

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 896	Press ~~Mis.~~
22. 23	
Dated	2 - 5 - 1865.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Revenue Department,
2nd May 1865.*

No. 22. Read the following Proceedings of the Board of Revenue:—

Submitting, for consideration, file of letters
received from officers consulted by the
Board, on the subject of encouraging
the growth of firewood, and collecting
agricultural statistics. (Here enter 6th January 1865, No. 48.)

No. 23. ORDER THEREON, 2nd May 1865, No. 896.

Miscellaneous.

1. The letter above recorded is the Board's reply to G. O. 6th November 1863, Revenue Department, No. 1,994, on the subjects of encouraging the growth of firewood on waste lands, and collecting agricultural statistics. With their letter the Board also forward the replies of the Collectors whom they consulted on these questions.

2. As regards the growth of firewood, the Tope Rules passed in 1848 allow waste land to be taken up for this purpose, free of assessment for twenty years, and during this period the holder is allowed also to cultivate the spaces between the trees, free of tax. At the end of the twenty years, the fixed assessment of the land is charged. Almost all the officers consulted by the Board consider that these Rules hold out as much encouragement as can be legitimately offered by Government.

3. Mr. Wedderburn, the late Acting Collector of Bellary, however proposes that in the Ceded Districts, Government should grant ten-acre lots of waste land, free of tax for ever, for planting purposes.

4. Mr. G. Morris, the late Collector of South Canara, suggests that the "Kummaky" system of that District might with advantage be extended to some other Districts. According to this system each Ryot is allowed the usufruct free of tax of the uncultivated land to the distance of one hundred yards from the boundaries of his cultivated land, being however restrained from cultivating it and from felling the more valuable trees without payment.

5. The Director of Revenue Settlement, Mr. R. E. Master, proposes that where waste lands are not available, as is frequently the case in the Delta villages of the Godavery, a remission of half the assessment should be allowed on a limited extent of each Ryot's holding, to be devoted to planting purposes.

6. Mr. Banbury, the late Acting Collector of Madras, recommends the formation by Government of two large plantations of Casuarinas on the sandy tracts north and south of Madras.

7. The Board of Revenue approve of the principle of the Canara Kummaky system, and "deem it deserving of consideration whether proportionate allotments out of the waste, tax free so long as uncultivated, might not be attached to every Ryot's holding in the country for the purpose of encouraging the growth of fuel and increasing the supply of vegetable manure, while the plots when enclosed might often, with advantage, be used as small grazing paddocks." They would allow any trees to be planted in these plots except cocoanuts, betel-palms and plantains.

8. The Board are also disposed to recommend that the limitation of the free tenure of tope lands to twenty years be removed, as they believe that it has checked applications for waste land.

9. The importance of affording the people every reasonable and legitimate encouragement to plant trees and grow fuel cannot be questioned, but the first step is to consider what causes now prevent them from planting freely.

10. The first cause is undoubtedly want of capital. As a general rule several years must elapse before the Ryot can expect any return for his outlay, and meanwhile he is incurring expense in tending and protecting his plantation. The same capital devoted to the growth of grain crops, cotton or indigo brings in more immediate and larger returns.

11. Another cause is the physical unsuitability of certain Districts for the growth of trees. In Bellary, for instance, the Government in 1825 commenced planting topes, and a yearly allowance was granted for the purpose. The result of twenty-eight years' operations was the rearing of 1,97,913 trees at an aggregate cost (exclusive of interest) of Rupees 1,93,603, the annual return being Rupees 1,903, or less than 1 per cent. It is not surprising therefore that planting is not a favorite speculation in Bellary.

12. But the cause which operates most generally throughout the Presidency to deter the people from planting, especially for fuel, is that mentioned by the Collector of Nellore, viz., the existence of tracts of jungle whence firewood and common timber for ordinary purposes can be procured more cheaply than the Ryot can grow them.

13. The Kummaky system of Canara is, as the Board point out, favored by the climate, physical configuration, and land tenure of the District. The extension of the principle to other Districts differing in all these respects is of more than questionable expediency. The last rent-roll shows that there are now 21,25,000 ryotwary holdings in the Presidency, and it is obvious that the attaching to each of these holdings a proportionate allotment of waste, to be held tax free so long as uncultivated is practically out of the question. Moreover, 12,00,000 of these holdings are assessed at less than 10 Rupees per annum, so that in the case of one-half of the Ryot's estates the allotment for firewood would be an insignificant plot. In many villages there is not a sufficiency of waste to admit of such allotments being made, and even in Canara itself a large and, owing to the spread of cultivation, annually increasing number of Ryots have no Kummaky land. The growth of timber and firewood is governed by the same laws as the culture of other products, it must be profitable or capital will not be devoted to it, consequently no bonus that the Government can hold out, short of a paying price, will have any effect in attracting capital to it. It cannot be alleged that the assessment of such land as is ever likely to be devoted to timber and firewood is too heavy; large tracts in every District are assessed at a few pence per acre, and everywhere, grants of waste free of assessment for twenty years with the privilege of cultivating the spaces between the trees can be had for the asking. The mere charge of assessment evidently does not retard, nor will its remission encourage planting. In some localities the price of firewood has risen sufficiently to be remunerative, and as the immediate consequence planting has been resorted to largely. In the neighbourhood of Madras, until quite recently, scarcely an acre of land was taken up for planting under the Tope Rules; no change has been made in those Rules, but the price of firewood has risen, and within the last

two or three years upwards of 2,000 Acres have been taken up for planting, and applications continue to be made rapidly for more land. In many of these cases too, the planter pays a considerable sum to buy out the Merassidar. The same result will follow elsewhere, wherever the price of fuel becomes sufficiently remunerative, and nothing short of this, a remunerative price will have the desired effect.

14. Moreover, it is obviously inexpedient that the Government should by any such rule as the Board propose, require several million acres of land to be kept waste in perpetuity. The great rise in prices of late years has rendered the present assessment moderate, and the revised settlements are framed on very liberal principles, it would therefore be a grave error for the Government to fetter the Ryot in the use he makes of his land or to depart from the rule, dictated by policy as well as past experience, of requiring the Ryot to pay the full assessment on all the land he chooses to appropriate. The assessment is moderate enough to admit of this rule being carried out, and if the system of offering a bonus for special products is to be resorted to, there is no reason why it should be restricted to fuel;—there are other necessities of life for the special fostering of which claims may be advanced with equal force, and the ultimate result would be, what the agricultural community have but lately been freed from, an assessment varying with each product, necessitating vexatious examinations and interference by subordinate officials and opening a way for much fraud and corruption. The Government are of opinion that the Board have not made out any case for extending the liberal encouragement already afforded by the Tope Rules; while the particular measure they recommend is attended with very serious objections, and holds out but slender hope of more than a large area of waste kept in an unproductive condition.

15. The Government cannot now do more than is proposed in His Excellency the Governor's Minute (dated 1st October 1863, paragraphs 11 and 12), viz., to form topes in each village, and establish nurseries at suitable places. The Board state that they have issued orders to this effect, and as means are available from the Jungle Conservancy Fund these orders should be steadily and vigorously carried out. The village officers should be held responsible for the maintenance and extension of these topes, and rules should be prescribed for their guidance.

16. In Nellore the Government have recently sanctioned an experimental plantation of firewood, in order to prove to the people that in the neighbourhood of large towns distant from jungles, such a speculation is likely to pay well. If the result turns out to be successful the experiment will be repeated elsewhere.

17. The Government further think it desirable that, as an experiment, portions of low hills, such as those in the neighbourhood of Vellore and Arcot, which have become denuded of trees, should be fenced in, with the view of ascertaining whether, if thus protected from cattle, they might not, in a few years, be again transmuted into Forest. The Board will communicate with the Collector of North Arcot on this point.

18. The attention of the Railway Company, who are large consumers of fuel, will also be directed to the necessity of their taking steps for the growth of firewood to meet their future requirements. The Conservator of Forests has already been

instructed to adopt measures for re-planting denuded portions of the Government forests, but it is quite clear that the Government cannot take upon itself the obligation of growing firewood for the people. All it can safely do is to husband existing resources, and not discourage private enterprise by selling below a fair price.

19. As intimately connected with the subjects discussed in His Excellency the Governor's Minute, the Board also forward a file of letters from the Collectors on the great diminution in the agricultural stock of the Presidency shewn by the last quinquennial returns. According to these statements the number of tilling cattle had increased by $6\frac{1}{2}$ per cent., while that of cows and she-buffaloes had decreased by 13 and 18 per cent. respectively. It does not appear that the Board caused the accuracy of the returns to be tested in each District. It is obvious that the result above mentioned may be owing to errors, in the census itself or in that of 1856-57 with which the comparison is made. The accuracy of the return is impugned by some of the Collectors, and *prima facie* it is unlikely that while cultivation has enormously extended, and the number of tilling cattle has increased, the number of cows and she-buffaloes should have decreased. Epidemic disease among cattle has not been more prevalent of late years throughout the Presidency than in former years, nor is there reason to believe that cows and she-buffaloes are more subject to such diseases than tilling cattle.

20. The Board do not submit any recommendation on the Collector's report.

21. The mortality among cattle is generally attributed to want of proper pasturage. In some localities, as the delta of the Godavery, there is no common waste, all the land being cultivated with cereals, &c. These localities, however, are comparatively few. As a general rule there is ample waste, and it is not deficiency of grazing ground but want of good grass that is felt. The remedy which the Board suggested to the Collectors, viz., allowing each Ryot to hold for pasture one-fifth of his land at one-fourth of the assessment would not be of much avail. The grass on these plots would be no better than that on the common pasture grounds of each village, and would in the same way be burnt up during the summer. To make the measure effectual, it would be necessary to compel the Ryot to grow green crops for his cattle with the same care as he now grows cereals for the market, but such a measure would be simply impracticable. As already stated, the Board recommend an allotment of waste for fire-wood to be attached to each ryotwary holding, and they would seem now to contemplate a further allotment for pasturage. The revised settlements now being carried out are moderate, and based on the supposition that a part of each estate will be devoted to pasturage in turn with cereals, &c., and the Board must now understand that Government will not tolerate a return in any guise to the old system of regulating the demand on the Ryot by the use to which he applies his land, and offering special concessions for particular products or objects.

22. Beyond pressing on the attention of the people the importance of paying attention to the rearing and feeding of their stock, and such other encouragements as cattle shows, &c., afford, the Government can do little. Self-interest, increasing intelligence, and wealth must be the main hope.

23. The prevalence of any severe epidemic should be immediately reported to Government, in order that they may, if possible, depute an experienced Veterinary Surgeon to investigate its cause, &c., as was recently done in Kurnool.

24. With regard to statistical information, the Government concur in the Board's views as set forth in paragraphs 20 and 21 of their letter, and request that they will at once adopt measures for carrying them into execution. The officers to whom the duty of preparing the statistical memoirs of villages may be entrusted, must, however, be carefully selected with reference to their qualifications for the task, knowledge of the vernaculars, and experience.

(True Extract.)

(Signed) J. D. SIM,
Secretary to Government.

To the Board of Revenue.
„ the Financial Railway Department.
„ the Conservator of Forests.
„ the Officiating Director of Revenue Settlement.

From W. HUDLESTON, Esq., Secretary to the Board of Revenue,
To J. D. SIM, Esq., Secretary to Government, R. D.

SIR,

With reference to Government Order, dated 6th November 1863, No. 1,994, on the subject of encouraging the growth of firewood, and collecting Agricultural statistics, I am directed by the Board of Revenue to submit, for the consideration of Government, the accompanying file of letters on the subject, received from the officers consulted by the Board.

2. As regards the first question, almost all the officers consulted are of opinion that the existing Tope rules hold out as much encouragement to private individuals to engage in planting operations as can legitimately be offered by Government. Mr. Wedderburn, however, would add to this encouragement by granting ten acre lots of waste land tax free for ever for planting purposes, and he considers that this plan would be really more economical, and likely to produce better results than any system of Government plantations. Deputy Collector Raghanadha Row has also made a similar suggestion.

3. Mr. G. Morris suggests the extension to other Districts where feasible of the system known in Canara as Kumaki, under which each Ryot (Wurgdar) is allowed the usufruct free of tax of the uncultivated land to the distance of one-hundred yards from the boundary of the cultivated fields, the result being that there is abundance of firewood, and cowdung is but little used as fuel.

4. The climate and configuration of the surface of the country on the West Coast render this system the most suitable there; while the position of the Wurgdars, who are owners of farms rather than fields, allows of this individual application of a principle which is equally recognised as regards the village community in gross on this side of India.

5. The Board scarcely see how this individual system could be carried out in most of our Districts, but they approve of the principle, and deem it deserving of consideration whether proportionate allotments out of the waste, tax free so long as uncultivated, might not be attached to every Ryot holding in the country for the purpose of encouraging the growth of fuel, and increasing the supply of vegetable manure, while the plots when enclosed might often, with advantage, be used as small grazing paddocks. The Board would allow them to be planted with any kind of tree that the Ryot might prefer except Cocoanut, Betel-nut or Plantain, without charging any assessment, which should only be imposed in the event of the land being brought under the plough, or used for gardens as above.

6. The plan would be an extension or modification of the system existing in Coimbatore under which a Ryot may hold one fifth of the land in his Puttah, at one-fourth of its full assessment, for grazing purposes, and can also take up grass land at a special low rate (Paravapilluvari). Mr. Master points out that the Tope rules are inoperative in villages where there is no unoccupied land, as is frequently the case in the deltas; and suggests that in these cases a remission of one-half of the assessment should be allowed on a limited extent of land planted with private topes, precautions being taken to ensure the appropriation of the land, in the manner intended. The remission would of course affect only the assessment on the land, and water if used would be charged for at the usual rate. The Board are disposed to doubt whether, on the whole, by the limitation of the free tenure to twenty years, the Government do not lose more in the retardation of planting, than they gain by the reservation of their ultimate right of resumption of the free tenure. There can be little doubt that this reservation has checked applications, and the value of the reversion is really nominal in the case of waste land. The Board are disposed to recommend that the reservation be abandoned within certain limitations as to classes of land, and with conditions to ensure its being *bona-fide* devoted to the special purpose.

7. As bearing upon the question of allotments for planting and grazing purposes, the Board beg to submit, for the information of Government, a file of replies to a Circular issued by the

Dated 5th August 1863, No. 4,879.

Board calling for opinion as to the measures necessary for encouraging Cattle breeding, and pro-

moting the improvement of Stock. This subject is intimately connected with the agricultural improvements discussed in His Excellency the Governor's Minute, dated 1st October 1863, which led to the Government order now under reply, and is expressly mentioned in paragraph 14 of that Minute. It will be observed that complaints of want of pasture land are very general. Thus much as regards encouragement to be given to individuals to induce extension of planting; but it has been suggested that operations in the same direction might be undertaken by Government.

8. His Excellency the Governor suggests the establishment of nurseries, and the distribution of young plants; and there can be no doubt that great encouragement would be afforded to individual efforts by supplying seed and seedlings either gratis, or at a very cheap rate. Mr. Grant, the Collector of Coimbatore, would extend this system to the supply of young Cocoanut trees.

9. But the Board are of opinion that more than this may be done without incurring any great amount of expense, and they attach the utmost importance to the re-clothing of the face of the country with wood as far as that is possible, with regard not only to the supply of fuel, but also to the amount of the rain-fall, and of the evaporation from the surface.

10. Whatever may be the direct effect of trees on the rain-fall, there is no doubt that trees attract moisture; that their roots retard too rapid drainage; that their presence benefits springs; and that their shade checks evaporation.

11. These results cannot fail to exercise a decidedly beneficial effect on the country in a tropical climate, and are of the highest importance to an agricultural community.

12. The Board do not suppose that the use of Cowdung for fuel can be altogether superseded; for, as pointed out in some of the accompanying letters, it is favored by the religious ideas of many classes in India; but there can be no doubt that want of firewood must encourage the resort to such fuel, and the Board see no reason why Government should not endeavour directly to remedy this deficiency.

13. The Board trust that a beginning has really been made by the use of the Local Planting funds, and they hope that much may be ultimately effected in the same direction by this means. They consider that it would also be of advantage to prescribe as a rule that every road side and canal bank shall be planted, and they believe that systematic and unremitting endeavours in that direction would, in a few years, produce marked and valuable results.

14. The Board have instructed Collectors to encourage and promote the formation of an extensive Village Tope in every village and hamlet, and to establish plantations and nurseries in all favorable positions including Topes at salt stations and other halting places. They believe that the Village Jungle Conservancy and Planting Fund will supply ample means for carrying out their orders; but to produce decided results must be a work of time and persistent effort.

15. The Board have, on more than one occasion, expressed strongly their opinion that planting should receive more attention from the Forest Department, and Captain Beddome, in his letter included in the present correspondence, advocates more systematic operations for this purpose. He, however, relies on obtaining a certain amount of gratuitous assistance in labor from the Ryot. The Board do not think that the Forest Department is likely to obtain this; but if the Department can supply funds and superintendence, the Revenue Officers could probably secure some amount of co-operation of this kind from the people, and at any rate the effort could be made.

16. The planting operations of the Forest Department ought not, however, to be dependent on any such extraneous assistance.

17. Mr. Banbury has suggested that a considerable tract of the sandy wastes, north and south of Madras, should be planted by Government for firewood. The Board think it better that this land should be left for private persons to take up, especially as many persons have already shown, in this District, a disposition to grow wood, in order to supply the market with fuel.

18. Mr. Fane has already turned his attention to the planting of the Coast Canal banks.

19. As regards the collection of Agricultural Statistics, the officers consulted very generally echo the opinion expressed by the Members of Government—Honorable Messrs. Maltby and Pycroft—that almost all that could be collected is already on record, and that Collectors have certainly not the leisure to prepare the elaborate and exhaustive analysis of the agriculture of a particular locality, which it is suggested should be required of them.

20. The Board fully concur in these views, but at the same time they must admit that the information indicated is needed by many, and is not readily available, and they consider that improvement might be effected in this respect. What is on record might be printed and published so far as is deemed necessary, and the minutely detailed inquiries made by Dr. Buchanan in his official tour through Coimbatore, Malabar, and Canara, might be imitated in other Districts, in the manner suggested by the Collector of South Canara, viz., by placing a Covenanted Assistant in charge of a village, and requiring him to submit an exhaustive report on the system of agriculture and farming generally pursued, and the results obtained. The Government have in fact already prescribed some such course in their order, dated 11th February 1864, No. 250, Revenue Department, laying down rules for the training of junior Civilian.

21. The Board also consider that the Deputy Collectors in independent charge should be encouraged to select two or more villages in their division, so as to exhibit varieties of agriculture, and to report on the systems and their results, with full details of actual facts.

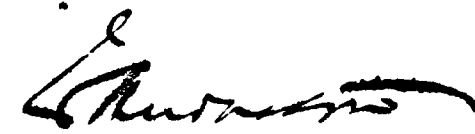
22. More than this the Board are not prepared to recommend, unless the Government are disposed to offer a prize for a practical essay on the subject in each District.

23. The Agri-Horticultural Society might perhaps aid in this direction.

I have the honor to be,

Sir,

Your most obedient servant,



Secretary.

REVENUE BOARD OFFICE,

Madras,

6th January 1865.

To J. D. Sim, Esq., Secretary to Government, R. D.,
with two Files of replies to Board's Circulars, dated 5th August and 16th November 1863.

" All Collectors.

" R. E. Master, Esq., Officiating Director of Revenue Settlement.

" R. K. Puckle, Esq., Deputy Director of Revenue Settlement.

" Captain R. H. Beddome, Conservator of Forests.

Exd. J. Wright.

No. 7,270.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 16th November 1863.

Read the following :—

REVENUE DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following Minutes :—

MINUTE BY THE HONORABLE THE PRESIDENT.

1. During my absence from Madras I have travelled, in various directions, through much of Mysore; I have visited the Districts of Bellary and Kurnool, and have resided for some time in the higher part of the Salem District. The whole of the country which I have visited is under, what are termed, dry crops. Of course advantage is taken of every opportunity of collecting the drainage of the country into tanks, and the water, thus stopped in its progress to the sea, is utilized to the utmost extent; still, however, by far the largest portion of Mysore, and of the other Districts named, is dependent upon the rain; for the moisture required for the crops. In fact, the character of the dry cultivation is analogous to that of England, with, however, this marked difference, that while in England, as a general rule, farming operations can be carried on throughout the year, with only the occasional interruption caused by excess of moisture, in these Districts the rain is periodical, being the product of the two monsoons, and may last for five or six months, and during these wet months the whole work of the farm must be completed, the dry months from January to May putting a stop to all operations upon the baked and burned up surface, with the exception of a few detached fields, where advantage is taken of the casual showers which fall generally about April.

2. The time for farming operations being thus limited, it is a matter of importance that the work should be performed as speedily as possible, that each process should be got over with the utmost rapidity compatible with efficiency; the tools and implements should, therefore, be as effective as possible, regard of course being had to the power at the disposal of the farmer, and no loss of time or of labor should be allowed. The actual state of things, so far as they came under my observation, was widely different from this.

3. The ground being left untouched during the dry season, the weeds have ample time to seed and to develop themselves, and the ground is well covered with a variety of trash, among which a species of couch grass is the commonest, and the most obstinate in resisting removal.

4. The first ploughing, having for its object the clearance of the soil from weeds, is performed with such an indifferent tool as to produce but little effect; it does indeed but scratch the surface, and of course must leave much of the roots of the couch grass in the ground. As this ploughing is ineffective, it has to be repeated several times, while women and children follow the plough for the purpose of picking up the loose weeds.

5. The ground being prepared by frequent ploughings, the seed is sown by a species of drill (I am speaking now more particularly of Raghi, which is the principal crop in this part of Salem and in Mysore); too little attention, however, has been paid to the petty arrangements of this drill, so that much seed is wasted by being sown too thickly. A bush harrow is used to cover the seed, and does its work effectually.

6. When the plant makes its appearance above ground, it comes up much too thick, and it is necessary to cross hoe it with a kind of heavy rake, worked by bullocks, and having four teeth. This operation serves two purposes, it loosens the ground, and by thinning the drills, leaves the plants room to grow. The distance between the drills in Raghi is from 5 to 6 inches, and under the system above detailed it grows, under favourable circumstances as to moisture, strong and healthy.

7. The Native, however, is not contented with one or even two strings to his bow; having sown the Raghi he proceeds to insert the seeds of various other plants in rows at distances of about 3½ or 4 feet apart; that is, about every eighth drill of Raghi has other plants, interpolated, and I

P. L. Narayana 1863

No. 69-66

Refer to 17 June

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No. 69-

From the Secretary to the Board of Revenue,
To the Secretary to Government, R. D.

Dated 6th January 1865.

Despatched 10.8.

Received 11.

E. 2. - files

No. 48.

See 1863-64

Submitting for consideration file of letters, received from Officers consulted by the Board, on the subject of encouraging the growth of fire-wood, and collecting Agricultural Statistics.

have seen in one field as many as five different kinds of plants; Raghi being the staple, Mustard is found growing irregularly, then in the drills there are varieties of Beans which are pressed for oil; then a variety of Cholumor Millet is found, and not unfrequently plants of Castor Oil; in some Districts Cotton is planted in this way. All these come to maturity at different times, and of course the ground must not only be gone over in reaping as many times as there are kinds of plants, but each crop must be reaped more slowly and carefully in order to avoid injuring the standing plants. To proceed, however, regularly: after these various plants have made their appearance, and been thinned out by the hoe as beforementioned, a body of weeders is turned into the field; this is necessary, for the ground being very foul when the seed was sown, notwithstanding the many ploughings it has received, the weeds would choke the crop unless they were kept down by the hand, and this process of hand weeding is a part of the annual labour bestowed upon the crop.

8. When the crop is ready for reaping, the Raghi is reaped with a short sickle. Some of the beans are pulled up by the roots, and other crops are disposed of in different ways. In some cases the threshing is done in the field, in other cases the crop is stacked. I have, however, in a former Minute alluded to the rudeness of the process of threshing, and cleaning the grain. My object now is to bring under the notice of the Government the slovenly character of the cultivation, and to point out the steps which it might be advisable to take with the view of bringing about, gradually, a more wholesome state of things.

9. That any change for the better must be gradual, is very certain; for the different processes dovetail into each other, and are so dependent upon the power which the Ryot can dispose of, while this power is in direct relation to the climate, that no sudden change can be expected. It would, however, be very absurd were those, who are in a position to suggest and carry out some kind of remedial action, to sit down with such a set of evils staring them in the face, and assume them to be irremediable. I will, therefore, try whether I cannot suggest a course of procedure which may, in the course of time, have a beneficial effect upon the whole aspect and produce of the country. Before, however, I allude to the remedies, I will give a list of some of the evils and of their possible causes.

No. 1.—The ground is cropped continuously, and but lightly manured; much of the manure being consumed as fuel, owing, in great measure, to the absence of wood. Nothing can be more bare of trees than the whole of the tract through which I have passed.

No. 2.—The ground is badly cultivated, or prepared for the crop, owing, first, to the want of weight and power in the animals used for draught; and secondly, to the poor and inefficient character of the tools used.

No. 3.—The mode of cropping a field with various sorts of plants is very objectionable.

10. The first step towards increasing the quantity of manure would be to provide the population with a better description of fuel. The loss of labor in bringing in the small amount of wood now consumed and of preparing the cow-dung is enormous.

11. Some arrangement might be made for planting a portion of the waste land of each village with Casuarinas, or other trees. I mention Casuarinas, for these seem to grow equally well at Madras, in the low country on a level with the sea, on the Mysore plateau 3,000 feet above the sea, and on the Neilgherries 3,000 feet higher still: it would seem to be a tree very well suited to the climate, and being indigenous, or thoroughly acclimatized, there could be no difficulty in propagating it to any extent from seed. It is a tree which grows rapidly, does not cast much shade and would not therefore do much injury to crops growing near it; besides all this, it furnishes the very best kind of firewood. In Australia an extra price was always paid for She Oak, as the Casuarina was there called. It might also be as well to use trees for the boundary marks of the different holdings, the present stones, or mounds of earth, are of too slight a character to be maintained for any time; whereas a tree is a lasting mark, which the owners of the land would be induced to maintain by the promise of being allowed to make use of it on condition of planting another in its place.

12. The effect of planting upon the climate cannot but be beneficial, and it would be well worth the consideration of the Government whether it might not be advisable to provide nurseries of such plants as might be best suited to each District, at all the stations where there is an officer who could be trusted to look after them; the cost would be very trifling, and the young trees might be given to the Natives upon the sole condition of planting them. With a large supply of firewood the necessity of employing cow-dung for fuel would cease, and this would be turned to its proper use as manure; the labor of manipulating and bringing this into the form of small cakes would be saved, and the cost of collecting it would not be more than at present. Changes, however, such as this require time, but this would seem to be a good reason for anticipating the results, and for taking the necessary steps to secure them with as little delay as possible.

13. More immediate results will follow from the improvement of cultivation.

14. The first cause of bad cultivation, viz., the want of weight and power in the animals employed for draught can only be remedied very gradually. As manure becomes of more importance, more care will be taken of the stock; they will be kept nearer the homestead, fed better, and will gradually increase in size and capability of working. A good effect has been produced in Nellore by the annual exhibition of stock, and by giving prizes for the best animals. A similar course should be followed in other districts, as soon as the Revenue authorities think that a beneficial effect is likely to result from it.

15. More immediate effects would be produced by the introduction of better implements. The native plough is a light, cheap article, but it can do little but scratch the ground; the horse hoe, to which I have alluded before, is but a heavy rake. I have seen no harrow, but a bush is used to cover the seed when sown. A good, light and cheap plough, proportioned to the power of the bullocks which have to draw it, and which would turn a furrow deep enough to expose the roots of the couch grass, would be a very valuable implement. One good ploughing with this, and an after-harrowing with a proper harrow, would save the Ryot the numerous ploughings with which he prepares his land. In a report upon the cultivation of different crops in the Godavery District I find it stated, that, in a sandy loam, the ground is ploughed for Cholum (a species of Millet) twice in June, and then once in every fifteen days till September, that is the ground is gone over six times. Again for Cumboo (*Panicum spicatum*) the ground is ploughed twice every six days for three weeks; and for Cotton it is said that the ground is ploughed twice in June, twice in July, this process being repeated in September and October.

16. Now, all these ploughings are more for the purpose of cleaning the ground and keeping the weeds down than as a preparation for the crop. They occupy, however, the time of men and cattle; increase the number of the latter which the Ryot must keep, and add unnecessarily to the cost of cultivation. I am very much disposed to believe that one good ploughing and harrowing at the commencement of the season, and another as a preparation for the crops would answer every purpose.

17. The plough which would, I think, be found best suited to the country would be a light one with wheels, capable of being worked by a pair of light bullocks; the wheels would keep the untrained bullocks in the furrow, and lighten the labor of the man between the stils.

