Educational (1896) Department.

ORDINARY MS.

G.O., No. 83

Dated 12 "Feb. 1896

INDEXED

[Despatch Abstract.]

DAIRY FARM.

Recording Proceedings, Revenue Department, passing orders on papers relative to the establishment of a -- capable of supplying the troops and hospitals of Madras with milk and butter.

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Govt. of {1896} Madras.

REVENUE.

CHIEF SECRETARY'S GOVERNMENT OF MADRAS 5 FEB 1896

Issued

Recd. *Encl.*

G.O., No. 31, 21st January 1896.

JANUARY.

Dairy Farm.

Passing orders on papers relative to the establishment of a — capable of supplying the troops and hospitals of Madras with milk and butter.

Order No 83 d/12 Feb 96

Recorded.

Copy to the D.P.I. 13/2

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—again the following G.O., Mis. No. 2226, Revenue, dated 5th June 1895 :—

Read—the following letter from G. S. CURTIS, Esq., I.C S., Under Secretary to the Government of Bombay, to the Acting Secretary to Government, Revenue Department, dated Bombay Castle, 10th May 1895, No. 3498 :—

With reference to your letter, No. 1314, dated 27th March 1895, enquiring whether the Superintendent of Farms at this Presidency can recommend a dairy expert for employment in Madras, and, if so, on what terms the man would be willing to serve, I am directed to forward herewith copy of a report No. 110, dated 11th April 1895, from that officer on the subject, together with a letter from the Survey Commissioner and Director of Land Records and Agriculture, and to state that this Government concur with Mr. Ozanne.

Enclosures.

From E. C. OZANNE, Esq., Survey Commissioner and Director of Land Records and Agriculture, Bombay, to the Secretary to Government, Revenue Department, dated Poona, 25th April 1895, No. 1226-A.

I have the honour to furnish the report made by the Superintendent of Farms in obedience to Government endorsement, No. 2708, dated 5th April.

The subordinate proposed by Mr. Mollison in his paragraph 1 is not, in my opinion, the class of man desired by the Madras Government and I would suggest that Mr. Mollison's alternative proposal be accepted : that the Madras Government should depute an educated man to Poona to learn dairying.

From J. W. MOLLISON, Esq., Superintendent of Farms, Bombay Presidency, to the Survey Commissioner and Director of Land Records and Agriculture, Poona, dated Kirkee, 11th April 1895, No. 110.

In reference to your endorsement, No. 1094-A under Government memorandum, No. 2708, Revenue Department, dated 5th April 1895, forwarding letter, No. 1314, dated 27th March 1895, from the Acting Secretary to the Government of Madras, Revenue Department, I have the honour to report that I can recommend a dairyman thoroughly trained in the manipulation of improved dairy machinery and in the manufacture of dairy produce (except cheese) by improved methods. This man has also a good knowledge of the management of dairy cattle. He speaks Marathi and Hindustani but no English and would go to Madras on Rs. 25 per mensem.

2. Apparently more than a mere dairyman is required. If such is the case, then it will be very difficult to find a suitable man unless specially trained.

3. I would suggest that the Madras Government be invited to send a man to the Poona farm to be trained. A good man would acquire all the requisite knowledge in two months. He must however be prepared to work and not be a mere on-looker.

4. One of the two Stock Inspectors who have been sent for a year from Madras to the Bombay Veterinary College would be a suitable man. Hussain Ally (I think) is the name of the man I refer to. He with other senior Veterinary students attended the course of lectures I gave at the farm. He is intelligent, very keen at his work, and would, when trained, be perfectly able to communicate intelligently to others the knowledge which he has acquired. This man finishes his course at the Bombay Veterinary College in about ten days.

5. The only alternative suggestion that I can make is to depute to Madras, with the sanction of Government, one or other of my subordinates. All have been thoroughly trained in dairying and in the course of two months could impart the necessary knowledge to a few of the senior students of the Saidapet College.

Order—Mis. No. 2226, Revenue, dated 5th June 1895.

Communicated to the Board of Revenue for report after consulting Mr. Keess.

2. With reference to paragraph 2 of Board's Proceedings, Mis. No. 913, dated 16th February 1895, the Board is informed that the objects of the proposed experiments will be as follows :—

(1) To repeat the experiments of 1892 with a view to compare European and Native dairy methods in Madras; the former being worked by a trained practical dairyman.

(2) To ascertain, whether on the expiry of the existing contracts, the dairy farm at Saidapet could undertake the supply of milk and butter to the troops and hospitals in Madras, and at what price. For this purpose, the farm herd at Saidapet would have to be increased by hire or purchase to a large enough number of cows to keep two or three separators at work.

(True Extract.)

(Signed) G. S. FORBES,
Ag. Secretary to Government.

To the Board of Revenue (Revenue Settlement, Land Records and Agriculture), with enclosures to be returned.

