible, of good milch breeds of cattle, such as the Gir and Kankrej, (b) more systematic breeding of such breeds as the Nimar and Dangri to milk and (c) affording encouragement and facilities for the crossing of village cattle by bulls of such milch breeds as have been evolved and which will thrive in specific tracts of the Province. However, the Committee desire to point out that, in areas like the Konkan, where dual-purpose cows are not found in any great numbers, due to unsuitable environmental conditions, buffaloes, which give a good amount of milk and the progeny of which form an important portion of draught animals, should be regarded as dual-purpose animals and should receive similar encouragement from Government to the dual-purpose cows in other areas until a dual-purpose cow is found to replace them. The Committee are also of the opinion that single-purpose cows like the Khillar and the Amrit Mahal should be accorded the attention which Government gives them at present having always the ultimate object of gradually replacing them by dual-purpose animals.

28. The milch cow, as has already been stated in other parts of the report, has, in general, been totally neglected as a source of milk supply. The buffalo, due to her higher milk and butter fat producing capacity, has out-rivalled the cow and, under existing conditions, the cow cannot possibly altogether replace the buffalo as the main milk producer of the country for many years to come. Under such circumstances, buffalo milk will have to be handled by co-operative organizations for city milk supply and rural ghee-making till such time as the buffalo can be gradually replaced by the cow as the latter increases in numbers and in individual milk production. However, as fluid cows' milk is in many ways preferable to buffalo milk for human consumption, the Committee are agreed that, in view of the paramount importance of developing "dual-purpose" animals for use in the villages, i.e. animals which will not only give good draught livestock for cultivation purposes but which will add to the cultivators' and their families' food supply by producing even small quantities of milk for human consumption,

all the assistance given by Government to cattle breeding in the Province should be diverted to the cow—as opposed to the buffalo—in all areas of the Province, except in the Konkan, where the buffalo is the main source of milk and an important source of draught animals and, particularly, to the development of, what is popularly termed, the “dual-purpose” breeds.

29. The *buffalo* is the butter fat producer of the Province and, in some tracts of heavy rainfall, e.g. the Konkan, it is also utilized largely for cultivation purposes. In areas at some distance from fluid milk markets, milk must be converted into products, e.g. ghee, butter, etc., which can be manufactured easily and economically and transported long distances without danger of deterioration. In such areas steps require to be taken to educate the milk producer in the more economical production of milk products by the general use of the mechanical separator.

30. The Committee consider that Government should give every encouragement to the starting of co-operative ghee manufacturing societies in areas where conditions are at present unfavourable for the establishment of the organization suggested in Section 3 of the Report, i.e. Co-operative Rural Creameries and Village Co-operative Cattle Breeding and Milk Production Societies. Such areas are to be found in the Konkan and in rural tracts remote from urban milk consuming centres. The Committee recommend that an annual sum of Rs. 3,000 should be placed at the disposal of the Rural Development Department for advancing long-term loans, free of interest, to such co-operative ghee societies for the purchase and installation of equipment, i.e. separators and ghee-boilers, in order to encourage the adoption and spread of improved methods of the manufacture of ghee and other milk products on a co-operative basis.

[Reference Estimate (4) attached.]

In the case of co-operative societies for ghee production which receive assistance from Government, such assistance should be contingent upon the introduction of cows into the herds of the societies with the object of increasing gradually the percentage of cows' milk utilized. No Government assistance should be given to such Societies for purchase of additional buffaloes.

31. The Committee desire to stress the great importance of better grazing and fodder provision in connection with any work undertaken to improve the milch cattle of the Province. Accordingly the Committee has recommended concessionary treatment in the provision of grazing lands to village “Co-operative Cattle Breeding and Milk Production Societies” (reference para. 12) and to non-official institutions devoted to cattle breeding (reference para. 39). The Committee, however, emphasize that such concessions should be dependent upon the recipients of the concession being prepared to undertake the storage of grass as hay and/or silage as an essential condition as otherwise such concessions are likely to do more harm than good to the cause of better cattle breeding.

32. *Draught Cattle Breeds* do not require as much attention and careful feeding as cattle for milk production. The main objects in the improvement of such breeds are earlier maturity, more regular calving and, as a result, more economic production. Here also, storage of fodder against seasonal shortage is essential. The Committee recommend that the proposals submitted to Government for the development of the draught cattle breeds, i.e. Dangi, Amrit Mahal and Nimar, as contained in the schemes for the reconstruction of the Tegur and Bankapur Cattle Farms, should be accepted by Government and put into force as soon as possible, special attention being devoted to the development of milk in the Dangi and Nimar breeds.

33. The Committee considered the working of the existing scheme for the supply of superior male stock in villages for grading up village cattle, i.e. the "Premium Bull Scheme" and recommend its expansion. At present, Government provides a sum of Rs. 10,000 annually for the working of the "Premium Bull Scheme" under the Livestock Expert to Government. The Committee recommend that this annual grant should be increased by Rs. 5,000 which amount should be solely utilized for the spread of male breeding stock of "dual-purpose" breeds of cattle in suitable areas in addition to the amount already being spent on this purpose from the present grant. It is also recommended that, for such breeds, the monthly "premium" under the "Premium Bull Scheme" should be increased from Rs. 7 to Rs. 12 in view of the greater expense involved in the maintenance of bulls of milch cattle breeds.

[Reference Estimate (4) attached.]

34. In view of the potential importance in the development of the Nimar and Dangi breeds as "dual-purpose" breeds over large areas of the Bombay Province and as such development must be preceded by scientific work towards the introduction of more milk in these breeds, the Committee recommend to Government the establishment of adequate breeding herds of these two cattle breeds under the Livestock Expert to Government for (a) scientific work on the encouragement of milk production within these breeds and (b) the production of male and female stock of milking strains for subsequent distribution in the districts. The Committee are informed that the Military Stud Farm at Ahmednagar is being relinquished by the Remount Department and consider that this site would be ideal for the purpose laid down in this recommendation.

[Reference Estimate (4) attached.]

35. The Committee desire to point out most emphatically that all efforts on the part of Government to develop a dairying industry in rural areas for urban milk and milk products supply will be greatly handicapped and stultified unless simultaneous action is taken to control the production and distribution of milk within city limits. On the subject of the production of milk in cities, the



Committee has given its views in paras. 45 and 49 of this Report. With regard to distribution, the Committee is of the opinion that much stricter enforcement of existing legislation and of municipal regulations is essential in order to eliminate the unfair competition based upon malpractices such as watering, adulteration, etc., which prevents pure milk produced under rival conditions from competing on a fair basis with city-produced milk. The Committee consider that action could most suitably be taken on the under-noted lines:—

(a) revision of existing regulations and bye-laws governing the distribution of milk in cities in order to check adulteration and penalize malpractices;

(b) increase in the number of qualified milk inspectors in city areas. The Committee suggest that, in large cities, a separate staff should be engaged for this purpose and that the additional cost might be met, in part at least, by a graded licence fee on milk producers and milk shops in city limits;

(c) considerable increase in the penalties for milk adulteration;

(d) abolition of the present system of "licenced milk hawkers" in order that the actual milk producers and distributors could be made directly responsible for adulteration and malpractices.

This subject, however, is one of great complexity and extent and, in the opinion of the Committee, should receive careful examination by a special Committee which should be appointed by Government to investigate and report upon the existing conditions of city milk supply in the Province.

**SECTION 5—OFFICIAL AND NON-OFFICIAL INSTITUTIONS  
ENGAGED IN CATTLE BREEDING IN THE BOMBAY PROVINCE.**

36. Cattle breeding work is being carried on at the under-noted Government institutions in the Province :—

- (1) Chharodi (Northcote Cattle Farm) with the Kankrej breed.
- (2) Bankapur Cattle Breeding Farm with the Amrit Mahal breed.
- (3) Agricultural College Dairy, Poona, with the Sindhi cow and Soorti buffalo breeds.

(1) The Chharodi (Northcote) Cattle Farm is to be amalgamated with the Gujarat Agricultural Institute, Anand, when that institution is established. At present, the pure-bred cow herd at Chharodi numbers 120 cows and the Committee recommend that the herd should be increased to 240 cows so as to enable 40 breeding bulls and 20 cows to be liberated for distribution in the districts annually.

(2) The Bankapur Cattle Farm has at present the under-noted stock of pure-bred Amrit Mahal Cattle :—

Cows	...	36
Heifers	...	29
Bulls	...	3
Young bulls	...	19
Calves	...	29
Bullocks	...	8

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Proposals have been submitted to Government under the Director of Agriculture's letter No. 627, dated 8th May 1939, for the dispersal of the bulk of this herd in the neighbouring Karnatak districts and for the establishment at the Farm of nucleus breeding herds, not exceeding 60 animals, excluding suckling calves of (a) Amrit Mahal and (b) Gir in order to provide a centre for the production of foundation pure-bred stock of these two breeds in the Southern Division.

(3) The Agricultural College Dairy, Poona, will be utilised in future for the production and distribution of male Soorti buffalo calves in accordance with the scheme sanctioned by Government in Government Memorandum, Revenue Department, No. 708-A/39, dated 29th May 1939, until the complete buffalo herd is dispersed as suggested in the following paragraph.

In addition, in view of the need for increasing sources of supply of pure-bred Gir cattle of good milking strains, for distribution in the districts under the scheme detailed in Section 3 of this Report,

the Committee agree that steps should be taken gradually to replace the present Sindhi and Soorti buffalo herds at the Agricultural College Dairy by high-milking Gir cattle.

[Reference Estimate (5) attached.]

37. Tegur Farm, in the Southern Division, has hitherto been utilised solely for the grading-up of local cattle by the use of good Amrit Mahal bulls. Proposals have been submitted to Government for the dispersal of the present scrub stock at the Farm and the establishment of small breeding herds (20 cows and 2 bulls of each breed, to begin with) of (a) Dangi and (b) Nimar breeds.

*N.B.*—Such provision is absolutely essential in the case of the Dangi breed as there is at present no cattle breeding institution, official or non-official, devoted to this breed. In addition, special attention will be devoted at the re-constituted Tegur Farm to the development of both these breeds as "dual-purpose" breeds for which they appear to be well suited.

The proposals mentioned above are contained in detail in the Director of Agriculture's letter No. 627, dated 3rd June 1939, addressed to Government.

The Committee is of the opinion that similar work should be undertaken in the Deccan tracts for the development of the Dangi and Nimar cattle breeds as "dual-purpose" breeds and that such work might suitably be combined with a "Mixed Farming" research station, where the technique and economics of suitable mixed farming systems could be investigated.

38. With regard to the Khillar breed, no official or non-official institution for breeding work and the production of pure-bred stock exists, but the intensive breeding areas, organized by the Livestock Expert to Government in the Deccan tracts, largely deal with this breed and form an adequate source for the supply of pure-bred animals for breeding purposes.

39. The main non-official institutions carrying on cattle breeding work in the Province, together with the cattle breeds with which they are dealing, are given below :—

- (a) *Bombay Gowrakshak Mandali*—  
Breed ... Gir.
- (b) *Harijan Ashram, Sabarmati*—  
Breed ... Kankrej.  
Gir.
- (c) *Shri Gowshala, Dhulia*—  
Breed ... Kankrej.
- (d) *Ahmedabad Panjrapole, Ahmedabad*—  
Breed ... Kankrej.
- (e) *Nathu Laljee Gowshala, Mulund*—  
Breed ... Gir.
- (f) *Dombiwali Gowshala*—  
Breed ... Gir.
- (g) *Gilligan Cattle Farm, Jalgaon*—  
Breed ... Nimar.
- (h) *Gangapuri Cattle Farm, Jamner*—  
Breed ... Nimar.

Certain of these institutions are at present assisted by Government (a) by grant of annual subsidy in money and (b) by concessions in grants of pasture and grazing land. A statement giving details of such Government assistance is appended.

(Reference Appendix D.)

40. The Committee is of the opinion that, in order to encourage all such institutions to develop their herds and to liberate a greater number of pure-bred animals for use in the districts, the financial assistance given by Government should not be in the form of a subsidy in future but should take the form of higher prices for male stock taken over by Government for distribution on the "Premium Bull System" or otherwise. For instance, the Bombay Gowrakshak Mandali at present receives a subsidy of Rs. 2,400 per annum and has to supply to Government young male stock for breeding purposes at Rs. 200 each. The committee consider that a better arrangement would be for Government to guarantee the Mandali an offtake of a minimum number of male stock, approved by the Livestock Expert, at Rs. 300 each, any others taken over this minimum number being purchased at Rs. 250 each. The lump sum subsidy would be discontinued. Similar arrangements would be made with all other private cattle breeding institutions mentioned in para. 39 above, and with any approved private cattle-breeders who maintain pedigree herds and who are willing to abide by such conditions as may be laid down by the Livestock Expert to Government.

The minimum guaranteed number of approved bulls to be purchased by Government annually from each institution and the prices suggested are shown in the statement below :—

Gir and Kankrej Breeds.	Minimum number of bulls to be purchased and price.
1. Kandivlee Gowshala ...	15 bulls at Rs. 300 each and above this number at Rs. 250 each.
2. Mulund Gowshala ...	10 bulls at Rs. 300 each and above this number at Rs. 250 each.
3. Sabarmati Ashram Gowshala.	10 bulls at Rs. 300 each and above this number at Rs. 250 each.
Nimar Breed.	
1. Gilligan Cattle Breeding Farm, Pimple.	12 bulls at Rs. 250 each and above this number at Rs. 200 each.
2. Gangapuri Cattle Breeding Farm, Gangapuri.	8 bulls at Rs. 250 each and above this number at Rs. 200 each.

A comparison of the financial liability to Government per annum under (a) the existing subsidy scheme and (b) the increased bull purchase scheme suggested by the Committee had been prepared by the Livestock Expert to Government and is attached (Appendix E) and (Estimate 6).

Female animals purchased from such non-official cattle breeding institutions by Government for distribution in the districts would be obtained at usual market rates.