18. The third evil to which I have alluded is that of growing a variety of crops intermixed with each other. This though carried out with some regularity, inasmuch as most of the extra plants occupy the drills, is yet productive of great loss of labor, to say nothing of the loss arising out of the action of the plants on each other. The Castor Oil plant, for instance, grows up to be a shrub, and must affect in various ways the growth of the ordinary crop in its neighbourhood. Cotton too is a spreading shrub. Irrespective, however, of the loss occasioned by the action of the different plants on each other, the additional cost of going over the ground four or five times instead of once is by no means trifling, while a stop is put altogether to the introduction of the scythe in place of the reaping hook.

19. The following account of an experiment lately made by Colonel Thompson, the Remount Agent at Oosoor, will give practical evidence of the extra expenditure in gathering in the crops resulting from the use of the reaping hook, which, however, so long as mixed crops are grown in the same field must be employed for that purpose. In a meadow, carrying a heavy crop of Doab or Hurreala grass, two equal strips of land were marked off; to one of these an Englishman with a scythe was allotted, while alongside of the other twenty-two women, each with a small reaping hook, were posted. These latter were encouraged to do their best by the promise of a Rupee in addition to their ordinary wages. At a given signal both parties commenced to work, and the women in consequence of the extra stimulus applied, won the race. On looking over the land it was evident that the man would have beaten sixteen women, even under the excitement of the stimulus, and I believe that, at the ordinary rate of working, the scythe would go over as much ground in a day as twenty men, or rather women, would go over with the reaping hook. If then a Native, who by the way is very quick in learning the mode of handling these implements, be considered to be physically equal to half an European, and if he is rewarded for his intelligence in learning the use of a scythe by the receipt of double wages, he would in fact do the work of ten labourers, receiving the payment of two, and a saving of eight workers would be made.

20. From what I have mentioned above as the result of the cursory observations made by me during the last few months, it is evident that great improvements might be made in carrying out the commonest agricultural processes. I think, too, that better implements, if properly adapted to the circumstances of the country, and the means and powers of the people, would soon save their cost by the saving of labor which would result from employing them.

21. The mere importation of implements, however, or their exhibition at an agricultural show, will not be sufficient to induce the Natives to purchase or use them; they will naturally require to see the implement, whatever it may be, fairly at work; to be able to criticise its performances, and to compare these with the work of their own tools. The Government then should be not only in a position to exhibit the working of the different implements, but it should show them worked by Natives, so that no doubt should exist as to the power of these latter to employ them beneficially.

22. Luckily the Government has an establishment at Oosoor which offers all these advantages. There is already a farm of about 240 Acres attached to the Remount Establishment, and it has been proposed to add to this 150 or 200 Acres, so as to give to the Remount Agent the means of making a profitable use of the power he has at his disposal, by raising produce of different kinds, either for the food of his horses or for sale.

23. There is at the establishment a fair proportion of the different kinds of soil; the upland is similar to the great mass of the land in Mysore, a red sandy loam; while in the bottom there are some acres of irrigated land. On this farm, therefore, experiments might be made with most if not with all of the new implements sent out, with the certainty that every really good tool is not only paying its cost in diminishing the expense of cultivation, and enhancing the produce of the farm, but that it is making its way in the estimation of the people, and will be the parent of many contingent benefits to the Government which introduces it.

24. Natives, in certain numbers might be permitted to attend at the Depot, not merely for the purpose of examining the tool and witnessing its action, but to learn the mode of employing it. The number of these pupils must of course be limited, but the instructions to the Remount Agent would be to the effect that the object of the Government would be best gained by the wide diffusion among the Natives of the knowledge of the mode of using the tool. It would also be as well that, at the two periods of seed time and harvest, when the farm work is in full operation, a sort of exhibition should take place. A ploughing match might be held about June or July, and some trifling prizes given to the best Native ploughmen. While at or about Christmas the various reaping and threshing machines might be exhibited in action, and eventually, such improved machinery for oil pressing, &c., &c., as might be adapted to the power available, might be exhibited, and compared, as to their results, with the existing Native machines.

25. Looking upon this Minute as supplemental to my former one on the introduction of machinery, I should wish to add the following to the list of implements and machines therein contained:—

- (1.) 6 Light Ploughs with wheels.
- (2.) 1 Read's sub-soil Plough.
- (3.) 6 Sets Harrows, wooden, Rhomboidal.
- (4.) 1 Horse Hoe.
- (5.) 1 Do. expanding.
- (6.) 1 Slight's improved Drill prepared for sowing seeds of different sizes, from Mustard up to Wheat.
- (7.) 30 Scythes for short people and light weight.
- (8.) 12 Hay Rakes, wooden, American.
- (9.) 1 Horse Rake.
- (10.) 1 Good one-horse Cart.
- (11.) 1 Reaping Machine.

26. These would be fair specimens of the class of tools and implements for which use might be found on the farm at Oosoor, and modifications of these in material easily procurable in India, might be soon manufactured here by Native workmen. What we ought to seek to impress on the Native mind is the principle or the idea. When once this is fairly engrafted, it will soon grow and produce the required fruit.

27. There is one subject in connection with those discussed in this Minute, to which I wish to direct the special attention of the Government. It forms part, it is true, of a general question, but may, with advantage, be dealt with separately, and form a suitable introduction to the remainder. I mean the collection of agricultural statistics.

28. From the nature of our connection with the country we have hitherto either found, or fancied, difficulties in the prosecution of statistical enquiries. I cannot, however, but think that these difficulties are gradually disappearing; even as regards those questions which have a more close relation to the domestic arrangements of the people, I mean those which require a record to be kept of births, deaths, and marriages, would not now be so distasteful as used to be anticipated.

29. The difficulties, however, which impede the collection of a variety of useful agricultural facts, are not greater here than elsewhere. The Government has here far better means of arriving at them, and they are of much greater importance to the Government here than they can be in other parts of the world, where the revenue does not bear so direct a relation to the produce of the soil as it does in India. The field is so wide and the information in our possession so scanty that the sooner a methodical system of collecting, arranging and registering these facts can be established, the better.

30. I see no reason why the Collector in each District should not be called upon to forward a Report annually upon all matters connected, directly or indirectly, with the agriculture of a portion of his District, a Talook for instance, or a portion of a Talook. To ask him for a report upon more than a small portion would but ensure the return of a general sketch of the district, instead of a finished microscopical analysis of a portion; more information, such as that which is required, would be got from an exhaustive report upon one village than from a sketch of a district.

31. The information derived from these reports would be valuable in two ways, it would give to the members of Government a vast mass of facts of which they are at present ignorant, and it would be the means of inducing the Collectors to look closely into many matters to which, as not directly affecting the execution of their duties, they now pay but little attention.

32. A general form might be prepared, noticing the subjects to which attention should be paid, more, however, as a Memorandum for the use of the Officers employed than as a check upon the

introduction of any subsidiary information. I here mention the subjects which immediately occur to me, of course it would be easy to make additions from year to year:—

- (1.) Description of Talook or of village in full detail, physical aspect, number of population, means of communication, &c., &c.
- (2.) Area of cultivation, of cultivable waste, jungle, &c., &c.
- (3.) Character of soil, of sub-soil, quarries, mines, presence of minerals, metals, &c.
- (4.) Quantity of irrigation, mode of increasing this.
- (5.) Quantity of stock, cattle, sheep, donkeys; prices of each; size and weight of cattle, do. of sheep, load for each bullock, for each donkey, power of draught, &c., &c.
- (6.) Cultivation, wet and dry crops; mode of cultivation; number of ploughings; state of soil; quantity of seed, quantity of produce, grain straw, length of time in ground, how reaped, how threshed; price, wages of labor, how paid.

These are mere general heads, as soon as the Collector begins to make his enquiries he will be struck with the mode in which subsidiary enquiries interpolate themselves; the more the subject is looked into the more interesting will it become, and a marked difference will be seen between the reports sent in at first, and those which will be the result of three or four years' experience.

33. In order to produce as beneficial effects as possible, a summary of the facts placed before the Government should be drawn up with every attention to the details, and not too much condensed, and printed in the different vernacular languages for general circulation; while the report of each Collector should be published, in full, in the District Gazette. There is one most important preliminary to the collection of statistical information or rather to the comparison of the facts collected, which has already attracted the attention of Government, I mean the improvement of our system of Weights and Measures. Unless these can be simplified, the bare facts will require so much calculation and reduction to bring them into a form to admit of comparison as will render them practically useless. I would suggest then that a reference be again made to the Supreme Government, calling its attention to the substance of the recommendation of this Government in the letter dated 13th May 1863, No. 834, and requesting to know whether there is any intention on the part of the Government of India to adopt the suggestion therein contained, or to make any effort to bring about anything in the shape of a uniform system of Weights and Measures. Should the reply be in the negative, the Government may then take up the subject so far as the Madras Presidency is concerned, and do its best to methodize and arrange upon some simple basis the relation between the different Weights and Measures now in use.

1st October 1863.

(Signed) W. T. DENISON.

MINUTE BY THE HONORABLE MR. MALTBY.

1. This Minute of the President forms a supplement to his former one on the introduction of machinery, and the implements and machines detailed in paragraph 25 should be added to the list of those for which application has been made to the Secretary of State.
2. In paragraphs 1 to 18 His Excellency comments on the imperfect system of agriculture carried on in those Districts which he has lately visited. The subject is an important one, and has long engaged the attention of Government and its officers. I would refer more especially to the elaborate details collected by Dr. Buchanan in the agricultural tour which he was directed to undertake for the purpose of obtaining information, and the records of the Revenue Board will be found to contain more recent reports from many intelligent officers, which throw much light on the subject.
3. In my opinion the apparently backward state of agriculture arises less from ignorance or from unwillingness to use improved methods than from poverty and the discouragement of small gains. In Districts where a handsome profit is obtainable from the land, as in Cuddapah, Malabar, &c., the agriculture will be found to be of a superior description, and I argue from

this that the surest way of promoting improvement is to render land valuable and attract capital to it, by such methods as fixing a light and permanent assessment, giving security of title, enlarging the means of irrigation and facilitating the conveyance of produce to market towns and ports by improving the communications of the country. In proportion as efficient measures are carried out for making land valuable, the mode of farming will, I am confident, become better, and I should wish to see the chief energies of the Government directed to measures of the above description.

4. In support of my remarks I would point out the readiness with which the people have improved their lands and introduced new products, such as indigo, ground-nut, &c., where the state of the assessment and the power of disposing of their produce permitted them to do so without imprudence. It seems to me also that although poverty often obliges them to conduct farming on a humble scale, they exhibit much aptitude for turning their means to the best account. English commercial houses, for example, seem generally to purchase the produce which they require for their sugar, indigo, and other factories, although they have made attempts to grow it for themselves with the appliances of European skill and art.

5. But even should it be conceded that I have pointed out the primary method of advancing the agriculture of the country, I by no means wish to undervalue the means which His Excellency proposes for the same purpose. Improved implements placed by Government, for use as models, in the hands of some of the more enlightened Native land-holders may lead to important results; but they should be tried in our more advanced Districts. Manuals adapted to the climate and soils of this Presidency and explaining the principles of agriculture in simple language, might also produce much benefit when circulated in the native languages. Hints for the cultivation of cotton and indigo have, if I mistake not, been published in this manner.

6. On the subject of statistics, I propose that His Excellency's suggestions be referred to the Revenue Board for their consideration and report. My impression is that statistical details already abound in their records. Elaborate enquiries have been made from time to time by various officers to ascertain the yield of the land and the cost of cultivation. The quinquennial returns show the more important statistics of each Province. All the sources of irrigation are carefully registered in the Public Works Department, and under instructions approved by Government the Survey Land Registers now being prepared will contain a statistical Memoir for each village. The question is attended with some difficulty and requires careful treatment, as attempts to obtain agricultural returns have been found to give the lower Native Revenue servants an opening for interference and exaction.

15th October 1863.

(Signed) E. MALTBY.

MINUTE BY THE HONORABLE MR. PYCROFT.

Minute by His Excellency the President, dated 1st October 1863.

1. His Excellency the President in the above interesting Minute has correctly described the present condition of native agriculture generally in this Presidency, and the defects incident to it.
2. Those defects can, as it seems to me, only be remedied gradually as the general improvement of the country proceeds, and as the people become more enlightened. The main remedies are the lowering of the land assessment where unduly high, and placing it on a permanent footing, security of tenure, development of internal communications, roads, canals, tramways, and light railways, extension of irrigation, reduction of the interference of subordinate Revenue officials to a minimum, cheaper and more prompt administration of justice, and diffusion of education—every thing in fact which promotes the free action of the cultivator, opens out to him fresh markets, brings him into communication with the European merchant and settler, and by creating a greater and more certain demand for his produce gives him the strongest stimulus to raise it in the best state, and with the utmost economy of time and labor. This has already been

effected to some extent as respects exports for foreign countries, Indigo, Ground-nut, &c., and the progress is likely to continue.

3. At the same time I see no objection to the immediate agency of Government towards the desired end in the way proposed by His Excellency. The implements which he specifies should be applied for in addition to those in the list already sent home. Agricultural exhibitions should be encouraged, and the improved machines, tools and implements shown in practical operation, and their uses, modes of action and results explained to the assembled Ryots. A model farm in which these several machines and tools should be seen in constant use may also be established, but I would not place it at Oosoor which is on the very frontier of the Madras Presidency, nor under the Remount Agent who, however zealous and intelligent he may be, cannot have that intimate knowledge of the natives, their ways, prejudices, and feelings, which is only to be acquired by long residence in the Provinces, and constant intercourse with the people. I would rather locate it in some central spot on a line of Railway, say at Coimbatore, where it would have the best chance of success under the present able and energetic Collector. If a second farm were required for the Northern Division of the Presidency, I would suggest Cuddapah as the best site.

4. The promotion of the growth of trees is on many accounts an object of first-rate importance. His Excellency's views on this head might be communicated to Captain Beddome, for his suggestions as to the best mode in which they could be practically carried out.

5. Paragraphs 27 to 33 of His Excellency's Minute might be referred to the Board of Revenue for their remarks. I must confess myself averse to adding to the number of reports and returns at present laid before Government, and to throwing more labor on the Collectors, who are over-worked already, but the matter may be considered more fully when we are in possession of the Board's sentiments.

6. The Supreme Government may be requested to favor us with an early answer to our letter of 13th May last, on the adoption of a uniform set of Weights and Measures. I continue of opinion that the simplest and easiest course would be to introduce the English standards, which are now (practically) in use on the Railways and at the Sea Custom Houses. The question however has no doubt been complicated by the late Resolution of the House of Commons in favor of the Decimal system.

24th October 1863.

(Signed) T. PYCROFT.

ORDER THEREON, 6th November 1863, No. 1,994.

1. Resolved that the Minutes above recorded be forwarded to the Home Government with a request that the additional implements, noted in paragraph 25 of His Excellency the President's Minute, may be sent out with those applied for on the 13th July 1863.

2. The Board of Revenue will be instructed to communicate with the Acting Conservator of Forests and the Acting Director of Revenue Settlement on the subject of encouraging the growth of firewood on waste lands. By the existing rules such land is granted free of assessment for twenty years, and the planter is also allowed to cultivate the land in the spaces between the trees, without any charge. At the end of that period, the land assessment only is chargeable. These are liberal terms, but assistance might also be afforded in the way of supplying seeds and young plants, and the importance of not employing valuable manure, as fuel, should be explained to the people.

3. The Board will provide in the Budget of next year as already desired, for agricultural exhibitions in those Districts where there is a reasonable prospect of their being appreciated, and will take care that suitable prizes are offered for cattle and improved agricultural implements.

4. Paragraphs 23 and 24 of His Excellency's Minute will be communicated to the Military Department, with a view to instructions being issued accordingly to the Remount Agent. Funds for the grant of prizes will be provided in the Revenue Department.

5. The Board of Revenue will report on the general question of agricultural statistics, and suggest the best mode of procuring them after communicating with a few of the Collectors on the subject.

6. The Government of India will be requested to favor this Government with an early reply to their letter of May last on the subject of "Weights and Measures."

(True Extract.)

(Signed) J. D. SIM,
Secretary to Government.

1. The Officiating Director of Revenue Settlement and the Officiating Conservator of Forests will be requested to favor the Board with an expression of their opinion as to the best means of encouraging planting for fuel.

2. The same subject and that of collecting Agricultural Statistics in minute detail will be referred for report to the undermentioned Officers:—

Collector of Coimbatore.....	Mr. P. Grant.
Acting Collector of Madras.....	Mr. Banbury.
Collector of Nellore.....	Mr. Dykes.
Do. Vizagapatam.....	Mr. Carmichael.
Acting Collector of Bellary.....	Mr. Wedderburn.
Collector of Kurnool.....	Mr. Minchin.
Acting Collector of South Canara.....	Mr. Morris.
Collector of Malabar.....	Mr. Ballard.

3. Messrs. Master and Puckle will also be requested to report their views on the question of collecting Agricultural Statistics.

4. The instructions contained in paragraph 3 of the Government Order will be attended to.

(True Extracts.)

(Signed) W. HUDLESTON,
Secretary.

To J. D. Sim, Esq., Secretary to Government, R. D.

" P. Grant, Esq., Collector of Coimbatore.
" G. Banbury, Esq., Acting Collector of Madras.
" J. W. B. Dykes, Esq., Collector of Nellore.
" D. F. Carmichael, Esq., Collector of Vizagapatam.
" A. Wedderburn, Esq., Acting Collector of Bellary.
" J. I. Minchin, Esq., Collector of Kurnool.
" G. L. Morris, Esq., Acting Collector of South Canara.
" G. A. Ballard, Esq., Collector of Malabar.
" R. E. Master, Esq., Officiating Director of Revenue Settlement.
" R. H. Puckle, Esq., Deputy Director of Revenue Settlement.
" Captain R. H. Beddome, Officiating Conservator of Forests.

Exd. J. Wright.

From R. K. PUCKLE, Esq., Deputy Director of Revenue Settlement, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated Shenkerrydroog, 26th November 1863, No. 194.

1. As requested in the Board's Proceedings, No. 7,270, dated 16th instant, I have the honor to record my views on the question of collecting Agricultural statistics.

2. Statistics innumerable have been already collected by this Department in all that relates to the mode of agriculture, wages of labour, cost of production, yield of crops, &c., but few of them are strictly reliable, for though I myself have at different times taken down every detail that the most intelligent Ryots of 16 Taluks in the Trichinopoly and Salem Districts were able to afford; and though the native subordinates have recorded the expenses and mode of cultivation, the nature of the irrigation, the price of land, the rent paid by under-tenants, the present and former condition of the villagers, the wages of labour, rate of cart hire, &c., in the field registers of upwards of 3,000 villages, yet the Ryots are so apt to exaggerate the cost of production, and to depreciate the yield of their crops, when required to express an opinion on the subject by any Revenue Officer, that the statistics that have been taken in the Taluks are more general averages, or deductions drawn from original information furnished, when modified by uninterested parties, than the *bona fide* results of actual observation; and the figures entered by the classifiers are usually so wildly extravagant, that I have seldom found them worth referring to.

3. Much useful information may no doubt be sifted from this mass of figures, particularly on those points on which it was not to the interest of the Ryots to mislead; but that the greater bulk of these voluminous accounts should be utterly untrustworthy, clearly shows that a few statistics, drawn up on perfectly accurate data, are of far greater value than any number of rough estimates or facts assumed from hearsay.

4. That accurate data are procurable, and that every agricultural detail might be as generally well known here as in any other country, does not, I think, admit of doubt: but the inquiry must be conducted by European agency, and must necessarily extend over a series of years.

5. For but little information, worth recording, can be obtained from the Ryots by a Revenue Officer who is known to be making his inquiries with a definite object in view; and who has moreover to arrive at his conclusions within a given period, but numberless facts can be ascertained by personal observation, and by casual inquiry, and these, when tested by general discussion, and proved correct by independent evidence obtained elsewhere, might be adopted as satisfactory data on which to base further inquiry; thus step by step sure progress might be made, until all uncertainties had vanished, and the requisite information has been gained.

6. Thus for instance any one could ascertain for himself the number of rows of tobacco in a plot of ground 66 feet square,* and the number of plants per row; he might easily count the number of inner leaves in a certain number of plants, and ascertain the weight of them when dried. He might elsewhere casually inquire the mode of cultivating tobacco, the months in which it is sown and picked, and the number of times that it requires irrigation: the data thus procured would be reliable, and if to these he added a few notes as to the quantity of water contained in the ordinary picottah bucket, the number of times per minute that it can be raised from a given depth, the per centage of water spilt and wasted, the number of men employed, and the area irrigated in an hour, all of which might be ascertained in the course of a morning's walk, some useful data would have been recorded, and all further information regarding manuring, ploughing, ridging, planting, weeding, and reaping a plot of garden land, might be obtained from time to time in different localities; in this manner the cost of cultivating, and the yield of a certain crop, would be pretty well understood, and by repeated experiments might be determined to a nicety, but it should not be forgotten that the nature of the soil must be taken into consideration in every case, as the cost of cultivating a heavy clay or a light loamy soil is of course widely different; all facts connected with the cultivation of ordinary produce such as Paddy, Cumbu, Cholum, &c., would be of equal value, and if proved to be correct by a comparison with the facts obtained by other officers in the same District, might be forwarded to competent authority for record.

* One-tenth of an acre.

PROCEEDINGS OF THE BOARD OF REVENUE.

Dated 16th November 1863.

Despatched

Received

No. 7,270.

1863.

Department.

No.

Informing that the Director of Revenue Settlement and the Officiating Conservator of Forests will be requested to give their opinion on the best means of encouraging planting for fuel, and that certain Collectors and Messrs. Master and Puckle will be requested to report their views on the question of collecting Agricultural Statistics.

7. Printed papers of questions might be circulated to all Officers of the Revenue, Police, and Public Works Departments, to Merchants, Coffee Planters, and other European settlers in the provinces, with a request that any or all of the questions put, might be answered wherever most convenient.

8. The wages paid to servants, the cost of feeding cattle, the number of servants and ploughing cattle kept by certain land-owners, the area they cultivate, the nature of the soil, the crops produced, their general appearance and estimated yield, &c. &c., might often be noted down, and if some such plan is generally adopted, and efficiently carried out, in a few years hence all subjects connected with the simple routine of native agriculture will have been explained, and the many peculiarities of different Districts will have been contrasted with one another.

Exd. J. Wright.

From Captain R. H. BEDDOME, Officiating Conservator of Forests, to W. HUDLESTON, Esq.,
Secretary to the Board of Revenue, dated South Canara, 28th November 1863, No. 748.

1. I have the honor to acknowledge the receipt of the Proceedings of the Board of Revenue, No. 7,270, dated the 16th of November 1863.

2. With regard to the encouragement of the growth of timber for fuel and vegetable manure, I beg to offer the following remarks.

3. In the District of South Canara a certain amount of land round all cultivation is allotted to the Ryots as an auxiliary, and is styled Kumaki; this yields them a considerable amount of vegetable manure for their fields, and also timber for their own use, as the more valuable timber trees are reserved by Government; the plan is an excellent one, though it will probably disappear in course of time before increased cultivation and regular assessment. Kumaki land is 100 yards in every direction from cultivation; in thickly wooded Districts like South Canara and Malabar, and in fact most of the country on the western side of the Presidency, this area would contain in most cases a considerable amount of timber. In Districts however like Salem, Bellary, Cuddapah, and Kurnool, where vegetation is not so prolific, if a similar area was granted to Ryots as an auxiliary, it would seldom contain timber, and they would have to plant it themselves. I consider it very doubtful if Ryots would ever carry this out systematically, particularly as the advantages would be in a measure prospective. I would therefore propose that in all our thinly wooded Districts of the centre and the eastern side of the Presidency, planting operations should be concentrated. I have already brought to the notice of Government, and the Board, that I consider the topes of our Presidency might be greatly increased, and I can propose no better plan than a large increase of existing topes, and the formation of new ones. Some such plan must be carried out, or timber will become annually scarcer in some Districts. Regular nurseries should be formed; seed is easily procurable; where there is a forest establishment in the District they might give some aid in the formation of the nurseries and in procuring seed, but this can be easily carried out by the Native Revenue authorities. When it is pointed out to the Ryots that these topes are formed chiefly for their benefit, they would probably yield assistance in watering, &c., and from the privileges that they enjoy of cutting timber for agricultural purposes, free of taxation, they could well be called upon to give a certain amount of assistance. In future years, when planting operations have been largely extended, a considerable percentage of the trees could be annually felled for fuel and timber; these would be regularly marked and felled systematically, and others planted in lieu of them. Cow-dung could then be economised for manure; every tree planted, moreover, would yield a certain portion of vegetable manure. The best trees are the mango, the jack, the tamarind, the wood-apple, the bel, the ippie, these are all valuable both for their fruit and their timber: each District, however, has some timbers adapted to it, and indigenous in its forests that are well known to the Ryots and others. The Casuarinas (*C. Equisitifolia* and *C. Muricata*) introduced trees, yield a valuable firewood, but as they have no fruit, give little or no shade, and yield a very small amount of vegetable manure, I would not recommend them for topes: they might, however, be planted largely near the coast as they succeed there better than inland, and would often grow readily where there would be a great difficulty in getting any other trees to answer.

Exd. J. Talloch.

From D. F. CARMICHAEL, Esq., Collector of Vizagapatam, to W. HUDLESTON, Esq.,
Secretary to the Board of Revenue, dated 1st December 1863, No. 998.

1. I have the honor to acknowledge the Board's No. 7,270, dated 16th ultimo, giving cover to the Order of Government, No. 1,994 of 6th idem, together with the Minutes of the Honorable the Governor and the Members of Council on the Improvement of Agriculture, &c.

2. There is no doubt the art of agriculture in India is entirely empirical; in this, as in other things, the Natives of the country follow the traditions of their fathers in full faith and simplicity. But they are never slow to adopt changes, which recommend themselves to their interest in social and economical matters. Witness the improvements in the cultivation of Cotton, of Indigo, Coffee, and many other products. I can conceive nothing more suited to foster and develop an improved system of agriculture than the institution of model farms in selected localities; but I apprehend that such undertakings should be superintended by practical farmers from England, men thoroughly acquainted with the whole system of crops, manures, and soils, and initiated moreover into chemistry and the cognate sciences. If they are left in the hands of amateurs, whether Collectors or Centurions, I look for nothing but failure or self-deception.

3. To these farms should be attached as Apprentices some of the best lads of the European and East Indian Orphanages. There are several Agricultural Schools in England, where the training is both practical and scientific, and they are resorted to with the best results as well by those who intend to start in farming with their own capital, as by those who design to get their living as bailiffs, stewards, land agents, surveyors and the like. I am confident that the demand for such qualified youths would far exceed the supply both with Planters and Native land-owners, and so by degrees the country farming would be raised into a science.

4. In regard to the question of fuel, the encouragement given to the growth of firewood is sufficiently liberal. I am not aware that the *Casuarina* is of quicker growth or better suited for firewood than the *Woodia murrum* and other trees, a list of which was circulated by authority in 1855—*vide* page 160 of the Circulars and Standing Orders, D. P. W. It only remains for one or two enterprising people to invest their capital in this direction, and as railroads are springing up, commanding markets both far and near, it may be expected that persons will shortly be found to engage in the trade.

I am informed, at the same time, by Native friends, that there will always be a demand for manure as fuel, provided it is the dung of horned cattle and other *clean* creatures, because it is the fashion to use it alone in certain culinary processes. It is well known also that in a dry climate, where irrigation is not available, manure is not used in Indian agriculture, under the impression, right or wrong, that it burns up the soil.

5. With reference to agricultural statistics, I would humbly submit that these are already voluminous enough; and with the rapid increase of official work in every direction, a zealous Collector is very nearly overwhelmed already.

Ed. J. Tulloch:

From the Collector of Nellore, dated 3rd December 1863, No. 410.