Read—also the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 14th October 1895, No. 326:—

Read—again Proceedings of the Board of Revenue (R.S., L.R. and Agri.), dated 3rd July 1895, Mis. No. 3403.

Abstract.—Communicating to Mr. Keess, G.O., Mis. No. 2226, Revenue, dated 5th June 1895, communicating, with remarks, to the Board, for report, letter from the Government of Bombay forwarding certain papers regarding the employment of a dairy expert for Madras, and also the following note of Deputy Director of Agriculture, dated Camp, Satyamangalam, 23rd June 1895; as also some other papers on the subject of dairy farming, and requesting his opinion as to the best manner of giving effect to the desire of Government that the dairying experiments made in 1892 should be repeated at Saidapet.

Note.

[*Reference.*—G.O., Mis. No. 2226, dated 5th June 1895].

In the Government Order quoted, the Government states that it desires (1) that the dairying experiments made at Saidapet in 1892 may be repeated under a trained dairyman, and (2) to ascertain whether the milk and butter required for the troops and hospitals of Madras cannot be advantageously supplied from Saidapet.

Regarding (1) the first requirement is an expert dairyman and the Superintendent of Farms, Bombay, offers to train one for us at Poona, if we send him a man. Either one of our Agricultural Inspectors should be sent and then deputed to work at Saidapet under Mr. Keess, or the Principal should nominate one of his staff to be trained who could afterwards carry on the experiments. This I would recommend should be settled as soon as possible in order that advantage may be taken of the presence of the Assistant Agricultural Chemist at Saidapet in November next in carrying out the experiments. That this officer should assist in the experiments should also be arranged with the Government of India.

Regarding (2) the question is a much larger one and turns partly on price and partly on what the departments concerned are prepared to pay for milk and butter from a guaranteed source of supply. Another question which will have to be discussed is the possibility and advisability of depending on one source for supply in view of the danger of its interruption in case of an outbreak of disease. The total quantity of milk and butter which, according to the notices in the *Fort St. George Gazette*, is annually contracted for by hospitals in Madras is very large, and the mere management of such a supply from a distance like Saidapet would be a matter of some difficulty and would probably demand more time from the Principal of the College than he can give, unless the post of Vice-Principal be filled up.

As to the price at which milk could be supplied from Saidapet, the Principal can doubtless give details, but it appears from the annual reports of the College that the realizations by the sale of milk, butter and ghee during the three years ending 1893–94, were Rs. 3,297·25, and the amount of milk received was 62,263 lb., that is, at the rate of nearly 19 lb. per rupee. Butter making from cow's milk is usually an unprofitable business where, as at Saidapet, the fresh milk can be sold at a good price, and this low rate may be due to butter making, irregularities of local demand and the like.

Mr. Mollison's report for 1893–94 shows that cow's milk is sold at Poona at 13 lb. and buffaloe's milk at 14 lb. per rupee. From Mr. Ozanne's report communicated with G.O., No. 3953, dated 10th July 1891, the Agricultural Department, Bombay, appears to have then supplied cow's milk at 14 lb. and buffaloe's milk at 15 lb. per rupee. These rates were lower than the usual contract rates. It remains to be ascertained what the contract rates in Madras at present are. At Poona, by arranging that a certain amount of "reduced" buffaloe's milk shall take the place of cow's milk, the butter supply is to a great extent provided, buffaloe's milk being much richer in fat than is cow's, and the abstraction of a portion of this butter-fat makes the milk a more palatable and suitable beverage than the whole milk.

According to the notices which have appeared in the *Fort St. George Gazette*, the total amounts of milk and butter required for the hospitals in Madras during the year ending 31st March 1896 is—milk 501,205 lb. and butter 10,321·25. If buffaloe butter were supplied about 120,000 lb. of milk would be required, and if cow's probably from 180,000 to 220,000 lb. In all, it may be taken that nearly 700,000 lb. of milk are required annually for the hospitals of Madras.

On the figures of the four years ending 1893–94, the average annual yield of milk per head from the cows kept at Saidapet is about 2,000 lb., or 9·3 lb. per diem in milk. At Poona (*vide* Mr. Mollison's report), the daily yield is nearly 10·2 lb. for the cows and 11·8 lb. for the buffaloes kept there. The latter are very different from the buffaloes of Madras. The average annual yield per head at Poona is not determinable accurately from the published figures, and it is therefore advisable to calculate from the rates determined at Saidapet, though possibly the daily yield there may be capable of increase. These figures show that it would be necessary to maintain a herd of 350 milch cows to supply the milk and butter required for all the hospitals, of which over 200 would have to be in milk. The milch cows at Saidapet number from 10—12 in different years, so that the enormous development that would be necessary is at once apparent. Even assuming that the farm at Saidapet could be enlarged so as to carry the cows actually in milk, the dry cows and young stock would have to be provided for elsewhere. This is done at Poona.