The Committee also urge the extension of concessions in fodder and grazing allotments to such non-official cattle breeding institutions by Government provided that the managements of such institutions are prepared to cut and store hay and/or to make silage in accordance with a scale prescribed by the Livestock Expert to Government.

41. Special reference was made to the Committee by Government in Government Memorandum No. 377-H/33, Revenue Department, dated 24th April 1939, regarding the development of the Gilligan Cattle Farm, Jalgaon, as a milch-breeding centre for the North Central Division, and the Committee was asked to consider what assistance Government should give in order to ensure this development.

The Committee is of the opinion that :—

(a) The managements of the Gilligan Cattle Farm, Jalgaon and the Gangapuri Cattle Farm, Jamner, should be requested to amalgamate the two farms into one farm, i.e. East Khandesh Cattle Breeding Farm, dealing with the Nimar Cattle Breed, the existing Gilligan Farm being utilised as a dairy farm solely and the Gangapuri Farm for the maintenance of dry animals and the rearing of young stock. The Committee feel that this amalgamation would result in much economy and in increase of efficiency all round.

(b) Subject to the agreement of the managements of the two Farms to the amalgamation proposed in (a) above, Government should provide the combined farm with a qualified Manager for a period of five years to begin with.

(Estimate 7 attached).

(c) Under the "increased bull purchase" scheme proposed in para. 40 above, Government should guarantee to take 20 approved male stock for distribution annually at Rs. 250 each, any excess over this number being paid for at Rs. 200 each.

*N.B.*—At present, Government pay Rs. 135 each for male stock taken for breeding purposes from either the Gangapuri or Gilligan Cattle Farm.

42. The Committee considered a letter, dated 20th April 1939, from Mr. N. J. Modi, Bombay, offering to place land at the disposal of Government for cattle breeding at Vadgaon, Maval taluka, and requesting that the conditions of such an offer might be discussed. As the Committee do not recommend the opening of a Cattle Breeding Farm in this tract, no action is considered necessary.

## SECTION 6—PREVENTION OF SLAUGHTER OF MILCH ANIMALS.

43. In Government Memorandum No. 8409-A/33, Revenue Department, dated 25th May 1939, the Committee was instructed by Government to consider whether legislation should be undertaken for the prevention of slaughter of milch cattle and, if so, to submit detailed proposals specifying the exact breeds of cattle to which the prohibition should be applied and the conditions on which slaughter should or should not be allowed.

44. At the request of the Committee, the Municipal Commissioner has kindly supplied the under-noted details of cattle slaughtered in the Bombay Municipal Slaughter Houses at Bandra and Kurla during the past 12 months :—

		Cows.	Bullocks-	She-buffaloes.
<i>1938</i>				
June	...	2,996	1,237	1,546
July	...	2,997	1,215	1,582
August	...	2,863	1,214	1,566
September	...	2,565	1,087	1,508
October	...	2,715	1,116	1,577
November	...	2,697	1,167	1,464
December	...	3,036	1,432	1,602
<i>1939</i>				
January	...	3,114	1,650	1,555
February	...	2,505	1,543	1,343
March	...	2,733	1,703	1,474
April	...	2,342	1,662	1,412
May	...	2,752	1,609	1,450

No he-buffaloes are slaughtered and no records is kept of the age of the animals slaughtered.

45. The Committee is of the opinion that, under the existing conditions whereby milch cattle are kept within city limits for milk production, legislation is necessary to prevent the slaughter of useful animals. They desire to emphasize, however, that if adequate arrangements could be made by Government, Municipalities, etc., for the establishment of "dairy districts" outside cities where milk producers could produce milk, breed and rear milch stock and maintain dry animals until they come into milk again, the problem of the slaughter of useful cattle would be very greatly minimised and might, in time, disappear altogether. In other words, the Committee is of the opinion that the slaughter of useful milch cattle is a direct result of the existing system of city dairy stables and desires to point out most strongly that an alteration of this system in favour of milk production outside city limits is the first and most essential step to be taken in any policy for the protection of milch animals and the development of a satisfactory indigenous dairy industry in the Province.

46. The Committee is not in favour of the total prohibition of the slaughter of cattle in the Province, which, for many reasons they do not consider possible. The object which should be aimed at is to prevent the slaughter of good cattle, i.e. cattle of recognized breeds which have future usefulness for breeding and milk production and the destruction of which, when dry, is a definite unnecessary drain on the animal wealth of the Province.

47. As a preliminary measure, the Committee recommend that legislation should be brought into force for the licensing under law of all slaughter-houses or places where cattle are killed for commercial purposes in the Province and that a condition should be attached to the issue of such licenses that each slaughter-house should maintain a fully qualified Veterinary Officer, paid for by the authorities maintaining the slaughter-house, and who should be on duty at the slaughter-house premises during such hours as these premises are open for working. There would be no objection to such an officer being engaged also on other duties in the slaughter-house, e.g. meat inspection, issue of certificates for hides and skins, etc.

48. Such legislation should also include provision for prohibition of slaughter of milch cattle in accordance with one or other of the alternatives suggested below :—

(a) Prohibition of the slaughter of both female and male (entire) animals of certain scheduled breeds under the age of 10 years, unless, by reason of deformity, injury, etc., they are unfit for further breeding.

*N.B.*—The scheduled breeds suggested are :—Kankrej, Gir, Shindi, Nimar, Dangri, Krishna Valley, Khillar, Malvi and Amrit Mahal and Soorti, Pandharpuri, Jafferabadi, Delhi and Mehsana breeds of buffaloes.

(b) Prohibition of slaughter of female cattle of any description under 10 years of age unless they are, by reason of any deformity, injury, etc., unfit for further breeding purposes.

*N.B.*—No restriction is placed on the slaughter of male animals under this alternative.

Under either (a) or (b) above, the duty of deciding what animals can be admitted to a licensed slaughter-house for slaughter will devolve upon the Veterinary Officer employed by the slaughter-house management, who will be responsible under law for the administration of the preventive legislation suggested.

49. The Committee is, in general, in favour of the alternative (a) above and suggest that detailed descriptions of the scheduled breeds should be supplied to the Veterinary Officers, employed at each slaughter-house, by the Livestock Expert to Government. The Committee desire, however, to bring to the notice of Government that, in their opinion, such legislation will be liable to result under existing conditions whereby milch cattle are kept in cities in raising the price of milk in cities and must give rise to a problem of the disposal of milch animals in city milk stables

which are under ten years of age and which, at the end of their lactation period, are not considered suitable by their owners for removal to outside areas for further breeding purposes. The Committee recommend that, in order to facilitate the removal of dry milch animals from city limits, the railway authorities concerned should be requested to grant wide concessions in freight charges on such animals from cities to rural areas, and, at the same time, to enhance considerably freight rates on milch cattle from rural areas into urban centres. Provision for the maintenance of such animals outside city limits until they come into milk again is a matter which Government might reasonably expect to be undertaken by the private Cow Protection Societies, etc., who urge the prevention of slaughter of milch animals. If, on the other hand, such animals are retained in Bombay, encouragement will be given to *gowlis* to prolong the milk period by malpractices, e.g. phooka with the result that the animals will be irretrievably ruined for further breeding and, as their slaughter would be prohibited, would become a useless burden on the country.

50. The Committee does not consider that there is any necessity for Government to take measures to check or limit the slaughter of milch animals outside urban areas as they are of the opinion that such slaughter is not done to any appreciable extent outside towns.

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## SECTION 7—SKIM MILK POWDER INDUSTRY

51. Under Government Endorsement No. 8409-A/33, Revenue Department, dated 5th May 1939, two letters, dated 23rd April 1939, from Mr. V. L. Doshi of Doshi Brothers of Anand, dealing with the possibility of establishing a skim milk powder industry in the Province, were forwarded for the consideration of the Committee and for subsequent report to Government.

52. The Committee ascertained that skim milk powder is at present being imported into Bombay in large quantities from various foreign countries and information obtained from the Collector of Customs, Bombay (copy attached—Appendix F) shows that 6,431 cwt. of this product, valued at Rs. 1,55,050 was imported into Bombay from 1st April 1938 to 31st March 1939. The average price of imported skim milk powder is approximately 3.5 annas per lb. It is understood that it is being retailed in Bombay at 4.5 to 6 annas per lb. From one pound of skim milk powder, 9 lbs. of skimmed milk is produced by the additional of 8 lbs. of water. This mixture corresponds to fresh skim milk and is being used extensively in the ice-cream and tea shop trade in Bombay City. The Milk Producers' Association, Bombay, has complained that the mixture is also being used to adulterate milk and there is evidence that this complaint is well-founded. The wholesale price of milk in Bombay has dropped to Rs. 5-8-0 per maund and had fluctuated between Rs. 7-8-0 and Rs. 9-0-0 per maund previously. There appears to be little doubt that the unrestricted import of foreign skim milk powder is having a deleterious effect on the fresh milk trade in Bombay and is affecting adversely the small dairy and butter manufacturing industries in rural areas by subsidizing indirectly cheap butter imports from foreign countries where skim milk powder is manufactured thus lessening the cost of butter production.

53. The Committee consider that there is ample scope for the development of a skim milk powder manufacturing industry in parts of Gujarat, to commence with, and that, in the early stages, such an industry is deserving of Government assistance. The local preparation of skim milk powder from separated milk would contribute considerably to the prosperity of the indigenous dairy industry in India and would facilitate the organization and profitable working of rural creameries. The form which such assistance should take was considered by the Committee who recommend—

(a) that Government should urge strongly upon the Government of India the need for a re-imposition of the duty on imported skim milk powder to at least 20 per cent. ;

(b) that Government should arrange for the deputation of a suitable officer for training abroad in modern methods of production of skim milk powder and that his services should be placed at the disposal of co-operative organizations, private firms, etc., in an advisory capacity, if such organizations and firms are prepared

to undertake the manufacture of skim milk powder in the Province provided that the services of such a trained man are not available in the Bombay Province ;

(Estimate No. 8 attached.)

*N.B.*—The Committee was informed by the Imperial Dairy Expert that he has an officer, suitably trained abroad in this subject by the Imperial Council of Agricultural Research whose services can be made available to private firms, etc.

(c) that Government should subsidize this new industry in the Province for a period of 3-5 years by loans free of interest or at a low rate of interest or, in the case of co-operative organization by guaranteeing any loss which they might incur during the period until the industry is properly established.

54. With regard to the technical points raised in the letters from Messrs. Doshi Brothers, Anand, the Committee is of the opinion (a) that, as far as previous experience in India indicates, buffalo milk will yield as good skim milk powder as cow milk, (b) that in considering the Roller and Spray processes of manufacture, no comparative experience of the working of both these systems under Indian conditions is available and that this matter is one upon which further information would be most valuable, (c) there is a demand for the manufactured product in the Province which demand is bound to increase rapidly and that the Military Department could possibly be induced to use locally manufactured skim milk powder. The Committee is unable to furnish details of the running costs of both types of factories.

It must also be emphasized that, for the manufacture of skim milk powder, the slightest acidity in the milk used renders the milk useless for this purpose. Accordingly the establishment of this industry in Gujarat would necessitate a preliminary organization of the collection of pure fresh milk at least twice daily, for which purpose the co-operative organizations for milk production suggested in Section 3 of this Report could possibly be utilized to advantage.

## SECTION 8—CONTROL OF CATTLE DISEASES.

55. The Committee was informed by the Director of Veterinary Services, Bombay Province, that the total mortality among cattle in the Bombay Province from contagious diseases during the past six years was 98,746 deaths reported. It is probable that the actual death rate is considerably higher. Of the total mortality, 60,359 were due to rinderpest alone and, in 1933-34 and 1936-37, deaths from this disease exceeded 17,000.

The Committee desire to emphasize their opinion that control of epidemic cattle diseases is a necessary adjunct to cattle improvement in the Province and that the prevalence of such plagues as rinderpest, etc., will handicap considerably all efforts to increase good stock in the villages. Accordingly the Committee recommend that Government should consider that advisability of introducing legislation—as an essential part of their policy for cattle improvement—which would, in particular, aim at achieving the following objects :—

(a) by compulsory vaccination, etc., at provincial boundaries, restrict the importation of cattle diseases by stock brought into the Province from outside,

(b) the introduction of rules whereby the movement of cattle to or from a village or area declared to be infected with infectious cattle disease would be completely checked as long as the risk of infection to other areas existed,

(c) compulsory vaccination of all cattle in villages or areas in which Government assistance in cattle improvement is being given.

The details of the necessary legislation could be prepared by the Director of Civil Veterinary Department who should be given the necessary staff and resources for its proper enforcement in the districts.

Poona, 13th July 1939.

(Sd.) W. J. JENKINS,  
Director of Agriculture (Chairman).

(Sd.) E. J. BRUEN,  
Livestock Expert to Government.

(Sd.) K. V. JOSHI,  
Deputy Director of Rural Development.

(Sd.) C. B. HULI,  
Assistant Registrar of Co-operative Societies  
and Rural Development Officer, Southern Division.

(Sd.) DINKAR V. PANDYA.

## FINANCIAL SUMMARY

OF

*Estimates of expenditure (capital and recurring and recoverable, i.e., loans and non-recoverable) arising out of the recommendations of the Expert Cattle Committee.*

Item.  1	Expenditure which will be required by Government to give effect to the Committee's recommendations.				Remarks.  6
	Capital, i.e., non-recurring.  2	Recurring expenditure—3 year period.			
		1st year.  3	2nd year.  4	3rd year.  5	
<p>1. Supply of initial stock of (a) milch cows and (b) breeding bulls, of approved milch breeds to village Co-operative Cattle Breeding and Milk Production Societies.</p> <p style="text-align: center;">Reference—<i>Estimate I and paragraph 13 of Report.</i></p>	.....	<p style="text-align: center;">Rs. 92,000 for purchase of milch cows.  (Recoverable).</p> <p style="text-align: center;">Rs. 3,500 for purchase of breeding bulls.  (Non-recoverable).</p>	<p>Will depend upon the organization of additional groups of village "Co-operative Cattle Breeding and Milk Production Societies" over and above the 5 groups proposed to begin with.</p>	<p>Estimate is based upon the establishment of 5 groups of village societies, each group to be supplied with 100 milch cows and 5 breeding bulls of the approved breed, as the foundation stock of the "Society Herd". The expenditure will be required as the groups are organised.</p>	
Total ...	.....	Rs. 95,000	.....	.....	