1. I have the honor to acknowledge the receipt of the Board's Proceedings of the 16th ultimo, No. 7,270, calling for opinions as to the best mode of encouraging the planting of fuel and collecting agricultural statistics, with reference to His Excellency the Governor's Minute of the 1st October, and the Government Order of the 6th ultimo, No. 1,994.
2. As regards fuel, the Government observe by existing rules waste lands are granted free of assessment for twenty years, and the planter is allowed to cultivate the land between the trees without any charge, and these are liberal terms; whilst the importance of not employing valuable manure as fuel, the Government consider, should be explained to the people.
3. Than the question of fuel there is, perhaps, no question at present awaiting a decision of more vital importance to India; and assuredly there is none of more simple proportions. It is simply a question of political expediency; and the question in reality narrows itself into this—are the Board and the Government prepared to meet a considerable dis-arrangement of our markets and consequent distress among the poorer classes; or are matters to drift on as they are, in the hope that something may turn up before the country becomes a desert—a new mode of producing heat, cheap electricity, &c.
4. The Government refer to the Tope Rules as bearing on the question; but who will plant fuel when they can cut fuel at five annas the cart-load?—and cut it as they like!
5. We must go to France and other countries on the Continent for information on this point; and if we do not find private speculation planting fuel there we can scarce expect more public spirit in India; even though there is a remission of assessment for twenty years and a wide door opened for fraud in the matter of cultivating the spaces between the trees.
6. And in the Government forests* we shall find a system that experience has proved to be the only safe system where a country has to depend on wood for one of the necessities of life; and a very different system from that pursued here.
* In France.
7. In my opinion it is hopeless to expect in India that private enterprise will, for many years yet, be tempted to plant fuel either by greatly increased market rates, or the continuance of universally condemned bonuses. And I believe the proper course to pursue is simply to look the matter in the face—resolutely close the Government Stores, and serving out what is actually required by the community, endeavour to alleviate by public works the universal distress that must inevitably follow the introduction of such a measure at first.
8. We have wood-lands; and with one hand we have been giving Cowles, bonuses again, to clear these wood-lands; with the other hand we have been giving Cowles to plant wood. Let us stop the bonus system—at all events for the first operation; and let the existing wood-lands be carefully marked out by the Survey and Settlement, and rigidly maintained as Government forests.
9. No matter how small the extent of land returned in any village as jungle, scrub, &c., let it be carefully preserved, marked as public property, and supplemented by throwing into it any lands that lie handy to it and are likely to grow wood easy.
10. And if the requisite area is thus secured, and all cutting prohibited save by areas the rest will soon follow. The proceeds will be fully equal to the extension; and if pinched at first the people will in the end fully recognize the ruin from which they have been saved.
11. But that the effect of such a measure will at the first be severely felt is self-evident. A class of wood merchants will spring up. There will be the wood-yards as in France. By frequent sales we may prevent combination; but no action of Government can prevent prices rising with the wood merchants and the wood-yards. No action of Government can long give wood for any one to cut as he likes at five annas the cart-load; and with the rise in the price of wood there will be sudden rise in the price of labor; price of all commodities—for a similar

rise in the price of such a necessary of life as wood must make itself universally felt, and is equally sure to cause universal distress. And it may be perhaps considered matter for congratulation that at such a crisis in the urgent wants of public works in every District in this Presidency, the Government has ready to hand an almost inexhaustible field for affording relief to good purpose.

12. As regards agricultural statistics, for so much as are not at present submitted in the Quinquennial Returns, I would certainly recommend that they should be collected; or in other words that our Quinquennial Returns should be amplified, and that this should be carried out by each Tahsildar reporting on his Taluk, and his report being published in the District Gazette.

13. Sooner than lose another five years such reports might be furnished for this year; and till the next Quinquennial Return is due operations in this direction might be confined to reporting any changes observed in the systems pursued as reported on the last occasion.

14. For instance, in their Order of the 24th ultimo the Government have forbidden fallow—in other words have put a stop to serfdom and freed the Ryots from the bondage of sixty years, and without stopping to inquire now how far the remedies proposed will meet the end in view one thing is clear; the Ryots will hold their lands on very different terms to what they hold them on now; and there will be a great change in the system of cultivation. One of the causes of the crowding of crops observed by His Excellency is unquestionably the system of allowing fallow. There is the economy of labor and time in getting the crops in—matters of no small moment as His Excellency observed with our seasons. But there is still stronger reason for the course pursued in the question of Rupees. When the Rupees are remitted on all the land he does not cultivate the Ryot has a cogent reason furnished him to cultivate as little as he can, and grow as much on it as he can sow. And when this system is changed; when he knows he must pay, whether he cultivates or not, we shall see a great change; we shall see an opening out, and this opening out and the other improvements that will follow it would be interesting to trace Taluk by Taluk, District by District, information the proposed returns would give and place on record for future information and guidance.

Exd. R. H. Lee.

15
From G. BANBURY, Esq., Acting Collector of Madras, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated Saidapet, 3rd December 1863, No. 525.

1. In reply to the instructions contained in the Board's Proceedings, No. 7,270, dated 16th ultimo, I have the honor to state that there appears to me but little difficulty in obtaining the agricultural, and statistical details therein discussed. This task would, however, take up much time, and somewhat hinder those current duties which require the Collector's daily attention. The process of obtaining the required information would be both interesting and instructive; and the reports might be drawn up Taluk by Taluk. They would be doubtless a valuable record, but it remains to be considered whether, when all this information has been collected, and compiled, there will be found any one to peruse these reports, and benefit by their contents.

2. The scheme has to a certain extent been already tried in the Settlement Department; not only was information minutely collected regarding each village, but the Deputies drew up a full and carefully studied report upon the Taluks, which had been the scenes of their operations, and in which their camps had been located, during the progress of the settlement. These reports will be found to comprise most of the subjects which His Excellency touches upon in his Minute.

3. If a Taluk in the hands of a clever and intelligent Tahsildar were selected, and if one of the Covenanted Assistants were to lend his aid to the Collector, the desired reports could be furnished, I apprehend, satisfactorily. I have always however found that, when inquiries of this nature are set on foot, the Ryots immediately suspect that a contemplated increase of assessment is the real origin of these investigations; they consequently endeavour to mystify and throw hindrances in our way; and what information they do furnish is carefully prepared, with a view of proving that their expenses are far greater than their returns.

4. Regarding the best modes to be adopted for meeting the increased demand for fuel, the Board will remember that this subject has already been taken into consideration regarding the Madras District, and sanction has been solicited for retaining a small Survey Establishment, to enable me to survey and dispose of quickly the numerous applications, which are now made to this office for grants of waste land under the Tope rules for planting Casuarina trees, to be eventually lopped and cut for firewood. Planting has now become a favorite mode of investment of capital, it will be no doubt a profitable enterprise; and the Tope rules, under which Government concede the land to the applicants for 20 years' free of assessment, is certainly as liberal a measure as any one has a right to expect. In fact, I anticipate that finally Government will reap but little benefit, in a revenue point of view, from these concessions; the Casuarinas in six or seven years will be fit to cut, and before the 20 years have expired, probably the owners of the topes, and every vestige of the topes themselves will have disappeared. Nevertheless, I would not advocate that enterprise of this nature be in any way checked by an abbreviation of the term upon which the lands are now held free of land tax.

5. In order to promote the growth of trees for fuel, I would suggest that two sandy tracts upon the sea shore, one to the north, and one to the south of Madras, be selected, and that two large Government plantations be established thereon. These tracts might be three miles long by one broad, and the trees planted should consist of Casuarinas, Karivelays and Korakapullys. The undertaking would be a highly remunerative one, the experience gained valuable, and the example beneficial. These woods might either be placed under the Collector's management, or entrusted to the Forest Conservancy Department. I think, as a general rule, Revenue Officers always enter most heartily into any scheme for promoting avenues, and groves; and the formation and due protection of these two large plantations would be an agreeable task.

6. We might render these Government woods useful in extending the growth of fuel, by supplying therefrom at a low rate young trees, seeds, and shoots; to intending planters the firewood obtained from the plantations themselves might either be sold, or be appropriated for supplying the numerous Government demands, to meet which a considerable outlay must be now incurred.

Exd. J. Tulloch.

From the Acting Collector of South Canara, dated Mangalore, 7th December 1863, No. 226.

1. I have the honor to acknowledge the receipt of the Board's Proceedings, dated 16th November 1863, requesting my opinion on the best means of encouraging planting for fuel and collecting agricultural statistics.

2. As regards planting for fuel, I think that the plan proposed by His Excellency the Governor might be tried in such Districts as Salem, Coimbatore, Trichinopoly, &c., and that much good would be likely to result therefrom.

3. I am of opinion also that if plots of waste land near large villages were granted to the inhabitants for the purpose of raising jungles, and proper seed distributed to them, it would aid towards gaining the end in view.

4. In this District, as the Board are well aware, the usufruct (to a limited extent) of land to the distance of 100 yards from the boundary of cultivated fields is the privilege of the farmer; and the consequence is that there is an abundance of firewood, and cow-dung is but little used for fuel. Doubtless the moist climate of Canara has its due effect on the growth of firewood; but still I am convinced that the privilege abovementioned has also lent a very powerful aid in the same direction; and I think, therefore, that the principle of this privilege might be extended to some other Districts with good effect.

5. With reference to the collection of agricultural statistics I think quite enough general statistics regarding Districts and Taluks are now furnished by Collectors in their Jamabundy Reports and Quinquennial Returns.

6. Minute details of particular crops; of the various modes of cultivating different lands; of the bearing qualities and value of trees of all descriptions; of the rearing and employment of cattle; of the rates of labor; and indeed of the whole interior economy of a village are what we require; and it appears to me that much more useful information of this description might be obtained by placing a Covenanted Assistant in each District in charge of a village, and requiring from him annually a full report of everything connected with its agriculture.

7. As Sir W. Denison observes, what is wanted is a microscopical analysis of a small portion of a Taluk; and besides not only would a vast mass of facts, of which we are for the most part ignorant, be thus collected together; but we should also be adopting the best possible plan to make our Assistants thoroughly understand their work. I followed a somewhat similar plan on a small scale, and for a short time, when Acting Special Assistant of Tanjore, in order to thoroughly understand the village accounts, and I have often regretted since that I did not more thoroughly carry it out.

8. Moreover, a want of European Covenanted Assistants does not appear likely to occur for sometime to come at all events; and I know of no better way than the above for turning their services to good account, either as regards themselves or the Government.

Exd. R. H. Lee.

17

From the Acting Collector of Bellary, dated Harpanahally, 12th December 1863, No. 176.

1. With reference to the Order of the Board of Revenue, paragraph 2, dated 16th November 1863, No. 7,270, requesting me to give an opinion as to the best mode of encouraging plantations for fuel and also of collecting agricultural statistics in minute detail,

2. I have the honor to state that having long considered the subject of planting in the Ceded Districts, I am of opinion that the planting of trees is dependant on the means of artificial irrigation. Men of large capital plant trees in Britain, which are for some years not remunerative, and which demand that the return expected should not be immediate as in other branches of trade or agriculture. What these gentlemen and proprietors would do if they had by manual labor, or machinery, to water their plantations twice or thrice a week I cannot imagine.

3. There are Government plantations in France for fuel; but these do not require irrigation. The high price of wood in France, which is the only indigenous fuel, makes these plantations supporting.

4. There is a proverb extant in North Britain regarding the season of the year for planting. In one month if planted you may be said to command the tree to grow; in another to entreat it; but in this country, I mean the Ceded Districts, the culture of trees will not be effected by command or entreaty but by a copious supply of water, which in most cases has to be raised 30 or 40 feet to the surface.

5. The preliminary step to increasing the growth of trees would be, in my opinion, to plant them in all moist situations where their roots might reach water, either along the banks of river-channels, or on the borders of tanks—not on the bunds alone. But Government planting is an expensive and unsatisfactory process. I would make it the interest of private individuals to make plantations; and I would grant rent free for such purposes, waste land to the extent of ten acres in a lot. This will be much cheaper than Government growing trees. If a tree has to be planted, tended, fenced, watered, preserved by paid labor for a series of years that tree will certainly be a costly one to Government. It has a host of enemies to contend with and but few friends—when newly planted; a grub; too copious a chattry of water, or the reverse; the heat of the sun; goats; sheep; buffaloes are all in conspiracy against it. When it grows up its branches are broken for fuel; its bark cut off for medicine; its leaves stripped for forage. As regards the Casuarina tree it does grow at all elevations; but at Bellary so soon as the root strikes the kunker sub-soil it withers and dies before it fulfils half its growth. My idea is in favor of distributing seeds of trees to private parties, and granting waste land, free of tax (not for twenty years only), to parties making plantations.

6. I do not advocate this for the whole Presidency; 10 acres of rice-field in Tanjore would be rather an expensive gift; but in the unwatered Ceded Districts 10 acres of waste in every village which is always dry waste, or waste because it is dry, might be given without any loss to the revenue and with prospective advantage to the country and climate.

7. The waste of fuel in this country is very great, owing to the customs and caste of the people who cannot boil their food in one mess but require so many separate receptacles and consequent fires; without the means of irrigation I cannot see how Government is to provide fuel for the million; and I would leave it to private enterprise with the encouragements as before said—applicable at least to the Ceded Districts.

8. Many topes were planted by influential village officers and others in the Ceded Districts, and chiefly in Cuddapah. The Mahomedan Government called them *Circar* topes, and so they

• NOTE.—i. e. annexed them.

came to be rented out. Now they are mostly made over, in default of heirs of former planters, to private individuals who pay the rent of the land occupied by the trees. This was considered Paragraph 17, Government Order 21st April 1858. a step in the right direction, as it was argued that if it was a man's interest to keep his tree he would

keep it, otherwise it was not desirable that it should be kept.

9. I very much doubt this maxim of political economy as applied to trees; and if the avenue trees of the Cuddapah and Bellary road had been made over to private individuals, I fear there would now be little shade on that road, and a present high price for the trunk of a tree in a village tope is very apt to lead to a gap being made which is not always filled up again.

10. Now as the old village topes were planted by headmen and others in the vicinity of the village, where no rent was charged for the site of the tope, and as the Potels or Headmen would generally be the parties who took the contract for the produce, might not the inducement of rent free land for topes, as I recommended, form a sufficient inducement to plant again? Twenty years' rent free is not a sufficient inducement where every tree has to be watered for a number of years in the most expensive manner;

† NOTE.—Else why this scarcity of fuel after fifteen years of the Tope rules? and if it will not pay a private individual to plant a tope rent free for twenty years† the loss to

Government, not only of the rent of its plantation but of the expense incurred in making and maintaining that plantation, will be much greater than the sacrifice involved in giving up rent free land which now pays no rent.

Secondly. As regards the question of agricultural statistics, I have always been under the impression that the number of bullocks; buffaloes, male and female; sheep; ploughs; &c., were registered every five years.

11. If it would be of benefit to describe the physical aspect of a village in full detail, or of a Taluk, there would not be much difficulty; the population is known and registered; also the means of communication; in fact every thing except the size and weight of cattle—there are no machines to weigh them alive, and they are of all sizes and weights; bullock and donkey-loads can easily be given as also the power of draught, which of course has something to do with the machine pulled and nature of road.

12. All the information in No. 6; the description of cultivation of all the different crops; averages of seed and out-turn to acreage, &c., can easily be supplied.

13. I have often watched the farmers of Cuddapah District in their agricultural operations, and have been at a loss to suggest improvements that were feasible. No doubt if cheap wrought iron implements were to be had, such as they could use, they would adopt them; and I would strongly recommend a set of light agricultural implements to be exhibited at Cuddapah where the Ryots are rich and enterprising; an improved bullock-yoke is a desideratum; also a light plough; harrows; rollers; a good pattern of a cart—the country is not advanced enough for a steam thrashing machine and the like implements.

A water-tight sheet iron cart, or iron tubs, would be useful articles to carry manure in a liquid state from the pit where it is stored to the fields; as there are no means of carrying liquid manure there is a great waste of fertilizing material which is allowed to evaporate.

14. No doubt improvement in agriculture might be suggested by Manuals translated into the Vernacular, provided great care is taken not to generalize too much, and to discriminate the different treatment of various soils. I have noticed a recommendation of extensive manuring for Cotton, and then heard that such a process, which is not now in vogue, tends to generate grubs which destroy the Cotton. Advice on agricultural subjects to the Ryots should proceed only from an experienced tropical agriculturist.

15. I do not feel sanguine as to the advantage of explaining to the people of Bellary the importance of not using valuable manure as fuel; they do not use animal manure as fuel in Cuddapah because they can get wood, and are not so wretchedly poor; but as the poor must live, and as they live on boiled food and cannot afford to buy wood at the excessive price at which it is sold, they have no other resource than to use the cow-dung cakes as fuel.

16. I suggested, as an inducement to improvement of agricultural products, prizes to be given in each Taluk Cusbah during the Revenue Officer's yearly tour. It is true that not much is to be expected, owing to the ignorance of the bulk of the people; for an agriculturist should be educated in order to progress; but it will do more good than single District exhibitions where long distances have to be traversed and there is no competition and very little exhibition, except under official pressure.

The area operated on is wider with Taluk than with District exhibitions, and more impression would thereby be effected; we must take the people as we find them; an ignorant race; long oppressed and the slaves of custom. I have only one further suggestion to make that no cast iron implements be introduced, as they cannot be repaired if broken.

Ed. R. H. Lee.

From the Collector of Kurnool, dated Doopad, 2nd March 1864, No. 27.

1. With reference to the Sub-Secretary's Official Memorandum, No. 164 of the 19th February, I have the honor to reply to the Board's Proceedings, dated 16th November 1863, No. 7,270, on the subject of encouraging Planting, and collecting Agricultural Statistics.

2. Owing to the large tracts of jungle on the Nalla-malla Hills, which may be considered practically inexhaustible, there is no lack of firewood in this District, the cost being measured by that of cartage from the range of Hills to the different villages.

3. An inferior fuel is also procurable in the lower range of Hills called the Yerra Malla, from which the western villages of the District are supplied.

4. It is perhaps owing to the vicinity of these jungles that the growth of Topes in the plains of Kurnool has been somewhat neglected, though this is also owing to the natural difficulties attendant on the growth of trees in many parts of the District.

5. Partly owing to the want of irrigation, and more so to the small depth of soil, the attempt to plant trees in the plains between Kurnool and Bellary has always resulted in failure, a striking example being seen in the avenues attempted to be planted along the road leading westwards from Kurnool, by the Public Works Department, on which much care and expense has been lavished without result.

6. In the Koondar valley, trees seem to thrive better as the villages approach the Nalla Mallas, and the Taluks to the east of this range appear well suited to their growth.

7. As far as the state of the country will admit of amelioration in this respect, improvement will be effected out of the District Conservancy Fund: a Government Nursery will be kept up in Kurnool, under the care of Doctor Keess, the Zillah Surgeon, who has offered to undertake the charge, and from it plantations will be made in such localities as may prove most suitable, and where sufficient depth of soil is obtainable.

8. The banks of the Canal under construction by the Irrigation Company seem to afford the best field for planting trees in this District: here both the depth of soil will be sufficient, and the necessary moisture will also be found, without the necessity for artificial irrigation, as long at least as water runs in the Canal.

9. Unless the planting of trees along the banks forms part of the Company's scheme, and is carried out by their officers, this work should unquestionably be undertaken out of the District Conservancy Fund; but as the site of the banks has been made over to the Company, the privilege of using them for planting purposes must devolve on the Company if desirous to avail themselves of it.

10. With regard to the encouragement of private Topes, I do not see that any can be added to what is afforded by the existing Tope Rules. The Deputy Collector Ragoonadha Row suggests that land granted for a plantation should be free of assessment for ever, subject only to the charge of the dry rate after twenty years when the land is actually cultivated with a dry crop in addition to the tree plantation. As this would necessitate constant inspection, and interference, I consider it objectionable, and am of opinion that the existing freedom from assessment for twenty years is as liberal an encouragement as can reasonably be offered for the end in view.

11. The use of dried cowdung for fuel is often commented upon, as resulting from the want of firewood, and as a positive injury in an agricultural point of view, from the destruction of manure which is thus entailed. On this point I would make one remark that has not perhaps been sufficiently noticed. The droppings from cattle thus used are collected in the thoroughfares and wastes by women and children, whose labor might not otherwise be so profitably employed: the fuel thus manufactured is in fact saved from absolute loss, and added to the general stock, while the droppings of the cattle in the stable are as carefully preserved in heaps and pits for agricultural purposes, as they are in an English farm yard. However plentiful firewood may be, I doubt whether amongst an economical people like the Hindoos, the scrapings of the thoroughfares will ever cease to be used for fuel, when by a little labour a child or old woman can supply the wants of the household. It may be doubtful whether it would be worth a farmer's while to pay such labour to collect these petty scrapings for manure.

12. With regard to the question of statistical details, I have always been under the impression that, as stated by the Honorable Mr. Maltby, these abound in the Board's office. I cannot refrain from stating that the constant re-opening of such inquiries is most distasteful to the agricultural population. There is nothing that they dislike more than "Kyles," of the result of which they entertain a well founded distrust, knowing the mistakes that must follow any attempt to calculate broad averages from single examples. The Ryots do not attempt to deny their present thriving condition, but they can seldom give correct details of farming statistics, because they do not themselves possess the required information.

13. The conditions of native agriculture are so identical in the greater portion of this Presidency, that I believe a minute description of the system of farming in one District would be found equally applicable to most others; while in the Sub-Collectorate of Nellore I made myself intimately acquainted with the practical farming of that part of the country. With the exception of a change in some of the dry grains, and that the season in Kurnool is somewhat earlier owing to its obtaining more of the south-west or early monsoon, the system of husbandry is identical in this District, and has hardly any variations in the dry grain countries of Guntoor, Bellary, Cuddapah, and Mysore. Detailed agricultural statistics of villages throughout this range of country would vary only, I believe, according to the various fertility of the soils, of which most varieties would be found alike in all localities.

14. The Deputy Collector Ragoonadha Row, while objecting to the further collection of statistics by the servants of Government, suggests that a few intelligent and wealthy landlords in each District might be requested to furnish such a report on their estate, as detailed by His Excellency the President in his Minute. In the Southern Districts of the Presidency it is probable that some landlords may be found, able and willing to supply the information sought for; but I regret to say that I am not acquainted with such in this District.

Exd. J. Wright.

From the Collector of Coimbatore, dated Gudalur, 2nd March 1864, No. 36.

1. I have received Proceedings of the Board dated 16th November 1863, No. 7,270, calling for my "opinion as to the best means of encouraging planting of fuel," and "of collecting agricultural statistics in minute detail;" also a reminder from the Board dated 19th ultimo on the same subject.

2. Since the receipt of the Board's Proceedings the subjects above alluded to have engaged my attention, but before writing on them it was my wish to gain further information by personal observation whilst moving amongst the people during the course of the annual settlement. During the last three weeks I have had the desired opportunity.

3. With regard to the collection of statistical information, I decidedly think that this should be made village by village; correct information about one village will be more valuable than general information about half-a-dozen. The course I would propose is to obtain the Survey Maps and Registers of some of the lately surveyed villages, then to select any one village and map in hand, to ride over or visit each field, and note down on the map the nature of its soil. This might easily be done with the aid of a pencil red at one end, and blue or black at the other. All the soils for practical purposes might be brought under four heads. A red mark on the field would indicate red soil; a black mark would indicate a black or regur soil; a black and red cross thus $\times$ might indicate a mixed soil; and the fields left blank would show that they were sandy or inferior soils. The sub-divisions of the principal kinds of soil are practically unnecessary, and have led, in all our old settlements, to much trouble and vexatious interference on the part of the subordinate Revenue servants, without whose aid (seldom given gratuitously I fear) no Ryot can tell whether the land he wishes to cultivate is 1st, 2nd, or 3rd class; red, or black, as the case may be.

4. By following this course we shall start with a correct Survey and Register of the village, with definite knowledge of the soils composing its various fields, and the basis on which all future observations are to be made will be known. Careful inquiry will afterwards enable a person to arrive at fairly correct results; but to do so, he should be able to devote his undivided attention to the subject in order that each branch of it may receive due consideration. As to manure the natives pay but little attention to it so far as their outlying dry fields are concerned; the chances of a fair monsoon are so small that they would often lose money by undergoing the expenses of conveying it to them. It is far different, however, when water is to be had; both the rice and garden lands are well attended to, in the latter case, especially in this District, an abundance of manure is applied; in fact, whenever the supply of water is certain, either from surface irrigation or from wells so as to ensure a good crop, the natives are far from backward in their application of manure; what they require in this District is a reduction in the number and rates of assessment on dry lands, and the only grounds on which this can be refused is a temporary sacrifice of revenue, but sooner or later the reduction and simplification of assessments must be made, if the poorer portion of the population is to improve; until this is done, it is useless to attempt agricultural improvements of any kind; the people are so poor that they have not heart to try them. In England, a farmer takes a farm and begins immediately to attend to his manure; in India, the Ryot gets some land and his first thought is water; give him this, and he will soon develop into a producer of all kinds of farm produce and live stock: water may in a great measure be said in this country to be to land what manure is in England. As to fuel, the real way to encourage the planting of trees will be to improve the condition of the people; wherever they possess wells, it will be observed that they have planted trees to a greater or less degree; but as trees are scarce generally in the District, it would no doubt prove advantageous to establish nurseries of young trees in different parts of it, so that the people might know where to look for and obtain them without difficulty. Nurseries of young coconut trees for sale might also be established. I have reason to believe that they would be bought up by thousands at a price sufficient to cover the original outlay expended in their formation; whilst Government are so anxious about the extension of the planting of trees in the low

country, I would earnestly direct their attention to the felling of the forests which has taken place within the last twenty odd years, and is still being carried on, for the rain-fall over the country in the vicinity of all the Hills has undoubtedly been much affected by it. Talk of rain to the Ryots, and they will tell you how it has decreased of late years; this is the case particularly in the villages three, five and six miles distant from the Hills, but more especially in those which are or used to be within the influence of the south-west monsoon. In the Bolampetty valley the other day, the Ryots pointed out to me certain villages to the east to which the south-west monsoon now extends, and those villages which formerly came within its influence. There is a distance of six miles between them. This failure of rain is a matter of fact, falling within the experience of the present generation, and is to be attributed wholly I believe to the demolition of the forests on the Hills and the low country. It therefore becomes a question whether the sale of forest lands on the Neilgherries is not likely to affect the water supply on which the irrigation of Coimbatore, Salem, Trichinopoly, and Tanjore Districts is so dependent. The whole of the springs which supply the Bowany, the Moyar, and very many other streams, are to be found on the Koondahs and Neilgherries in the sholahs and forests, and as these are cleared away, the springs dry up. The process is not only not slow but it is certain, and every tree that is felled tends to accelerate it, as the more the Hills are denuded of forest, the less power they have to attract the clouds and rain, the feeders of all the springs. How much depends on the Cauvery river? and yet, I suspect, that the country in which it is cradled, if I may use the expression, has for years resounded with the sound of the axe. A Commission to report on the probable effect of the demolition of the forests now going on in South India on the future supply of water is, I consider, a subject deserving the serious consideration of Government.

Exd. J. Wright.

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From the Collector of Malabar, dated Palghat, 22nd March 1864, No. 72.

1. In the Board's Proceedings dated 16th November last, a report on "The best means of encouraging planting for fuel," and on "The collection of Agricultural Statistics in minute detail," is called for.

2. The first subject is one which in this District does not assume the importance which attaches to it elsewhere, because the climate and soil are favorable to the growth of wood, and there is in fact an abundance which promises to be unfailing for a period beyond which it seems hardly necessary to look.

In Malabar, moreover, as the proprietary right in the soil vests in private individuals, there is less scope for Government encouragement.

No revenue regulations obtain checking private enterprise in planting, so we have no restrictions to do away with. The only active step that I can suppose might be attended with advantage, is the establishment of nurseries; and though this might be productive of good by the introduction of new species of plants, and improvement of arboriculture generally, I do not think any measure of the sort necessary for the provision of fuel.

3. I may observe that a noble example of planting on a grand scale for timber exists in the "Conolly plantations" at Nilambur; and several native landholders have profited by it, and are raising Teak plantations of their own. But the capital required to be sunk is too great, and the returns though eventually large, are too slow to render such speculation likely to be general in the present state of the country.

4. The rules now obtaining, as observed by the Board, are liberal; and no modifications of a general nature suggest themselves to me.

In such Districts as Tinnevely, Madura, Masulipatam, &c., I would advocate the establishment of nurseries near the Taluk Cutcheries, which might be kept up at a very moderate expense. With interest displayed in the subject by the Revenue officers, I am quite sure considerable results are obtainable in this way.

5. But where private enterprise is dull to existing favorable revenue terms, and the demand for firewood pressing, I would strongly recommend that Government should itself take up tracts near good water or land communication, and plant out; cutting and selling the wood on system at periodical auctions.

I look on this as far more likely to meet the requirements of the case, than the offer of extravagantly favorable terms to induce Ryots to enter on speculation which they hardly believe in, and require excessive stimulants to induce them to undertake.

I am confident that, if judiciously managed, such plantations might be made a source of revenue as well as of public advantage; but I only now advocate Government entering on the course, because, as already said, planting requires capital, and its returns, though sure and ample, are too slow to be generally attractive.

6. I see that I have rather said what I take to be the best means of procuring a sufficient supply of fuel, than discussed the best means of encouraging planting by private individuals, but I believe expression of opinion was desired on the more general question.

And before quitting the subject of fuel, I may remark that however plentiful we may make firewood, we must not expect to see cow-dung cakes disappear altogether from village walls; for quite independently of the scarcity of wood, "Bratties" as fuel have an attraction of their own.