The mere distribution of the milk and butter—1,373 lb. milk and nearly 30 lb. of butter daily amongst twelve institutions would involve a considerable amount of work and entail close supervision to ensure safe delivery. What then should be recommended?

I would suggest that if the Principal reports that it can be done at rates that will compare favourably with those now paid, or even on equal terms therewith, the dairy herd be developed at Saidapet, so as to supply the station hospitals at the Mount and Madras. The Commissariat Department could then undertake the distribution; they have a subordinate already stationed at Saidapet in charge of their meat supplies. To do this even, it will be necessary to largely increase the herd at Saidapet, and to establish a run at some distance outside Madras, where the dry cows and young stock may be kept.

Although the primary object of the development of the dairy farm at Saidapet should be the economical supply of pure milk and butter to the troops in hospital, the secondary, though not less important one should be, as Mr. Ozanne says of the Poona farm, the improvement of milking breeds of cattle. Results in this direction are necessarily slow but the possibilities are great.

In connection with this matter the following may be consulted with advantage:—

Report of the Director of Land Records and Agriculture, Bombay—
1891–92, paragraph 22 and appendix A.
1892–93, „ 25.
1893–94, „ 31.

Annual report of Poona farm for 1893–94, paragraphs 47—58.

Satyamangalam,
23rd June 1895.

(Signed) C. BENSON,
Dy. Dir. of L. Rds. and Agri.

Enclosure No. I.

Statement showing the amounts of milk, &c., for which tenders of supply are called for in hospitals of Madras.

Name of institution.	Quantity.		Remarks.
	Milk.	Butter.	
	lb.	lb.	
1. Station Hospital at Madras, St. Thomas' Mount, Pallavaram and Poonamallee (Commissariat).	68,750	4,000	The commissariat notices in the Gazette specify no conditions.
2. General Hospital	135,000	2,000	The notices specify that the milk should be fresh cow's of good and wholesome quality; specific gravity 1,025°. Cows to be milked at the hospital. The butter to be fresh of best quality.
3. Hospital for Women and Children	75,000	1,000	
4. Lunatic Asylum	65,000	1,200	
5. Government Lying-in Hospital	61,105	750	
6. ,, Ophthalmic Hospital	8,600	220	
7. ,, Leper Hospital	47,500	1,000	
8. Voluntary Venereal Hospital	7,750	120	
9. Monegar Choultry, Native Infirmary, Rajah Sir Savalai Ramaswami Mudaliar's Lying-in Hospital and Rajah of Venkatagiri's Choultry.	32,500	31·25	....
Total ..	501,205	10,321·25	

Enclosure No. II.

Statement showing yield of milk obtained at Saidapet.

Year.	Number of cows.	Days milking.	Total yield.	Average yield per cow.	
				Per annum.	Per diem.
			lb.	lb.	lb.
1890-91	12	2,471	24,093	2,008	9·75
1891-92	8	2,060	19,845	2,481	9·63
1892-93	10	2,295	20,334	2,033	8·86
1893-94	12	2,437	22,084	1,840	9·06
1894-95	12	2,327	21,833	1,819	9·00
Total and general average ..	54	11,590	108,189	2,004	9·34

Read—again Proceedings of the Board of Revenue (R.S., L.R. and Agri.), dated 9th July 1895, Mis. No. 3554.

Abstract.—Requesting the Surgeon-General with the Government of Madras, and the Chief Commissariat officer, Madras, to furnish particulars regarding the supply of butter and milk to hospitals and troops in and about Madras.

Read—again Proceedings of the Board of Revenue (R.S., L.R. and Agri.), dated 19th July 1895, Mis. No. 3794.

Abstract.—Requesting the Chief Commissariat officer, Madras district, with reference to his reply to the above, whether any maximum or minimum daily quantities of milk or butter are fixed under the contract either as a whole or for the four station hospitals separately.

Read—again Proceedings of the Board of Revenue (R.S., L.R. and Agri.), dated 2nd August 1895, Mis. No. 4035.

Abstract.—Recording letter from the Chief Commissariat officer, Madras district, stating that there is no maximum quantity fixed for the supply of milk and butter required daily.

Read—again Proceedings of the Board of Revenue (R.S., L.R. and Agri.), dated 17th September 1895, Mis. No. 4918.

Abstract.—Recording pending receipt of reply from the Surgeon-General with the Government of Madras to Board's Proceedings, dated 9th July 1895, No. 3554, the following letter from Mr. Keess, dated 19th August 1895, No. 506.

Letter from W. KEESS, Esq., M.A., M.R.A.C., Acting Principal, Madras College of Agriculture, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture (through the Director of Public Instruction), dated Saidapet, 19th August 1895, No. 506:—

I have the honour to furnish the information called for in Board's Proceedings, Mis. No. 3403, dated 3rd July 1895. Unavoidable circumstances have prevented me from replying to the reference before to-day.