2. Cost of establishing 6 Milk Collection and Pasteurizing Stations, one for each "Co-operative Rural Creamery" to handle about 6,000 to 10,000 lbs. milk daily.  Reference— <i>Estimate II and paragraphs 17-20 of the Report.</i>  Based on estimate furnished by Imperial Dairy Expert.	(a) <i>Plant.</i>	<i>Staff.</i>	<i>Staff.</i>	<i>Staff.</i>	Estimate is based upon the assumption that the "Rural Creameries" will be established by Government and run by Government for three years before being converted into co-operative organisations. On such conversion, no further recurring expenditure by Government will be required and capital expenditure should be recovered in instalments from the co-operative organisation, i.e., capital expenditure is recoverable.
	Rs. 1,75,000	Rs. 27,500	Rs. 27,500	Rs. 27,500	
Total ...	(b) <i>Buildings.</i>	<i>Contingencies*</i>	<i>Contingencies*</i>	<i>Contingencies*</i>	
	Rs. 1,25,000	Rs. 85,000	Rs. 85,000	Rs. 85,000	
		* Includes working expenses.			
	Rs. 3,00,000	Rs. 1,12,500	Rs. 1,12,500	Rs. 1,12,500	
3. Expenditure to be undertaken by Government in connection with the supervision of the scheme for the establishment of Village Co-operative Cattle Breeding and Milk Production Societies and Co-operative Rural Creameries in five centres in the Province.  Reference— <i>Estimate III and paragraph 22 of the Report.</i>	.....	(a) <i>Establishment.</i>	(a) <i>Establishment.</i>	(a) <i>Establishment.</i>	Item (a) is provision for the supervision of the groups of village Co-operative Cattle Breeding and Milk Production Societies which the Committee consider should be undertaken by Government for a period of three years after which time this work could be taken over by the Co-operative Rural Creameries.
		Rs. 4,935	Rs. 4,935	Rs. 5,595	
(a) Supervising establishment for village Co-operative Cattle Breeding and Milk Production Societies (5).		(b) <i>Contingencies.</i>	(b) <i>Contingencies.</i>	(b) <i>Contingencies.</i>	
		Rs. 275	Rs. 225	Rs. 225	

FINANCIAL SUMMARY—*contd.*

Item.	Expenditure which will be required by Government to give effect to the Committee's recommendations.				Remarks.
	Capital, i.e., non-recurring.	Recurring expenditure—3 year period.			
		1st year.	2nd year.	3rd year.	
2	3	4	5	6	
(b) Annual loans to Co-operative Rural Creameries for developing milk production.	Rs. 15,000 (Recoverable).	Rs. 15,000 (Recoverable).	Rs. 15,000 (Recoverable).		Item (b) is provision for annual advances to Co-operative Rural Creameries to provide for the development of pure milk production in the constituent village societies by loans for improvements, e.g., construction of milking sites, etc. and is recoverable. Item (c) is provision for a Dairy Development Officer in the Rural Development Department for the direction of the working of the whole scheme throughout the Province. He will also undertake the re-organization of new groups in other areas as opportunity offers.
(c) Dairy Development Officer ...	(a) Establishments. Rs. 5,736	(a) Establishment. Rs. 5,916	(a) Establishment. Rs. 6,156		
	(c) Contingencies. Rs. 820	(b) Contingencies. Rs. 520	(b) Contingencies. Rs. 520		
Total ...	.....	Rs. 26,766	Rs. 26,596	Rs. 27,496	

4. Expenditure to be undertaken by Government in giving effect to the recommendations of the Committee with regard to the development of cattle-breeding in the Bombay Province.

Reference—*Estimate IV and paragraphs 30, 31 and 3 of the Report.*

(a) Annual grant to Rural Development Department for long-term loans to Co-operative Ghee Societies.	.....	Rs. 3,000 (Recoverable).	Rs. 3,000 (Recoverable).	Rs. 8,000 (Recoverable).	Item (a) provides for grant of Rural Development Department for giving long-term loans, free of interest, to Co-operative Ghee Societies for purchase of improved apparatus, etc., for ghee manufacture (Recoverable).
(b) Additional grant under "Premium Bulls" to Agricultural Department for spreading mal breeding stock of "dual purpose" breeds.	.....	Rs. 5,000	Rs. 5,000	Rs. 5,000	Item (b) provides for increase in the annual grant to the Livestock Expert for "Premium Bulls" to be devoted solely to the spread of breeding bulls of "dual purpose" breeds in the villages under the "Premium Bull System".
(c) Re-organization of existing Government Cattle Farms.	Bankapur—	Rs. 9,000	Rs. 11,165	Rs. 11,285	Item (c) provides for the expenditure required for the re-organization of (a) Bankapur and (b) Tegur Cattle Farms as already proposed to Government under letters No. 627, dated 8th May 1939, and No. 627, dated 8th June 1939, addressed to Government by the Director of Agriculture.
	Tegur—	Rs. 8,015	Rs. 6,517	Rs. 6,739.	
(d) Expenditure on proposed Government Cattle Breeding Farm for Nimar and Dangri cattle breeds.	Rs. 88,200	Rs. 15,200	Rs. 15,200	Rs. 15,200	Item (d) provides for the establishment of a Government Farm for the scientific development of the Nimar and Dangri breeds of cattle towards milk production. This estimate can only be very approximate at present.
Total ..	Rs. 57,800	Rs. 85,315	Rs. 40,882	Rs. 41,224	

**FINANCIAL SUMMARY—contd.**

Item.	Expenditure which will be required by Government to give effect to the Committee's recommendations.				Remarks.
	Capital, i.e., non-recurring.	Recurring expenditure—3 year period.			
		1st year.	2nd year.	3rd year.	
	2	3	4	5	6
5. Cost of replacement, over a period of three years, of Sindhi and Soorti milch herds at the Agricultural College Dairy, Poona, by Gira. Reference— <i>Estimate V and paragraph 36 of the Report.</i>	Purchase of Gir cattle.	Rs. 6,500	Rs. 6,500	Rs. 6,000	The Committee recommend the dispersal of the existing Sindhi cow and Soorti buffalo herds at the Agricultural College Dairy, Poona and their replacement by a milch herd of the Gir breed, within a period of three years. The annual nett cost to Government is shown.
	Deduct sale price of existing animals.	Rs. 3,020	Rs. 3,020	Rs. 3,820	
	Total ...	.....	Rs. 3,480	Rs. 3,480	
6. Expenditure required by Government by adoption of Committee's recommendation for "increased bull purchase" scheme for subsidising non-official cattle breeding institutions in the Province. Reference— <i>Estimate VI and paragraph 40 of the Report.</i>	.....	Rs. 15,500	Rs. 15,500	Rs. 15,500	The actual expenditure by Government would be Rs. 15,500 of which Rs. 4,750 would be recovered when the bulls are given out on the Premium Bull System, i.e., nett cost to Government would be Rs. 10,750. Under existing "cash subsidy" scheme Government spends Rs. 9,650 annually, so increase is only Rs. 1,100.
		Less 4,750	Less 4,750	Less 4,750	
	Total ...	.....	Rs. 10,750	Rs. 10,750	



7. Expenditure required on provision of qualified Manager for combined Gilligan, Gangapuri Cattle Farms annually.	.....	Rs. 720	Rs. 720	Rs. 840	The actual cost would be the cost of providing a new recruit in the grade of Rs. 60-60-70-5-100 in place of trained man deputed to manage the combined Farm. Total cost for five years is Rs. 4,140.
Reference— <i>Estimate VII and paragraph 41 of Report.</i>					
Total ...	.....	Rs. 720	Rs. 720	Rs. 840	
8. Expenditure on deputation of officer abroad to study technique of skim milk powder industry.	.....	Rs. 5,000 to Rs. 6,800	Rs. 5,000 to Rs. 6,800	Rs. 5,600 to Rs. 6,800	This estimate can only be very approximate until it is decided to which country the officer should be deputed, etc. The lower figure is for cost of deputation to New Zealand, the higher to United States of America.
Reference— <i>Estimate VIII and paragraph 53 of Report.</i>					
Total ...	.....	{ Rs. 5,000 to Rs. 6,800	{ Rs. 5,000 to Rs. 6,800	Rs. 5,600 to Rs. 6,800	

## APPENDIX A.

MODEL BYE-LAWS OF A VILLAGE CO-OPERATIVE CATTLE  
BREEDING AND MILK PRODUCTION SOCIETY.*I. Preliminary.*

1. The name of the Society is the Co-operative Cattle Breeding and Milk Production Society Ltd., and its registered address is at Taluka District . Any change of address shall be notified to the Registrar within fourteen days.

*II. Objects.*

2. The objects of the Society are—to provide for the improvement and spread of good cattle in the villages in the following ways :—

(a) to keep bulls and cows, to improve the strain of milch and draught cattle and secure proper selection and breeding ;

(b) to ensure good care of the cattle by providing suitable remedies against epidemics ;

(c) to provide good grazing and fodder facilities and to arrange for manufacture and storage of hay and silage ;

(d) to provide facilities for the production of milk and its products under hygienic conditions, suitable control and direction ;

(e) to provide facilities for the sale of improved strains of cattle and the co-operative sale of pure milk and its products ;

(f) to disseminate up-to-date information about cattle breeding and dairying ;

(g) to create funds by means specified hereafter to be lent out to its members at a moderate rate of interest for carrying out the above purposes ;

(h) to undertake the purchase and distribution of concentrates and cattle feeds among members ;

(i) to undertake the maintenance of dry animals and young stock of its members ;

(j) to encourage thrift, self-help, mutual aid, co-operation and trade morality among its members and to do and perform such other acts as are incidental and conducive to the attainment of the aforesaid objects or any of them.

*III. Funds.*

3. Funds may be raised by—

(a) issue of shares,

(b) receiving deposits—

(i) from members,

(ii) from non-members.

- (c) raising loans,
- (d) donations,
- (e) grants,
- (f) entrance fees.

4. The amounts of capital to be raised by the sale of shares shall not exceed Rs.

5. Deposits and loans may be received for fixed periods at such rate of interest and to such an amount as may be determined by the Managing Committee provided that the total of loans and deposits shall never exceed eight times the paid up share capital plus the Reserve Fund.

6. The funds of the Society when not utilised shall be invested or deposited as required by section 37 of the Act, but no investment shall be made under section 20 (e) of the Indian Trust Act.

#### *IV. Membership.*

7. No person shall be a member unless—

- (i) he is a resident in,
- (ii) his written application for membership has been approved by majority of the managing committee,
- (iii) he understands the objects for which the society is registered,
- (iv) he has paid an entrance fee of Re. 1. He has subscribed and paid for at least one share and possesses one or more cows or buffaloes for milk production.

Members who have signed the original application for registration are exempt from condition 7 (ii).

8. A member may be expelled from the society by the vote of not less than 2/3rds of the members assembled at a general meeting for any of the following reasons:—

- (a) if he is a persistent defaulter or habitually fails to carry out his obligations to the society,
- (b) if he wilfully deceives the society by false statements,
- (c) if he is bankrupt or legally disabled,
- (d) if he is criminally convicted,
- (e) if he persistently keeps his cattle in an insanitary condition or neglects instructions of good breeding or keeps no cow or buffalo,
- (f) if he persistently adulterates his milk or,
- (g) if he intentionally does any act likely to injure the credit of the society,
- (h) if he sells any of his milk production other than through the society.

The Committee shall give such member fourteen days written notice of the proposal to expel him. Expulsion may involve the

forfeiture of all the shares held by him. But shares shall be forfeited if a member has intentionally caused financial loss or done damage to the business or credit of the society.

9. A person ceases to be a member—

- (1) on death,
- (2) when his resignation is accepted by the managing committee,
- (3) on ceasing to hold at least one share,
- (4) on withdrawal after three months notice,
- (5) on permanent insanity,
- (6) on expulsion.

10. A person ceasing to be a member under bye-law 9 can be readmitted to membership by a resolution of the general meeting.

#### V. Shares.

11. The face value of each share shall be Rs. 5 payable on allotment or in instalments as may be determined by the managing committee.

12. A member may hold any number of shares not exceeding 600.

13. Application for shares shall be made in writing and shall be disposed of by the managing committee.

14. Every member shall hold at least one share of Rs. 5 for every Rs. 50 or a fraction thereof outstanding with him, as a loan from the society.

15. The liability of a member shall not exceed the amount, if any, unpaid on shares for which he or his estate is liable.

16. A member may transfer his share or shares after holding them for one year to another member with the approval of the Managing Committee. The transfer is not complete until the name of the transferee has been entered in the share transfer register and such fee as the Managing Committee may prescribe has been paid.

17. A share certificate bearing a distinctive number shall be issued for every share or shares subscribed.

18. Any member of the society may in writing under his hand deposited with the society nominate any person other than a servant or officer of the society to whom the whole or any part of his interest in the society should be transferred in the event of his death. The first nomination shall be free of charge. A fee of annas four shall be charged for any subsequent variation or revocation thereof.

19. On the death of a member, all amounts standing to his credit by way of shares, dividends, etc., shall, subject to the deduction on account of his liability, be paid within two years from the date of his death, to his heir nominated by him, or in the

absence of such nominee, to such person as may appear to the committee to be entitled to receive the amount as heir or legal representative of the deceased member, on his executing a deed of indemnity, to the society provided that the deposits to the credit of the deceased member shall not be so paid, until the period of the deposits, if any, has expired.

20. A person who ceases to be a member shall be entitled to receive back the actual sum paid up by him on account of his share before the expiry of two years from the termination of membership.

#### *VI. General Meetings.*

21. The supreme authority shall vest in the General Meeting. A general meeting may be called at any time by a majority of the Managing Committee and must be called once every year within the quarter ending 30th September. This meeting shall be called the Annual General Meeting. It shall transact the business specified in bye-law No. 24.