7. As regards "the collection of Agricultural Statistics in minute detail," I believe that microscopical analysis of portions of Districts would be very useful and interesting, if proper agents are chosen for the purpose of making them, and the Collectors are simply the media of conveying them to Government with such general remarks as their experience may dictate.

But I do not hesitate respectfully to deprecate the requisition of such reports as are sketched by His Excellency in paragraphs 30 to 32 of his Minute; if more than review is expected at the Collector's hands, the result, nine times out of ten, in such case would be, that more important duties would be interfered with by undue attention to this one, which would probably be but imperfectly performed after all; or that the Collector's signature would be appended to an inaccurate mass of matter, collected by unfit and irresponsible subordinates.

The reports would assuredly want the precise accuracy, and (so to speak) reliability, which would be their great merit over the voluminous statistics now collected. For it must be remembered that most of these statistics required are now furnished; and that occasional reports on villages or portions of Districts, able as any that could now be expected from Collectors, and embracing almost every point mentioned or alluded to by His Excellency, might be found in the Board's, the Revenue Settlement, or the District records.

As far then as returns from officers charged with general duties are concerned, I would advocate reduction rather than amplification, with increased attention to accuracy.

8. But I am respectfully of opinion, that the present condition of the service affords excellent opportunity for the preparation of a series of more systematic, reliable, and minute reports, of the nature contemplated by His Excellency than have even yet been made.

A number of highly educated men have lately joined the service who will soon be distributed as Assistants in different Collectorates.

Some of these have probably studied Geology, Botany or Chemistry as applied to agriculture, and have so far special qualification for the preparation of worthy papers. Let these men be selected and deputed with a special view to the work.

Such an Assistant after joining his District should remain a year or so at the Collector's office on general duty, to complete colloquial knowledge of the vernacular, and acquire some knowledge of the people, and get an insight into the current routine of work. He should study the general history of the District, and any previous reports of importance.

He should then be deputed to a locality chosen of very limited extent, and his duty should be to leisurely camp through it, and prepare his report spending a fortnight in one village, a month in another, and so on, drawing his facts as far as possible from personal observation, and direct and extended inquiry and intercourse with the people in their bazars, their farmsteads, and their fields.

9. If this plan is pursued we shall in due course have a set of reports that we can really trust to, and we shall at the same time be affording the most admirable training for future Revenue officers.

Every Collector would be the better of going through such a school; but if a man has not done so before he becomes Collector, it seems to me then too late to send him there.

10. Before closing this letter I venture a brief remark on the question of model farms and improvement of agriculture discussed in the papers covered by the Board's Proceedings under reply.

I believe the establishment of several model farms will be of the greatest benefit to this Presidency, if two conditions are prominently kept in view. On these, in my humble opinion, the success or failure of the farms in improving the agriculture of the country will mainly hinge.

Firstly.—The farms must be under the management of scientific professional farmers.

Secondly.—There must be ample provision for the training of apprentices in the principles and practice of agriculture, and the instruction of farm laborers in the skilful management of the improved machines.

Edw. J. Wright.

No. 2,588.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 29th April 1864.

Read the following letter from the Officiating Director of Revenue Settlement, dated Madras, 12th April 1864, No. 454-18:—

1. I have the honor to acknowledge the receipt of the Board's Proceedings of the 16th November last, No. 7,270, requesting my opinion as to the best means of encouraging planting for fuel, and also on the question of collecting agricultural statistics.

2. In villages containing a sufficient area of waste land, I do not think that any more liberal measure is called for than that already provided by the existing rules, under which waste land taken up for Topes is granted free of assessment for twenty years, though it may perhaps be advisable in addition to distribute the seeds of the Casuarina and other quick-growing trees suitable for firewood. There are however numerous villages containing no unoccupied waste, and which consequently cannot be benefited by the Tope Rules if strictly enforced; and yet it is

precisely in these villages that fuel is most scarce, and that it is most desirable to encourage its production. It is true that paragraph 4 of the Tope Rules of 1848, extract of which is given in the margin, admits of private Topes

being planted in lands usually under cultivation; but except where very special reasons exist for greater indulgence the full assessment is to be levied. I would suggest that where no unoccupied land is available, as is the case in many of the delta villages of the Godavery District, Ryots undertaking to plant private Topes be allowed a remission of one-half the assessment on a reasonable extent of land so planted; precautions being taken to ensure the due appropriation of the land to the purpose.

3. The system of planting trees for boundary marks of fields and holdings in lieu of stones or earthen mounds, as suggested by His Excellency the Governor in paragraph 11 of his Minute, was tried a few years ago in the Godavery and Kistna Districts, and failed. The Ryots could not be induced to water or look after the young trees when first planted, and in almost every case they died.

4. As regards the collection of agricultural statistics, the Settlement Reports already submitted to the Board and Government will be found to contain much information of the nature required; while the returns furnished annually and quinquennially by the Collectors can leave little wanting on this head. As observed by the Honorable Mr. Maltby in his Minute statistical details already abound in the Board's records. The whole of these are perhaps not altogether trustworthy; but it is questionable whether attempts at fresh collections would lead to more reliable data being obtained.

13th January 1864, No. 35.

5. I annex copy of a letter from the Acting Deputy Director in Coimbatore making suggestions for the encouragement of the growth of firewood.

ENCLOSURE No. 1.

From W. C. STUART, Esq., Acting Deputy Director of Revenue Settlement, Coimbatore; to R. E. MASTER, Esq., Officiating Director of Revenue Settlement, dated Camp Perindora, 13th January 1864, No. 35-14.

8. I have now the honor to reply to Proceedings of the 33rd November 1863, No. 1,423-234, requesting me to submit any suggestions that may occur to me on the best mode of encouraging the growth of firewood on waste lands.

2. The only trees I am aware of that could be successfully grown for fuel are the Australian Acacia, the Casuarina, and the Mimosa Zilcarpa. I do not think the Australian Acacia would grow in the low country; and the Casuarina requires a sandy soil, and thrives only in littoral tracts; but the Mimosa Zilcarpa seems to grow anywhere, and makes excellent fuel; and besides the wood being very tough and fibrous answers particularly well for ploughs, and being very thorny the branches are useful for fences. I am not certain that I have given it the correct botanical name, as I am writing merely from memory, not having a botanical dictionary

by me to refer to ; but I believe the tree is well known in the north as the Thamba Chettu, and in the south as the Karuvelampatta. It is also called the Kali Kikar, which, I am told, is the Hindoostani name for it. There are two species of it, one bearing a white and the other a yellow flower, and it is the latter species I refer to. From the bark of the species bearing the white flower a well known spirituous liquor is manufactured ; but the tree is not suited for fuel. There are several plantations of the Karuvelampatta in this District, which were formed by the late Collector, Mr. Thomas. The objection, however, to its extensive cultivation is, that it makes the locality unhealthy, generating malaria and causing fevers. There is a large plantation of it near the town of Avanashy in the Pulladam Taluk ; and the inhabitants informed me that ever since the plantation grew up the place has become feverish. This however is only a vulgar notion, and I do not know whether its accuracy has ever been tested.

3. By the existing rules, the terms on which waste lands are granted are liberal ; and I would suggest that the growth, on a more extensive scale, of the Mimosa Zilocarpa should be encouraged on waste lands near villages, on the side of rivers, streams, irrigation channels, &c., and on the bunds of tanks ; and in order that the suggestion might be practically carried out, I would recommend that the Tahsildars should be supplied with a quantity of the seed, and also that nurseries should be formed in each Taluk under the superintendence of the Tahsildars, and that the seeds and young plants should be offered to the Ryots, and they should be encouraged to plant them on waste lands by explaining to them the advantages they would derive. It should be pointed out to them that in many localities what would make valuable manure is now employed as fuel simply because of the scarcity of wood, or the difficulty of obtaining it. The planting of the trees on the side of irrigation channels, and on the bunds of tanks might, I think, be entrusted to the Public Works Department.

4. As regards the Wynaad, I have no doubt that the Australian Acacia would grow luxuriantly in that Taluk of Malabar, though I do not think it has yet been introduced anywhere. It is an ornamental as well as a useful tree ; and I believe if the European settlers were supplied with the seed they would form avenues of it by the side of the roads on their estates, as well as plant it on the grass hills which they reserve for pasturage.

5. So far as the Government are directly concerned I would take the liberty of suggesting that the Forest Department might form plantations of the Acacia on the barren grass hills (which at present are turned to no account, except for grazing cattle, not being adapted for coffee) as well as in clearings of bamboo jungles belonging to Government ; and I have no doubt the example would soon be imitated by the natives and others. There are extensive hills of the above description, belonging to Government, in the Ganapadivattam and Memanad Amsams. The Tahsildar also might raise a small plantation in the neighbourhood of Manan-toddi. In such cases as the above, I think the trees should be planted far apart, to admit of the spaces between the trees being cultivated if desirable. The consumption of fuel in Wynaad is increasing so fast, and the clearing of the forests is extending so rapidly, that in a short time fuel will become a scarce and dear commodity in the towns, and the owners or farmers of such plantations would reap considerable profits.

(True Copy.)

(Signed) R. E. MASTER,

Officiating Director of Revenue Settlement.

1. Ordered to be communicated to the Collectors of Coimbatore and Malabar, who will give their consideration to Mr. Stuart's suggestion.

2. Mr. Master's letter will be disposed of with the other replies to the Board's Circular Order.

(True Copies and Extract.)

(Signed) W. HUDLESTON,

Secretary.

To P. Grant, Esq., Collector of Coimbatore.

Copy to G. A. Ballard, Esq., Collector of Malabar.

to R. E. Master, Esq., Officiating Director of Revenue Settlement.

Ed. R. H. Lee,

Emerson a letter from
sent to the Prof. of
Sent to Govt. A. D. 1863
January 1863 at 48.

Rev: 69/65

File of replies repts
the growth of firewood
& collecting agricultural
statistics.

Rev. Mr. May 1863-64
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MISCELLANEOUS CIRCULAR, No. LXI.

Board No. 4,879.

From W. HUDLESTON, Esq., Secretary to the Board of Revenue,
To ALL COLLECTORS.

SIR,

The last Quinquennial Returns have exhibited in the strongest light the very serious diminution in the agricultural stock of the country, that the prevailing bad seasons and disease of late years have caused.

2. Had the Stock not increased in the due proportion, there would have been good grounds for anxiety, but when, as is the case, a positive and large decrease is perceptible at the end of five years, there is no room for doubt that the evil must be most serious, and that the results in an agricultural community may be calamitous beyond present apprehensions, assuming of course that the returns are approximately correct.

3. The Board desire me, therefore, to request that you will give your best attention to the subject, and will suggest the means which it is in your opinion expedient to adopt, in order to encourage cattle breeding as much as possible, and to facilitate the keeping up of Stock.

4. The rules in force in your District for the occupation of land for pasture should receive special attention, and be reported on to the Board, with proposals for emendation if deemed necessary.

5. The rule in force in some Districts, of allowing one-fifth of the whole extent of land in a Puttah to be held for pasture at one-fourth of the full *Tarum* assessment, might perhaps be made more general with advantage.

I have the honor to be,
Sir,

Your most obedient servant,

(Signed) W. HUDLESTON,
Secretary.

REVENUE BOARD OFFICE,
Madras,
5th August 1863.

(True Copy.)

(Signed) W. SCHARLIEB,
First Assistant.

Exd. J. Wright.

MISCELLANEOUS CIRCULAR, No. LXVI.

Board No. 5,046.

From W. HUDLESTON, Esq., Secretary to the Board of Revenue,
To ALL COLLECTORS.

SIR,

I am directed by the Board of Revenue to request that, in replying to my letter dated 5th August 1863, No. 4,879, on the subject of the decrease in Agricultural Stock, you will be good enough to state whether there has been a marked increase of disease among cattle in your District in the last five or six years; and if so, whether it has been coincident in point of time with marked prevalence of epidemic disease among human beings, or the reverse.

2. You will also please to state the symptoms of the cattle disease as ascertained from the Ryots, the remedies which they employ, and those which you consider may, with probable benefit, be tried.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) W. HUDLESTON,
Secretary.

(True Copy.)

(Signed) W. SCHARLIEB,
First Assistant.

REVENUE BOARD OFFICE,
Madras,
12th August 1863.

Exd. J. Wright.

MISCELLANEOUS CIRCULAR, No. LXI.

From the Secretary to the Board of Revenue.
To All Collectors.

Dated 5th August 1863.

Received

Board No. 4,879.

Issuing instructions to Collectors for the preparation of future Quinquennial Returns, and requesting to know the means which seem to be expedient in order to encourage cattle breeding and to facilitate the keeping up of Stock.

25
From J. W. B. DYKES, Esq., Collector of Nellore, to W. HUDLESTON, Esq., Secretary
to the Board of Revenue, dated 14th August 1863, No. 253.

1. I have the honor to acknowledge the receipt of the Board's Miscellaneous Circular, No. LXI of the 5th instant, commenting on the falling off in stock exhibited by the Quinquennial Returns, and suggesting that one-fifth of the extent of a Puttah might be held as pasture at one-fourth of the assessment with advantage.

2. The Board do not state why one-fifth is selected as the fraction of area, and one-fourth as the fraction of assessment on that fractional area; and in this District we have no such division of assessment. But in the Sub-division the fraction of area referred to is what the Ryots call their "Pashuvubidu," is held in private occupation, whilst the assessment is simply a share of the general Pulari or grazing tax fixed on the village, and whether as regards the Accountants whose duty it is to see to the proportions, or the Ryots whose duty it is not to transgress those proportions, is one perpetual source of trouble. In the Principal Division we have our Pulari already described in full. And of course the simplest way to encourage breeding and facilitate the keeping up of stock would be to abolish Pulari in either shape.

3. I however think all fostering whether for cotton or cattle is wrong, and opposed to the true principles of political economy. Bonuses have been universally condemned; neither with our large Taluks have we the establishments to check such conditional tenures. And I trust the Survey and Settlement now in progress will remove the discouragement to breeding inseparable from the present grain assessment on all occupation.

4. Whether we take action in the matter or not, the markets will in time adjust themselves and that, I believe, is the true policy. Whilst, in this District, there being an increase in the tilling cattle, it is difficult to account for the falling off in the cows, on which point I am calling for information from the Tahsildars, and am at the same time having tables drawn up, showing how our stock returns have corresponded, as long as the accounts are available for, with the area under the plough and price of grain.

Exd. J. Tulloch.

MISCELLANEOUS CIRCULAR, No. LXVI.

From the Secretary to the Board of Revenue,
To All Collectors.

Dated 12th August 1863.

Received

Board No. 5046.

Requesting that certain information about
cattle disease be furnished when replying to
Board's Circular, dated 5th August 1863, on the
subject of the decrease in Agricultural Stock.

26
No. 5,700.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 10th September 1863.

Read the following letter from G. A. BALLARD, Esq., Collector of Malabar, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated Calicut, 10th August 1863, No. 169:—

1. Adverting to your Circular of the 5th instant No. LXI, I have the honor to observe that the Quinquennial Returns from this District do not exhibit the diminution in agricultural stock that appears to be elsewhere observable.

Statement.

	Fasli 1266.	Fasli 1271.	Increase.	Decrease.
Ploughing Cattle.	3,05,890	3,18,348	12,458	.....
Cows.....	2,49,939	2,48,018	.....	1,921
Buffaloes.....	45,528	47,371	1,843	.....
Sheep.....	22,059	21,287	2,228	.....

2. On the contrary a general tendency to increase is found.

3. I do not therefore think that any special action is called for here.

Recorded.

(A true Copy and Extract.)

(Signed) W. HUDLESTON,
Secretary.

To G. A. Ballard, Esq., Collector of Malabar.

Ed. J. Wright.

Recording letter from the Collector of Malabar observing with reference to Miscellaneous Circular of the 5th Instant, No LXI that as the returns from Malabar shew a tendency to increase in agricultural stock no special action seems called for.

No. 5700.

Dated 10th September 1863.

PROCEEDINGS OF THE BOARD OF REVENUE,

No

1863. Department.

From H. MORRIS, Esq., Acting Collector of the Godavery District, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated Cocanada, 28th September 1863, No. 314.

1. In reply to the Board's Miscellaneous Circulars, Nos. LXI and LXVI, dated the 5th and 12th ultimo, I have the honor to send you the following report on the breeding, pasturage, and diseases of cattle.

2. I am informed that the mortality among the cattle in this District during the last six years has been very great. It has been occasioned by a fatal epidemic and other dangerous diseases, and has accompanied the rapid extension of cultivation and trade.

3. The epidemic is very prevalent among all classes of cattle; but the season in which it prevails varies much. It is not coincident in point of time with the prevalence of epidemic diseases among men; but, in its swiftness, stealthiness, and uncertainty, as well as in many of its symptoms, it closely resembles Cholera.

4. This epidemic is of two kinds. The symptoms of the first are looseness, abstinence from food, and change of colour. The animal usually dies in two or three days. I am informed that this form of the disease is incurable, and terribly contagious. A few weeks ago the Moonsiff of a neighbouring village lost 100 head of cattle within a fortnight from this malignant disease.

5. The symptoms of the second species of the epidemic are a swelled throat, much trembling, abstaining from chewing the cud, change of colour, and a distended stomach. The nerves seem thoroughly unstrung, and a good deal of saliva oozes from the month. The attack usually lasts about a week: but it is, I believe, curable.

6. Of other diseases incident to cattle, the most peculiar in its nature, and the most fatal in its results, is one called "Jalaga." It prevails in the Delta Taluks only, and was unknown before the construction of the Anicut and its numerous canals. It consists of small leeches about half an inch long in the stomach, and is occasioned, according to the testimony of the Ryots, by the cattle feeding on the grass which grows luxuriantly on the banks of the channels, and especially on an aquatic herb called "Tutikada," which grows only in the channels, tanks, and swamps that are filled with the water from the Godavery. The symptoms are two-fold, extreme thinness and debility, and great looseness, which usually commences a week before the animal dies. Death is certain, and none recover.

7. The usual remedy adopted by the Ryots for the first form of the epidemic is a porridge made of raggy mixed with oil. For the second they use a mixture compounded of palmyra toddy, jaggery, onions, turmeric, opium, a bulbous root called Kanda, and bishop's weed. The cattle are also kept from drinking water, and now and then receive a dose of brandy or arrack. As in the case of Cholera, however, no specific remedy has yet been discovered. The usual remedy for "Jalaga" is tobacco juice mixed with salt.

8. Dropsy and beri-beri are also common diseases, and the usual treatment for them is branding.

9. I enclose a Statement showing the comparison between the agricultural stock in the District of Rajahmundry and the transferred Taluks of Masulipatam in Fasli 1266 and that of the present District in Fasli 1271. It will be observed, that, while there is a large decrease perceptible in other species of cattle, there is an increase in the number of ploughing bullocks. This is, I believe, attributable to the simple fact that oxen, which are absolutely necessary to carry on agricultural operations, have been brought from other Districts, as cultivation has continued to increase.

10. The want of good pasturage is undoubtedly the cause of the great mortality of cattle in this District. There is very little grazing land in the Delta Taluks, as almost the whole of the soil has been taken up for cultivation, and the dry land converted into wet. The cattle are gene-

rally sent to the upper Taluks for pasture during the rainy season, and brought back again when the rains are over. The only extent of really good pasturage in the Delta is situated in the Taluks of Nurapore and Undi, as described by Mr. Master in the hundred and forty-second paragraph of his Report on the Settlement of the Western Delta.

11. All the pasture lands in this District are left at the disposal of the Ryots, free of assessment, with the exception of those already mentioned and the tracts used for grazing in the upper Taluks: and I do not think, even if an indulgence were granted to the Ryots by reducing their rent on condition of their leaving a portion of the land for pasturage, that there would be much improvement, as they seem so anxious to turn every particle of land to advantage.

12. The only remedy for the disease mentioned in paragraph 6, is to substitute good pasturage for bad. The root which produces it is, I am informed, so tenacious that it cannot be eradicated; and, to keep the cattle away from it, it might, perhaps, be advisable to insist on a sufficient portion of each village being set apart for pasturage, and being carefully examined from time to time by the Revenue authorities to see that it is applied to the purpose for which it is intended.

ENCLOSURE No. 1.

STATEMENT showing the comparison between the Agricultural Stock in the old Rajahmundry District, and the transferred Taluks of Masulipatam in Fasli 1266, and that of the present District in Fasli 1271.

	Ploughing Bullocks.	Kine.	Buffaloes.
For the old Rajahmundry District according to the Returns of Fasli 1266	1,17,030	64,911	38,563
Transferred Taluks of Masulipatam do. ...	18,844	19,140	12,271
Total Godavery District ...	1,35,924	84,051	50,834
According to the Returns of Fasli 1271 ...	1,52,217	65,453	39,417
Increase...	16,293	...	...
Decrease...	...	18,598	11,387

COCANADA, 28th September 1863.

(Signed) H. MORRIS, Acting Collector.

Edw. J. Wright.

From M. J. WALHOUSE, Esq., Acting Collector of Trichinopoly, to W. HUDLESTON, Esq.,
Secretary to the Board of Revenue, dated 30th September 1863, No. 188.

1. I have the honor to acknowledge the receipt of Board's Miscellaneous Circulars dated 5th and 12th August last, Nos. LXI and LXVI respectively.

2. In reply I beg to inform you that the rules for pasture land in this District up to 1860 were certainly favorable. The lands being assessed according to the description of crops grown on them, that portion of a Ryot's holding set apart as pasture land was assessed as for growing grass, and consequently very low, the tax not exceeding, on an average, 4 Annas per Cawny. Since 1860 the Order contained in the latter part of paragraph 9 of the Government Proceedings dated 10th March 1860, No. 364, Revenue Department, has been enforced, *i. e.*, no Ryot can be allowed to retain land for pasture when another wants it for cultivation. This has to a great extent discouraged the Ryots from keeping up a larger stock of cattle than they may actually have occasion for; much pasture ground has also fallen into Sheigal from two or more Ryots contending for the cultivation. A Ryot's possession of grazing land has thus become more precarious and dependent on his neighbours.

3. The large tracts of waste land that have lately been made over to various parties on Durkhast will also have the effect of limiting pasturage. All these circumstances are against the breeding and increase of cattle.

4. This District, unlike some of those verging on it, has not been noted for any breeds of cattle. The pasturage, except in a few limited tracts is not good. Salem produces excellent bullocks, and Coimbatore is well known for its sheep and cows, and in some places breeds good horses, but Trichinopoly is distinguished for no sort of cattle.

5. Prices of cattle were never so high as now. I can testify to their having doubled in these Districts within the last ten years, and good cows and bullocks are always eagerly bought up. If this demand fails in encouraging breeding, and producing a supply I should not be very sanguine of the result of any artificial stimulus. I think however it might be well to try the effect of creating annual prizes in each Taluk for the best cattle bred in it by a resident Ryot, and for the greatest number of serviceable stock maintained in proportion to the extent of a holding; thus the holder of 100 acres who possessed 50 head of good cattle would carry off the prize from the holder of 1,000 acres whose stock was 200. A prize open to the whole District might also be instituted at the great Shrivangam cattle fair held yearly in December for cattle certified to have been bred in the District.

6. The rule alluded to in paragraph 5 of the Miscellaneous Circular, No. LXI, would also be usefully introduced in this District. It is well calculated to encourage cattle breeding, and would serve also as a wholesome correction of the Razeenamah rules conveyed in Board's Circular dated 8th August 1859, No. 3,061. Productive power is lessened by continual cultivation, and this rule would allow the land an opportunity of laying fallow once in five years.

7. As directed in Miscellaneous Circular, No. LXI, I beg to inform you that for four months in the beginning of the year 1860 a disease called "Vakkai" prevailed among the cattle in this District and did great damage. Cholera was raging about the same time. The latter usually appears in December, and a few days before or after the cattle disease breaks out, and both continue for three or four months. Since 1861 however there has been a marked decrease of disease among the cattle.

8. A list of the cattle diseases prevalent in this part of the country, their symptoms, and the remedies which the natives employ, generally, it is said, successfully, is enclosed herein. I do not feel competent to make any suggestions on the subject.

ENCLOSURE No. 1.
LIST OF CATTLE DISEASES AND THEIR REMEDIES.

1. *Vekkai* (வெக்கை).

SYMPTOMS.—Continual purging, dung stinking, water secretion muddy, ceasing to chew the cud.

REMEDY.—Cardamum... .. Palam 1
Cinnamon... .. do 1
Cannabis Indica leaves... .. do 1
Opium... .. (கஞ்சா). do 1
Cloves... .. do 1
Palmyrah Jaggry... .. do 1

Pound all to fine powder mix with Jaggry and administer three doses, one in the morning, one in the evening, and another next morning.

Dose.—Three-eighths of a palam weight.

2. *Adaippan* (அடைப்பான்).

SYMPTOMS.—Swelling of the tongue, continual discharge of water from mouth.

REMEDY.—Leaves of Acalypha Indica (குப்பைமேனி) a handful.
Leaves of Vitex Negundo (வெண்ணெய்ச்சி) do.
Betel... .. do.
Pepper Palam 1
Acorus Calamus (வசம்பு) ... do 1
Dry ginger... .. do 1
Garlick... .. do 1

Pound them all together, mix it with human urine, and pour it into the nostrils and ears.

3. *Cough or Sirumal* (சிறுமல்).

SYMPTOMS.—Sirumal or continual coughing (சிறுமல்).

REMEDY.—Leaves of Acalypha Indica (குப்பைமேனி) a handful.
Acorus Calamus (வசம்பு) ... Palam 1
Garlick... .. do 1

Grind the above with hot-water, pour it once into the nostrils. Brand the crown of head with red hot iron.

4. *Komari* (கோமாரி).

SYMPTOMS.—Continual purging in large quantity, unbearable stinking of the dung, an almost instantaneous disability to stand.

REMEDY.—Root of Flugeolen copyrus (வட்டபூலா) a handful.
Young leaves of Nancea Cadamba (கடம்பமரம்) do.
Leaves of Bergera hnaiga (கருவேப்பிலை) do.
Flour of Phaseolus radiatus (உளுத்த) do.
Grind them well, mix it in a Madras measure full of milk. This is one dose and must be given in immediately.

(Signed) J. M. WALHOUSE,
Acting Collector,

Exd. J. Wright

From A. WEDDERBURN, Esq., Acting Collector of Bellary, to W. HUDLESTON, Esq.,
Secretary to the Board of Revenue, dated 5th October 1863, No. 143.

1. In reply to the Proceedings of the Board of Revenue, calling for information as to the means to be adopted to encourage the breeding of cattle, and to facilitate the keeping up of

Stock, I have the honor to state that Bellary breeds but a small inferior sort of cattle. All the large working cattle in this, as in the Cuddapah District, are imported from Nellore.

2. It has been suggested that superior bulls might be imported by Government for the improvement of the breed, but I have great doubts as to the success of any such procedure, though none as to its expense.

3. Mr. H. Forbes, when Collector of Tanjore, imported at a high price from Ongole in 1853 about a dozen bulls, but they were not found to answer, and were, I believe, sold at a dead loss.

4. I am pretty sure, from the prices given by the Cuddapah and Bellary Ryots, many of whom in the Western Taluks of the former District are substantial men, and think little of giving Rupees 200 for a pair of good bullocks, that if cattle breeding* had been feasible, it would have been attempted by them, but when there is not the necessary grazing to be found for breeding stock, stall feeding will be found too expensive.

5. It is expensive enough to feed working stock in a rain-less, grass-less District, the cost of an animal bred in such a locality would be far above the price of an imported animal.

6. It is not only the bad seasons, i. e., deficient rains, that injure stock, another lately increasing cause is the high price of exported produce. Cotton and Indigo are cultivated at the expense of cholum, and other forage yielding crops. A rich Ryot of course provides for his own cattle, but will not sell his fodder. So indirectly the high prices of Cotton and Indigo combined with rain-less seasons affect the cattle of the less wealthy Ryots, in fact of the majority; badly fed cattle are more liable to epidemic disease.

7. In a District like this, an increase of irrigation would provide paddy straw for cattle, but I have no suggestions to offer to counteract the natural disadvantages of the District, where cattle must die when the grass fails.

8. As regards the grant of one-fifth of the whole land in a Puttah at one-fourth of the assessment, I consider it unnecessary in this District, where more than half the assessed land is waste, and may be grazed upon if there is grass on it, at pleasure, and without restriction.

9. As regards increase of disease among cattle in the last five or six years, and whether coincident with prevalence of epidemics among human beings, or the reverse, on which I am called on to report in the Board's Proceedings of 12th August 1863, No. 5,046, I have the honor to state that beyond the diseases, and starvation, which bad seasons cause, there have been no extraordinary epidemics which have come to notice in that period, nor has there been anything remarkable of the sort among human beings.