2. As to the proposed dairy experiments, they can be conducted at Saidapet by Mr. Collins during the time he is on duty at this college, viz., middle of November to end of December. I presume the experiments will not be confined to the products of the milk obtainable on the Saidapet Farm, but will include those of the milk of buffaloes and ordinary Madras cows. In the latter case, I would recommend that the experiments, other than those on the farm milk, be conducted in Triplicane or Mylapore. For the experiments made by me in 1892, buffaloe's milk and ordinary Madras cow's milk had to be purchased in Triplicane or Mylapore and brought to Saidapet by jutka, thus preventing the commencement of any experiment till past 10 A.M. Further, there is some difficulty and loss of time in sending samples from Saidapet to the Chemical Examiner's office, a distance of 6 miles. Mr. Collins could doubtless analyse some of the samples at Saidapet, but I don't think he could do without the assistance of the Chemical Examiner.

3. Regarding the question of deputing some one to Poona to learn the manipulation of the dairy implements there in use, I beg to recommend that J. Chelvaranga Raju, Bailiff of the College Farm, be selected for the purpose. He has had a good deal of experience of dairy work at Saidapet including the manipulation of a cream-separator, and I think *a month* at Poona would be ample for him to learn the methods of using the improved implements used on the Poona farm. If this suggestion commends itself to the Board, I request that the Director of Public Instruction be addressed. I presume the Agricultural Department will pay the whole cost of the bailiff's deputation.

4. Referring to the supply of milk and butter to the hospitals of Madras, it appears that 501,205 lb. of milk and 10,321·25 lb. of butter will be annually required. If the butter is produced from cow's milk, the total annual outturn of milk must be 750,000 lb., about 24 or 25 lb. of milk being taken as producing a pound of butter. The daily yield of milk would have to be about 2,100 lb. Taking 9 lb. as the average yield per day of a cow, about 230 cows would have to be daily milked. To ensure this number of cows being in milk, a herd of 350 cows would be necessary. At present the Saidapet farm can, without interfering with its use as an annexee to the College of Agriculture, maintain about 12 or 13 cows. If an out-farm somewhere near Saidapet were established where cows not in milk and young stock could be kept, the farm might maintain a herd of, say, 20 cows as a maximum, about 14 or 15 of which would be in milk. The enormous expansion of the herd which the supply of milk to the hospitals would entail is apparent. To begin with, the area of the farm would have to be increased by about 400 acres stretching to the south of the College, where alone an expansion of the present farm is possible. Next would come the purchase of about 300 cows with the necessary bulls for service, bullocks for cultivation and heifers in reserve or a total of about 400 head of cattle. The purchase money alone would amount to over 40,000 rupees. Lastly, one would mention the additional buildings and implements which would have to be provided.

5. No doubt if the farm were once established and the contracts for the hospitals obtained for a great number of years a large profit could be shown, as the price * which the authorities are willing to pay is practically the same as what the farm can command at present ($3\frac{1}{2}$ annas to 4 annas a measure of milk). There can also be no doubt that it would be very advantageous for the students of the College to learn the management of a large dairy. I must point out, however, the great risk which would be incurred, in case of an outbreak of cattle disease, of all the hospitals being suddenly deprived of their milk and butter.

* One anna per pound for milk. Price of butter not known, but presumably Re. 1-4-0 to Re. 1-8-0 a pound.

6. Mr. Benson's suggestion that the College should supply the station hospitals only does not commend itself to me. About 460 lb. of milk would be daily required, necessitating the milking of about 50 cows a day and the maintenance of a herd of about 70 cows. This would mean a large increase to the area of the farm. If anything is undertaken in the way of supplying milk wholesale to hospitals, I would prefer that a herd of 350 cows be established and *all* the hospitals supplied. The establishment and management of a herd of 70 cows would be very little less difficult than when the herd numbers 350.

7. In conclusion I beg to express my opinion to the effect that it is not advisable to undertake the supply of milk to hospitals in the manner indicated by the Board. The initial cost, the trouble of managing a large herd, the risk of the supply being suddenly cut off and the impossibility of selling a large quantity of milk in case the contracts are terminated, are the considerations which have led me to record the above opinion.

Read—letter from the Secretary to the Surgeon-General with the Government of Madras, dated 17th September 1895, No. 6361.

Abstract.—Forwarding with reference to Board's Proceedings, No. 3554 of 1895, copies of reports of Medical officers in charge of Presidency hospitals regarding the supply of milk and butter.

Read—also the following paper:—

MEMORANDUM.