22. All General Meetings other than the Annual General Meeting shall be called Special General Meetings. A Special General Meeting may be called at any time by a majority of the Managing Committee and shall be called by the Secretary within one month on requisition in writing of 1/5th of the members of the society or by the Registrar.

23. The first General Meeting after registration shall transact the same business as is herein allotted to the Annual General Meeting.

24. The following, among other matters, shall be dealt with by a General Meeting:—

(1) to receive from the Committee a report on the preceeding year's working of the society together with the statements showing the receipt and disbursements, assets and liabilities, and profit and loss for the year and to sanction the appropriation and distribution of profits,

(2) to elect a managing committee,

(3) to appoint a secretary subject to the provisions of bye-law 25 and fix his remuneration, if necessary,

(4) to fix the limit of outside borrowings which may be incurred subject to the maximum limit specified in bye-law No. 5.

(5) to fix the number of bulls to be maintained, the area of grazing to be hired, to make regulations generally for the control of the herd and the management of the grazing area,

(6) to lay down regulations for the use of the bull by outsiders,

(7) to consider the collection, conveyance, and sale of milk and milk products and to pass resolutions as to its organisation,

(8) to fix the commission to be charged by the society on the price realised by sale of members' milk and milk products or to fix the prices at which the society shall take them from members and market them,

(9) to decide on the opening of depots for the sale of milk and to satisfy themselves that all accounts have been settled punctually every month;

(10) to consider the audit memo, audit rectification report from the managing committee and any other communication received from the Registrar and federal societies;

(11) to sanction the levy of penal interest under bye-law No. 54;

(12) to grant extensions for periods in excess of one year under bye-law No. 49;

(13) to consider and approve of the rules framed by the managing committee under bye-law No. 41;

(14) to dispose of any other business duly brought forward.

The proceedings of the general meeting shall be recorded in a minute book.

25. The appointment of a secretary shall be made ordinarily for five years in an annual general meeting and shall be subject to the approval of the Assistant Registrar. The secretary shall be liable to be removed at any time with one month's notice or if a paid secretary with pay in lieu thereof by a resolution of the general meeting. Previous approval of the Assistant Registrar is necessary for removal. If the Assistant Registrar is of opinion that the secretary does not carry out his duties satisfactorily he may call upon the society to dispense with his services and the society shall be bound to comply.

26. In the case of annual general meeting 14 days' notice and in the case of Special General Meeting, 7 days' notice shall be given by the publication of a written notice outside the office of the society, and in conspicuous places in the village included in the area of operation of the society. The notice shall specify the day, hour and place fixed for holding the meeting and shall state the nature of the business to be transacted at the meeting. Similar notice shall be given in the village by beat of drum.

27. With the permission of two-thirds of those present at the general meeting, any member may bring forward a proposal regarding any matter not specified in the notice of the meeting provided that he may not propose the expulsion of another member or an amendment in the bye-laws.

23. Two-fifths of the total number of the members or 25, whichever is less, shall form a quorum at a general meeting. If on the day of the meeting there is no quorum or if all the business is not completed the consideration of all or a part of the business may be abandoned or adjourned to another day not less than seven days later. If on the day to which the meeting is adjourned, no quorum is obtained, the business shall be disposed of without a quorum.

29. (a) At the first General Meeting the president shall be elected by the members present and subsequent general meetings

shall be presided over by the Chairman of the Managing Committee and in his absence the members present may elect a president for that meeting.

(b) Each member present shall be entitled to exercise not more than one vote.

(c) The president shall have a casting vote in addition to his ordinary vote.

30. Except by an order of the Assistant Registrar, no resolution can be brought at a general meeting for cancelling a previous resolution of the general body unless six clear months have elapsed after the passing of the original resolution.

31. The Society shall affiliate itself to the financing agency and the Milk Supply Union which may be organised and which can be utilised by the Society to its advantage and whose area of operation includes the area of operation of the Society.

#### *VII. The Managing Committee.*

32. The Managing Committee shall consist of not less than five members and not more than seven members. A majority of members shall form a quorum.

33. (a) The committee shall elect their own chairman from among themselves for their period of office. When present, the chairman shall preside at all meetings of the committee. In his absence, the members present shall elect one from among themselves as the chairman of the meeting.

(b) The chairman is entitled to give a casting vote in addition to his ordinary vote.

34. The committee elected by the Annual General Meeting shall hold office till another committee is elected. Vacancies in the committee occurring during its term of office on account of death or any other cause shall be filled up by co-option.

35. Subject to the provisions of bye-laws and direction conveyed in resolution of general meeting of the society, the managing committee shall have full authority to carry on the business of the society. The committee may meet as often as it considers necessary for the transaction of the business but it shall meet at least once every month.

36. A committee member may be removed during his term of office by 2/3rds majority of votes at a Special General meeting.

37. No member shall be present at the time of the consideration of, or vote on, any matter in which he has a personal interest. The Managing Committee shall request any of the members to retire from any meeting during such time as when any matter in which that member has a financial interest is being discussed.

38. No member shall be eligible for election to the committee or to continue to be a member of the committee if he is in unauthorised arrears to the society or violates or has violated during the previous year the provisions of bye-law.

39. Should a member of the committee absent himself from four consecutive meetings of the committee without showing adequate cause, he shall be deemed to have ceased to be a member of the committee.

40. All acts done by the committee or any person acting as a member of the committee notwithstanding that it is afterwards discovered that there was some defect in the appointment of such committee or person shall be valid as if the committee or every such person had been duly appointed.

41. The business of the committee shall be—

- (1) to dispose of application for membership and for shares ;
- (2) to raise loans and to prescribe the conditions on which deposits may be accepted ;
- (3) to collect amounts on shares and repayments of loans ;
- (4) to consider applications for loans ;
- (5) to watch the utilisation of loans ;
- (6) to take steps for recovery of overdue instalments ;
- (7) to consider applications for extension ;
- (8) to sanction working expenses ;
- (9) to check the accounts of the secretary and to count the cash balance ;
- (10) to prepare the annual report and balance sheet ;
- (11) to make arrangements for members' animals to be milked at the society's central milking site and to look after breeding on lines laid down under the supervision of the society's staff ;
- (12) to see that the members' animals as well as society's animals are properly fed and housed ;
- (13) to arrange for the proper handling and sale of the members' milk and milk products or for manufacturing cream, butter or ghee and marketing them at profitable prices ;
- (14) to open distributing depots to see that the milk is sent punctually to regular customers, and that any balance remaining over is disposed of profitably, and that all bills are recovered punctually subject to the directions of the Milk Supply Union of which the society is a member ;
- (15) to keep milk register for recording the milk yield of each of the members animals, and to record the results of tests made to ascertain the quantity of their milk ;
- (16) to fix the number of bulls, cows and calves to be maintained by the society and to make regulation generally for the control of the herd ;
- (17) to lay down regulations for the use of cows, bulls and calves to outsiders ;
- (18) to see that the members fulfil their obligation to deliver to the society all the milk which they produce except what they use at home and to make arrangements for weekly payments to members in accordance with the milk supplied ;



(19) to see that only such cows as approved of by the committee be served by the society's bull ;

(20) to see that the calves born of the bull not to be slaughtered or sold outside the society unless they have been previously offered to the society ;

(21) to judge every year the cows belonging to the members and to select those suitable for breeding ;

(22) to make arrangements for the maintenance of dry animals and young stock of members and fix the fees therefor ;

(23) to arrange for the correct weighment of the milk of each member's cow at each milking and to have the milk of each animal tested for quality at regular intervals ;

(24) to arrange for the supply of concentrates or cattle feeds to be provided to each member's cow at milking time and to record the amounts so issued for debiting the cost against the member concerned ;

(25) to have the cows marked with a current number on the middle of the ear ;

(26) to have the ears of the calves suitably marked ;

(27) to see that a careful record of service and calving is maintained ;

(28) to see that a record of the total milk herd is maintained ;

*N.B.*--On the basis of the milk return obtained from each member's cow under clause 24 and 28 above, to undertake annually a review of the economics of production of each animal in order to reject uneconomic ones.

(29) to suspend the secretary appointed under bye-law No. 25, recommend his dismissal to the general meeting and appoint an acting substitute pending the final decision, and to appoint, suspend, punish, or dismiss other salaried servants of the society ;

(30) to institute and defend legal proceedings and to compromise such proceedings ;

(31) to arrange for the purchase of concentrates and feeding materials and for storage, distribution and sale of the same to members ;

(32) to examine the stock register and verify the stock ;

(33) to supervise the scales, weights and measures in use in the society ;

(34) to acquire or lease premises for accommodating the society's office and for storing goods and for keeping cattle ;

(35) to arrange, if possible, for insurance against loss of premises and goods by fire and cattle against death at reasonable rates ;

(36) to prepare a list of trustworthy brokers or merchants through whom or to whom the produce may be disposed of, whenever the society has to take the risk of granting trade credit ;

(37) to take security from the secretary and other employees handling cash, goods and securities on a scale not lower than one prescribed by the Registrar,

(38) to consider the audit memo, to take action on the instructions contained therein and to submit an audit rectification report to the Auditor within two months of the date of receipt of the audit memo and to place the audit memo and the rectification report before the next general meeting,

(39) to fix and levy penalty for the violations by any member of any rule or bye-law of the society or for any act detrimental to the objects or interests of the society, and

(40) generally to conduct the business of the society.

42. It shall be competent to the managing committee to frame business rules consistent with the provisions of the Act, rules and bye-laws for proper conduct of the business of the society. Such rules shall be entered in the minute book of the committee and shall come into force after they are approved by the general meeting and the Assistant Registrar.

#### *VIII. Secretary.*

43. The duties of the secretary shall be—

(1) to summon and attend all general and committee meetings of the society,

(2) to record the proceedings of such meetings in the minute book,

(3) to make disbursements and receive payments under orders of the managing committee,

(4) to keep all accounts and registers required by the rules,

(5) to prepare all the receipts, vouchers, balance sheet and other documents required for the transaction of the business of the society,

(6) to conduct correspondence and to supply all needful information to the members,

(7) to see that the audit memo is placed before the managing committee for consideration, without delay, and to take further steps in regard to rectification and submission of an audit rectification report to the Auditor in time,

(8) to guide, supervise and control the work of the salaried staff of the society,

(9) to do all other work which may be entrusted to him by the committee.

In the absence of the secretary, the committee may authorise any other person to perform his duties.

Receipts passed on behalf of the society shall be signed by the secretary. Share certificates and other documents shall be signed by the secretary and one member of the committee jointly.

*IX. Loans.*

44. Loans shall be granted to the members only, for the purpose of furthering the objects of the society.

45. No member who does not bind himself to adopt the improvements decided upon by the general meeting and sell his marketable produce through the society, shall be eligible for the grant of loans.

46. Loans for the purpose of purchasing cattle, food stuff, concentrates etc., which are supplied through the agency of the society shall be made in kind only. Loans for other purposes shall not be given.

47. Before sanctioning any loan the committee shall require two good sureties who shall be the members of the society. For such loans as are not repayable within one year the committee may require additional collateral security of mortgage of members' immoveable property.

48. The sum due to the society from any member shall not exceed Rs. 200 and eight times the value of the paid up share capital to the credit of the member whichever is less. The managing committee shall be personally liable for all loans granted in excess of the limit prescribed in this bye-law.

49. The managing committee has power to extend loans in the aggregate for one year only. Extension beyond one year may be granted by the general meeting. The rate of interest on those shall be  $1\frac{1}{2}$  pies per rupee per month and it may be varied by the general meeting with the previous approval of the financing agency but it shall not be less than  $1\frac{1}{2}$  pies per rupee per month and more than 2 pies per rupee per month.

50. Subject to the provisions of bye-law 49 the general meeting may allow the ordinary lending rate to be reduced by  $\frac{1}{4}$ th pie in the case of punctual repayments and to be raised by  $\frac{1}{4}$ th pie in respect of fresh finance to members who are granted concessions individually in respect of remission of interest or otherwise. Interest shall be calculated from the date of advance to the date of repayment, fraction of a month if less than 15 days being counted as half a month and if 16 days or more as a complete month.

51. The total amount of loan with the members of the managing committee shall at no time exceed  $\frac{1}{5}$ th of the total outstanding loans from members.

52. In cases where extension is not granted, a notice of demand should be served on the principal borrower and his sureties. The period of the notice shall not be less than one month and more than three months. If satisfactory repayments are not made within the period of notice, the managing committee shall immediately refer the cases to arbitration. When a delay occurs in starting arbitration proceedings against the defaulters, the managing committee will be held responsible for any loss which the society may suffer as a result of delay. The managing committee shall be responsible to send an award for execution soon

after it is obtained, if no appeal is preferred against the same or no time is granted in the award for payment or no extension is granted for want of satisfactory repayments after the award.

53. The managing committee shall have power to recover the whole or part of the society's dues from the members, from the sale proceeds of their produce sold through the society.

54. In the event of any loan or instalment of a loan not being paid on the dates fixed for repayment, penal interest at a rate not exceeding 50 per cent. over the existing rate will be recoverable on the total amount overdue from the date of default.

No penal interest shall be levied except by a resolution of the general meeting and except in cases of contumacious defaulters.

55. A member applying for a loan shall state in his application the amount of the loan required and the purpose and period for which it is required and the nature of the security offered for the loan. In dealing with such applications, the committee may refuse or sanction a loan of such amount and on such terms as they deem proper.

56. When the loan granted for a specified purpose is misapplied, the committee shall have the power to recall the loan with interest to the date of repayment. The committee's decision as to the fact of the misapplication is final.

57. When the person who has stood as surety dies or becomes in the committee's opinion unfit, the committee may require the borrower to furnish another surety within 15 days. If the borrower fails to furnish another surety, when so required, the loan shall become repayable immediately with interest up to the date of repayment.

*N.B.*—No member who is also a member of any co-operative credit society other than Land Mortgage Bank shall be eligible for a loan from the society except with the approval of that society.