10. The common epidemic disease among cattle is called in Telugu "Moosari" rogum (the word is not found in Brown's Dictionary), but I believe it to be murrain, characterized by loss of appetite, darkness of skin, purging, occasionally sanguineous, and symptoms of putrescence; recovery is rare. The remedies employed are boiled green gram mixed with ghee and jaggery; also the liquor in which ragi is boiled, mixed with butter-milk, is given.

11. I am unable to suggest any better treatment, and am of opinion that the want of grass is one of the chief causes of loss. In illustration of this I subjoin a Memorandum of the increase and decrease. If the cause of decrease had been epidemic disease, the working cattle, which are stall fed, would have suffered in some proportion to the breeding stock, and sheep, which have to find their own livelihood, but there is a slight increase in the working cattle, and a great decrease in the stock which subsist by grazing.

ENCLOSURE No. 1.

COMPARATIVE STATEMENT showing the number of Cattle in the District of Bellary as per accounts of Faslis 1266 and 1271.

Cattle.	As per Accounts for Fasli 1266.			As per Accounts for Fasli 1271.	Comparison.		Remarks.
	Total No. of cattle in the District.	Deduct Punch-polliem Taluk.	Remaining.		In crease.	Decrease.	
Tilling Cattle ..	2,38,064	19,429	2,68,635	2,69,096	461	...	These cattle are fed with straw of Jonna and of other grains. Graze on the waste lands.
Cows	2,62,417	12,283	2,50,134	1,46,191	...	1,03,943	
She Buffaloes..	1,35,781	12,043	1,23,738	80,392	...	43,346	
Sheep.....	6,52,935	37,253	6,15,682	4,41,606	...	1,74,076	
Total...	13,39,197	81,008	12,58,189	9,37,285	461	3,21,365	
Net Decrease...					3,20,904		

(Signed) A. WEDDERBURN, Acting Collector.

Exd. J. Wright.

From W. M. CADELL, Esq., Collector of Tanjore, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated 17th November 1863, No. 432.

* Circular No. LXI, dated 5th August 1863.
Do. No. LXVI, dated 12th August 1863.

1. With reference to the Board's Miscellaneous Circulars marginally noted, I have the honor to state, that the first of them is inapplicable to Tanjore inasmuch as the last Quinquennial Return shows an increase instead of a decrease in the agricultural stock in this District. From my own experience and personal observation, I am inclined to think that this increase has only kept pace with the growing prosperity of the District.

2. With respect to paragraph 5 of the Circular above referred to, I would beg to observe, that no difficulty is experienced for want of pasturage in the Kadarambam or dry tracts, as also, in the more Eastern Section of the river-irrigated part of the District. In the Western Section of the last mentioned part however, the tendency to bring every available acre under the plough appears to me to require to be checked; but I conceive that a careful scrutiny of all applications for Durkhasts as also of the accounts of extra cultivation by the Mirassidars of the villages, is all that is required to secure this object. I am not of opinion that the Tanjore Ryot will give up the profits of cultivation on any terms whatever with the view merely of reserving a portion of his holding for pasture, and the introduction of a rule that one-fifth, or any other portion of a Ryot's holding shall be occupied for pasture at one-fourth of the full assessment, would only lead to a considerable sacrifice of the Public revenue, without in point of fact, ensuring the reservation of such portion for the purpose intended.

3. With reference to the second Circular above quoted, I would observe that, as far as my information goes, there has been no marked increase of disease among cattle in this District in the course of the last five or six years; nor does it seem that the prevalence of disease among them is coincident in point of time with, or bears any relation to, the prevalence of epidemics among human beings.

4. The diseases of a general and infectious character, which ordinarily prevail among cattle in this District, are what are known by the names of "Komari" and "Vekkai." "Komari" is an ulceration of the hoofs with worms in its aggravated symptom. The approach of this disease is generally characterized by an entire aversion to food on the part of the animal, and by much watering at the mouth, and it generally prevails after long continued seasons of severe drought, the remedy generally and frequently successfully applied is to make the cattle stand for a while in mire, and the disease is for the most part easily cured.

5. "Vekkai" is a morbid looseness of the bowels, and attacks cattle in various forms; one of which is a profuse discharge of blood. This is also apparently caused by excessive heat, and various specifics are applied to it without, however, very much success. This disease is generally considered incurable, and carries off the cattle at once. I am not aware of any remedy now not applied, which can, with probable benefit, be tried in either of the cases above specified.

Exd. J. Wright.

From J. W. B. DYKES, Esq., Collector of Nellore, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated 18th November 1863, No. 390.

1. I have the honor to acknowledge the receipt of the Board's Miscellaneous Circulars Nos. LXI and LXVI, on the diminution of agricultural stock as shown by the Quinquennial Returns for the last five years.

2. The Board call for suggestions as to the best means of encouraging the Ryots to devote more capital to the breeding of cattle, &c., and for report on the rules that regulate the occupation of land for pasture; whilst the Board further observe that the rule of allowing one-fifth of the land at one-fourth of the assessment might perhaps be made more general with advantage.

3. Even if the Returns cannot be depended upon, and the purchase of bullocks from elsewhere does not exactly explain why cows should decrease when bullocks increase, it is still matter calling for serious attention that in a time of, it may be said, unexampled prosperity, the Returns of cattle are not more satisfactory. It is equally sure that the remedy will be worse than the disease, if in trying to bolster up cattle we inflict general injury on all else that affects the well being of the Ryots. And, in submitting the results of the inquiries made in this District, I beg to state that I have given the question my most careful consideration, but have viewed it as merely a part of the agricultural scheme.

4. I enclose copy of a letter I have received from the Sub-Collector, Mr. Elliott, and an abstract of the replies received from the Tahsildars of the several Taluks save Guduru and Kanigiri, in the former of which an increase was reported, and, as regards the latter, because the Taluk having been transferred recently the requisite dates were not available.

5. Mr. Elliott is strongly in favor of the Board's suggestion being carried out for exceptional rates, he is sure a more liberal allowance of pasture will give a more liberal allowance of calves; and he refers to the known inequality of our Pulari assessment as rendering this course still more necessary.

6. The Tahsildar of Kandukuru similarly recommends that the Ryots should not be allowed to cultivate a third of their village lands, and the other Tahsildars mostly dwell on the increase of grain cultivation as the cause of the reverse results in cattle.

7. The Tahsildars go into details in respect to disease, and remedies; and for this portion of the information received I have had two tables drawn up, showing, first, in which Taluks the several diseases, 15 in all, are said to be prevalent; and, secondly, how each disease is said to be treated in the several Taluks in which found, which I also enclose.

8. In their Circular, No. LXVI, the Board require to be informed whether there has been a marked increase in epidemic diseases; and, secondly, whether it has been coincident with similar diseases amongst human beings. And on this point also the local Officers have reported, and the information in the affirmative as regards the first proposition, and negative as regards any coincidence, will be duly found in the Abstract.

9. Whilst as regards myself, all I have to say on this most important question may be given in a few words, viz., I would encourage cattle breeding by allowing all land to be held according to the principles of agriculture; I would revise at once the rules in respect to Pulari

as recommended in my report* of the 26th October 1861, No. 231; and, when I had abandoned a grain assessment as a falsity,

I would at once abolish "fourths," and "fifths," as directly opposed to the only principle on which the Ryotwar system can be fairly carried out, and the Ryots made independent of a bureaucracy that stretches from the Vetty to Serishtadars. I agree with Mr. Elliott that there will be more calves with more grass. But I think we shall buy our calves too dear at the cost of a principle. Political economy has long condemned the bonus system on evidence that cannot be set aside. As Mr. Elliott observes, sickness and drought have been at work; and we can't help that. And as regards what we can do, I have no doubt what we ought to do. We must

give up the idea of a grain assessment being possible as a general measure; we must fix our assessment on the principle that only a portion of the land can be cultivated annually with grain, a portion with the inferior crops rotated, and the remainder held as fallow and pasture; and having thus placed our agricultural system on a sound footing, we have done all we can do, all we ought to do, and must leave it to the markets to effect the rest. Markets are the true encouragement; and when we bid fifths of grass, or fourths either, we sacrifice a principle that has cost us too dear already.

P. S.—In writing this report however I have, I find, omitted one point I had meant to bring forward, and that is the absolute necessity for helping the Ryots to establish sanitary cordons. It is a measure they are well acquainted with, whether as regards epidemics among men or cattle. And with the help of the Collector and Magistrate it is a measure that may be made many fold more effective than it is at present. I would suggest for consideration whether a legislative enactment might not be brought forward with advantage in order to strengthen the hands of the authorities in dealing with questions of this nature.

ENCLOSURE No. 1.

From E. F. ELIOTT, Esq., Sub-Collector of Nellore, to J. W. B. DYKES, Esq., Collector of Nellore, dated Chendrasekarapuram, 18th September 1863, No. 77.

1. Adverting to your letter, No. 61, dated 12th ultimo, requesting me to call on the Tahsildars of the Sub-division for an explanation of the causes which, in their opinion, have led to the diminution of Agricultural stock, as perceptible from their last Quinquennial Returns, and also for the means which they would suggest should be adopted for encouraging cattle breeding, and facilitating the keeping up of stock, and to forward them with my own remarks and suggestions in the matter, I have the honor to submit herewith my own remarks in the matter alone, as the reports from the several Tahsildars concerned have been sent by them to you direct, with reference to your Circular to them, and it would be needless for me to reiterate their sentiments here again.

2. I may here mention that I do not include Kanigiri Taluk in my present report, nor was any explanation required therefrom, as it was uncertain whether there had been a decrease in that Taluk or not, as the Quinquennial Return previous to the last is not on the records of that Taluk, as it occurred previous to the transfer of the Taluk to this District from Kurnool.

3. With reference to the diminution of Agricultural stock in the other two Taluks of Ongole and Kandukuru, as shown in the margin, it may clearly be ascribed to three causes: firstly, disease; secondly, bad seasons; thirdly, cultivation of pasture lands, owing to the high prices obtaining for grain, &c.

The first two causes are of course irremediable, being natural causes, and therefore beyond our control.

With the third cause, a course of action might be pursued as suggested by the Board in the 5th paragraph of their Circular, No. LXI, dated 5th August last, of allowing one-fifth of the whole extent of land in a Puttah to be held for pasture at one-fourth of the full "Taram" assessment, and in addition to the authorized pasturage now enjoyed in this District by each Ryot, exclusively for that purpose, and independent of his Puttah land, on the payment of Pullari; and the condition should also be enforced, that in the event of such one-fifth extent of land being not occupied strictly for pasturage purposes, it should be paid for at the full Taram rate by that Ryot.

	Ploughing cattle.	Cows.	Buffa- loes.	Sheep.
Ongole.....	267	10,771	7,056	2,723
Kandukuru....	..	7,220	2,823	4,928

4. The system of Pullari as at present obtaining in this District is, as you are aware, very unequal: some Ryots possessing more than their share, some less, and some none at all, and therefore the proposal now made would be a necessary boon to the last class of Ryots; whilst the two former classes would also derive their benefit proportionately, for to all alike there would be the same increase available in pasturage ground, which under the existing authorized rules, in most cases, is never sufficient for their stock, whether enjoyed in excess, or in decrease of their shares.

5. It is on pasturage chiefly that the Ryot depends for the good condition, health, and feeding of his cattle, and for the throwing of good calves at early intervals, and in dealing with this, I believe the most important and chief point of the case is achieved; and it is with reference to this view of the case that I have made the above proposals, in confidence that the result will speedily show the force of this argument.

(True Copy.)

(Signed) J. W. B. DYKES, Collector.

ENCLOSURE No. 2.

A STRACT of replies received from the several Taluks of this District regarding the causes that tend to diminish Agricultural stock.

I. ATMAKURU TALUK.—1. The chief diseases of cattle are the four following, viz., Saruku, Gudipettu, Galicuntla and Guraka, or Gurakathagalu. Arzi No. 85, 20th August 1863.

2. Sheep and goats have also suffered much this year from the bad seasons, want of pasture, &c., and their chief diseases are Thagulu, Musara, Galicuntla, Cullamusuru, Mundithogulu or Midesaruthagulu, and Saruku.

3. All these diseases are of occasional occurrence, and are generally fatal in such villages as they occur. They are not coincident with epidemic diseases of human beings, and are chiefly caused by bad seasons, drought, want of proper rain, severe land winds, &c.

4. The want of rain this year is much felt at present, and cattle and men are both suffering in consequence.

II. KANDUKURU TALUK.—1. The causes of the diminution in the agricultural stock are ascribed to diseases and want of pasture, which latter is attributed, firstly, to bad seasons and want of rain; and, secondly, to the general occupation and cultivation of pasture lands owing to the reduction of assessment, and general high prices of grain: and that if one-third of the lands in each village be as a rule left for pasture, there would be great increase in the stock.

2. Sheep and goats have not suffered much in this Taluk, and the decrease in the last five years is little above 10 per cent., and no particular remarks on this point seem called for.

III. KAVALI TALUK.—1. The chief diseases of cattle are Peddachedalu, Gundapattu, Gurakathagalu, Galicuntla, Domma and Naganaradi. Of these the first three sometimes occur simultaneously and are epidemic. Arzis Nos 70 and 71, dated 28th Sept. 1863.

2. The general decrease in stock is owing to disease, bad seasons, and consequent want of pasture and rain.

IV. NELLORE TALUK.—1. The diseases of cattle are four as follows:—Galicuntla, Peddacheda, Domma and Gudipettu.

2. Sheep and goats, &c., are occasionally affected with a disease called Gundiranku to which there is no remedy. It resembles cholera and such like diseases of human beings in its occurrence. Arzi No. 86, dated 20th August 1863.

3. During the five years in question these diseases made their depredations in the agricultural stock to the extremest degree. In this Taluk especially the pasture lands being very limited, the stock is obliged to be sent for pasture to the Rapuru Taluk, but the deficiency in number thus caused in plough cattle is in very many cases compensated by new purchases made from the north. There are no pasture lands in some of the villages of this Taluk.

V. ONGOLE TALUK.—1. The chief diseases of cattle are Peddachedalu, Musaru, Galicuntlu and Naradu.

2. The chief causes of the diminution of agricultural stock are, diseases, want of rain, bad seasons, and the general occupation of pasture lands.

3. The pasture lands in this Taluk being very limited, the stock is sent to villages in the Kistna District for pasture.

VI. RAPURU TALUK.—1. The marked diminution in the agricultural stock is chiefly attributable to three causes, viz., want of proper pasture and rain, bad seasons, and murrain.

2. Disease of cattle does not appear to be coincident with any great disease or epidemic among human beings.

VII. UDAYAGIRI TALUK.—1. The chief causes of the diminution in the agricultural stock are as follows:—Murrain, bad seasons, want of rain and necessarily of pasture. Of these the first has been classified under the following heads:—Saraku, Domma, or Gudipettu.

2. These diseases are of occasional occurrence like cholera and other epidemic diseases of human beings, but they are not coincident with them.

NELLORE, 19th November 1863.

(Signed) J. W. B. DYKES, Collector.

ENCLOSURE No. 3.

Abstract of the Cattle diseases said to exist in the District as reported by the several Tahsildars.

Names of the Diseases.	Names of Taluks.							Remarks.
	Atmakuru.	Kandukuru.	Kavali.	Nellore.	Ongole.	Rapuru.	Udayagiri.	
Galicuntlu.	...	...	...	...	...	...	...	
Domma	...	...	...	...	...	...	...	
Gudipettu	...	...	...	...	...	...	...	
Naradi or Naganaradi	...	...	...	...	...	...	...	
Peddachedah	...	...	...	...	...	...	...	
Gurakathagulu	...	...	...	...	...	...	...	
Saraku	...	...	...	...	...	...	...	
Gundamukuru	...	...	...	...	...	...	...	
Gundapattu	...	...	...	...	...	...	...	
Kolicamucuru	...	...	...	...	...	...	...	
Kollekattulu	...	...	...	...	...	...	...	
Mukkusila	...	...	...	...	...	...	...	
Musaru...	...	...	...	...	...	...	...	
Nallamusuru	...	...	...	...	...	...	...	
Rakthasalalu	...	...	...	...	...	...	...	
For this Taluk the Tahsildar gives no details.								

NELLORE, 19th November 1863.

(Signed) J. W. B. DYKES, Collector.

ENCLOSURE No. 4.

Abstract showing how each of the diseases of Cattle reported to exist is said to be treated in the several Taluks in which found.

Names of diseases and their symptoms.	Names of Taluks.				
	Atmakuru.	Kandukuru.	Kavali.	Nellore.	Ongole.
<i>Symptoms.</i> Ulcerous mouth and hoofs, with offensive smell, attacked with worms. Always masticating, disinclination to graze. As some sometimes a blackish color. Swelling of the chest or fore leg, and disinclination to drink or graze. Obstruction of the throat and swelling of the jaw. Death within a day or two. Swelling of the neck, death within six hours, and sometimes within a day. Obstruction of the throat, and swelling of the jaw as in the case of "Domma," with the addition of the front legs becoming swollen. Assuming a dark color with contraction of limbs. Dying in a couple of hours while grazing, the throat being obstructed. Sometimes not inclined to graze.	<i>Remedies.</i> Driving the cattle into wet "Savadu," or Fullers' earth, on which nothing will grow. Heating stones, and branding the chest and ribs with them. No remedy.....	<i>Remedies.</i> Driving the cattle into dirty swamps, and feeding with boiled rice and green gram. Boiling hot-water poured over the sides. No remedy.....	<i>Remedies.</i> Ditto. Washing the sore parts with hot-water, and feeding with green "Sarakava" in milk. Lime earth (Savatimatti) in boiling lamp oil applied to the chest, neck, and sides. No remedy.....	<i>Remedies.</i> Ditto. Cleaning the sore and applying camphor, and feeding with boiled Arika in lamp oil. Feeding with boiled Korralu, or gram in milk. Feeding with boiled Korralu, or gram in milk. Feeding with boiled horse gram, and an application of hot lamp oil, and garlic is sometimes used.	<i>Remedies.</i> Ditto. Hot ashes applied to clean sores, feed with boiled Zonna, or green gram in ghee. Feeding with boiled Korralu, or gram in milk. Feeding with boiled Korralu, or gram in milk. Feeding with boiled horse gram, and an application of hot lamp oil, and garlic is sometimes used.
<i>Names.</i> Galicuntlu..... Domma..... Gudipettu..... Naradi or Naganaradi.	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....

Abstract showing how each of the diseases of Cattle reported to exist is said to be treated in the several Taluks in which found.

Names of diseases and their symptoms.		Names of Taluks.				
Names.	Symptoms.	Atmakuru.	Kandukuru.	Kavali.	Nellore.	Ongole.
Peddachida.....	Ulcerous mouth; sometimes the whole body affected. Swelling of the throat, evacuations of blood by purging.	Remedies.	Remedies. No proper remedy. But the cattle are sometimes fed with boiled green gram in ghee, or boiled raghee made into a kind of paste with sour conjee water. Effects very doubtful.	Remedies. Fed with green gram in ghee. Recovery rare.	Remedies. Cattle are fed with boiled green gram or raghee. Recovery from this disease very doubtful.	Remedies. No remedy given.
Gurakathagula or Guraka.	Hard breathings, death within a day or two, disinclination to graze or drink. Sometimes attacked with eruptions like small-pox.	Administering milk warmed by heated "Pallaku Rallu." Recovery seldom.	Three brands below the neck. Recovery, if made early.	No remedy.	.....	.....
Saraku.....	Excessive purgings; sometimes swelling of the belly without purgings. Evacuations of blood and matter which last for four days, or thereabouts.	Giving 2 Gotlus of boiled raghee and conjee water, cooling the same one whole day. Recovery uncertain.	.....	.....	.....	.....
Gundamukara.....	Obstruction in the throat caused by the swelling of the "Mukkatagunda," near the apple of the throat.	.....	Feeding with Tamarind or gound Moduga flowers in sour conjee water, and human urine. Recovery, if given early.	.....	.....	.....
Gundapatu.....	Swelling of the front legs which continues for three or four days, during which time the cattle neither graze nor drink.	.....	.....	Branding the front legs. Recovery very seldom.	.....	.....
						Fed with cooked raghee, boiled green gram, ghee, and the juice of the bark of Margosa tree. Recovery uncertain.

Kolicamucara.....	Matter running out from the corners of the eyes, and not inclining to graze.	.....	.....	.....	.....	.....	Fed with sour conjee water, salt and saffron powder.
Kalikatlu.....	Loss of sight.	.....	Fed with green gram and ghee. Recovery, if given early.	.....	.....	.....	.....
Mukkusila.....	Ulcerous nose.	.....	Cutting nose bone. Recovery, if made early.	.....	.....	.....	.....
Musarlu.....	Disinclination to graze.	.....	.....	.....	.....	Fed with boiled "Zonna" and green gram in hot water; also rubbing down the body with the juice of "Bonthazamudu," or giving cooked rice mixed with green gram.	.....
Nallamusara.....	The hair of the body stands erect; assumes a blackish color with disinclination to graze. Another species of this disease, known as the "Selambadimusaru," is attended in addition to the above symptoms, with a discharge of matter from the corners of the eyes, &c. If accompanied with contraction and oppression in the chest, it is called "Gundamucara," and is also another species of Nallamusara.	.....	Feeding with sour conjee water mixed with Tamarind, and "Vamun" boiled in human urine, when hot; or, stuffing with oil and the juice of the cucumber leaf in equal quantities mixed with pepper powder, and chimney soot.	.....	.....	.....	.....
Rakthasalalu.....	Passing blood with urine and dung.		Giving "Yenugapale-ru plant" in water impregnated with sugar. Recovery, if given early.				

Nellore, 14th December 1863.

Erd. J. Tulloch.

(Signed) J. W. B. DYKES, Collector.

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From G. BANBURY, Esq., Acting Collector of Madras, to W. HUDLESTON, Esq., Secretary
to the Board of Revenue, dated Saidapet, 18th November 1863, No. 502.

Proceedings, Nos. 4,879 and 5,046.

1. In reply to the Board's Circulars Nos. LXI and LXVI dated respectively the 5th and

12th of August last, I have the honor to state that the Quinquennial returns in this District do not show that any decrease has taken place in the number of ploughing cattle, and of agricultural stock throughout the Zillah. There is on the contrary, an increase of about 20,000 head over the preceding Quinquennial Statement. Purchases from neighbouring Districts and transfer of villages from North Arcot have doubtless tended to cause this augmentation, but we must, I think, attribute it mainly to natural local fecundity, and to absence of any serious murrain.

2. The cattle of this District are diminutive and weak; the only method that suggests itself to me of improving the breed, is to introduce bulls of a superior description from Nellore and Salem. The bulls from the former District should not be too heavy, but of moderate size, suitable for the small cows that will be brought to them. This proposition is, I think, likely to be attended with a fair measure of success.

3. As regards the lands to be allotted upon reduced assessment for grazing purposes, there is in this District no necessity for this measure. About two-thirds of the whole area are now uncultivated; and as long as the present Mirassi tenure exists, we need not be under the slightest apprehension about there being ample waste. There will be, as there ever has been, abundance. When Durkhasts are presented, and the Mirassidars are unwilling to take up themselves the lands asked for, they bring forward the plea of necessity for grazing ground, with a view of keeping out the more enterprising cultivator, and paying nothing for his exclusion.

4. Where waste tracts are available, the advantage of these areas for cattle grazing and breeding is unquestionable; still I do not consider that they are a paramount necessity, and the retention of land for pasturage should not act as a barrier to the progress of cultivation. In the Wet Taluks of Trichinopoly and Tanjore, there is no waste available for the cattle, and I have lived for months amongst the Ryots of Manargudi and Chellumbrum, who in the cultivating season have hardly room for their bullocks to stand, much less space for grazing. I never found that these Ryots experienced any serious difficulties from the absence of pasturage; their cattle being well housed and stall-fed, thrive satisfactorily. When farming operations ceased, and the services of the bullocks and buffaloes were not required, those cultivators who had an unusually large quantity of agricultural stock, sent them to the Udayar Polliem Jungles; those with more moderate possessions retained them throughout the year.

5. In fact, during the seven years I was in the South Arcot District, I never heard the Ryots complain about want of pasturage, the Punjab assessment is on the average higher than that of this District, and they were not people to remain quiet, under any grievance real or imaginary. We must remember that extension of cultivation brings a corresponding increase in the quantity of straw, stubble, stalks, and other products consumed by cattle.

6. In England, the highly bred stock are, if I mistake not, almost universally kept in loose boxes, even when fattening is not the object. In towns, the cows belonging to the large dairies never leave their stalls; and in this country the trotting bandy bullocks are generally prohibited from grazing.

7. The two most serious diseases amongst cattle are "Vekka" and "Adapan." Severe diarrhoea accompanied with cramps and fits is the symptom of the former ailment. Stimulants and astringents are usually administered. The disease is an epidemic and much dreaded. It is often fatal and generally appears in the cold season. Adapan is a species of lung disease, and is characterized by swelling of the tongue, difficulty of breathing, and congestion of the lungs; it is fortunately not very common, as it most frequently does not yield to the remedies applied. These are for the most part warm fomentations, and puncture with a hot iron instrument.

8. Komari, another complaint, is a Species of fever, and manifests itself by ulcers in the hoofs and running at the nostrils and mouth. The modes of treatment are various, and consist of cooling remedies administered internally. The suffering animal is also made to stand for some hours in the mud of a tank or river, to mitigate the feverish symptoms in the feet and hoofs. This disease is not fatal, but is infectious, and generally appears in the hot months.

9. For the minor diseases of cattle, various indigenous leaves, pounded and mixed with curds or water, are administered. Onions, Assafoetida, and Garlic, are largely used in the Native Cattle Doctor's Pharmacy; and, as far as my experience goes, the result is quite as satisfactory as the treatment of cattle in England by the village Veterinary practitioner.

Exd, J. Wright.

From G. L. MORRIS, Esq., Acting Collector of South Canara, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated Mangalore, 4th December 1863, No. 224.

1. I have the honor to acknowledge the receipt of the Board's Circulars, dated 5th and 12th August 1863, Nos. LXI, Board No. 4,879, and LXVI, Board No. 5,046, regarding cattle disease and cattle breeding, and to answer each question *seriatim*.

First Question.

Has there been a marked increase of disease among cattle in this District in the last five or six years?

2. The following account shows the number of cattle which have annually perished from disease during the last ten Faslis:—

Fasli 1263 ..	5,516
„ 1264.....	11,002
„ 1265 ..	5,791
„ 1266.....	8,206
„ 1267... ..	17,089
„ 1268.....	6,357
„ 1269... ..	611
„ 1270	560
„ 1271... ..	519
„ 1272.....	650

Total... 56,301

From this account the past four years appear to have been particularly free from epidemic, which raged with great violence in Faslis 1264, 1266 and 1267.

Second Question.

Has a marked increase of disease among cattle been coincident with a marked prevalence of epidemic disease among human beings?

3. No. There does not appear to be any coincidence or connection between the two.

Third Question.

What are the symptoms of the most prevalent diseases among cattle, the remedies employed by the Ryots, and the most efficacious of those remedies?

4. The three most prevalent diseases are Maharoga, Kalukunta and Bennukuru. Murrain or Maharoga generally appears in January and February. The symptoms are fever, disinclination for food, passing watery dung, tumours forming on the tongue, saliva running from the mouth, and pustules breaking out all over the body. Kalukunta also comes in January and February, and its symptoms are fever, and sores breaking out in the hoofs, so that maggots are bred, and the animal attacked is unable to walk. Bennukuru consists of a large abscess which breaks out in the back at any time of the year, but more particularly in the hot weather. The native remedies for Maharoga are:—1. White gulagangi (abrus precatorius) well powdered and mixed with rastali plantain, and administered in doses of three fanams' weight each dose 2 Opium mixed with rastali plantain. 3. The flesh of a tiger, monkey, otter, crocodile, and guana, all well dried, and then given in water in which rice has been boiled. 4. A conjee boiled in a decoction made of the bark of the Daddala and Uppalige trees, and then mixed with the burnt ashes of an old mat. The first two of the above specifics are the most successful, as might be imagined from their description. For Kalukunta and Bennukuru the natives have the two following remedies respectively, and they are each said to be efficacious, viz. :—1. The bark of the Karma tree well ground in cocoanut milk and mixed with gingelly-oil in the proportion of 1 to 4, and then administered in doses of half a seer at a time. 2. Cowdung plasters and warm cocoanut oil constantly applied to the part affected.

Fourth Question.

How can cattle breeding and the keeping of stock be encouraged and facilitated?