In a note, dated 23rd June last, read in Board's Proceedings, Mis. No. 3403 of 1895, I pointed out the principal points for consideration in connection with the proposals of Government made in G.O., No. 2226, dated 5th June 1895. That note was communicated to Mr. Keess and his reply was read in Board's Proceedings, Mis. No. 4918 of 1895.

2. It will be observed that Mr. Keess recommends that his farm bailiff may be deputed to Poona for special training in dairy-work. This proposal may be accepted and the immediate orders of Government on the point sought, as it is desirable, if the proposed experiments are to be made this year, that the bailiff should have returned from Poona in time to allow of his carrying out Mr. Collins' instructions as to the experiments. Mr. Collins will be on duty at Saidapet from the middle of November to the end of December next.

3. As to the experiments to be made, I think that they should first be confined to the milk produced on the farm at Saidapet, but should be supplemented by others with buffaloe's milk. If the latter be not obtainable at Saidapet in sufficient quantity, probably there would be no difficulty in arranging for conducting the experiments at Chepauk and it would only be necessary to secure permission for Mr. Collins to make use of the chemical laboratory of the Chemical Examiner.

4. As to the further problem which the Government desires solution of, it will be observed that Mr. Keess in the main confirms the statements made in my previous note. The difference in the calculation of the quantity of milk required to supply the milk and butter used by the hospitals in and around Madras being due to his basing his calculation on cow's milk alone.

5. As to the question of price Mr. Keess bases his calculation on a rate of one anna a pound for milk, and a proportionate price for butter. At these rates he states that a large profit could be shown. That is to say, the milk could be supplied departmentally at a saving on the current rates paid, for it appears that for milk the average rate now paid is 1·125 annas per pint, say 1·25 lb., that is about 18 lb. per rupee (nearly five Madras measures). As regards butter, however, it is evident that at the average rate now paid for the hospital supply—8 annas a pound—no business is possible so far as cow's milk butter is concerned, whilst as to buffaloe's milk we have no local data. But assuming the Poona ratio of about 12 lb. of milk to a pound of butter, the charge

should be 12 annas a pound, unless a large sale for reduced milk can be secured, or the hospitals would take this milk in part. On the latter point I have no information, but taken on the whole I think it may be safely stated that the milk required could be supplied departmentally at a saving to Government.

6. According to the data now available it would appear that the average daily consumption of milk and butter is less than that shown as required by the advertisements for tenders in the *Fort St. George Gazette* alluded to in my previous note. It amounts to—

Milk	1,143·75 lb. per diem.	
25·125 lb. butter=milk of buffaloes	301·5	
Total ...	1,445·25	

A sufficient margin would have to be allowed for contingencies, but even assuming that we secured buffaloes as good as those at Poona, we should require nearly 30 buffaloe-cows in milk as well as about 150 cows. If cows were to be depended on for the butter also, the number of cows to be kept in milk would be about 220. Thus the calculations in my previous note would not be materially affected.

7. The further points for consideration are—

(1) How and where so large a herd could be maintained.

(2) Where a run for young stock and dry cows could be found near enough to Madras.

(3) How safety from failure of supply could be ensured, such failure and risk of loss being liable to occur from an outbreak of disease.

(4) Whether the Government is prepared to face the initial capital outlay.

8. As to items (1) and (3) alone, I believe that the question could be solved by making use of the municipal sewage farms in Madras. The practice of utilising sewage farms for milk production has been very successful in England, and from the Madras farms we could obtain the necessary fodder. It might be feasible to establish dairy depôts in connection with the Black Town and Kistnampett sewage farms if the necessary arrangements could be made with the Municipality. At these depôts only cows in full milk would be kept, all dry cows being sent to the run alluded to as the second requirement. In addition to these the Saidapet farm herd might be fully developed, and it might perhaps be possible to establish another depôt in connection with the Lunatic Asylum, which is one of the largest consumers of milk. These depôts should, I think, only be maintained for milk production and distribution, but this separation whilst adding greatly to the safety of the supply, would enhance the difficulties of supervision enormously. As Mr. Mollison points out in his last report on the Poona farm, the cleaning of milk vessels requires persistent supervision. This might perhaps be secured if a central depôt for butter making and supply were established in Egmore, whither all milk vessels should be sent for cleaning by special arrangements before being returned to the depôts from the hospitals.

9. As to the provision of a run for young and dry stock, this has been done at Poona and if Government decide to undertake the business it can no doubt be done near Madras. It must, however, cost some money. So also must the initial provision of the necessary stock of cows and buffaloes. But it must not be forgotten that the results that can be looked for from an undertaking such as Government has suggested will not end with the financial question of milk supply. On this point I would draw attention to paragraphs 79—87 of Mr. Mollison's last report on the Poona farm. Mr. Mollison is an agriculturist of considerable experience in stock-breeding and dairying.