## X. Deposits.

58. The society may accept savings deposits and deposits fixed for not less than six months.

59. In order to encourage thrift among its members the society shall introduce a system of compulsory deduction as deposit from sale proceeds of milk of each member at the rate of one anna for every rupee of milk sold by him to or through the society subject to such rules as may be framed by the managing committee and approved by the general body.

60. Savings deposits may be accepted from members only and on the following conditions :—

(1) The balance to the credit of any depositor may never exceed the maximum of Rs. 500.

(2) The smallest sum that can be deposited at one time is annas four and the largest sum is Rs. 100.

(3) A depositor may withdraw money not more than twice in one calendar month.

(4) A depositor may not withdraw at one time a smaller sum than one rupee or a larger sum than Rs. 100.

(5) No deposit can be accepted and no money withdrawn without the production of the pass-book. The society will not be responsible for any sum not acknowledged in the pass-book.

(6) If a pass-book is lost a fresh one will be issued on payment of a fee of annas four,

(7) Interest will be allowed on the lowest balance to the credit of any account between the second and last date of each calendar month.

(8) All sums in savings account shall be paid to the depositor within three days of the notice of the withdrawal exclusive of the public holidays if below Rs. 100 and within 7 days if Rs. 100 or upwards.

61. The rate of interest on deposits shall be fixed and varied by the managing committee with the previous approval of the financing agency but it shall not be more than per cent. per annum for fixed deposits and per cent. per annum for savings deposits.

62. The society shall make arrangements for fluid resources to ensure punctual repayments of deposits as prescribed by the Registrar.

### *XI. Distribution of Profits.*

63. At the Annual General Meeting, the gross profits earned in the previous year shall be announced and the following deductions shall be made:—

- (1) interest payable on loans and deposits,
- (2) working expenses,
- (3) losses,
- (4) depreciations, on buildings and other wasting assets.

The balance remaining after these deductions shall be treated as net profits.

A sum not less than 25 per cent. of the net profit shall be carried to the Reserve Fund every year.

The balance of profits, after making provision for development purposes in the interest of members of the society will be available for distribution as dividend at a rate not exceeding  $7\frac{1}{2}$  per cent.

The balance that then remains will be distributed as bonus to the members in proportion to the milk supplied.

### *XII. Reserve Fund.*

64. In addition to the sum prescribed in bye-law 63, all entrance fees, donations other than those for specific purposes and receipts on account of penal interest, forfeited shares and fines shall be carried to the Reserve Fund.

*XIII. Balance and Securities.*

65. The managing committee shall decide in whose custody the cash balance and the extent of such balance and the securities and the account books of the society will be kept.

*XIV. Appeals.*

66. (a) An appeal shall lie from the decision of the managing committee to the general meeting. The general meeting shall refuse to entertain such an appeal if it is not preferred to the society within two months of the date of communication of the decision of the Managing Committee.

(b) An appeal shall lie to the Supervising Union against any order or decision of the Society.

*XV. Accounts and Records.*

67. (a) Books of accounts and other records shall be maintained as prescribed in the rules and also as directed by the Registrar with such addition as the managing committee considers necessary.

(b) Receipts shall be issued for all deposits, for repayments of loans and for other sum received by the society.

(c) Carbon copies of quarterly statements of accounts shall be issued to all members and non-members in respect of all the transactions with the society within the quarter under the signature of the Chairman and the Secretary. Confirmation slip shall be issued annually to depositors and shall be verified by the Auditor.

68. Any member of the society may inspect any of the registers or accounts during office hours so far as they relate to his own business transactions.

69. Before 15th July annually, the managing committee shall draw up statements showing the receipts and disbursements, assets and liabilities and profit and loss for the previous year. A copy of these statements shall be supplied to the Auditor appointed under Section 22 of the Act before 20th July.

*XVI. Amendments.*

70. None of the bye-laws herein contained shall be altered or rescinded and no bye-law shall be added except by vote of majority consisting of at least 2/3rds of the members present at a general meeting. The notice convening the meeting shall specify the proposed alteration, addition, or rescission and shall not be less than ten days prior to the meeting. The amendment shall not take effect until it has been approved and registered by the Registrar.

*XVII. Service of Notice.*

71. Whereby these bye-laws it is provided that a written notice shall be given to any member, the delivery of such notice at the house at which such member ordinarily resides shall be sufficient service of such notice.

Dated

Signature.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

## APPENDIX B.

## MODEL BYE-LAWS OF A "CO-OPERATIVE RURAL CREAMERY".

*I. Introductory.*

1. The name of the society is the Co-operative Rural Creamery Ltd., and its registered address is
2. Any change of address shall be notified to the Registrar, Co-operative Societies within fourteen days and published in a local paper.
3. The operation of the Creamery shall be confined to  
for production and distribution of milk and milk products.
4. The First General Meeting after registration shall have the same powers as are herein given to the Annual General Meeting:

*II. Objects.*

5. The objects of the Union are :—
  - (a) To ensure production and distribution of unadulterated milk under hygienic conditions.
  - (b) To purchase or arrange for the purchase of improved cattle for its members as their agent.
  - (c) To conduct propaganda among members towards scientific methods of feeding milch cattle and proper breeding.
  - (d) To arrange for the transport of milk and milk products from the affiliated societies to the Central Depot for distribution.
  - (e) To purchase or arrange for joint purchase of fodder and concentrated feeds.
  - (f) To organise campaigns against cattle epidemics and to arrange for qualified staff for the purpose.
  - (g) To instal pasteurising plant and other machinery for the preservation of milk and the preparation of milk products.
  - (h) To guarantee the purity of milk and its products.
  - (i) To organise consumers to form buying clubs to purchase milk for their members.
  - (j) To create funds by means specified hereafter to enable carrying out the above purposes.
  - (k) To encourage thrift, self-help, mutual aid, co-operation and trade morality amongst members and generally to do all such things as are incidental or conducive to the attainment of the abovementioned objects.



### III. Funds.

6. Funds may be raised :—

- (a) by issue of shares,
- (b) by receiving deposits,
- (c) raising loans,
- (d) by donations,
- (e) by Government grant and Subsidies,
- (f) by entrance fees.

7. The amount of capital to be raised by the sale of shares shall not exceed Rs. . There shall be two kinds of shares bearing the nominal value of Rs. 25 to be held by individual members and Rs. 50 by societies and the General Meeting shall decide in what instalments (if any) the amount shall be called up.

8. Deposits and loans may be raised for fixed periods or upon current accounts at such rates of interest and to such an amount as may be determined by the Board of Directors provided that the total of loans and deposits shall never exceed eight times the paid up share capital plus the reserve fund.

9. The funds of the society when not employed in the business of the Creamery shall be invested or deposited as required by section 37 of the Act, but no investment shall be made in immovable property under section 20 (e) of the Indian Trusts Act.

### IV. Membership.

10. The Creamery shall consist of affiliated societies and individuals—

(a) any producers' society registered under the Bombay Co-operative Societies Act VII of 1925 and having for its objects the production and sale of milk and milk products may be affiliated to the Creamery,

(b) any persons wishing to effect the sale of milk and milk products and also those wishing to secure them through the creamery may be admitted as members.

11. No individual or society shall be a member unless a written application has been approved by the Board, an entrance fee of rupee one has been paid and the individual or the society has subscribed to at least one share of the first or second class respectively. Shares of the first class will bear face value of Rs. 25 each and those of the second class Rs. 50 each respectively.

12. Members signing the original application for registration are exempt from the operation of the clause in bye-law 11 relating to written application for membership.

13. Any individual member may withdraw from the Creamery at any time with the sanction of the Board and this sanction will not be given unless he has squared up all his dues, to the Creamery.

14. No society once affiliated to the Creamery will be allowed to resign from it; but it will cease to be a member on its registration being cancelled, or on voluntary liquidation.

15. Any individual member or a society affiliated to the Creamery may be expelled by a vote of 2/3rds of the members present at a general meeting—

(a) if he or it wilfully deceives the Creamery by false statements,

(b) if he or it intentionally does any act likely to injure the credit of the Creamery,

(c) if he or it sells any of his or its milk or milk products other than through the Creamery.

Expulsion may involve the forfeiture of any or all the shares held by a member.

16. A person ceases to be a member—

(a) on death,

(b) when his resignation is accepted by the Board,

(c) on expulsion,

(d) on transfer or forfeiture of all shares held by him.

#### V. Shares.

17. Except in the case of the original members who have appended their signature to these bye-laws, application for shares shall be made in writing and shall be disposed of by the Board.

18. Shares will be of two kinds:—

(a) Shares held by individuals of which the face value will be Rs. 25.

(b) Shares held by societies of which the face value will be Rs. 50.

19. The amount of shares shall be paid in such instalments as may be fixed by the General Meeting.

20. A share certificate bearing a distinctive number shall be issued for every share subscribed.

21. The liability of a member shall not exceed the amount if any unpaid on shares, for which he or his estate is liable.

23. Any individual member of the Creamery may (by a writing under his hand deposited with the Creamery) nominate a person other than a servant or officer of the Creamery to whom the whole or any part of his interest in this Creamery should be transferred in the event of his death. A fee of 4 annas will be charged for recording such nominations and every subsequent revocation or variation.

23. In the event of death of a member the amount standing to his credit by way of shares and dividends, shall, subject to deductions on account of his liability, be paid to his heir or legal representative of the deceased member on executing a deed of indemnity to the Creamery. The deposits of the deceased may be withdrawn by such heir only if the period of deposit has expired.

24. In the event of an affiliated society being liquidated the amount of its shares shall be returned to the Liquidator of that society.

#### VI. General Meeting.

25. The supreme authority shall rest in the General Meeting. A General Meeting may be called at any time by a majority of the Board of management and shall be called once in a year within the quarter ending 30th September. This meeting shall be called the Annual General Meeting.

The General Body shall consist of—

(a) all individual members and

(b) one delegate from each affiliated society appointed from among its members by the latter by a special resolution to represent it.

26. The functions of the Annual General Meeting shall be :—

(1) To receive from the Board of management the annual report and the balance sheet of the preceding year and to sanction the distribution of profits including dividend and bonus.

(2) To consider the budget of the ensuing year.

(3) To elect a Board of management including a President for the ensuing year and to appoint the Manager as may be required and to fix his pay.

(4) To fix the maximum up to which the Board may raise funds under bye-law No.

(5) To appoint qualified Auditors (Local) for the ensuing year and to fix their remuneration.

(6) To fix allowances, if any, for attending Board meetings up to a maximum of Rs. including travelling allowance.

(7) To consider any communication or audit memos that may have been received from the Registrar.

(8) To approve of estimates and arrange fixing up plant for pasteurisation and other machinery.

(9) To do any other business as may duly be brought to the notice of the general body.

27. In the case of the Annual General Meeting notice of 14 days and in the case of a Special General Meeting notice of 7 days will be given. The notice will specify the place, date and hour of the meeting and also the business to be transacted.

28.  $\frac{2}{5}$ ths of the total number of members or 25 (whichever is less) shall form a quorum at a general meeting. If there be no quorum the meeting shall stand adjourned and shall be held on the same day and time next week at the same place if possible. At the adjourned meeting the business of the original meeting shall be disposed of whether there is quorum or not.

29. The President shall preside over all meetings of the general body. In his absence the members present will elect their own President.

Each member and representative of the affiliated societies shall have one vote only. The President shall have a casting vote in addition to his own. The President will be the Chairman of the Board of Directors.

#### *VII. Special General Meeting.*

30. A Special General Meeting can be summoned by the President or by majority of the Board or on a requisition from the Registrar or from  $\frac{1}{5}$ th of the members. It shall be the duty of the President to call such a meeting within one month of the receipt of the requisition.

#### *VIII. Board of Management.*

31. The Board of management shall consist of seven members including the President.

32. At the First General Meeting of the society the whole of the Board shall retire from office and shall be eligible for re-election. At each subsequent annual general meeting in every subsequent year,  $\frac{1}{3}$ rd of the Directors for the time being or two shall retire from office.

33. The Directors to retire in every year shall be those who have been longest in office since the last election, but as between persons who became Directors on the same day those to retire shall (unless they otherwise agree among themselves) be determined by lot.

34. A retiring Director shall not be eligible for re-election for one year. But the retiring President shall be eligible for re-election if supported by a majority of not less than  $\frac{2}{3}$ rd of the members present at the meeting.

35. Nomination for President and Directors must be in writing and received at the registered office of the Creamery not less than 10 days before each annual general meeting. Every nomination

must state clearly the full name, address and occupation of every member nominated and be signed by the member who nominates him and by the member nominated signifying his willingness to act as President of or on the Board of Directors.

36. (a) If a vacancy caused by the retirement of any Director is not filled by the meeting at which it ought to have been filled under the bye-laws it may be filled by the Board of Directors, until a fresh general meeting is called for the purpose.

(b) A casual vacancy on the Board of Directors may be filled up by the Board and the member so appointed shall hold office for the unexpired period of office of the member whose place he fills.

37. A Director may be removed from office at any time by resolution carried by 2/3rds of the votes given thereon at a Special General Meeting which may thereupon proceed to fill his place by a resolution carried by a majority of the votes given thereon.

38. The Board of Management shall consist of seven members elected as under :—

1. Three members representing affiliated societies ;
  2. Two members elected by the individual members ;
  3. One representative of the Registrar nominated by him for a period of one year ; and
  4. One member co-opted by the above members.
- Four members of the Board shall form a quorum.

#### *IX. Duties of the Board of Management.*

39. The Board of Management will carry on the following amongst their duties :—

1. To make arrangements for the sale of milk and milk products.
2. To recover dues and to supervise expenditure as per budget.
3. To arrange for the joint purchase of the requirements of its members on commission, viz., concentrates and feeds.
4. To arrange for the up-keep and repairs of machinery and utensils.
5. To establish Dairy and Dairy Farms with suitable plants, tools, engines, machinery for the purpose set forth in the objects of the Creamery.
6. To appoint, suspend, punish and dismiss all salaried servants of the Creamery except the Manager and to give such powers to the Manager as will be necessary for him to control the staff.
7. To draw up the annual report and budgets for presenting to the general body.