5. The importation of Foreign bulls for breeding purposes has been tried with so little success in other Districts, that I do not think any good is likely to be gained by any experiment of that kind in this district. All the Tahsil-

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dars of the District, whom I consulted on this point, agree that the only way to encourage the keeping of stock in South Canara is by allowing the cutting of Camry in certain places, and taking care that Darkhasts are not received for the cultivation of land which has been used for grazing purposes, or is fit for the same. During the dry season there is but little pasture on the coast, and herds of cattle are driven into the interior; I think therefore that great care should be taken that grazing land should not be allowed to be turned to other purposes, and I will specially see that Darkhasts for the same are not accepted. Regarding the cutting of Camry, if any places are brought to my notice, in which it might be allowed without any detriment to the State, I will bring the same to the notice of the Board, in order to the requisite permission being obtained.

Fifth Question.

What are the rules in force for the occupation of land for pasture?

6. There are no particular rules, and Darkhasts for the cultivation of pasture; land appears to have been accepted more readily than they should have; I will however see, as I have previously stated, that this practice is not continued.

Sixth Question.

Could the rule of allowing one-fifth of the whole extent of land in a Puttah to be held at one-fourth of the full Taram assessment be made more general?

7. I do not think that the extension of this rule to this District would answer the end in view at all. Ryots would agree readily enough to be let off some of the assessment which they have been accustomed to pay, but they would not on that account cultivate less of their land, or obtain one inch more of pasture; for the immediate gain which they get from cultivated land is too great a temptation to allow of their thinking of prospective benefit. All the Tahsildars of this District have answered this question as above, and I consider that they are right.

Exd. J. Tulloch.

From D. F. CARMICHAEL, Esq., Collector of Vizagapatam, to W. HUDLESTON, Esq., Secretary to the Board of Revenue, dated 5th December 1863, No. 1,019:—

1. I have now the honor to reply to Miscellaneous Circulars, Nos. LXI and LXVI, on the subject of decrease in Agricultural stock, and the prevailing diseases of Cattle.

2. I would at once say, on the first point, that I do not believe in the accuracy of the Returns. The enormous increase in cultivation is certain; we touch the money, and there is no doubt at all about it; and yet we are called upon to believe that the tilling cattle have decreased in a similar proportion.

3. I take my own District, and what do I find? The Principal Assistant, who has strong bucolic tastes, and lives in the midst of his Taluks, certifies that the "last six years have been remarkably healthy cattle years;" and in the face of this statement, our tilling cattle, if we trust the Returns, show a decrease of from 19,008 to 10,840 between the last and penultimate Quinquennial Returns, or just about one-half the tilling cattle of the Government Taluks have been swept off the face of the earth. Why, we should have had a wail that would have reached at the very doors of the Board's office, whereas not a single complaint, not a single demand for remission, has been made on this head. And why should this extraordinary mortality have visited "tilling cattle" only; why is it not observable in the Returns of cows and she-buffaloes, which remain nearly stationary at the old figures? The fact is that we are entirely dependent on the village Kurnums, who, seeing no reason or object in a Quinquennial Return, whether of men, or cattle, or sheep, indulge in such figures as come first to hand.

4. We have no rules for the occupation of land for pasture, and I think the proposal in paragraph 5 of Circular No. LXI a very fair one; but it need be applied only to field-assessed Districts. In this District matters are left as they were found. A Ryot pays for his entire farm what his ancestor paid to the Zemindar, and as shown by the Principal Assistant, a portion of his holding is always allotted for pasture.

5. The Principal Assistant's letter, which I forward in original, gives a very complete list of the diseases of cattle, and of the remedies applied. It is easy to deride the superstition occasionally displayed, but we have neither of us the means of suggesting remedies of our own. It will be seen that in this District cattle disease has prevailed in the absence of epidemics amongst the population, and *vice versa*.

ENCLOSURE No. 1.

From C. T. LONGLEY, Esq., Principal Assistant Collector, to D. F. CARMICHAEL, Esq., Collector of Vizagapatam, dated 4th December 1863.

1. I have now the honor to reply to the Board's Miscellaneous Circulars, Nos. 4,879, and 5,016, dated the 5th and 12th August 1863.

2. In this District there is no ground allotted specially for pasturage. In the Survasiddi Taluk, where there is little or no waste land, the Ryots graze their cattle in a portion of their registered field, and this portion is never more than sufficient to keep the cattle alive. In the Golconda Taluk, the grazing grounds are the low hills and jungle to which the cattle are driven every morning, and the cattle in Golconda are, I think, as a rule, in better condition though smaller than in Survasiddi, and I attribute the better condition to their having better grazing grounds on, and near the Hills. I think the main cause, to which the diminution of stock is attri-

butable, is want of good grazing ground, especially in the hot weather, and the remedy I would propose is,

- (1.) That in each village there should be a tract of land, in proportion to the number of cattle in the village, at the rate of 20 acres for 100 cattle, set apart for the grazing ground of the cattle.
- (2.) That this piece of ground should be fenced, and small tanks made in it by the villagers.
- (3.) That this ground be placed under the care of the Munsiff and Patanamdars, whose business it would be to see that the fences, &c. were kept in repair, and that the whole of the ground was not grazed at one time.
- (4.) That one-fourth the full Taram assessment of the lands set apart should be collected from the Ryots rateably in proportion to their respective Puttahs.
3. The Board desire to be informed, whether in the last six years there has been a marked increase of disease among cattle; to this I would reply that in the southern portion of the District certainly not.
4. In the years 1858, 1859, 1860 and 1861, there was very little disease among the cattle; in 1862 there was more sickness, but no particular epidemic. On the whole, I should say that the last six years had been remarkably healthy cattle years, and I can only ascribe the decrease in stock, to which the Board have called our attention, to cattle dying from want of proper food, and this especially during the hot weather.
5. Experience does not show that disease in cattle is coincident in point of time with marked prevalence of epidemic disease among human beings, on the contrary. The year 1861, was a particularly unhealthy one in this District, especially in the southern portion. Cholera was rife from June to September, and virulent small-pox succeeded it. But it was a particularly healthy year for cattle; the next year 1862 was healthy for human beings, there being no cholera, and very little fever, or small-pox. But there was more sickness among cattle.
6. I have ascertained from the Ryots the diseases to which the cattle of this District are most subject, as well as the remedies which the Ryots apply. The diseases and remedies are—
 - (1.) Pedda Sankatam makes its appearance by ulcers on the body with small worms in them. The cattle refuse their food. The Ryots never give any medicine in this disease, but celebrate the feast of the village Goddess until the animal dies or recovers; they declare there is no remedy but this.
 - (2.) "Domma Sankatam." The belly swells, and the cattle refuse their food. The Ryots grind a weed called "Konda Nalleru," and country mustard called "Varnavalu" together, and administer it for three days, three doses a day, it is given in balls the size of a lime; they sometimes brand. This disease lasts for ten days. Warm water must be given to drink.
 - (3.) "Tippu Sankatam." The cattle thus afflicted reel and fall down. It is remedied in the course of five or six days by branding at the back of the ears and head.
 - (4.) "Nallamabbu Sankatam." Cattle refuse their food for a day or two, and the skin becomes dry and parched, but Ryots give a ball of pounded mustard seed; the cattle get over it generally in a day or two.
 - (5.) "Neridi." The liver swells and difficulty of breathing ensues. The fore-arms are branded, and a charm is put on the neck. This disease lasts for three or four days.
 - (6.) "Mudi Mada." The knees swell, the Ryots put a charm, the swelling subsides in a few days. This and "Donga Mada," swelling of the neck, generally come from over-work. Rest is the only cure.
 - (7.) "Vayava Sankatam" (Rheumatism.) A stiffness of all the joints: the cattle cannot walk. The shoulder joints and the fore and hind legs are branded, it lasts about a week; it is prevalent in the rains.
 - (8.) "Kadupu Noppi," (Gripes.) Chillies and mustard are given in balls.
 - (9.) "Yenda Tegalalu." The cattle get lean and fall away. This disease is very common in the hot weather, when there is little grass to be had, and is induced from want of food. They generally die. The Ryots brand the belly and sides.

7. The last and most important perhaps of all the diseases, is what the Ryots call "Jadupu or Cow-pox." It first appears with ulcers in the cleft of the hoof, and then with small pustules on the udder, face, and neck. It is not considered at all dangerous. The Ryots make the cattle stand in wet clay if the ulcers on the feet are very bad: they then give "Pasalu" (green gram), and if the Ryot is well to do, he mixes rice and conjee-water with it, and gives this in the form of a ball three times a day, for a week or ten days. By this time the pustules are generally broken and dried up. They do not use the milk of any cow or she-buffaloe which has been affected with this sickness until some days after the pustules have disappeared.

8. I regret the delay which has occurred in forwarding this report, but circumstances over which I had no control have caused it.

Exd. J. Tulloch.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 15th December 1863.

Read the following letter from the Collector of Kurnool, dated 9th December 1863, No. 203, on the subject of Cattle disease and the decrease in Agricultural Stock :—

1. I have the honor to reply to the Circulars dated 5th and 12th August last, Nos. LXI (Board No. 4,879), and LXVI (Board No. 5,046), regarding the breeding and diseases of Cattle, and the diminution of Stock as shown in the last Quinquennial Returns.

2. This is not a breeding District: few Cows are to be found in the villages, and those only of a poor description, and Stock is kept up entirely by purchase from the breeding country to the east of the Nallamallas, the Northern Taluks of Nellore, and what was formerly the Guntur District.

3. There are no rules in force for the occupation of land for pasture, and there are no pastures except on the Hills, upon which a very luxuriant grass springs up after the first rains along the whole Nallamalla range.

4. In the northern table land of these hills, near the river Kistna, large herds of cattle are in the habit of being grazed from the commencement of the hot season, until forage is available in the plains. These herds are driven up not only from the Kurnool District, but from the neighbouring Taluks of Nellore, and the Kistna.

5. A small fee per head is paid as Poollary, and the right to collect this has been always farmed. This farm has been conceded to Captain Nelson on a fixed rate, for the term of years during which he has the renting of the villages of Siddapoor and Biarlooty.

6. The grazing charge is trifling, is paid willingly by the owners of cattle, and though doubtless but a small portion of the collections reaches Captain Nelson, there is nothing in the nature of this farm calling for alteration.

7. Along the whole range of the Nallamallas the grass is equally luxuriant, and suitable for pasturage, as in the northern table lands, but in no other portions of the range have I seen any Cattle sent up to graze, except the Buffaloes belonging to the Wadders who work the forests.

8. I attribute this fact partly to the steepness of the hill sides, but chiefly to the dislike of the Ryots to live upon these hills. The herdsmen in charge of cattle there are certain to suffer from fever; water is scarce; and the result is that cattle are with difficulty supported on dry forage in the plains throughout the year, when there is a luxurious pasturage within their reach.

9. No Poollary, or grazing tax is charged on any portions of these hills, except the table lands to the north, but freedom from this tax in no way tempts cattle owners to send their herds any where except to their accustomed haunts.

10. I am not of opinion that any alteration is required in the Poollary system partially in force in this District, nor do I think that any advantage would follow allowing a portion of the Puttah land to be held on favorable rates for pasture, the sole result of which would be a needless lowering of the land assessment, which does not press with severity on the agricultural classes of this District.

11. I now come to the question of disease amongst cattle, which subject was brought prominently forward by Captain Nelson, and the information thereby elicited in the letters forwarded to me with the Government Orders dated 11th and 18th November 1863, is the best which I have as yet procured.

12. The disease called Murrain by Captain Nelson, is named in Teloozoo Pedda Moosa Rogum, and detailed inquiries concerning it, and the usual remedies, have been made amongst the Ryots of every Taluk in this District. I regret that the reports of the Tahsildars have elicited nothing satisfactory, or that was not before fully known, and the remedies practised by the Ryots are so utterly empirical, that it would be a waste of time to note them down.

13. The nature of the disease being utterly unknown, the native practice is avowedly founded on no reason, and in general the matter is left to chance, as whether remedies are applied or not, the attack is generally fatal.
14. The symptoms of the disease are very accurately described in the letter written in 1852 by Lieutenant J. Loudon. The injection into the nostrils of a solution of sugar of lead, the remedy there suggested, is simple, and might be tried in conjunction with the medicines recommended by Assistant Surgeon Bidie, M. D.
15. It is evident however that the necessary appliances are not in the hands of the Ryots, and must be provided by the Government. Syringes with the solution of sugar of lead, and the internal medicines made up, should be procurable in every Taluk at such a price as would cover their cost to Government. In case of an outbreak of the disease, the Ryots would greedily purchase any remedies that might be offered, in their confessed utter ignorance of any useful treatment.
16. I cannot find that there has been any marked increase of the disease in late years. An outbreak of more or less severity will generally be found to occur somewhere in every District during the hot months of the year, and if it takes place in a village, it does not necessarily spread beyond its original locality, as the natives are perfectly aware of the contagious nature of the disease, and maintain a strict isolation of the cattle attacked by it.
17. It is when an outbreak occurs on the Hills, when vast herds are collected from all parts of the country within a limited grazing ground, that the ravages committed by it are of the most deadly description. On such occasions it is no exaggeration to say that hundreds of valuable cattle are carried off weekly, large cattle owners lose their whole herds in a few days, and hitherto literally nothing has been done to attempt to avert the scourge.
18. I fear that at any time it will be difficult to do much to remedy such a misfortune, and it was an attack of this nature, which died out many months ago, that induced Captain Nelson to endeavor to draw attention to the subject in hopes that some mode of treatment might be devised efficacious to check such disasters.
19. The danger is caused by the nature of the country, and the long continued drought of the Indian hot season, where for several months in each year nothing but dry fodder is procurable in the plains for the support of stock. In such a state of things the cattle must be driven to such localities as afford the necessary pasturage, and it is chimerical to suppose that any improvements in the system of agriculture can alter this general law.
20. Scientific agriculture, the cultivation of grasses, and stall feeding during the hot months, may in the course of years be introduced to a certain extent, but the great mass of cattle owners will probably always look to the Hill pasturages for the support of their stock during the dry season, and an epidemic amongst the herds thus congregated must always be looked on as a probable danger. The avoidance of contagion, however advisable, is thus almost an impossibility, and no effort should be left untried for the discovery of the best rational treatment.
21. The Government have referred this question to the Medical Department, and the Civil Surgeon of Kurnool has been directed to investigate the pathology of this disease. At the present time I am glad to say the epidemic is not raging, but were it most violent it would be impossible for Doctor Kees to leave Kurnool, and his human patients, to make a trip to the Nallamallas pastures, for the purpose of investigating murrain amongst the cattle.
22. A suggestion has been put forward in the public prints which I think most excellent. It is that the Government should depute a Veterinary Surgeon to the District for this purpose. Such a visit now would be useless, but if the services of such an Officer can be spared for three months, from March to May of next year, he would be able by spending those months on the Nallamallas, in the locality where herds are driven for pasturage from all the surrounding Districts, to examine the disease minutely, to test the best modes of treatment, and probably to discover

some mode of practice that must at least be more efficacious than the present system of leaving a fatal disease to run its course.

23. I strongly recommend that this step may be taken, and need hardly say that I would afford every assistance to such an Officer in his task, and arouse the Ryots to an interest in the measure, which as connected so closely with their agricultural prosperity, they cannot fail to feel.

24. Should the Government be unable to spare the services of a Veterinary Surgeon, I consider that the medicines and appliances required for the treatment recommended by Major Loudon, and Assistant Surgeon G. Bidie, M. D., should be placed by Government within the Ryots' reach.

Ordered that paragraphs 21 to 24 of the letter above recorded be submitted for the consideration and orders of Government.

(A true Copy and Extract.)

(Signed) W. HUDLESTON,
Secretary.

To J. D. Sim, Esq., Secretary to Government, R. D.

Copy to J. I. Minchin, Esq., Collector of Kurnool.

Exd. J. Wright.

From the Collector of Madura, dated 15th December 1863, No. 295:—

1. With reference to the Miscellaneous Circulars of the Board of Revenue, Nos. LXI of 5th August and LXVI of 12th August I have the honor to forward a list of the diseases prevalent amongst Cattle and Sheep in this Collectorate, showing their symptoms and the remedies employed as ascertained from the Ryots, a perusal of which will be convincing that till the veterinary art is improved amongst the Cattle Doctors no hope of checking disease amongst agricultural stock can be expected.

2. From inquiries I have made, and from my own experience after a residence of twenty years in the Southern Districts, I do not think disease has been more prevalent or more virulent in the last five years than in previous years; and I do not hear any complaint that it is so; or of any difficulty about procuring ploughing cattle; and I should say there can be no scarcity of the sort looking to the enormous droves that are to be seen unemployed and left to graze in the jungles.

3. Cattle have risen greatly in price in the last few years, not out of proportion to but commensurate with the rise in the price of all articles; while the demand for cattle has also increased to carry on extending cultivation, the traffic of the country, the working of new wells, &c., causing also doubtless an increased expenditure of cattle life and an export trade of cattle

Decrease according to Quinquennial Returns	31,080
Export	35,066
	3,986

to Ceylon has sprung up of late years, 35,066 head of cattle having been exported in the last five years from this District which is somewhat more than the decrease according to the Quinquennial Returns in the Ayan villages.

4. There does not seem to be any connexion between epidemic diseases among human beings and cattle; this year 1863 has been an exceedingly healthy year amongst the former, whilst disease has been very virulent since May in several parts of the District amongst cattle, and it seems to affect all localities equally, the plain country in all parts, hills of moderate elevation, and the tops of the Pulnies, the disease which is the most prevalent and deadly, and which is no doubt infectious comes on with loss of appetite, purging, follows, the mouth becomes a mass of sores, and the whole body breaks out in blotches, an animal once attacked hardly ever recovers.

5. I have long remarked that the disease breaks out soon after rain brings out the young grass and tendrils after a lengthened drought. I believe the starved and weakened cattle gorge themselves on the tender and green food which they cannot bear. Grazing cattle are certainly more liable to it than stalled beasts.

6. Salt may be a preventive to the disease; it was very prevalent at Kodaikanel in July; numbers of cattle died on the Pulnies belonging to the villagers and to the Europeans on the Hills; the only cattle not affected were those belonging to Dr. Wilson the Zillah Surgeon; cattle died all round the house he was living in; but he was careful not to allow his animals to graze where the infected herds did, and he gave his cattle a portion of Salt daily which they greedily devoured, not one of his cattle suffered even the slightest attack.

7. Madura has always been a cattle importing District; the native breed is small; the animals imported are of the larger sort bred in Salem, Mysore and Coimbatore, and are chiefly imported to be used in bandies and for working the heavy cotton soils; the District is too dry ever to become a good breeding country unless artificially irrigated; there are certainly extensive Hill ranges covered with fine grass in which good cattle might be bred; on which waste there is no demand for a land or grass tax; but cattle breeding is not attempted in them, and such is foreign to the habits of the people who never even attend to selection in breeding; the Sub-Collector Mr. G. Vans Agnew remarks in his report to me "that no full grown bulls are kept for breeding; they are all cut at from 2 to 2½ years old, and the whole stock of the country is got by these immature calves; this must of course have a most prejudicial effect upon the character of the stock thus produced. Ignorant and wedded to their own customs as the people are this is a matter diffi-

PROCEEDINGS OF THE BOARD OF REVENUE,

1863.

Department

No.

Dated 15th December 1863.

Despatched

Received

No. 7,959.

Submitting for Orders paragraphs 21 to 24 of a letter from the Collector of Kurnool, on the subject of Cattle disease and the decrease in Agricultural Stock.

"cult to remedy; something but not much might be effected by the influence of Tahsildars; the only practical remedy that suggests itself to me, and one the effect of which would be partial, is to make a point of insisting that as a rule every Head of a Village should keep a full grown bull which should be available for general use. I am aware that this will sound arbitrary; but in reality there would be no hardship in it; as a rule the Heads of Villages are well to do men owning a good stock of cattle; and it would be but a very slight return for their influential and much coveted position as the representatives of Government; there would then, especially where the advantage become apparent in improved stock, be some chance of others taking a hint from so widely spread an example. The rule would of course be relaxed in individual cases where its application would be a hardship." I think this might be attempted, and that prizet might be offered for the finest bulls of from five years upwards; but to make the scheme effective it would be necessary to enforce the gelding of all young bulls at 1 or 1½ years old; this again involves a complete change in the mode of emasculation, which is done by beating or bruising the testicles into a jelly with bamboos or mallets—an operation so severe that bulls younger or older than from 2 to 2½ years do not survive it.

8. Experience in this District does not show that the introduction of a grass tax would encourage cattle breeding; such indulgence would be gladly availed of and would be misused with the connivance of the Village Officers; the grass lands would be cultivated, and persons having large tracks would make money of them by charging for cattle grazing on them.

9. Grass tax, or a rule allowing one-fifth of the whole extent of land in a Puttah to be held for pasture at one-fourth of the Taram assessment, has been introduced in 53 villages in the Dindigul Taluk, and 52 in the Pulni Taluk; in all the other villages in the different Taluks the waste is used free of tax for pasturage, and the same is the case with all waste in excess of one-fifth of the whole of the Putcut in the above 105 villages; but notwithstanding the above favorable terms in the Dindigul and Pulni Taluks according to the Quinquennial Returns, the cattle in those Taluks have decreased 8 per cent. In Dindigul it would appear cattle have increased in the last year to the extent of 7,130 head; while in Pulni Taluk the decrease according to the 1266 according to the returns; such a decrease could not have occurred without drawing marked attention to it, while none of the other Taluks in which there is no grass tax show any such decrease. I do not believe the introduction of a grass tax is necessary; the people do not demand it, and there is an abundance of waste in the plains and on the Hills easily accessible to almost every village for the villagers to graze their cattle on during the hot weather; at other times and after the crops are cut in the reaped fields, &c., there is abundance of grass; besides it is the practice for the Ryots to grow fodder purposely to feed their cattle and for sale on the land on which the fodder is grown; they can afford to pay the Government tax, which is nothing now in comparison to the value of the fodder.

10. It is satisfactory to observe that sheep have increased from 4,24,733 in Fasli 1266 to 4,40,799 in Fasli 1271; while 1,97,950 have been exported in the last five years to Ceylon, and there is also a large consumption in the District; these animals also are subject to disease which destroys numbers of them.

11. I do not believe the return of agricultural stock is at all correct; the preparation of the return is left to the Curnums already overburdened with work, and the Establishments of the Taluks and Collector are unable to afford any assistance, and would recommend that the next returns be taken at a season of the year when the Curnums have a little leisure, and that some assistance be granted them for their preparation. Many Ryots do not know the number of cattle they possess, and are often averse to tell even if they know. The returns are prepared in May just at the time when the cattle are all on the Hills and when it would be next to impossible to get approximately correct returns; the best time to prepare them would be between November and January when the cattle would all be about the different villages.

ENCLOSURE No. 1.
List of Cattle Diseases prevailing in the District of Madura.

Names of Diseases.	Attending Symptoms.	Remedies.
அம்மியம் "Cow pox." செலனோவு. Obstruction of chest. புலமூட்டினோவு. "Giddiness." கூலியூட்டினோவு. Heart burning.	Fodder refused; lungs inflamed; blotches over the skin. Hair standing on end; much saliva streaming from the mouth. Pains in the chest. Blindness, staggers and insensibility. Liver enlarged, mouth salivates.	Plantain flower, cummin and onions are pounded and administered in the shape of balls. If it is not swallowed, it is mixed either in water or in (கமலங்குஞ்சி) Kumbankanjy "storch of Holcus spicatus" cooled or in country vinegar and administered in a liquid form. Another remedy. Procure any of the three following substances the bark of (உதுமாரம்) Odina tree (உருதுதேரை) Viudithalai the "leaves of Cleome fruticosa lin" or (புழுப்பாசு) Palamrasi "Sidanumilis leaves," pound it with cummin and onions and administer it as above directed. Another remedy. Procure (சுநிலாசை) Karipanthalai leaves of "Eclipta erecta" and pound it well in rape seed oil and administer it. Mix dry chillies pulverized in water or in country vinegar, add to it (இதுபலபண்ணைக்கு) pulverised Eluppapunnacku cake of the seed of "Basialangi folia" and administer it. Caterizing round the eyes, over the forehead and along the neck. Finely powdered quartz, black pepper, and dry ginger rubbed into the eyes is said to remove the cataract. Assafoetida, Pomace of Eluppai fruit, Tobacco, Betel, Boiled areca nut, A root "Alpinagalanga minor," சுந்தரத்தை Omum, Dill, "Anethum graveoleous," சதகுப்பை Pounded and mixed with fowl's blood.
குந்துநோவு Kunthu novu or disease affecting the legs. வாய்காலை and கால்களை Voykanai and Kalkanai. Murrain affecting the mouth and legs.	Shivering, total loss of appetite. Head drooping. Saliva running from mouth, lamina. Mouth and bowels inflamed, refuses fodder, sores in mouth and hoofs, appears in both dry and wet seasons.	A neck lace of the red beads of the creeper (சுநிலாசை) Kunrumony "Abrus precatorius." Make balls of boiled rice mixed with gingelly oil and administer it or use (கமலங்குஞ்சி) cumbankunjy starch of "Holcus spicatus" in lieu of it. Standing in mud, application to the limbs affected of some water in which leather is soaked or in which fishes are dressed. Application of Teak-wood oil to hoofs. Standing in mud and cooling medicines. Tamarinds and fish in warm water or gingelly oil and pounded gall-nut Catchu } Applied to Blue stone } the tongue. Lime juice }

Names of Diseases.	Attending Symptoms.	Remedies.
வெப்ப Yeppu or disease caused by excessive heat. முகடைப்பாற் Mukadappan. Disease of the nostrils. பிச்சுநாட்டி. Pichunatti. சரகலிச்சல் Sarakalichel. "Diarrhoe."	Blood ejected from the mouth. The nostrils are obstructed, causing difficulty of breathing. Wry nose, shivering of head, hairs erect. Look very poor, watery motions with mixture of a thick fleshy substance caused by eating young grass produced by rain after long- thened drought.	Procure the barks of the Jumbum, Mango, and Ficus trees soak them in water, squeeze out the fluid and apply it to the mouth of the animal. Apply a hot iron around the nose and feed the animal with grass mixed with quail's feathers, bamboo leaves may be substituted for grass. Compound in equal portions dry ginger, pepper, (இப்பிலி) or "Piper longum," (வசிட்டி) sweetflag "acorus calamus," anise sennam, black cummin, garlic and asafoetida, pound them well; mix it in castor oil and administer it in the shape of balls. Some warm water must also be given with the mess. Make the following preparation and administer it. Gall-nut 1 Polam. } Grind them well and dilute it in country vinegar 1 measure Cummin 1 do. } Onions 1 do. } and juice of tamarind leaves 1 measure. Balls of pounded, soaked varagoo, } Drench of sour rice Cummin seed, } water, boiled kamboo, Onions, } cummin seed, onions. (அகத்தி) "Coronilla grandiflora." To this is sometimes added decoction of tamarind leaves, pounded gall-nut. Procure the root of (கோவை) Koy "Bryonia grandis" and the leaves of (குப்பைமேனி) "Acatypha India" and (குறிஞ்சிமரம்) "Auduthinam- palai" (not to be eaten by sheep) grind them well, dilute them in country vinegar or rice water, add a little salt and administer it. Burn the forehead with a heated iron. Mix together finely pulverized (இலுப்பை) Eluppai-punnacku. "Bassia longifolia" stuff and half measure of dry chillies and administer it Also cauterize both sides of the chest. Castor oil. Human excrement. The fat of frogs.
காண்டுநோவு Kandoornovoo. மூட்டடைப்பாற் Mootadeppun. Shortness of breathing. உதுநுட்டி Udunutti. தவலைநோவு Tavalai novu. Frog disease.	Weakness, watery evacuations with clots of blood. Puffing of the belly, constipation, retention of urine, dryness of the nose. Saliva running from the mouth. Puffed belly from eating salt earth while in low condition in dry seasons. Diarrhoea. Swollen leg-joints. Unnatural growth of hoof, attacks cuttle in low condition.	

பிச்சுக்கட்டி Pichacatty. Obstruction of bile. பயிர் தின்னிசொக்கு Payertinny choku. திள்ளுமுறி Tillumury. Diarrhoe. குளுப்பை Kuluppai. Lu. ophligna atia. கொக்கு Kokkoo. Worms.	Swollen sides. By eating too much husk of horse gram. Faintness or stupifaction from eating certain young plants especially cholom and the tender red leaves of the castor oil. From eating young grass. Do. By exposure to wet and subsequent exposure to the sun. During the rain.	Cauterizing the chest in the form of cross. Balls composed of pounded Common salt. Leaves of (பிரண்டை) Pirundai "Cissus guardrangularis." (கொனிஞ்சி) Kolinji a sort of fig. White seeds of koondrumony. "Abrus precatorius." Root of (கெருட) Gerudo. Mixed with Margosa seed oil. Cotton steeped in castor oil. SHEEP. Canterizing over the nose. Extraction of (குப்பை) Tumbai, "Phlomis Judica" leaves. Cauterizing from the throat down to both knees. Mixture of salt earth and pounded dry chillies. Decoction of (சுதிர்கள்ளி) Sadirkally. "Euphorbia."
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MADURA, 15th December 1863.