10. Whatever may be said, however, the undertaking would be a large one and would involve the cordial co-operation of the officers of several departments to ensure its success as well as a large initial outlay at starting.

Madanapalle,
28th September.

(Signed) C. BENSON,
Dy. Dir. of L. Rds. and Agri.

Enclosure.

Statement showing the daily consumption of and contract rates for butter and milk in the different hospitals in and around Madras.

Hospitals, &c.	Daily consumption.		Contract rates.		Remarks.
	Butter.	Milk.	Butter, per lb.	Milk, per pint.	
1	2	3	4	5	6
	lb. oz.	PINTS.	AS. P.	AS. P.	
Government Lying-in Hospital ..	1 9	100	14 0	1 1½	Butter obtained from Bangalore.
Ophthalmic Hospital	0 10	27	6 0	1 0	
Hospital for Women and Children ..	2 0	130	6 0	1 0	
Government Leper Hospital ..	1 12	90	6 6	1 2	
Voluntary Venereal Hospital ..	0 4½	17	6 6	1 1½	
Government Lunatic Asylum ..	3 6	120	6 9	1 3	
General Hospital	4 8	280	10 0	1 1	
Commissariat Department	* 11 0	* 151	8 0	1 3	* The average daily consumption has been calculated from the annual consumption reported in the Chief Commissariat Officer's letter by dividing the latter by 365.
Total ..	25·125	(a) 915	..	..	
Average rate ..	..	..	8 0	1 1½	

(a) Equal to 1,143·75 lb. at 1·25 lb. per pint.

Resolution—dated 14th October 1895, No. 326.

With reference to G.O., No. 2226, dated 5th June 1895, the report of the Principal of the Agricultural College, Saidapet, and Mr. Benson's notes, read above, will be submitted for the information of Government.

2. Mr. Benson's suggestion that the herd of cows and buffaloes in milk might be divided and stationed near several of the municipal sewage farms, so as to secure a fodder-supply, and diminish the risk of the milk-supply being cut off by an outbreak of cattle disease, appears to the Board to be fraught with difficulties.

Supervision would be so difficult that whoever was placed in charge of each division of the herd would be almost independent. Costly land would have to be acquired and stabling erected, in several places, and the distribution of the milk would be troublesome.

3. The Board believes that all the grass and hay produced at the sewage farms finds a ready market at a high price; but if a sufficient supply could be made available, the preferable course would seem to be to cart the fodder to Saidapet, where the whole herd could be carefully supervised. No Government land is available at Saidapet for the extension of the farm, and the cost of acquiring, say, 100 acres to the south of the river would be very considerable. For stabling, at least four times the accommodation now available at Saidapet, would be required. The cost of the cattle alone would approach half a lakh, and it seems doubtful whether a dairy farm, on the required scale, could be started at a capital outlay of less than one and-a-half or two lakhs.

4. The existing supply of fresh milk is equal to the demand, and as it appears to be a general condition of the hospital contracts that all cows should be milked at the various hospitals in the presence of representatives of the medical authorities, the milk certainly comes straight from the cow. The contractors, however, feed, water, and stable the animals as they please, and the chief advantage which a Government milk-farm should afford would be an assurance that the food, water and stabling were clean and wholesome. Whether this assurance could be given if the cows were fed on grass irrigated by sewage, the Board is not competent to say; but, in cholera seasons, it is not improbable that uninstructed opinion would regard this source of food-supply with distrust and aversion. It is out of the question for Government to undertake the supply of butter to the hospitals at such prices as are now being paid.

5. Before pursuing further investigations as to the terms on which land, and fodder from the sewage farms, can be got, and as to the cost of farm-buildings and establishment, the Board solicits the orders of Government as to whether it wishes a scheme to be framed in detail.

6. As regards the indirect advantage which may be expected, viz., a gradual improvement in the breed of milch cattle, it appears to the Board that operations with this end in view can hardly be carried on under favourable conditions within the precincts of a great city like Madras, where grazing and fodder are at a premium, and Government has no suitable grazing grounds. A large run for dry cows and young stock would (as remarked by Mr. Benson) be indispensable, involving further outlay on buildings and establishment, and further difficulties in respect of supervision. A suitable run might be found in one of the several Chingleput forest reserves, adjoining the railway.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department, with one enclosure (returned).
Copy to the Surgeon-General with the Government of Madras.
" " Director of Public Instruction.
" " Superintendent, Civil Veterinary Department.

Read—also the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6559, dated 29th November 1895:—

Read—again Board's Proceedings, Mis. No. 5689, dated 25th October 1895.

Abstract.—Communicating to the Director of Public Instruction for issue of the necessary early instructions G.O., Mis. No. 4152, Revenue, dated 22nd October 1895, approving and sanctioning the deputation of J. Chelvaranga Raju, Bailiff of Saidapet Farm, to Poona, for learning the use of improved modern appliances for dairying.