8. To recommend to the General Body the amounts to be utilised out of profits for payment as bonus, rebate, etc.

9. To call the General Meeting or meetings as per bye-law to transact proper work.

10. To prescribe and maintain forms for accounts and statements as would be necessary for the administration of work.

11. To institute, conduct, defend, compromise or refer to arbitration claims by or against the Creamery.

12. To fix allowances to be paid to the members of the Board, staff and others as needful, subject to the approval of the General Body.

13. To arrange for and supervise testing of milk.

14. To frame ordinary rules of business for the guidance of the Creamery and its affiliated societies and the Board of Management may also appoint sub-committees to deal with different aspects of business as and when necessary.

15. To do in general such other work as may be conducive to the good working and progress of the Creamery.

40. In the conduct of the affairs of the Creamery every Director acting singly or jointly shall exercise the prudence and diligence of an ordinary businessman and shall be responsible for any loss sustained by the Creamery resulting from disregard to law, rules and bye-laws.

#### *X. Power and duties of the Manager.*

41. The Manager shall have knowledge of Dairying and Animal Husbandry so as to equip him with necessary qualification for his work.

42. The Manager shall be responsible for the executive administration of the Creamery subject to the control of the Board of Management, and his duties shall be:—

1. To manage or look after the routine work of the Creamery including the handling of milk and milk products.

2. To appoint employees under him subject to the approval of the Board of Directors and to direct, guide and control them.

3. To distribute work, to attend to the complaints and grievances of any ordinary nature so as to facilitate the smooth working of the Creamery.

4. To recover dues and pass receipts for amounts collected on behalf of the Creamery and to make payments for milk and milk products and other requisites purchased for the business of the Creamery subject to rules framed in that connection.

5. To carry out in general the instructions of the Board and the President to the best interests of the Creamery.

*XI. Profits.*

43. At the Annual General Meeting, the gross profit earned in the previous year shall be announced and the following deductions shall be made:—

1. Interest payable on loans and deposits.
2. Working expenses.
3. Losses, if any.
4. Depreciation on buildings and other wasting assets.

The balance remaining after these deductions shall be treated as net profits and distributed as under:—

Ten per cent. shall be credited to the Reserve Fund. The balance that then remains may be utilised for distribution of dividend subject to a maximum of 6½ per cent. on the paid up share capital.

Up to 50 per cent. of the balance may be distributed as bonus to societies and individuals in proportion to the quantity of milk supplied by them.

Up to 30 per cent. may be utilised for the development purposes connected with the Dairy industries. The balance that then remains may be distributed as below:—

- (a) Up to 50 per cent. as bonus to consumers in proportion to the quantity of milk purchased by them.
- (b) The balance may be utilised for giving bonus to the employees of the Creamery up to a maximum of one month's pay or equivalent wages and contributed to the machinery and plant fund in equal proportions.

*XII. Reserve Fund.*

44. In addition to the sum prescribed under the Act and provided for in bye-law No. 42 (1) receipts on account of forfeited shares and fines shall be carried to the Reserve Fund.

Any loss occurring as the result of the year's working may, with the previous sanction of the Registrar, be made good from the Reserve Fund, but this amount must be restored to the Reserve Fund from the profit of the next ensuing year or years.

45. The accumulations of reserves built up may be utilised for other purposes with the previous sanction of the Registrar conducive to the development of the Creamery.

*XIII. Accounts and Records.*

46. Accounts and records shall be maintained in forms prescribed or approved by the Registrar with such addition as the Board of Directors may think necessary. The President and the Manager shall have power jointly to execute documents, and sign share certificates on behalf of the Creamery.

47. Any individual member of the Creamery or a representative of the affiliated society may inspect any of the registers and records, during office hours so far as they relate to his own or his society's business.

48. Before July 31st annually the Board of Directors shall draw up statements showing receipts and expenditures, assets and liabilities and profits and loss for the previous year. A copy of these statements shall be supplied to the Government Auditor.

#### *XIV. Amendment of Bye-laws.*

49. Subject to the rules framed by the Local Government, bye-laws can be amended provided that notice of the amendments has been given to the Registrar and the members at least seven days prior to the meeting and provided that at least 2/3rds of the members present vote for the same. Amendments take effect after being approved by the Registrar and registered under Section 16, sub-section (3), of the Act.

50. The Creamery shall be affiliated to the District Central Co-operative Bank.

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#### APPENDIX C.

Copy of letter, dated 6th June 1939, from Mr. G. Azrilenko, regarding his scheme for milk processing and transport etc., and terms on which he would co-operate with producing organizations.

#### *Processing and transport of milk.*

I have to thank you for having given me the opportunity to be present at the meeting today of the Cattle Expert Committee appointed by the Government of Bombay. The object of this letter is to confirm what I am prepared to offer as regards the Quick Chilling, Transportation and Storage of Fresh Milk from points selected by the Government of Bombay to Bombay City or elsewhere. I will take the various points as they occur to me:—

1. I understand that Government is prepared to undertake the work of the selection and collection of fresh milk at the agreed centres in milk producing areas where cheap and healthy milk is available in large quantities.

2. I undertake to erect at the various points selected by Government suitable plant where fresh milk will be quick chilled by my Patent process.

3. After quick chilling it will be necessary to provide suitable accommodation for the storage of the processed milk. This accommodation will be erected and maintained by me. In the event of difficulty arising with regard to obtaining suitable sites for



the erection of the Quick Chilling Plants above referred to in paragraph 2 or the storage accommodation herein referred to, it is understood that Government will give every facility for the rapid acquisition of suitable sites.

4. It is understood that Government are prepared to arrange for suitable transport of chilled milk from collection point storage places to rail-head. I, on my part, am prepared to undertake the supervision of loading the processed milk at storage depots and also the supervision of unloading at rail-head.

5. I agree to provide the necessary cold storage equipment at rail-head to maintain the chilled milk at a suitable temperature whilst awaiting transport. I understand that Government are prepared to facilitate the provision of suitable sites for the erection of this equipment which will consist of Cold Storage Portable Cabinets which are neither bulky nor objectionable in any way to passenger traffic and which can normally be accommodated on existing Railway platforms or Goods Sheds without alterations involving any expense or inconvenience to ordinary traffic.

6. Normally the Cold Storage Cabinets referred to above—paragraph 5—will be loaded into ordinary luggage vans or other Railway rolling stock, whichever is most convenient to the Railway concerned. I will undertake the supervision of this loading.

7. On arrival in Bombay, I will supervise the unloading of the Cabinets containing the processed milk and will arrange for the provision of cold storage free of cost for a period not exceeding twenty-four hours.

8. It is understood that Railway freight from loading points on processed milk and equipment and also freight on returned empty equipment from Bombay back to loading point will be borne by Government.

9. The charge to be paid to me for processing fresh milk at collection points and supervision during transport, as outlined above, together with any technical advice which may ensure the proper transit and storage of the processed milk, will be at the rate of Rs. 1-8-0 (One rupee and eight annas) per maund of forty seers.

10. It is understood, that in consideration of my providing the foregoing plant and equipment and undertaking the responsibilities outlined herein that Government will arrange that the quantity available for processing daily shall not be less than 6,000 lbs. (six thousand pounds). It is, however, understood that if this quantity cannot be made available during the first month of the operation of this scheme, that Government shall be privileged to pay charges for the exact quantity processed and transported. I will esteem it a favour if you will give the foregoing your best consideration and inform me by return, if possible, whether it has been drafted in a form which is acceptable to Government. If there should be any alteration which in your opinion is necessary or advisable, if you will return this letter to me with your suggestions, I will be very pleased to re-submit it for your consideration.

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As I indicated to you at the meeting this morning, in the event of the quantity of milk processed and transported being substantially increased, I will make every endeavour to reduce the rate charged for processing.

Yours faithfully,  
(Signed) G. AZRILENKO.

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**APPENDIX D.**

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## APPENDIX D.

*Brief statement showing present position with regard to assistance to private Cattle Breeding Institutions.*

Name of the Institute.	Amount of Government subsidy and the conditions of its grant.	Management.	Grazing and fodder facilities.
1	2	3	4
1. The Bombay Cowrakshak Mandali's Cattle Breeding Farm at <i>Kandivli</i> .	<p>The annual subsidy is Rs. 2,400 and to be paid in two instalments of Rs. 1,200 each in April and October to meet the pay of a graduate Manager and of a Non-graduate Fieldman on the following conditions :—</p> <ol style="list-style-type: none"> <li>1. To breed pure strains of good milk Gir Cattle.</li> <li>2. To abide by the directions of the Livestock Expert to Government and the Economic Botanist to Government as to necessary due management, etc. of the breeding herd.</li> <li>3. To keep all necessary records and to submit monthly reports of the breeding herd and their milking performances on the prescribed form.</li> <li>4. To maintain and keep the breeding herd and bulls in good and thriving condition and the Mandali be allowed to sell or give away all bulls born on the farm and that all money realised from such sales, if any, go to gowshala.</li> <li>5. Government retain the right to purchase all bulls required for improvement work and that the price to Government should not exceed Rs. 200 for a bull 3½ years and over in age.</li> <li>6. The (Graduate) Manager and the Non-graduate Fieldman will be appointed with the consent of the Livestock Expert and they shall not be disposed of without the knowledge and consent of the Livestock Expert.</li> </ol>	<p>There is one Agricultural Graduate Manager at <i>Kandivli</i> at Rs. 85 and one at the sub-station <i>Betegaon</i> at Rs. 75 per mensem.</p> <p>The Manager submits monthly reports of the Cattle Breeding Farm and follows the breeding policy laid down by the Livestock Expert. The Hon. Secretaries of the Mandali supervise the work of the farm.</p>	<p>The total area at <i>Kandivli</i> is 1,100 acres of which 600 acres are hilly and 500 acres are for pasture, grazing and silage making 45 acres of land is fenced in for rotational grazing and 5 acres under well irrigation for fodder grazing.</p> <p>At the <i>Betegaon</i> sub-station Government has given in all 680 acres of land on lease for 80 years on occupancy price and current assessment for haymaking, grazing and silage-making.</p>

2. *Pimple Cattle Breeding Farm* conducted by the Taluka Development Association, Jalgaon, East Khandesh.

7. The Livestock Expert to Government and the Economic Botanist to Government and their staff may visit the Gowshala when they deem necessary.
8. In the event of the breeding herd being neglected and the instructions of the Livestock Expert not carried out. Government may at any time refuse to pay the subsidy.

The annual subsidy is Rs. 1,000 subject to the condition that the management of the farm agrees to run it to the satisfaction of the Agricultural Department and all bull calves born on the farm are properly cared for and reared for distribution as Premium Bulls under the advice of the Agricultural Department. If these conditions are satisfied the Agricultural Department is to subsidise the farm at the rate of rupee one for every three rupees spent on the management of the farm subject to a maximum subsidy of Rs. 1,000 a year and also of the proviso that the grant does not exceed the deficit in the working expenses of the Farm (please, *vide* G.R., R.D., No. 377/33, dated 24th March 1936).

The Manager of the Farm is a Dhulia Agricultural School trained man and his present pay is Rs. 43-4-0 per month. He is not a graduate. There is one Assistant Manager at Rs. 20 per mensem.

There is a Managing Committee of the Association including the Divisional Inspector of Cattle Breeding, Northern Central Division, Jalgaon, to supervise the working of the Farm. Monthly reports are sent to the Livestock Expert to Government. The Divisional Inspector inspects the farm once or twice in the month. The Overseer of the Association inspects the farm once in a week.

The Association is given 200 acres of good grazing land (which is fenced) at rupee one per acre and 203 acres of forest land in the same block is taken in annual auction sales at Rs. 300 to 350 (for 203 acres).

Besides 100 acres of private lands are taken on lease by the Association; of these 80 acres are under cultivation; 2/3rd of the area is devoted to fodder and grain crops and 1/3rd area under cotton and groundnut. There is a perennial source of irrigation from a rivulet on which a pumping set contributed by the Village Improvement Committee, Jalgaon, is installed for growing of green fodders such as Lucern, Maize, etc. Thus there is sufficiency of fodder and grazing at this Farm.

APPENDIX D—*contd.*

Name of the Institute. 1.	Amount of Government subsidy and the conditions of its grant. 2.	Management. 3.	Grazing and fodder facilities. 4.
<p>8. Gangapuri Cattle Breeding Farm conducted by the Taluka Development Association, Jamner, East Khandesh.</p>	<p>The annual subsidy is Rs. 1,000 on the same conditions as referred to under (2) for the Pimple Cattle Farm.</p>	<p>The Manager is a Dhulia Agricultural School trained man and his pay is Rs. 25 per month. There is a Managing Committee of the Association including the Divisional Inspector of Cattle Breeding, Northern Central Division, Jalgaon, to supervise the working of the farm. Monthly reports are sent to the Livestock Expert. The Divisional Inspector of Cattle Breeding inspects the farm once or twice in a month.</p>	<p>The farm has no independent grazing area of its own. There are forest lands adjoining the farm (in Bhusawal Taluka) and the cattle graze there. Since the last two years the Association is taking in auction sales grazing area measuring about 150 acres for Rs. 250 from the Forest Department. The Director of Agriculture has recommended to the Farm a grant of 200 acres of grazing land at annas eight per acre for five years on conditions that the area is developed by systematic treatment, rotational grazing and silage-making. The Association is given 69 acres of Revenue pasture lands by the Revenue Department. This land is very poor and stony and produces poor crops of fodders. There is a well on the area near the farm and about 4 acres are of good soil for growing of green fodders. The Village Improvement Committee</p>

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4. *Nathu Laljee Trust Fund  
Gowshala, Mulund.*

Annual Subsidy of Rs. 2,000 on the following conditions  
(as per Government Resolution, Revenue Department,  
No. 8532/33 of 15th February 1939) :—

1. The Gowshala should set aside a sufficient number of Gir cows headed by bulls selected by the Agricultural Department to produce at least 20 bulls each year.
2. These bulls should be given to the Agricultural Department when they are required at a fixed price of Rs. 100 each.