(Signed) V. H. LEVINGE, Collector.

44

*Proceedings of the Madras Government, Revenue Department,
19th December 1863.*

No. 357. Read the following Proceedings of the Board of Revenue, dated 15th December 1863:—

Read letter from the Collector of Kurnool, dated 9th December 1863, No. 203, on the subject of cattle disease and the decrease in agricultural stock.

(In Cons. 15th December 1863, No. 8,078.)

Ordered that paragraphs 21 to 24 of the letter above recorded be submitted for the consideration and orders of Government.

No. 358. ORDER THEREON, 19th December 1863, No. 2,344.

Communicated to the Military Department, in view to its being ascertained whether the services of a Veterinary Surgeon can be made available for the proposed duty, which is one of considerable importance.

(True Extract.)

(Signed) J. D. SIM,

Secretary to Government.

To the Military Department.
" Board of Revenue.

Exd. S. T. Augustin

From the Acting Collector of the Kistna District, dated Masulipatam, 23rd December 1863, No. 278.

With reference to the Board's Miscellaneous Circulars, Nos. LXI* and LXVI,† I have the

* Dated 5th August 1863.
† Do 12th Do.

honor to state that the large decrease in the agricultural stock of this District is attributable partly to the great prevalence of disease

during the last five or six years, but mainly to want of pasture.

2. It has sometimes been coincident in point of time with the prevalence of epidemic diseases among human beings, but not as a rule.

3. I enclose a Memorandum, showing the variety of diseases among cattle; their symptoms, as ascertained from the Ryots; and the remedies which they employ to cure them.

4. I do not feel competent to suggest what remedies should be tried—except that in epidemic diseases the people should be urged to separate the diseased from the healthy animals; to fumigate and thoroughly cleanse their cattle sheds; and to have the carcasses of all diseased animals buried, instead of as is now the case, allowing them to remain to taint the atmosphere and spread the disease.

5. It appears to me that the appointment of a Committee consisting of one or two Veterinary Surgeons, and the Medical Officers in charge of the Government horse and cattle establishment in Mysore, to consider the subject, would be attended with the best results.

6. In this District, want of seasonable rains during the last few years has caused a deficiency both of pasture and water, and the cattle have consequently suffered in the dry months.

7. Besides which the increase of irrigation and high prices have stimulated the Ryots to cultivate as much land as they can possibly take up; consequently in the Delta Taluks there has been scarcely any pasturage left for cattle, which must consequently subsist almost entirely on paddy and cholum straw. Generally speaking only ploughing-cattle and milch-cows are fed with grain, the rest are driven to the fields to graze and drink where they can. Nowhere is any kind of green-fodder grown for cattle. Consequently in the dry season numbers of cattle perish from debility and the diseases it notoriously produces.

8. Large numbers of cattle from the Masulipatam portion of the District are sent annually to the islands of the Colair Lake for grazing,

For Fasli 1272.	RS.
Pollery in the Colair Lake.....	2,762
Grass-rents in the District.....	20,479
Total..	23,241

where a Pollery tax is still collected. Although that tax has been abolished in the Guntoor portion rents are collected from grazing lands. I would suggest that both the Pollery in the

Colair Islands, and the grazing rents throughout the District, be abolished. The whole revenue produced from those sources is only Rupees‡ 23,241, which would not be much to relinquish in a District yielding a Land Revenue of 26 lacs, compared with the advantages the agricultural stock would derive from its abolition.

9. I would also recommend that an annual exhibition of cattle should be held, and prizes distributed (as has been so successfully carried out in the Nellore District) in order to encourage the raising of a superior breed of cattle.

Memorandum on the names, causes, symptoms and nature of Cattle diseases, and their treatment in the Kistna District.

ENCLOSURE No. 1.

Name of the disease.	Season when it attacks.	Causes, symptoms and nature of the disease.	Duration of disease.	Treatment.
Kinka.....	Uncertain.....	It resembles small-pox in men. The animal suffers from a pustular eruption all over the body, and in the mouth. The animal once attacked with this malady, is not again affected by it. On the onset of the disorder the animal purges bloody-flux, and if it is virulent runs wild and dies. It is both epidemic and infectious. Calves suckled by their diseased dams are liable to be affected by this disease. It very often proves fatal.	A week.....	In certain cases, Natcheny (Elen-sive coracana) pap or porridge is successfully given. In others large doses of dressed Jonnalu (Sorghum Vulgare) mixed in Gingelly oil are given with efficacy. Pasarappu or green pulse (phaseolus Mungo) boiled in ghee or clarified butter is given effectively in doses to check the discharge of bloody-flux.
Aduru domma.....	Appears generally in rainy or cold weather.	On the appearance of this disease the animal neither eats nor drinks; its belly swells. The disease is generally fatal.	Three days.....	Large doses of the following ingredients are given; garlic, mustard, bark of Muruga (Moringa pterygos perma), chillies, soap-nuts, and turmeric.
Chikudu domma... ..	Do. do.	Symptoms as above. Unless the disease is checked immediately, the animal dies within three days.	Uncertain.....	Doses of boiled black horse gram, mixed with palmyra jaggery or molasses are given. The animal recovers its strength in a few days, and gets better. In some instances eggs of fowls are given. Onions also do good.
Gallu.....	Uncertain.....	The hoofs crack, in which cracks maggots form. The animal discharges saliva. It abstains from food, and its body contracts. The disease is not always fatal.	A week.....	The animal is made to stand in mud which kills the maggots. The mouth is rubbed with gingelly oil mixed with the grass of Arigalu (Paspalum scrobilatum, which checks the flow of saliva. Plenty of water is given to the animal, and also the leaves of gulladu tree (Calotropis Gigantea.)
Ungidi.....	When Poonasa or early crops are sown... ..	The disease is said to arise from the cattle grazing on the sprouts of a young gonnacrop, before rains have fallen. It is also said to arise from their feeding on the castor oil plant. The animal faints and dies in an instant.	Instantaneous... ..	

Bedusu rogam.....	The monsoon or cold weather.	The attack of this destructive disease is very sudden. It kills the animal in an instant. Fat animals are supposed to be subject to it. It resembles apoplexy. The disease generally attacks heifers of one or two years old. The animals' lungs are affected and it breathes hard. It is said to be owing to feeding on the grass grown in the early part of the monsoon. The disorder arises from the feeding on the a quatic plant called Tootikoor (I pomea Reptans). Under its leaves leeches deposit their eggs which when eaten produce grubs in the stomach which gradually increase and in time kill the animal.	Instantaneous.....	There is no known remedy.
Guraka rogam... ..	The monsoon and rainy weather.	Swelling in the throat, and difficult breathing; the animal is gradually choked.	Three days.....	The animal is fired under the throat and on the sides.
I diga or Jalaga Tagooloo.	The cold weather or winter.	On the onset of the disease, the skin of the animal becomes black. The secretion of the milk lessens, eyes become dull. This distemper is not fatal. Pimples break out inside the jowls. The beast abstains from food. Cows are generally subject to this disorder. The attack is abrupt. Unless instantly checked the animal dies.	Three days.....	A drench of lime water is given. This kills the grub and the animal gradually recovers.
Pumbara.....	Uncertain.....		Do.	The affected part is cut "with a shark's fin," and hot cow-dung applied thereto.
Masaka.....	Winter.....		A week.....	Boiled Gingelly oil in which garlic is put, is applied outwardly to the head of the animal. The disease gradually abates.
Arla.....	Uncertain.....		Few hours.....	Black paddy and salt are rubbed over the pimples.
Gripes.....	Do.		An hour	One of the hind legs is bent and tied up and a rope is tied round the belly. (This treatment appears to be quite unique).
Mukku bundi rogam...	Uncertain.....	The animal constantly sneezes. The distemper is not fatal. Well known.	Four days... ..	The upper part of the nose is fired.
Tamara or mange... ..	Do.		Ten days.....	The joints of the fore and hind legs as well as the jowls are fired (This is also a singular treatment.)

MASULIPATAM,

23rd December 1863.

Ext. R. H. Lee.

(Signed) E. B. FOORD, Acting Collector.

47
No. 88.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 8th January 1864.

Read the following letter from the Acting Collector of Cuddapah, dated Jammalamadgu, 14th December 1863, No. 181 :—

* Vide Board's Miscellaneous Circular, No. LXVI, Board No. 5,016, 12th August 1863.

1. Having received a List* of the different diseases of cattle, and the medicines used for curing the same, I find it impossible to translate them into English, as no one in my Office knows the English name of the medicines. I have now sent them to the Native Surgeon, Iyasawmy Pillai, to see if he can make them out.

2. Should he not be able to do, may I be allowed to send them to the Board in Telugu.

The Board presume that the Native Surgeon will be able to make the required translation but should he fail to do so, the Collector is at liberty to submit the Telugu terms.

(A true Copy and Extract.)

(Signed) R. A. DALYELL,
Sub-Secretary.

To H. G. Smith, Esq., Acting Collector of Cuddapah.

Exd. J. Wright.

From the Acting Collector of Cuddapah, dated 3rd February 1864, No. 7.

1. With reference to the Board's Miscellaneous Circulars, dated 5th and 12th August 1863, No. LXI (Board No. 4,879), and No. LXVI (Board No. 5,046), I have the honor to forward you a List of the different diseases of cattle in this District, and the medicines used to effect a cure.

2. Of the diseases I know but little myself, but I have noticed that the time the cattle die mostly is after the first rains, when the grass they are fed on is young, and they have been but badly cared for during the hot season. The grass in general brings in Diarrhœa, which as they are already weakened carries them off.

3. The mortality however in the country I scarcely think equal to that of England, for it is only a short time ago I read that in the five years ending 1860, cattle amounting in value to more than 2,00,000£ sterling had died of one disease.

4. Nearly all the cattle in this District that are not required for immediate use are sent to the hills to graze, and with the exception of the small kind of cattle for light ploughing, there are none bred, but they are purchased from Nellore; indeed it would not be worth while attempting to breed to any extent, for there are only 11,000 acres of pasture land, and that but very indifferent, certainly not sufficiently good for young stock.

5. This being the case, and as there never has been any remission on account of pasture in the District, I do not see that it would be worth while to introduce it. The increase of bullocks and male buffaloes during the last five years was 25,349, and there is a small decrease of cows to the extent of 3,312, which is accounted for by their being kept in the jungles and suffering from the long droughts of late years. The increase in the buffaloes is 4,749, and goats and sheep 89,802.

6. I have been obliged to send in the List of diseases in Telugu, as no one in my office, or the Native Surgeon, can translate it.

1864. Department

No.

PROCEEDINGS OF THE BOARD OF REFERENCE,

Dated 8th January 1864.

No. 68.

Stating that the Collector is at liberty to submit the Telugu terms should the Native Surgeon be unable to make the required translation.

MEMORANDUM of the diseases of the cattle used for cultivation, and the Medicines administered by the Ryots and others.

ENCLOSURE No. 1.

Nos.	Names of diseases.	Symptoms.	Cures or medicines administered.
1	శరకజ్వలం (Sarakujiadum.) A sort of bloody flux.	Purging of water and blood.	In most of the cases the cattle die when attacked by this disease. Generally some pujahs are made to the goddess for its suppression, and medicines have no effect. Sometimes it is usual to cause the sick cattle to drink the juice of the barks of Michelia (పొంపొంక), Champaca, Linum (పొంపొంక), Uritatissinum, and of a species of Cola (పొంపొంక) and Cissampelas (పొంపొంక). Yet this disease never assuages.
2	పండుకజ్వలం (Kurumajadum.) Bloating disease.	Restriction of urine; shuddering; lock-jaw; foaming; cramp; bloating of the stomach; and restriction of dung.	Water in which Asafoetida (పొంపొంక) is soaked and the conjee prepared with corra grains (a kind of millet) with milk should be caused to be drunk, also a leather belt, and the milky creeper called Asclepias (పొంపొంక) Echinata are to be tied round the neck; in most of the cases this is successful.
3	కట్టజ్వలం (Kathijadum.) Bloody urine.	Urine with blood.	In some places the bark of Blackvutia with boiled gram water and in others the juice of the bark of Myrtus (పొంపొంక) Cymimem or blue apple with butter milk caused to be drunk.
4	పొంపొంక (Domrajadum.) Disease resembling spleen.	A collection of solid humour in the stomach obstructing respiration; coughing, and swelling of the neck.	A wound is made in the breast and boiled gingelly oil poured into it; arrack with the juice of onions and bark of Euphorbia (పొంపొంక) or milk edge caused to be drunk. In some places chilli powder with water; and fomentation of boiled gram.
5	ముక్కుజ్వలం (Mukusilla Morasilla) Forehead disease.	The nerve between the eye and the muzzle swells.	Bleeding the nerve.
6	పొంపొంక (Khalikuntlu) Pesential attack on legs.	The bursting of hoofs; the skin becomes peeled and covered with sores and insects.	External application with bandage of soot, camphor, leaves of sneek gourd, (పొంపొంక) and raggy; causing the cattle to stand in the mire and giving the green gram conjee or green gram cooked with rice and mixed with ghee; chunam and soot applied externally and to cause the cattle to tread saltish soils. The duration of this disease is sometimes two months.
7	నామ (Namu.) A disease among cattle produced by grazing on the sprouts of millet.	By grazing on the sprouts of millet and castor oil plants becomes fatal.	By spell or munthruma. Also by wrapping round the tips of the horns oiled cloth and lighting it, and by pouring boiled oil on the nape.
8	ముసరజ్వలం (Musarjadum.) Disease affecting the circulation of blood.	Blinding the eyes and eventually blackening the body.	Making spots with Thiruvully, a species of milk hedge on the nape, juice of the leaves of Rue (పొంపొంక) and Memosa (పొంపొంక) with pepper and garlic caused to be drunk.

9	నెటిపిడుగుజ్వలం (Netipidugujadum.) Running in the nose.	Profuse oozing out of humour from the nostrils.	Juice of Margosa (పొంపొంక) or of Galedupa Punga (పొంపొంక) poured on the head in a boiling state, branding round the head; curable if applied on the onset.
10	కప్పనలికరగము (Kappanalikarogamu.) Tongue swollen like a frog.	The nerves under the tongue become swollen.	The tongue is stretched out and the swollen nerve bled, and the tongue is rubbed with straw-ashes, (పొంపొంక) salt, turmeric, tamarind, and Cissus-quadrangularis (పొంపొంక) mixed together, and the tongue is tied up with the under lip with straw rope.

3rd February 1864.

(Signed) H. G. SMITH, Acting Collector.
(True Translation)

(Signed) A. RUTHNASAWMY.

Exd. J. Wright.

57
No. 920.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 11th February 1864.

Read the following letter from the Collector of South Arcot, dated Cuddalore, 23rd January 1864, No. 11 :—

1. Adverting to the Board's Miscellaneous Circulars, Nos. LXI and LXVI, and the Official Memorandum of the Sub-Secretary, No. 973, dated respectively the 5th and 12th August and 27th November 1863, I have the honor to state that from my inquiries there would seem to have been no perceptible increase of disease among the cattle in this District during the last few years. On comparing the figures in the Quinquennial Return submitted in Fasli 1272 with those entered in the previous similar Return there has apparently been no diminution in the agricultural stock. Cattle disease is not coincident in point of time with the prevalence of epidemics among human beings; and the period of its visitation varies and is quite uncertain—sometimes preceding and at other times following the appearance of disease among the people. The enclosed Statement sets forth the ordinary symptoms of cattle disease under their various denominations; this information has been ascertained from the Ryots, as well as the nature of the remedies usually employed; but the application of which is reported not to be very successful.

2. In regard to the 5th paragraph of the first Circular under acknowledgment, I beg to state that the practice obtains in this District of allowing cattle to graze on waste lands free of any payment of Teervah; but these lands are insufficient for the wants of the cattle; the people are willing to resign one-fifth of their holdings to be set apart for pasture on a reduction to one-fourth of the present assessment, and I consider the measure to be a very desirable one if only to ensure adequate pasturing ground—a want now so generally felt.

3. As regards encouraging the breeding of cattle past experience does not seem to suggest the introduction of bulls from other parts into this District. The experiment has already been tried, and with results, I believe, quite incommensurate with the cost and trouble attending it, *i. e.*, accepting Mr. Hall's report on the subject to the Board, under date 1st December 1859, No. 283, and which was endorsed by the Board in their Proceedings of the 22nd September 1860.

INCLOSURE No. 1.

STATEMENT showing the nature of the Cattle disease and the remedies applied.

Diseases.	Symptoms before the attack of the disease.	Effects of the disease.	Remedies.
Adappan. ...	An ever ceasing cough.	The free passage of the throat appears choked. The animal foams at the mouth, and the breathing is difficult.	The root of poohyavarai, tail pepper, lingy and betel, are ground and applied, and the animal is sometimes slightly fired on the chest.
Vekai. ...	The ear-lap falls, and the animal ceases to chew the cud; the stomach swells, and the hair stands on end.	Two days after the appearance of the disease, flux and bloody—flux ensue, and the animal dies after a few days if the progress of the symptoms be not checked.	Cowage or kastoori, brinjal and tutti leaves, onion and jagger are mixed together and administered to the animal; or plantain flower, wood-apple, pomegranate and the tender parts of the cocanutt are beaten together, mixed in rice, water or butter-milk, and administered to the animal. Other medicines also are applied to the eyes.
Edinovu. ... Kundinovu or Adernovu. Poshukai. ...	The hair stands on end, and food is refused. Do.	The animal jumps about; appears convulsed and speedily dies. Do.	No remedy is known by the Natives, or attempted for this disease.
Neer Poshukai. ...	Do.	Besides the foregoing this disease is accompanied usually with great purging.	Ifog's lard is applied to every joint. A kind of leaf called nauvalai is ground and administered, mixed with castor-oil.
Varah Poshukai. ...	The eyes run for three days, and the animal becomes gradually weaker.	Its dung becomes hard and formed like that of sheep.	Kattalai a kind of alce and salt are beaten together and administered. A mixture of avil, or beaten rice, curd and onions is also applied. Ribs are also fired.
Perum Poshukai. ...	The eyes run for several days, and the head droops.	The skin becomes detached from the flesh, and the head and legs become tremulous, and the animal is unable to rise. NOTE.—On examining after death the carcase of an animal attacked with these diseases the skin is found quite separated and loosened from the flesh.	A mixture of myladi, velan, yeraku and neerpulah leaves and of long pepper. Nutmeg, saffron, onions, palmirah jagger, plantain fruit and lamp oil is prepared and administered to the animal.

Keeluvai. ...	The hoofs suddenly grow rapidly, and the animal will not take food.	The head and legs swell, and the motion is slow and difficult.	One measure of mochacottah flour, one-fourth measure of black gram flour; and four plantain fruits are kneaded together by putting water boiled with ass's dung. The above mixture of flour and water are separately administered to the animal.
Komari ...	Saliva continually flows from the mouth; the hoofs become sore and tender disabling the animal from moving.	There will be sores in the mouth and on the tongue, in consequence of which the animal will not take food.	Palmirah jagger and onions are beaten together, and after mixing them with vinegar or butter milk are administered to the animal; cobweb and chunnam are beaten together and applied to the sores between the hoofs, and the animal is made to stand in the mornings in water.

CUDDALORE,
25th January 1864.

(Signed) C. W. READE,
Collector.

1. The Collector is requested to explain more precisely his proposal in regard to the provision of pasture.

2. The practise in some Districts is to allow land to the extent of one-fifth of the entire holding to be retained at one-fourth of the full assessment on it for grazing purposes; but the Board are not prepared to sanction a remission to this extent on land now actually paying full assessment, and they can scarcely suppose that waste land is not available for the purpose to the necessary extent in South Arcot, except in very exceptional cases.

3. They observe that from the latest Returns in their Office the proportion of cultivated land to the whole Ayacut or culturable area was in South Arcot as one to two in Fasli 1271.

(True Copies and Extract.)

(Signed) W. HUDLESTON,
Secretary.

To C. W. Reade, Esq., Collector of South Arcot.

Exd. R. H. Lee.

Requesting more precise explanation in regard to the provision of pasture.

No. 920.

Dated 11th February 1864.

PROCEEDINGS OF THE BOARD OF REVENUE.

No.

1684. Department.

From the Collector of North Arcot, dated Dusi, 1st March 1864, No. 45.

Dated 5th August 1863, No. I XI.
Do. 12th " No. LXVI.

1. Adverting to the Miscellaneous Circulars noted in the margin, I have the honor to submit my remarks on the subjects therein referred to.

2. The returns from the Taluks do not throw much fresh light on the more prevalent diseases to which cattle are subject; the seasons when these epidemics most frequently break out; their coincidence with visitations of Cholera and Small-pox; and the modes of treatment which have been found most efficacious.

3. This much however I gather from them that, with the exception of the "Gowmari" or small-pox which is peculiar to the hot months, the other diseases such as "Pedda rogum" or Murrain, "Staggers," &c., &c., do not appear to be influenced by atmospheric changes.

4. Some of the Tahsildars give lists of some eight or ten diseases, but the "Gowmari" and "Pedda rogum" alone appear to be epidemic; and being by far the most prevalent and destructive, should at first have exclusive attention. The symptoms of the "Gowmari" are, ulceration of the mouth, nostrils, ears, and hoofs, extending in bad cases to other parts of the body. The affected animal refuses all food, and moves with pain and difficulty. The malady runs a course of from ten to thirty days, and is contagious. A fair proportion of cases recover.

5. This epidemic, as already mentioned, generally shows itself during the hottest months of the year, and is more or less prevalent and fatal as the season has been unfavorable or otherwise.

6. The ordinary treatment in this District is to anoint the ulcers with hogs' lard, and to keep the affected animal standing for several hours morning and evening in mire or water.

Internal remedies are likewise given; but these I shall not attempt to describe as every locality has its own nostrums, and no one system of treatment seems to be recognized as more efficacious and successful than the other.

7. The "Pedda rogum" or murrain breaks out at all seasons, and is far more fatal than the "Gowmari." Probably not more than 5 per cent recover.

This terrible scourge is sometimes called "Nalupu rogum" from the blackness which over-spreads the skin on the first manifestation of the disease.

The symptoms are precisely those described in Captain Nelson's letter embodied in the Proceedings now under acknowledgment.

Branding seems to be the most common remedy in such cases, but some of the Tahsildars name a variety of native seeds, roots, and herbs, which are occasionally administered with some success.

Branding is likewise practiced with some success in cases of the "Suzal," "Staggers" or apoplexy, "Adaran," congestion of the lungs, &c., &c.; but as these, and other diseases enumerated in the local returns are not epidemic, it would only complicate this inquiry to notice them further in this place.

8. I should have much liked to give the Board some idea of the probable ratio of mortality to increase during the last five years; but the accounts which we have are so manifestly untrustworthy for all purposes of statistical comparison, that I dare not even venture upon an estimate.

I can not learn however that the disproportion has of late years been so great as to interfere to any perceptible degree with agricultural operations and the carrying trade of the District.

9. The remarks of the local officers seem to contradict the supposition that there is any sympathy between the outbreak of disease among man and beast other than this; that unseasonable weather is alike unfavorable to both conditions of animal life.

10. I now come to the question of local breeds, their present condition, and capabilities of improvement.

The Tahsildars' reports on these points amount to little more than this, that there are no distinct breeds or races of cattle or buffaloes in this District, and that there is no call on it from outside markets; and such is in fact the case. We have not a single cattle fair in the District, and the stock has indeed so little to recommend it in point of size and symmetry, that it can have no value in any other than the most purely local market.

11. We have few, if any Agricultural Capitalists, and the Zemindars who might have turned their attention to the improvement of the breed have hitherto manifested no interest in the matter; and thus have scarcity of fodder, apathy, and long disregard of the most obvious rules of breeding stock, brought it to a state of degeneracy beyond which it cannot probably further deteriorate.

12. In the Punganur and Kangundi Zemindaries, and in a few other tracts where the presence of wood and scrub jungle secures a supply of forage and water at all seasons, this absolute degeneracy has not been attained. I have myself seen herds out of which, except in the matter of size, some well bred shapely animals could have been selected. But even giving our local stock full credit for all it can show in those more favored localities, it has nothing that will bear the faintest comparison with the cattle to be met with in North Canara and elsewhere.

The breed is too debased to admit of any general improvement; and my own impression is that there is little to be done in this direction in North Arcot.

13. The District is, except at its western and south-western extremities, devoid of all natural vegetation; and during the hot months, the wonder rather is how even the puny, stunted cattle one sees, contrive to keep life within their lean and famished bodies.

Thousands do no doubt die yearly of pure starvation, of which no account is taken; and the question which naturally suggests itself is whether, in a country where fodder and water are so precarious, a larger and more shapely breed of cattle could be reared and maintained. I have myself great doubts of the success of any Governmental experiment, and believe that any movement in this direction must originate with the people themselves, and that this is not to be looked for until the class of capitalist farmer is more widely represented in the District than it now is.

14. The unenclosed and barren character of the country has necessitated the practice of herding the village cattle "en masse;" there being thus no check to unlimited breeding "in and in," it is not matter of surprise that under the influence of this, and a general scarcity of fodder, the breed has degenerated to the extent I have described.

Neither of these evils unhappily admits of any present remedy, as a system of separating and stall-feeding cattle would be far too costly and inconvenient, an arrangement to be generally attempted by our present class of farmers.

15. I do not think that small additional allotments of land for pasturage would effect any direct result in the improvement of the breed of cattle.

I say so, fully recognizing the advantages Canara has derived from its "Kumak" allotments, and of the value of such privileges in some of the adjoining Districts. But in Canara, the "Kumak" allotment is as often as not cultivated and incorporated with the "Wurg," and if left to nature, does at least produce firewood and grass for litter and thatch.

Here such allotments might occasionally be cultivated with some coarse dry grain, or if not, would be left to bake in the sun in all their natural sterility. It is not therefore in this way that any movement may be made.

16. It might however be worth while to try the effect of offering small annual prizes in each Taluk to be competed for by the villages within it, the prize to fall to the village or townships which exhibited the best average merit in a lot of fifty, one-hundred or more (as might be previously determined) head of cattle.

17. Meanwhile I would strongly urge the advantage of a short sheet of simple instructions and recipes being compiled by some professional person from the information now collected, and translated into Tamil and Telugu in view to copies being struck off in the several local Presses, and distributed to all the principal villages in each District.

Exd. J. Wright

From the Collector of Coimbatore, dated 9th March 1864, No. 39.

1. I have the honor to acknowledge the receipt of the Board's Miscellaneous Circulars, dated 5th and 12th August last, Nos. 61 and 66.

2. With reference to paragraph 3 of the Circular, dated 5th August, No. 61, the Board are

1. Mr. Thackray, paragraph 32 of the Report, dated 4th October 1817.
2. Mr. Sullivan, in paragraph 24, of the Report, dated 6th July, and paragraph 39 of the Report 7th September 1816, 3rd November 1834, paragraph 13, and also of the 29th May 1819, paragraph 60.
3. Mr. Thomas, in paragraph 31 of his Hookoomnamah sent to the Board with his letter, dated 18th November 1830, and also paragraph 11 of the Hookoomnamah, 10th November 1831, sent with his letter, dated 6th January 1833.
4. Mr. Drury, paragraph 18 of his Report 1st October 1833.
5. Mr. Thomas, paragraph 3 of a letter of the 15th March 1856, No. 34 and paragraph 1 of a letter of 15th January 1853, No. 15.

are aware from the correspondence noted in the margin that the rule of allowing one-fifth of the whole extent of land in a Ryot's Puttah to be held for pasture at one-fourth of the full Taram assessment was introduced into this District many years ago. It worked well and aided the Ryots in keeping up their stock. Land held on these terms was not liable to be taken from them by an ill-natured neighbour offering to cultivate or hold it on full tax. The result was that the people hedged in and paid particular

attention to their grass fields, manuring and otherwise improving them; but when a restriction, which seems to have been commenced in 1841 and 1842 but without any authority so far as can be traced from the records, was placed on this system, and the Ryots were only allowed to hold grazing land at a low rate of assessment "Parravoo Pilloovuttry" so long as no one else offered to pay the full assessment, all interest in the land ceased as a man felt that he had only to hedge it in and improve it to ensure its being applied for by some one else. The result no doubt has been that grazing lands have not received that attention which used to be bestowed on them, and that cattle have suffered in proportion. I therefore recommend that the old system which was recog-

nized and sanctioned in the late orders noted in the margin, be reverted to until the rates of assessment on dry lands have been so much

Board's Proceedings 21st June 1861, No. 3,217.
Government Order 7th November 1861, No. 2,133.

reduced in number and amount that the people can afford to hold them on full assessment. Within the last fortnight I have been much amongst the people, and morning and evening conversed with them by myself in their fields, in their gardens, at their villages, and along the road; and the one conclusion I have come to so far as the dry lands are concerned, if the welfare of the people and the increase of cattle and sheep are held in view, is that there must be a reduction of assessment, and that the rates must be few. It is useless to expect a large revenue from unirrigated lands in a country so dry as Coimbatore is. It is to the water and not to the nature of the soil that we should look; for Revenue; land worth 8 annas an acre under existing circumstances becomes worth, and will easily pay ten times that amount if water only can be brought to it. Water, is the want of Coimbatore. I passed several villages a few days ago, the inhabitants of which leave their houses every morning about 5 A. M. to fetch water for household purposes from the Noyel river distant two and three miles. This is a fact which throws much light on the subject, and shows what difficulties the people in many parts have to contend against. All the cattle and sheep belonging to these villages have to go to the said Noyel river to drink.