Read—also the following Board's Proceedings, Mis. No. 6426, dated 23rd November 1895:—

Read—again G.Os., Mis. Nos. 2226 and 4152, Revenue, dated 5th June and 22nd October 1895, respectively.

Resolution—Mis. No. 6426, dated 23rd November 1895.

The Principal, College of Agriculture, is requested to report what arrangements he proposes in order to carry out the instructions of Government given in the orders above quoted. Mr. Collins has arrived at Madras and it is desirable, if possible, to take advantage of his presence.

G.O., No. 2226, dated 5th June 1895.
Board's Proceedings, No. 387, Press, dated 25th May 1892.
Board's Proceedings, No. 521, Press, dated 20th July 1892.
Board's Proceedings, No. 326, Press, dated 14th October 1895.

2. In the meanwhile, copies of the marginally-noted papers will be communicated to Mr. Collins for his information.

(True Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Principal, College of Agriculture.
" Mr. S. H. Collins, Assistant Agricultural Chemist to the Government of India.
Copy to the Director of Public Instruction.

Read—also the following letter from W. KEESS, Esq., M.A., M.R.A.C., Acting Principal, Madras College of Agriculture, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated Saidapet, 26th November 1895, No. 688:—

I have the honour to furnish the report called for in Board's Proceedings, Mis. No. 6426, dated 23rd November 1895.

2. Government Order, No. 4152, Revenue, dated 22nd October 1895, was communicated to me by the Director of Public Instruction, but no orders have as yet been issued about the deputation of J. Chelvaranga Raju to Poona. Apparently, the reply of the Bombay Government to the reference regarding the orders to be issued to the Superintendent of Farms, Poona, is being awaited. Even if J. C. Raju leaves Saidapet at once he cannot return in time to enable Mr. Collins to take any part in the experiments, as he leaves Saidapet before the end of December.

3. With the appliances now available at Saidapet, and these are suitable to the College farm, as it now stands, it appears unnecessary to repeat the purely statistical portion of the experiments conducted by me in 1892, such as weight of butter obtainable from a given weight of milk, &c., for all such information is already available. As the result of practical experience and of previous experiments, certain figures have been arrived at, and all further experiment can do is to confirm them. As I understand matters, J. C. Raju is to go to Poona to learn the method of work there, and on his return certain experiments are to be conducted with a view to testing whether the Poona methods can be successfully put into practice at Saidapet if the herd of cows at Saidapet is increased. For such experiments certain implements will have to be purchased and a large amount of milk used.

4. The Educational Department intends to utilize Mr. Collins' spare time by causing him to investigate the following points. I have to-day arranged matters with Mr. Collins:—

(1) Relative merits (from a chemical aspect) of butter (from both farm cows and local buffaloes) made by the process described in the latter portion of paragraph 5 of my letter, No. 439, dated 25th April 1892 (Board's Proceedings, No. 387, dated 25th May 1892), and that made with the assistance of the "Baby" separator.

(2) Best method (judged by the analysis of the skim milk) of separating buffaloe's milk by the "Baby" separator. I may add that the remarks made in paragraph 2 of Mr. Mollison's letter, No. 381, dated 7th July 1892 (Board's Proceedings, No. 521, dated 20th July 1892), are of little or no practical value as they refer to the "Windsor" separator and not to the "Baby."

5. Should the Board desire Mr. Collins to investigate any other matter, I shall feel obliged by my being informed of the same at an early date.

Resolution—Mis. No. 6559, dated 29th November 1895.

Mr. Keess' report will be submitted for the information of Government. In the circumstances it will not be possible to repeat the experiments of 1892 with the aid of a trained practical dairyman during the time that Mr. Collins is on duty at Saidapet.

2. The reports read in the marginally-noted Proceedings showed that the experiments made in 1892 were inconclusive owing to defective method and appliances, and the object of deputing the College farm bailiff to Poona was that he should be trained in the modern methods which have been worked so successfully there. The papers read in G.O., Mis. No. 2226, Revenue, dated 5th June 1895, showed that the Superintendent of Farms, Bombay, was prepared to arrange for the required training, and it is therefore to be regretted that the bailiff was not sent to Bombay as soon as G.O., Mis. No. 4152, Revenue, dated 22nd October 1895, was communicated to the Principal.

No. 387, dated 25th May 1892.
" 521 " 20th July "

If the equipment of the College farm is insufficient for carrying out the experiments desired by Government, the Principal should specify what is further required.

3. The Board understands that the average daily yield of milk on the College farm is about 60 lb., and this quantity should suffice for experimental purposes, so far as cow's milk is concerned.