(NOTE.—This is to be modified as under :—

“Government retain the right to purchase all bulls required for improvement work and that the price of Government should not exceed Rs. 200 for a bull 8½ years and over in age).

3. The Gowshala should appoint a Manager approved by the Agricultural Department.
4. The Gowshala should maintain all suitable records necessary to keep accurate data of breeding, feeding and milk yield, etc.

As per conditions noted in column 2.

Jaigaon, has allotted Rs. 2,000 for installing a pumping plant on the well. The Fodder position is, thus, not so satisfactory as at Pimple Cattle Farm.

Seventy-eight acres under grazing and 4 acres under well irrigation. .

APPENDIX D—contd.

Name of the Institute. 1	Amount of Government subsidy and the conditions of its grant. 2	Management. 3	Grazing and fodder facilities. 4
<p>5. <i>Shree Gowshala, Dhulia</i> ...</p>	<p>Government propose as per Government Memorandum No. 7631-A/33, dated 18th February 1939 to give to the Gowshala, Dhulia (1) a non-recurring grant of Rs. 2,000 for the purchase of 20 good Kankrej cows (2) a recurring grant of Rs. 1,000 per annum for three years to cover the pay of the Manager and other incidental charges and (3) the lease of 200 acres of forest land at Borvahir at a concession rate to be decided, for 5 years subject to the conditions mentioned below :—</p> <ol style="list-style-type: none"> <li>1. The Gowshala will set aside 20 good kankrej cows and Government will give them a like number of 20 Kankrej cows at a total cost not exceeding Rs. 2,000.</li> <li>2. The Gowshala will undertake to maintain all good male and female calves and dispose of them with the approval of the Livestock Expert to Government in the interest of cattle improvement at the market price not exceeding Rs. 100 each.</li> <li>3. The Gowshala will appoint a trained and competent Manager with the approval of the Livestock Expert to Government. The Manager will be under the control of the Gowshala, but the Gowshala will not dispense with his services without the approval of the Livestock Expert.</li> <li>4. The Gowshala will be run on the lines approved by the Livestock Expert.</li> </ol>	<p>There is no Graduate Manager for the present to look after the Farm. Mr. Y. M. Parnerkar the Gowshala Dairy Expert guides the farm. There is a Managing Committee of the Gowshala.</p>	<p>The Gowshala has 60 acres of land where fodder crops are grown. For the present there are no grazing facilities.</p>

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 29



5. In the event of the breeding herd being neglected, Government will remove at any time its 20 cows, and their progeny and cease to pay its contribution towards the pay of the Manager.
6. The Gowshala will maintain records necessary to keep accurate data of breeding, feeding, milk yield, etc. of the 40 cows of the breeding herd which shall be numbered together with their male and female calves.
7. The Gowshala will not distribute any profits to any private individual.
8. The authorities of the Gowshala will give as undertaking that they will under no circumstances sell hay or fodder of any description.
9. The whole area, of the forest land, i.e. 200 acres will be divided into four convenient blocks, each of the blocks being utilised as follows:—
  - (a) Block 1—for grazing in the first year.
  - (b) Block 2—for cutting for silage when green and for grazing later on.
  - (c) Block 3—For making hay.
  - (d) Block 4—For seeding and grazing after the seedling is over.

In the second year, block No. 4 will be utilised as block No. 1 in the first year and block No. 1 as 2, 2 as 3 and 3 as 4. In the third year block No. 3 will be utilised as block Nos. 1 and 4 as 2, 1 as 3 and 2 as 4 and so on till the order in the first year will be repeated in the fifth year.

10. Infringement of any of these conditions will entail cancellation of the lease by the Conservator.

## APPENDIX E.

*Comparison of nett subsidies (in cash) given by Government to non-official Cattle Breeding Institutions (a) under existing "lumpsum" subsidy scheme and (b) under proposed "increased bull purchase" subsidy scheme, per annum.*

(Reference Section paragraph .)

Institution.	Guaranteed No. of bulls to be taken.	Cost to Government of	
		Present system.	Proposed* + system.
		Ra.	Ra.
1. Bombay Gowrakshak Mandali.	15	2,400 subsidy. 1,500 payment for bulls.	3,000
		3,900	
2. Mulund Gowshala ...	10	2,000 subsidy. 500 payment for bulls.	2,000
		2,500	
3. Sabarmati Aahram Gowshala.	10	Nil.	2,000
4. Gilligan Cattle Breeding Farm.	12	1,000 subsidy. 750 payment for bulls.	2,250
		1,750	
5. Gangapur Cattle Breeding Farm.	8	1,000 subsidy. 500 payment for bulls.	1,500
		1,500	
	Total ...	9,650	10,750

\* Based on assumption that minimum guaranteed number of bulls is taken by Government annually.

APPENDIX F.

Statement showing the quantity and value of "Provisions and Oilman's stores, etc. milk condensed or preserved including milk cream dried or preserved—skimmed" imported into Bombay from British Empire and other countries during the official year (April to March) 1938-39.

Month.	British Empire.						Other countries.						Total.	
	United Kingdom.		Commonwealth of Australia.		New Zealand.		Denmark.		Netherlands.		U. S. A. via Atlantic Coast.			
	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.
<i>Skimmed milk dried or powder.</i>														
April ...	...	...	57	1,869	260	6,020	...	...	2	54	...	...	819	7,448
May ...	...	...	...	...	162	4,067	...	...	1	26	...	...	163	4,098
June ...	...	...	80	937	150	3,804	...	...	...	...	...	...	180	4,741
July ...	...	...	60	1,560	152	3,894	...	...	1	26	...	...	218	5,480
August ...	...	...	92	2,033	342	8,651	...	...	220	4,859	...	...	654	15,543
September ...	...	...	90	2,222	550	14,012	...	...	320	7,879	...	...	960	23,613
October ...	...	...	130	3,090	480	12,048	...	...	242	5,851	...	2	852	20,491
November ...	...	...	60	1,562	145	4,552	...	...	260	5,909	...	...	465	12,023
December ...	...	...	51	1,091	303	7,199	...	...	1	24	...	...	355	8,314
January ...	...	...	70	1,751	298	7,030	20	465	102	2,436	9	262	499	11,944
February ...	...	...	49	1,899	185	3,196	...	...	95	3,743	...	...	329	8,938
March ...	...	8	29	636	745	17,971	118	2,910	550	11,508	...	...	1,442	33,023
Total ...	...	8	718	17,650	3,772	92,444	138	3,375	1,794	41,315	9	264	6,431	1,55,051

## ESTIMATE 1.

*Cost of supply of milch cows and breeding bulls to Village Co-operative Cattle Breeding and Milk Production Societies for the establishment of " Society " herds.*

(Reference paragraph 13 of the Report.)

The estimate is based upon the establishment of five groups of village societies, each group to be supplied by Government with 100 milch cows and 5 breeding bulls. Four groups to be supplied with Gir breed and one group with Kankrej breed.

*N.B.*—The figures of 100 cows and 5 breeding bulls are suggested as a unit and may be increased according to the expenditure made available by Government.

	Rs.
400 Gir cows, landed at the villages at Rs. 200 per cow	80,000
20 Gir bulls, landed at the villages at Rs. 150 per bull (supplied under Premium Bull System)	3,000
100 Kankrej cows, landed at the villages at Rs. 120 per cow	12,000
5 Kankrej bulls, landed at the villages at Rs. 100 per bull (supplied under Premium Bull System)	500
Total ...	95,500

It is intended that Rs. 92,000 of the above-noted total amount, i.e., the cost of the cows, should be recovered by Government from the village Co-operative Cattle Breeding and Milk Production Societies over a period of 3-5 years, by instalments of the price of each cow paid by the member to whom it is allotted by the village Society. The cost of the breeding bulls, i.e., Rs. 3,500 will be borne by Government.

## ESTIMATE 2.

*Estimate of cost of establishing a Milk Pasteurizing Station for a "Co-operative Rural Creamery" to handle about 6,000 to 10,000 lbs. milk per diem, prepared by Mr. Zal. R. Kothavalla, B.Ag., B.Sc., N.D.D., Imperial Dairy Expert.*

(Reference paragraphs 17-20 of the Report.)

The following are the details provided :—

(i) *Plant*.—Machinery and fittings as per detailed specification in Annexure I attached herewith. *About Rs. 35,000.*

*N.B.*—(a) The above cost also includes the cost of erecting and handing over the plant in a working condition. It is very desirable that such a condition should be insisted on when ordering the plant.

(b) The specifications drawn up are for general guidance. They will have to be redrawn in accordance with the conditions prevailing on the site to be selected for locating the creamery. The list does not provide for any plant for water supply or for generating motive power.

(c) At the time of placing the order the fluctuations in the prices of machinery will have to be taken into consideration and the estimated figure altered accordingly.

(ii) *Buildings*.—A list of the most essential buildings is provided in Annexure II. Detailed plans with constructional notes will be supplied by this office as soon as the site is selected. *About Rs. 25,000.*

(iii) *Establishment*.—A list of the staff required to manage the pasteurising station efficiently and economically is given in Annexure III. *Recurring cost about Rs. 5,500 per annum.* If the activities of the Station are increased in the direction of making products of milk, the Manager's scale of pay will have to be enhanced.

(iv) *Recurring Annual Expenditure*.—The details of this are given in Annexure IV. *About Rs. 17,000 per annum.*

In the end I should once again emphasize the fact that the figures provided for the above items are only approximate and are intended for general guidance. A detailed scheme giving the exact figures for the initial as well as the recurring costs will be worked out and submitted with the necessary plans of buildings, etc. as soon as it is decided to start the Creamery and the site for the purpose selected.

(Signed) ZAL. R. KOTHAVALLA,  
Imperial Dairy Expert.

## ANNEXURE I.

*Scheme for establishing a Milk Pasteurising Station to handle from 4,000 to 12,000 lbs. of milk per day drawn up by the Imperial Dairy Expert, Bangalore.*

Specification of pasteurising plant to economically deal with from 4,000 to 12,000 lbs. of milk per day.

- BOILER HOUSE ...** 1 Vertical cross tube boiler 7' x 3' with all fittings and mountings complete for a daily working pressure of 100 lbs. per square inch.  
 40 Feet of steel chimney for above with guys.  
 1 Injector of approved make fitted to boiler.  
 1 Hand boiler feed pump do.
- CAN WASHING ROOM.** -2 Circular bottomed galvanized iron can washing tanks each 4' x 2' with outlet plugs and legs complete.  
 2 Dairy Supply Coy's all metal steam sterilizing jets with  $\frac{1}{2}$ " steam connections.
- BOTTLE WASHING ROOM.** 1 Dairy Supply Coy.'s Hygies bottle washing trough and sterilizing chamber without boiler but with bottle jets and steam turbine bottle washer complete.  
 1 Circular bottomed washing tank of galvanized iron with brass outlet plug and legs complete.  
 1 Dairy Supply Coy.'s all metal steam sterilizing block  $\frac{1}{2}$ " steam connection.
- MACHINE ROOM...** 1 Dairy Supply Coy.'s "ASTRA" or "SABROE" refrigerating plant on the ammonia compression system consisting of :—  
 1 Vertical ammonia compressor ASTRA No. 10 or SABROE equivalent, capable of eliminating 50,000 B.T.U. per hour with condensing water and 15° C.  
 1 ASTRA or SABROE atmospheric condenser suitable for above.  
 1 ASTRA or SABROE submerged tank pattern evaporator suitable for above.  
 1 Centrifugal or rotary brine pump for above.  
 1 Centrifugal or rotary water circular pump for above.

MACHINE ROOM—  
contd.

- 1 Electric motor to work with local current of not less than 10 B.H.P. to drive compressor evaporator, stirrer, brine pump, and water pump.
  - 24 Feet 2½" steel shafting with 1 steel flanged coupling tued to shaft.
  - 5 Wall brackets with 2½" skefko bearings, wall bolts, plates and nuts.
  - 2 2½ shaft collars.
  - 1 W.I. split pulley for main shaft drive.
  - 1 Do. do. compressor.
  - 1 Do. do. evaporator.
  - 1 Do. do. brine pump.
  - 1 Do. do. water pump.
  - Necessary belting with fasteners for all the above drives.
- DAIRY ...
- 1 ASTRA milk weighing machine Type A No. 25 capacity of tank 55 gals marked in lbs. seers, and ¼ seers complete with stand.
  - 1 Dairy Supply Coy.'s open rectangular "Glass line" milk receiving tank No. 1 model, capacity 264 gallons, 80" x 40" x 24" with four legs and 1½" outlet cock.
  - 1 Tinned steel strainer with removeable brass gauze slides fitted to tank.
  - 1 Wizard Batch pasteurising and holding tank spiral coil jacketed pattern fitted with recording thermometer to actually hold 4,000 lbs. milk complete with fast and loose pulleys, belt shifter, hot water tank and circulating system.
  - 1 ASTRA brine and water cooler Type F of tinned copper with brass ends, size No. 40 with 96 feet of cooling surface. Half of cooling surface to be for use with water and half for use with brine. Cooler to have removeable covers of tinned steel and stand complete.
  - 1 ASTRA valveless milk pump Type DV No. 12 with fast and loose pulleys and milk receiving funnel complete.
  - 1 Tinned steel milk receiving tank 4' x 3' x 1' 6" deep with 1" outlet cock and W.I. stand to command bottler and capper.
  - 1 Milwaukee standard bottle filler and capper, hand power Type B complete.