4. Experiments in butter-making, on the method alluded to in paragraph 4 of Mr. Keess' letter read above, do not appear likely to lead to the production of butter free from an objectionable amount of curd, which is one great desideratum, but the Board has, in the circumstances, no better proposals to suggest for making use of Mr. Collins' spare time.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department,
with enclosures (copy of Principal's letter).
" Principal, College of Agriculture, Saidapet.
" Director of Public Instruction, with enclosure.

Read—also the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6912, dated 18th December 1895:—

Read—the following letter from the Acting Principal, Madras College of Agriculture, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 4th December 1895, No. 712:—

Referring to the last portion of paragraph 2 of Board's Proceedings, Mis. No. 6559, dated 29th November 1895, I have the honour to state that the dairy appliances at present on the farm are suitable for the amount of milk which the farm produces. They are not suitable, however, to deal with much larger quantities. Of course the nature of the appliances varies with the amount of milk to be dealt with, and until I know what amount of milk Government wishes the experiments made on it is impossible to specify the additional appliances which will be required.

2. Referring to paragraph 3 of same Proceedings, I beg to state that the amount of milk the farm is now producing is about three gallons in the morning and 2½ gallons in the evening. No experiments are required with these quantities with the implements now on the farm, which, as I have remarked before, are suitable under the existing conditions. We know all the statistics, &c., regarding these quantities—in fact, I may say we know a good deal more than what any chemist could possibly discover, for chemistry teaches us nothing about the quantity and the flavour of butter and the bailiff can tell what amount of butter and what kind of butter *each* cow on the farm can produce. What Mr. Collins is doing now is the investigation of certain points in connection with the separation of milk and the making of butter—*vide* my letter, No. 688, dated 26th November 1895. I anticipate practical good from Mr. Collins' work. In fact, already he has shown by analysis that the separation of cow's milk by the farm separator is practically complete. Further experiments could only be useful, I consider, if larger quantities of milk than the farm can at present produce were dealt with implements suitable to the quantities experimented on. The chief difficulty at Saidapet is the difficulty of obtaining sufficient milk for such experiments.

Resolution—Mis. No. 6912, dated 18th December 1895.

Submitted for the information of Government in continuation of Board's Proceedings, Mis. No. 6559 of 1895.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.

Order—No. 31, Revenue, dated 21st January 1896.

Miscellaneous.

From the papers read above, it appears that the establishment of a dairy farm capable of supplying the troops and hospitals of Madras with milk and butter is impracticable. The Government would have to commence by purchasing some 400 cattle at a cost of about half a lakh of rupees and it would then be necessary to provide, in the vicinity of Madras, grazing facilities and sheds for about 200 cows and a run for dry cows and heifers. Besides the initial expenditure of the scheme, which the Board estimates at from 1½ to 2 lakhs, it would further be necessary to arrange to prevent any sudden break in the supply of milk in consequence of an outbreak of disease in the herd and the cost of this would be very great.

2. While operations on so extensive a scale as were originally contemplated are thus impracticable for financial reasons, the Government is disposed to consider that the difficulties apprehended might be met if the supply of milk and butter were restricted to a limited number of hospitals. Before attempting, however, to form a definite opinion on this subject it is necessary to await the result of the dairying experiments which have been conducted at the Saidapet farm. It is to be regretted that the farm bailiff, whose deputation to Poona was sanctioned in October last, was not sent thither at once. Mr. Keess is chiefly to blame for this error, but the Director of Agriculture should have taken steps to see that his instructions were carried out. The bailiff should now be sent to Poona without further delay. With regard to what should be done at Saidapet after his return, the Government observes that Mr. Keess considers that further experiments would only be useful if larger quantities of milk than the farm can at present produce are manipulated with suitable implements. It is understood, however, that Mr. Benson has recently been to Poona and had there the opportunity of making himself acquainted with the working of the dairy farm at that place. If Mr. Benson has now returned, he should be instructed to draw up a brief memorandum on the methods of working in vogue in the Poona farm dealing specially with the question of the supply of milk and butter to the troops. It is possible that his observations may be of assistance in introducing improvements at Saidapet as well as in elaborating proposals with regard to the supply of milk and butter to a limited number of hospitals in Madras. When this information is before Government, together with an account of Mr. Collins' experimental work which is said to have shown that the separation of cow's milk by the farm separator is practically complete, the Government will be in a better position to decide what further action to take with regard to the establishment of a dairy farm on a larger scale and the introduction of improved methods and appliances for the making of butter.

(True Extract.)

Secretary to Government.

To the Board of Revenue (Revenue Settlement, Land Records and Agriculture).
Copy to the Educational Department.

Exd. C. M. Brisson.

50 Copies.

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When examined ____
When signed ____
} 189 .

Read again G.O., No. 189 , dated

Current No.

Enclosures to C. No

Order of Government	A	A	A	A	A	A	A	
Letter of Government. .								
Statement with ditto.								
Papers not filed up, being meant for despatch in original.								

N.B.—
A = Copy in full.
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