DAIRY—concl'd.	...	<p>1 Electric motor 5 B.H.P. to drive dairy plant suitable for local Madras current, slow speed with all fixtures complete.</p> <p>24 Feet of 2" turned bright steel shafting.</p> <p>1 Turned bright flanged coupling trued to shaft.</p> <p>5 C.I. wall brackets each with 2" skefko bearings, wall plates, bolts and nuts.</p> <p>2 2" shaft coolers.</p> <p>1 W.I. split pulley for main drive from motor.</p> <p>1 W.I. split pulley for pasteuriser.</p> <p>1 W.I. split pulley for milk pump.</p> <p>Necessary belting and fasteners for above three drives.</p>
TEST ROOM	...	<p>1 16 bottle Gerber Tester complete with all glassware (hand power).</p> <p>2 Richmonds milk scales.</p> <p>2 Metal S.G. lactometers with glass jars for same.</p>
DELIVERY ROOM.		<p>1 Low down bottle truck with rubber-tired wheels suitable.</p> <p>1 Low down bottle truck with rubber-tired wheels suitable for entering and leaving cold store.</p> <p>1 Hand power bottle capper standard pattern.</p> <p>1 Sandrigham dairy recorder complete.</p>
GENERAL	...	<p>The necessary piping, cocks, fittings and fixtures for water steam Milk, ammonia and brine within purchasers premises including insulation of all brine pipes required for the complete erection and working of all the foregoing plant, water-supply and electric current to be laid on inside dairy building by purchasers. All electric connections inside the buildings to be made by contractors and contractors to provide steam piping from boiler house to dairy. The whole of the foregoing to be supplied and delivered fixed and erected complete, within purchasers premises, and handed over in thorough working order to the satisfaction of the Imperial Dairy Expert to the Government of India.</p>

(Signed) ZAL. R. KOTHAVALLA,  
Imperial Dairy Expert.



## ANNEXURE II.

*Scheme for establishing a Milk Pasteurising Station to handle from 4,000 lbs. to 12,000 lbs. of milk per day drawn up by the Imperial Dairy Expert, Bangalore.*

(Probable cost of Buildings.)

			Rs.
Main dairy with sufficient floor area	...	...	19,000
Power house etc.	...	...	3,000
Insulation of cold store.	...	...	1,000
Roads, fences and drainage, etc....	...	...	2,000
		Total ...	<u>25,000</u>

(Signed) ZAL. R. KOTHAVALLA,  
Imperial Dairy Expert.

## ANNEXURE III.

*Scheme for establishing a Milk Pasteurizing Station to handle from 4,000 to 12,000 lbs. of milk per day drawn up by the Imperial Dairy Expert, Bangalore.*

List of Establishment.	Per month.	For the first year.
	Rs.	Rs.
1 Dairy Manager at Rs. 150—5—200—10—300.	150	1,800
1 Dairy Supervisor at Rs. 50—60—75—5—150.	50	600
1 Dairy Engineer at Rs. 60—75—5—125 .	60	720
1 Mechanic at Rs. 30—1—40 ...	30	360
1 Boilerman at Rs. 25—1—35 ...	25	300
1 Storekeeper and clerk at Rs. 25—1—35 .	25	300
4 Dairy boys at Rs. 15 each ...	60	720
1 Butter and Ghee boy at Rs. 18 ...	18	216
1 Sweeper at Rs. 10 ...	10	120
		5,136

(Signed) ZAL. R. KOTHAVALLA,  
Imperial Dairy Expert.

## ANNEXURE IV.

*Scheme for establishing a Milk Pasteurizing Station to handle from 4,000 to 12,000 lbs. of milk per day drawn up by the Imperial Dairy Expert, Bangalore.*

## Statement showing details of annual expenditure.

		Rs.	For the first year.
1. Salaries and wages ... ..		5,136	(as per Annexure III).
2. Fuel, light, water and oils—			
	Rs.   s.   p.		
(a) Steam coal per day ... ..	5   0   0		
(b) Electrical energy for running dairy plant and well pump and lighting per day ... ..	8   8   0		
(c) Lubricating oils and grease per day ... ..	0   8   0		
Total ... ..	<u>14   0   0</u>	or	5,100
3. Chemicals and miscellaneous stores—			
(a) Ammonia ... ..	... ..		
(b) Ca <sub>2</sub> and water detergents ... ..	... ..		
(c) Laboratory Chemicals ... ..	... ..		
(d) Colour and Salt for butter ... ..	... ..	750	
(e) Miscellaneous stores including butter paper, muslin, brushes etc. etc. ... ..	... ..		
4. Stationery and Printing ... ..		25	
5. Rates and Taxes ... ..		35	
6. Upkeep of—			
(a) Buildings ... ..	Rs. 100		
(b) Plant and Machinery ... ..	650		
	<u>750</u>	750	
7. Depreciation on—			
	Rs.		
(a) Buildings Rs. 26,000 at 2½ per cent. ... ..	650		
(b) Plant and Machinery at 5 per cent. average ... ..	1,750		
	<u>2,400</u>	2,400	
8. Shrinkage in Pasteurization ... ..		750	
9. Interest on Rs. 35,000 at 4 per cent. ... ..		1,400	
Total ... ..		<u>16,346</u>	

(Signed) ZAL. R. KOTHAVALLA,  
Imperial Dairy Expert.

ESTIMATE 3.

*Estimate of expenditure proposed to be undertaken by Government in connection with the supervision of the scheme for the establishment of village Co-operative Cattle Breeding and Milk Production Societies and Co-operative Rural Creameries in five centres in the districts of the Bombay Province in accordance with the proposals contained in Section B of the Report.*

(Reference paragraph 22 of the Report.)

	1st year.	2nd year.	3rd year.
	Rs.	Rs.	Rs.
(A) Supervisor (agricultural overseer-Graduate) for each group of village (Co-operative Cattle Breeding and Milk Production Societies) i.e., 5 supervisors in all—			
(a) Pay—			
(1) Five Supervisors on Rs. 60— Grade Rs. 60, 60, 70-5-100 ...	3,600	3,600	4,200
(2) Five Peons on Rs. 15— Grade Rs. 15-1/2-20 ...	900	900	960
<b>Total, Pay ...</b>	<b>4,500</b>	<b>4,500</b>	<b>5,160</b>
(b) Travelling Allowance Lump Sum—			
<b>Total, Travelling Allowance ...</b>	<b>435</b>	<b>435</b>	<b>435</b>
(c) Contingencies—			
(1) Rent, rates, taxes ...	100	100	100
(2) Office expenses ...	100	100	100
(3) Postage etc. ...	25	25	25
(4) Purchase of deadstock ...	50	...	...
<b>Total, Contingencies ...</b>	<b>275</b>	<b>225</b>	<b>125</b>
<b>Grand Total ...</b>	<b>5,210</b>	<b>5,160</b>	<b>5,820</b>
(B) * Provision of annual loan to each Co-operative Rural Creamery for assistance to constituent village societies in developing milk production (To be recovered by Government) ...	15,000	15,000	15,000

ESTIMATE 3—*contd.*

	1st year.	2nd year.	3rd year.
	Rs.	Rs.	Rs.
(C) Provision for Dairy Development Officer in the Rural Development Department for organization and supervision of scheme as a whole in the Province—			
(a) Pay—			
(1) Pay of Dairy Organising Officer starting on Rs. 310 per month in the Grade, Rs. 170-10-250, E. B. 15-400 E. B. 20-500 ...	3,720	3,900	4,030
(2) Clerk on Rs. 30 per month in Grade, Rs. 25-5/2-55 ...	360	360	420
(3) Two Peons on Rs. 14 each ...	336	336	336
Total, Pay ...	4,416	4,596	4,836
(b) Travelling Allowance Lump sum—			
Total, Travelling Allowance ...	1,320	1,320	1,320
(c) Contingencies—			
(1) Rent, rates, taxes ...	120	120	120
(2) Office expenses etc. ...	300	300	300
(3) Postage etc. ...	100	100	100
(4) Dead stock ...	300	...	...
Total, Contingencies ...	820	520	520
Grand Total ...	16,556	6,436	6,676
<i>Summary.</i>			
Supervision of Village societies ...	5,210	5,160	5,820
Advances to rural creameries* ...	15,000	15,000	15,000
Supervision of rural creameries ...	6,556	6,436	6,676
	26,766	26,596	27,496

\* Recoverable by Government.

## ESTIMATE 4.

Estimate of expenditure proposed to be met by Government over a period of three years in giving effect to the recommendations of the Committee with regard to the development of cattle-breeding in the Bombay Province as contained in section 4 of the Report.

(Reference paragraphs 30, 32 and 33 of the Report.)

Item.	Expenditure required.			Remarks.
	1st year.	2nd year.	3rd year.	
	Rs.	Rs.	Rs.	
A.—Annual grant to be placed at disposal of Rural Development Department for long-term loans free of interest to Co-operative Ghee Societies for purchase of modern implements.	3,000	3,000	3,000	This amount will be recoverable by Government.
B.—Additional grant to be placed at the disposal of the Livestock Expert to Government under "Premium Bull Scheme" for spread of male breeding stock of "dual purpose" breeds.	5,000	5,000	5,000	This amount is in addition to the existing sanctioned annual expenditure under the Premium Bull Scheme, i.e. Rs. 10,000.
	<i>Bankapur Farm.</i>			
C.—Estimate of expenditure involved in the reorganization of Tegur and Bankapur Farms, proposals for which have already been submitted to Government by the Director of Agriculture—	9,000	18,365	11,285	Bankapur:—Reference letter No. 627, dated 8th May 1939, addressed to Government, Revenue Department.
	<i>Tegur Farm.</i>			
(a) Bankapur	12,715	8,717	6,739	Tegur:—Reference letter No. 627, dated 3rd June 1939, addressed to Government, Revenue Department.
(b) Tegur				
D.—Estimate of expenditure to be incurred in the establishment of adequate breeding herds of Nimar and Dangi cattle under the Livestock Expert to Government.	59,400	15,200	15,200	This estimate can only be very approximate until the actual site etc. of the Farm or Farms is fixed.
Total ...	83,115	50,282	41,224	

## ESTIMATE 5.

Estimated cost of replacement of Sindhi and Soorti buffalo herds of milch cattle at the Agricultural College Dairy, Poona, by a Gir herd of milch cattle over a period of three years.

(Reference paragraph 36 of the Report.)

It is proposed that 1/3rd of the existing herds of Sindhi milk cattle and Soorti buffaloes at the Agricultural College Dairy, Poona, should be sold off annually during the next three years and replaced by good milch animals of the Gir breed. The expenditure involved annually would approximate as under—

	1st year.	2nd year.	3rd year.
Purchase of 90 milch cows of the Gir breed.	90 at Rs. 200 = 6,000	90 at Rs. 200 = 6,000	90 at Rs. 200 = 6,000
Purchase of 4 Bulls of the Gir breed. (Landed at the Agricultural College, Poona).	2 at Rs. 250 = 500	2 at Rs. 250 = 500	.....
Total ...	6,500	6,500	6,000
Deduct—Receipts obtained from sale of one-third of existing Sindhi herd at the Agricultural College.	20 Buffaloes at Rs. 80	20 Buffaloes at Rs. 80	30 Buffaloes at Rs. 80
	10 Cows at Rs. 80	10 Cows at Rs. 80	10 Cows at Rs. 80
	20 Buffaloes youngstock at Rs. 15	20 Buffaloes youngstock at Rs. 15	20 Buffaloes youngstock at Rs. 15
	10 Cow youngstock at Rs. 20	10 Cow youngstock at Rs. 20	10 Cow youngstock at Rs. 20
	12 Cows and buffalo males at Rs. 10	12 Cow and buffalo males at Rs. 10	12 Cow and buffalo males at Rs. 10
	3,020	3,020	3,920
Nett cost to Government ...	3,480	3,480	2,180

## ESTIMATE 6.

Expenditure involved by Government in the adoption of the "increased bull purchase" scheme proposed by the Committee in comparison with present "Lump sum" subsidy system, in connection with non-official cattle-breeding institutions in the Province.

(Reference paragraph 40 of the Report.)

## (A) PRESENT "LUMP SUM" SCHEME.

Institution.	Bulls taken.	Subsidy given.
		Rs.
(a) Bombay Gowrakshak Mandali ...	15	2,400 Subsidy payment for 1,500 bulls (Government share).
(b) Mulund Gowshala ...	10	2,000 Subsidy payment for 500 bulls.
(c) Sabarmati Ashram ...	10	Nil
(d) Gilligan Cattle Breeding Farm ...	12	1,000 Subsidy payment for 750 bulls.
(e) Gangapur Cattle Breeding Farm ...	8	1,000 Subsidy payment for 500 bulls.
Total ...		9,650

## (B) PROPOSED "INCREASED BULL PURCHASE" SCHEME.

Institution.	Bulls taken.	Expenditure by Government.	Recovered on sale of bull under premium bull system.
		Rs.	Rs.
(a) Bombay Gowrakshak Mandali ...	15	4,500	1,500
(b) Mulund Gowshala ...	10	3,000	1,000
(c) Sabarmati Ashram ...	10	3,000	1,000
(d) Gilligan Cattle Farm ...	12	3,000	750
(e) Gangapur Cattle Farm ...	8	2,000	500
		15,500	4,750
	<i>Deduct</i> ...	4,750	
	Nett cost to Government ...	10,750	

Additional cost on existing system i.e. A—Rs. 1,100



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### ESTIMATE 7.

Expenditure involved in supply by Government of qualified Manager to be in charge of the combined Gilligan and Gangapur Cattle Farms for the development of the Nimar breed of cattle.

*(Reference paragraph 41 of the Report.)*

It is suggested that an experienced Agricultural Overseer, trained in cattle-breeding and Management, should be deputed to this appointment for a period of five years.

The additional expenditure required would, therefore, be the replacement of the experienced officer mentioned above by a new recruit in the grade of Rs. 60-60.70—5—100 and the cost thereof, over a five year period, would amount to Rs. 4,140.

### ESTIMATE 8.

Expenditure involved in the deputation of an officer from the Bombay Province abroad for training on the technique of the manufacture of skim milk powder.

*(Reference paragraph 53 of the Report.)*

This estimate can only be very approximate until the class of officer to be deputed, the country to which he should be sent and the cost of fees, etc. for training are definitely ascertained. Assuming that a senior Agricultural Overseer (Graduate) is sent, the approximate costs would be as under to (a) United States of America, (b) New Zealand for a period of six months:—

	United States of America.	New Zealand.
	Rs.	Rs.
(a) Fares ... ..	2,400	1,200
(b) Deputation allowance ... ..	2,400	2,400
(c) Miscellaneous, including fees, etc. ...	2,000	2,000
Total ...	5,800.	5,600