3. I have long observed that poverty of pasture and bad water have induced much of the disease that exists amongst cattle and sheep. I cannot recollect ever having seen a sick cow or bullock in a Ryot's garden; the vicinity of water and cholera stalks acts as a prophylactic. Some respectable Ryots told me the other day that in 1861-62 grass was so scarce in this District that

they unroofed their houses for the sake of the straw to give it to their cattle. Many of the animals were saved, but others died of purging which set in and carried them off just as cholera does the human being. The following Memorandum throws light on the present state of the Ryots' holdings with regard to the amount of grass tax paid by them, and shows clearly that the less favorable terms on which grazing lands have of late years been held are coincident with the great mortality amongst cattle.

MEMORANDUM

The assessment on the proportion of grass land (one-fifth of their holdings) to which the people would be entitled under the old system amounts to Rupees..... 6,77,892
The assessment on the land actually held amounts to 3,58,830
The difference..... 3,19,062

is the assessment on the land which the people would probably have held had the old system of Ain grass been continued.

Number of cattle which died in Fastia.	
1268.....	27,900
1269.....	13,334
1270.....	13,700
1271.....	14,552
1272.....	24,023

The Ain grass tax was simply a reduction of assessment under certain conditions in favor of the Ryot, a wise institution, the discontinuance of which has been followed by a great diminution in the Agricultural Stock of the country.

4. From personal observation and inquiries, I am unable to give any definite information about the cattle disease. Those Ryots with whom I have conversed on the subject, although some of them have suffered the loss of cattle by disease, have only been able to afford general information. According to their Statements the most common diseases are—purging, which carries off the animal in two or three days but does not seem to be contagious, although four or five animals in a herd may die—and ulcers in the mouth and feet; in the former case the tongue is much affected; this disease seems to be preceded by great debility and a running from the mouth to the tongue. Salt and water is applied and rubbed in, and to the feet the hot iron is applied, or the animal is made to stand in water for some time, and various compound medicines are subsequently applied.

5. Once the purging has commenced, the people seem to look on the animal as gone beyond all chance of recovery; this disease seems to be most prevalent in October, November, and December; and the sore tongues and feet in the hot weather; but whether either or any of the cattle diseases are coincident in time with epidemic disease amongst human beings, I have not been able to learn.

ENCLOSURE No. 1.

Memorandum showing the disease prevailing among the Cattle in Coimbatore District.

Disease.	Symptoms.	Treatment.
1. Eruptive fevers. அம்மைநோய்	Eruptions all over the body terminating into sores; diarrhoea; running from the eyes.	Utubark, Mango bark, Ichu bark, should be ground in Buffalo's butter-milk; Vaulaipoo, Tennakoorombay, Palambair Talay, Nauchioogum, and Onions should be ground separately, and mixed in butter-milk, and then given.
2. Alarinoovoo. அலரிநோய்	Swelling of the belly, restlessness, constant lying down, and getting up; after third day, diarrhoea ensues.	The above; firing on the belly and sides of the belly, sprinkling of ashes on the spine. In some part of the District, in addition to the firing, the following remedies are given—a handful of tender leaves of Coomalam plant, a handful of country Cotton, a quarter measure of Onions, a quarter measure of Cummin seed are ground with half a measure of vinegar and given to the animal twice a day. Some people give the following remedy without the firing—Anainarunjee leaves, Camphor, and belly leaves are ground in vinegar and given.
3. Perianovoo. பெரியநோய்	Diarrhoea.	Do.
4. Veerapponovoo. வேரப்பநோய்	Trembling of the whole frame, swelling of the belly, hair standing on end, running from the mouth and nose.	Sprinkling of ashes.
5. Coondoovoo. கூந்துநோய்	Trembling of the whole frame, spasms of the abdominal muscles.	Firing on the legs.
6. Pitchinaridynovoo. பிச்சினரிதயநோய்	The animal skips about, is restless, and lies down with its eyes half shut.	Firing on the chest and neck; castor-oil and butter-milk well boiled and given internally.
7. Convulsion. கூர்ணிநோய்	Spasms of the muscles, legs and head; hurried breathing followed by swelling of the body.	Firing the muscles which are in inordinary action.
8. Coorovoonovoo. கூரூவூநோய்	Swelling of the body.	Do. on the sides of the belly.
9. Kolaypetchinovoo. கொலேபிச்சினோய்	Suffocation.	Onions and leaves of Elavan plants are ground in vinegar and given.
10. Pitchinovoo. பிச்சினோய்	Swelling of the guts, and diarrhoea; evacuations dark.	Firing on the chest between the legs on the front of the chest, three horizontal fire marks are made.
11. Oothadappoo. ஊதாப்பூ	Swelling of the body.	Firing.
12. Valacheenovoo. வலாச்சினோய்	Swelling of the belly scanty and hardened dung.	Do.
13. Tottayrinoovoo. தொட்டரிநோய்	Swelling of the ankle joints.	Juice of Amakalanlangoo is applied over the swelling.
14. Goondigay Salay. கூண்டிகைசலைய்	Excessive flow of blood into the chest with difficulty of breathing, lying down lazily.	Crucial firing over the sides of the chest, fire heat is applied over the chest, and three severe kicks are given over the part affected.

Memorandum showing the disease prevailing among the Cattle in Coimbatore District.

Disease.	Symptoms.	Treatment.
15. Nauckoo Salay. நாக்குசலே	Swelling of the veins of the tongue; disinclination to eat and drink, and swelling of the belly.	The vein under the tongue is opened so as to cause free bleeding, and then the tongue is rubbed with a quantity of tamarind and common salt.
16. Mookoochillai. மூக்குச்சிலை	Bleeding from the nose, and tenderness of the part to the touch. No inclination to eat or drink.	Firing and smearing with castor-oil round the horns; rubbing castor-oil all over the spine.
17. Sockoonovoo. சொக்குநோவு	Produced by eating the tender shoots of the Cholam, the castor-oil and Red Neringee plants which cause a swelling of the belly and restlessness.	Quarter measure of chillies are ground in one measure of water and given.
18. Voyevandy. வையெண்டி	Ulceration of the mouth and tongue, and running from the mouth; disinclination to eat, &c.	Hogslard applied over the ulcerated parts; 1 pie weight of hogslard mixed with Cholam or Cumboo rice about the size of a Mango given internally.
19. Kalvesady. காலவெசாதி	Ulceration between the hoofs, and breeding of maggots in them.	The animal is made to stand in heated sand and in water in which there are fish. In some part of the District Chunam mixed with butter is applied over the part affected.
20. Kaladappah Tairappah. காலடப்பா தைரப்பா எக்கப டட்டோவு	Sudden falling.	The feather of a bird called "Caday Patchi" is administered in grass.
21. Odinaitynovoo. ஓதினெய்தினோவு	Swelling of the belly, and disinclination to eat and drink. Sore mouth.	Leaves of the Palanepasy, Vailipary, Modakatan plants, Garlic, Pepper, Bishop's weed, Asonitida, Ginger, Camphor, are ground and mixed with one measure of castor oil, and a quantity of Buffalo's butter-milk and given in one dose.
22. Varanatty. வரனட்டி	Voracious appetite followed by a wasting away of the frame; dung, scanty and hard, after a time unable to move about.	Juice of "Sottoo Cuttalay" or also (cleaned with water). Cummin seed, Onions, Plantain roots, Avaram buds and its plants are ground with a spoonful of water, and mixed with ½ Measure of castor-oil and heated and administered.

COIMBATORE, 9th March 1864.

(Signed) P. GRANT, Collector.

From the Collector of Salem, dated Womalur, 9th March 1864, No. 40.

1. I have the honor to reply to the Board's Miscellaneous Circulars, Nos. LXI and LXVI, dated the 5th and 12th August 1863, on the subject of decrease in the Agricultural Stock.

2. With regard to Circular No. LXI. The gross decrease in Cattle according to the last Returns is 11,248 as compared with Fasli 1266.

3. Though disease and bad seasons did affect Cattle to a considerable extent during the five years, I do not, from inquiries I have made, believe the correctness of the decrease. The last Returns were no doubt taken with greater care than usual; while those of Fasli 1266 were taken on no system whatever and almost at hap hazard. It is not unlikely that many a Curnum actually filled up his Return sitting in the Taluk Cutcherry having only his general knowledge of the village to guide him. But cultivation could not possibly have increased so considerably during the five years (see margin) if there was an actual decrease, or at all events so large a decrease in the Agricultural Stock as that which the Returns show. I am inclined to think that the number in Fasli 1266 was an exaggeration, and that the number of cattle in Fasli 1271 could not have been less than that in Fasli 1266, though bad seasons and disease affected them and checked an increase which might otherwise have been considerable.

Increase 1,15,149 Acres; Rupees 2,00,000 assessment.

4. With regard to the Rules in force in this District for the occupation of land for pasture, I beg to refer the Board to paragraphs 6 and 7 of the Proceedings of Government, dated the 6th May 1860, No. 701, conveyed in the Board's Order, dated the 9th idem, No. 2,268. The lands which the Ryots are allowed to occupy for pasturage are of three kinds.

First. Fysul Pulluvari lands, or lands used for pasture alone, and assessed for that purpose at the survey.

Second. Tezaye Pulluvari, unirrigated land when taken up for pasture. On this one-third of the fixed assessment is levied.

Third. Chontaye Pulluvari. Land at one-fourth of the fixed assessment when it forms an integral part of the Ryot's entire holding, and provided it does not exceed one-fourth of the land in occupation.

5. The first and second exist only in the Taluks* below the Ghauts, and the third in the Usur Taluk (including Denkecottah), while no land is granted for pasturage in the four Baramall† Taluks.

* Attur.
Salem.
Trichengode and
Namkul.

† Darampuri.
Kistnageri.
Tripatur and
Utengeri.

6. The lands classed as Fysul Pulluvari (No. 1) pays a reduced assessment fixed at the Survey, and it is about one-fifth of the full Tarum assessment. The assessment of the land classed as Tezaye under occupation according to the accounts of Fasli 1272 is Rupees 8,929, of which the two-thirds remission amount to Rupees 5,953. The assessment of the lands classed as Chontaye is Rupees 13,261, of which the three-fourths remission amount to Rupees 9,946. The total assessment remitted on account of pasture lands in the whole District during Fasli 1272 is Rupees 15,899. When these three descriptions of pasture lands are brought under cultivation they are charged with their full Tarum assessment. The Ryots are therefore bound to keep them up as grazing lands; but there is a Rule (44) in the Hookoomnamah of the District under which, if any person applies for permission to cultivate the pasture land held by another party, the holder of the land is asked if he will himself pay the full Tarum assessment, and if he does not choose to do so it is given away to the applicant. This rule entirely defeats the object for which lands are given for pasture on reduced assessment, and I therefore request the Board's sanction for its immediate abrogation.

7. It is desirable that a uniform rule for the grant of pasture land should be established throughout the District. Of the three classes of land now occupied by Ryots on reduced assess-

ment for grazing purposes, the 1st, or Fysul Pulluvari, must continue as heretofore. It is of small extent (paying about 1,500 Rupees), and as it is not subject to increase it will in course of time disappear altogether being taken up for cultivation. The system of granting the 2nd class of land, viz. Tezaye Pulluvari should, I think, be abolished; while that of granting land at Chontaye or one-fourth of the Tarum assessment should be extended throughout the District limiting the extent given for pasture to one-fourth of the entire holding.

8. Besides the three classes of land above adverted to there is a large tract of jungle land on the banks of the Cavery in the Denkencotta Taluk rented out annually for pasturage. The present rent of this farm is Rupees 633. The renter collects a tax at 6 pice per head on the cattle grazed in this farm.

9. With regard to Circular No. LXVI there was disease to a considerable extent among cattle in some parts of the District; but it was not in point of time coincident with epidemic disease among human beings.

10. There are various kinds of disease among cattle, of which the principal are—first "Peria Novu." It is generally fatal and also both epidemic and infectious. The characteristic symptoms are purging, high colored urine, running at the eyes and nose, and a discharge of foam from the mouth. As the disease advances the cattle suffering from it refuse food and water.

The remedies applied:

One Madras Measure of boiled raggy or cumboo.

Half Measure of butter-milk.

Half do. Onions.

These three are mixed together and given morning and evening at the early stage of the disease for three successive days. The symptoms of this disease appear to be the same as those of the disease described by Doctor Bidie at Hoonsur in his letter to the Commissary General at Madras, circulated with the Board's Proceedings, dated the 1st instant, No. 7,572. I will take measures to have the medicine prescribed by Doctor Bidie tried in this District.

11. Second "Gomari" symptoms—ulcerous hoofs and mouth accompanied by offensive smell maggots attacking the ulcerated parts; always disinclination to graze and a staring coat.

Treatment external.

1st—Driving the cattle into mire or into muddy swamps every day till the disease entirely disappears.

2nd—Sweet flag (*Acorus calamus*) saffron and Margosa oil.

The first two are pounded and mixed with the last and applied to the sore parts to destroy the maggots and to keep off the flies.

3rd—Washing and cleaning the sore parts with hot water and applying camphor.

Internal.

1st—Boiled "Ariem" or raggy, onions and buttermilk. These three are mixed together and given.

2nd—Plantains, and fat of pigs mixed together are given.

12. There are other diseases of a milder and less fatal character.

13. Besides giving all grazing land on one-quarter assessment as mentioned in paragraph 7, I think the Alumbadi* Pulluvari rent might be abolished altogether. The sum derived from it is small and scarcely deserves consideration; but the removal of the tax would be a boon of some importance to the breeders who are all in poor circumstances.

* N. B. The largest cattle breeding place in the District.

14. With these concessions I think the breeding of cattle in this District might be fairly left to private enterprise without any interference whatever.

Exd. R. H. Lee.

57
From the Collector of Tinnevely, dated 22nd April 1864, No. 156.

1. With reference to the Board's Miscellaneous Circular, No. LXI, dated the 5th August 1863, Board No. 4,879, requesting my opinion as to the best means to adopt in order to encourage cattle breeding, and to facilitate the keeping up of Stock, I have the honor to state, that if one-fifth of the whole extent of land in a Puttah, be allowed for pasture at one-quarter of the full Taram assessment, as is done in other Districts, it will go a great way towards effecting the object of the Board, as there are no rules in this District relating to pasture ground.

2. Referring to the Board's subsequent Circular, No. LXVI, dated the 12th idem, Board No. 5,046, I have the honor to state, that there has been a marked increase of cattle disease in this District in the last five or six years, but I cannot say that it was coincident in point of time with marked prevalence of epidemic disease among human beings. A Statement showing the different kinds of cattle diseases in this District and their symptoms, as ascertained from the Ryots, as well as the remedies which they employ, is herewith forwarded. I am unable to say which of the remedies may be tried with most benefit, as the Ryots say that they are all equally resorted to.

ENCLOSURE No. 1
STATEMENT showing the diseases of Cattle, and their symptoms, as ascertained from the Ryots, and the remedies employed by them.
No. 1.—BULLOCKS.

Disease.	Symptoms.	Remedies.	Remarks.
1. Vethuppu Noi.	Rejection of food and water four days previous to the appearance of the disease; running at the eyes; purging, terminating in a bloody flux; grumbling in the belly; drooping head and ears; hair standing on end; languishing face.	1. Onions, cinnamon, cumin seed, and licorice are pounded and mixed with not less than one measure of sour conj water and given internally. 2. Gruel made of cumboo grain mixed with sour conj water. 3. Tender leaves of the avarum shrub (Cassia Auriculata) ground and mixed with sour conj water. This is also rubbed all over the body. 4. Boiled country green figs. 5. Boiled rice taken from raw paddy, ground cumin seed, and gingelly oil, mixed together and given. 6. Lime juice mixed with the milk of the same description of animal as that affected. 7. Onions, bark of the Karuveloo tree (Accacia Arabica) and flowers of the cocoanut tree pounded and mixed with arrack. 8. Onions, leaves of the Agathi tree (Coronilla grandiflora), tender pomegranates, cumin seed, and licorice bark pounded and mixed with sour conj water and arrack.	By trying some of these remedies, some times the animals recover, and some times they die within three or four days.
2. Vai Noi. Kal Noi.	Sores on the legs and round about the mouth and eyes. Inability to walk and eat.	1. Water in which salted fish has been soaked for twelve hours is sprinkled on the sores. 2. The diseased cattle are walked for some time on hot sand. 3. Chunam and gall nut are ground applied to the legs. Gingelly oil is applied round the mouth.	These remedies have been found successful in most cases. If the disease appears when the moon is in the increase, it is not healed before three months, but if it appears when the moon is in the decrease, it is healed in fifteen days. Proves fatal in two or three days. Partly successful and partly fatal.
3. Kalla Noi.	Sudden swelling of the belly and neck.	No remedy.	
4. Adaippu Noi.	Face languished and disfigured, drooping ears, and the hair stands on end.	Certain parts of the animal are branded with a hot iron of the thickness of a little finger.	
5. Suluthu Noi.	Whirling about the head and body.	The head is branded and part of the ears cut.	Seldom successful.

STATEMENT showing the diseases of Cattle, and their symptoms, as ascertained from the Ryots, and the remedies employed by them.—(Continued.)

Disease.	Symptoms.	Remedies.	Remarks.
6. Uthadaippan. Kalladaippan.	Irritation of the eyes; swelling of the belly and stoppage of urine and dung.	Immediately on the appearance of the disease, the abdomen is branded in the case of "Uthadaippan" and the sides are branded in the case of Kalladaippan. 2½ palam of sweet flag (Calamus) roasted and powdered, is mixed with half measure of urine and given internally morning or evening.	Successful in case of immediate branding.
7. Rethadaippan.	Purging blood.	Half measure of the juice of onion and ananerungi shrub (Tribulus terrestris) mixed with two measures of calany (water in which raw rice is washed) is given morning and evening.	
8. Iramutti Noi.	Coughing; hard breathing; and running from the mouth.	Dry ginger, long pepper, cubebs and adjovan seed, two palams each, are powdered. Then the leaves of the shrub called thuthuly (Solomum trilobatum) and cooppameni (Acalypha Indica) are ground, and a quantity equal to the size of two wood apples is mixed with the above powder in quarter measure of margosa oil, and given internally in the morning. That day the animal should be fed only with one description of food and hotwater given to it to drink.	
9. Virattai Noi.	Perspiring on the face; difficulty of breathing; swelling of the belly and stoppage of urine and dung.	The hoofs of assess, bullocks, and sheep are put into a fire made of bratties, or cow-dung cakes, and the face of the animal is held on the smoke thereof. The grease of the sarai pambou snake (the male of the Cobra capella) is given internally and also rubbed on the face.	Seldom successful.
10. Small pox.	Hair standing on end and purging blood. In certain instances the body is covered with blisters which open out like scars.	Onions and the flowers of a cocoanut tree are pounded up roughly and kept for a day and then given internally.	Seldom successful.
No. 2.—SHEEP.			
1. Manja Noi.	Bloody urine.	Onions ground with sour conj water and given twice a day at half measure each time.	Seldom successful.
2. Kopala Noi.	Blisters all over the body and swelling of the head.	No remedy. Generally die in three or four days.	

STATEMENT showing the diseases of Cattle, and their symptoms, as ascertained from the Ryots, and the remedies employed by them.—(Concluded.)

Disease.	Symptoms.	Remedies.	Remarks.
3. Vethuppu Noi	Purging terminating in bloody flux; hair standing on end; face and ears droopings; rejection of food.	1. Gruel made of cumboo grain is cooled and given. 2. Tender leaves of the avarum shrub (Cassia Arculata) ground with sour conji water is given internally and also rubbed over the body. 3. Onions, leaves of the agathi tree (Caronilla grandiflora), tender pomegranates, cumin seed and licorice bark powdered and mixed with sour conji water and arrack. 4. The sheep are also made to swim in deep water for two or three days.	
4. Kal Noi. Vai Noi.	Inability to walk freely. Inability to eat.	Onions ground with sour conji water given internally. Tender leaves of the avarum shrub (Cassia Arculata) ground and rubbed on the body.	Vide remark to No. 2 disease, Statement No. 1.
5. Small-pox.	Hair standing on end, face and ears drooping, purging blood, blisters over the body which open out like scars. Rejection of food.	1. Onions and the flowers of a cocoanut tree are pounded up roughly and kept for a day and then given internally. 2. Onions ground with sour conji water is also given. Avarum leaves (Cassia Arculata) ground and rubbed over the body.	Seldom successful.
6. Valippu Noi or Thullu Noi.	Convulsion.	No remedy.	
7. Sulluthu Noi.	Whirling about of the head and body.	The head is branded and part of the ears cut.	Seldom successful.
8. Uthadaippan. Kalladaippan.	Irritation of the eyes and swelling of the belly.	Immediately on the appearance of the disease the abdomen is branded in the case of "Uthadaippan," and the sides are branded in the case of "Kalladaippan."	Successful in case of immediate branding.

N. B.—When there is much rain the sheep are attacked with shivering and die.
TINNEVELLY, dated 22nd April 1864.
(Signed) J. SILVER, Collector.

Exd. J. Wright.

From G. S. FORBES, Esq., Collector of Ganjam, dated Chatterpoor, 28th July 1864, No. 160.

1. With reference to the Board's Miscellaneous Circulars, Nos. LXI (Board No. 4,879) and LXVI (Board No. 5,046), of the 5th and 12th August last, I have the honor to observe, that, from the last Quinquennial Statements of this District rendered to the Board with my report of the 2nd January 1863, No. 1, it would appear that instead of a decrease as stated by the Board there has been a large increase in agricultural stock. Since Quinquennial returns of Fasli 1266 were rendered, the increase in tilling cattle is represented to be more than 50 per cent. It is true, that the cattle of this District suffer occasionally from various diseases, but it cannot be said that there has been any marked increase of disease, or that it has been coincident in point of time with the prevalence of epidemic diseases among human beings; these are generally prevalent during the hot weather, whereas the cattle suffer chiefly in the rains. The accompanying Memorandum shows the names of cattle diseases, their symptoms, and the remedies usually applied by Ryots.

2. In this District there are no specific rules regarding the occupation of lands for pasturage, nor are such tracts held on favorable terms. The rule proposed by the Board under which one-fifth of the whole extent of land in a Ryot's Puttah may be held as pasture at one-fourth of the full assessment ought to offer great encouragement and assistance in cattle breeding. I herewith submit a Statement showing the extent and assessment of cultivated and cultivable lands, which might be held as pasturage in those villages in the neighbourhood of which there are no jungles or hills; the Board will observe that the extent of cultivated land proposed to be made available for pasture is 2,417 acres; and the amount of revenue which would be sacrificed is Rupees 2,821-8-0. This Statement does not provide for pasturage of cattle belonging to the villages of the Moherry and Pubakonda Kandams of the Berhampore Taluk, or for the Goomsur Taluk (with the exception of a single case) as the jungles and hills situated in them afford sufficient forage.

ENCLOSURE No. 1.
A Statement showing the names of Cattle Diseases with their symptoms and remedies.

Name of the disease	Symptoms of the disease.	Remedies.	Remarks.
Cowpox.	The vesicles are formed on the skin, but these burst only in the case of Buffaloes and not on Cows and Bullocks. Worms are generated in the mouth, eye, and other parts of the body, and the hair becomes black as if burnt. The animal ceases to graze for about three days and passes blood. Mucous is discharged from the nose and mouth.	Pounded Margosa leaf mixed with water is given. On the second day after the appearance of the disease warm water is given for drink. Margosa leaves are pounded with turmeric and applied to the vesicles.	It is frequently a fatal disease and prevails in all seasons of the year.
Betra.	The neck and tongue swell; saliva is discharged.]	Bark of a tree called "Vulumera," mustard and pepper are ground with water of previous day and given.	The disease sometimes is fatal and prevails in June and July.
Bhomira.	The animal turns round and round.	Ghee is poured down upon a red-hot iron ball so that it may fall on the head of the cattle and cauterize from nose to tail. An insect called Bhomira which is found turning on the surface of water is given.	The disease is sometimes fatal but the remedy is good to a great extent.
Benga.	The neck and tongue swell, the animal ceases to graze.	Salt, Calomel, Black Cashew nuts, mustard seed, leaves of trees called Vavila and Tulasee and parched corn are pounded and applied to the tongue.	This disease is called Benga when calves are attacked, but Nahada when grown animals are affected.
Gola also called Betna.	Passing blood.	Cauterizing on the loins. Wood apple leaves pounded in butter milk is given. Also ashes, cooked rice, and bamboo leaves are given.	Mostly curable.
Gumma.	The animal hangs its head and droops its ears; saliva flows from the mouth.	No remedy.	Is a fatal disease.
Vodhavi.	The legs are affected.	Mustard seed, bark of Someda, Katachela, Taraka, Vepaku, and Gadda Fishereka are ground and given, cauterized on the legs in two places, and also from the mouth to the tail along the back.	This disease is not generally fatal.

Pativakhura.	Worms are produced in the feet and in some cases in the gums.	Oil boiled with black casew nuts and ointment of black ebony wood are rubbed to the feet. In hot weather cattle labouring under this disease are made to stand in water.	The remedy is good to a great extent.
Narady.	Spleen enlarges greatly from the left side to the breast and shivering fits occur. The animal ceases to graze. This disease originates also in the intestines, for a day or two there is offensive purging with straining.	Fermented liquor and black horse-grass mixed with gingelly oil is poured into the mouth. Roots called Murudanda, Tettangly, Jilledu and mustard seeds are pounded together with sour rice water called Tarwany mixed with gingelly oil is poured into the mouth. The juice of the shoots of the milk edge, mixed with chillies or sour rice-water called Tarwany is poured into the mouth. The affected animal is cauterized on certain parts of the body. No water is given. Rice mixed with buffalo tyre is given. Black gram and unprepared rice boiled together is also given mixed with gingelly oil.	This disease generally prevails in June and July. Fatal.
Neradu Sorasa.	Some of the teeth of the animal fall out, ejection of phlegm takes place, a hole is formed in the palate from which water issues.	Cattle are cauterized on the neck. Margosa stick is inserted into the orifice and it is washed with hot water.	At all seasons of the year.
Narady.	Shivering fits, swellings.	Cauterized from chest to the back along the left side, and three strokes just below that 6 inches each. The roots of trees called Gidugu and Titanghy, mustard seed and opium are pounded and given.	June and July.
Belly-ache.	Struggling.	The tender shoots of the milk hedge with cobwebs and salt are pounded with cocoanut water and given, cauterized on belly.	June and July.
Jumma Tegulu or Vusiru Tegulu.	Giddiness.	Mustard seed. The root of the trees called Tet-tanghi and Pillevendram pounded together and given, cauterized round the head and from back to tail.	In any part of the year.

CHETTERPORE, 28th July 1864.

(Signed) G. S. FORBES, Collector.

ENCLOSURE No. 2.

Statement showing the Extent and Assessment of cultivated and cultivable lands which might be held as pasturage.

No.	Names of Taluks.	Land set apart for pasturage out of that now bearing assessment.		Land set apart for pasturage out of the unassessed Bunjar or waste.		Total.		One-fourth of the full assessment.		
		Extent in Acres.	Cist Rs.	Extent.	Sist.			For cultivated.	For unassessed waste.	Total.
1	Berhampur	1,000 30 15 8	1,265 6 2	3,957 14 8 0	3,959 4 11	4,958 5 7 3	5,224 11 1	316 5 6	989 13 2	1,306 2 8
2	Gumsur	...	...	8 26 0 0	8 9 6	8 26 0 0	8 9 6	...	2 2 2	2 2 2
3	Chicacole	1,415 33 10 3	2,496 10 0	3,981 4 4 0	4,464 11 7	5,396 37 14 3	6,961 5 7	634 2 8	1,116 2 11	1,740 5 7
	Total...	2,416 24 10 2	3,762 0 2	7,947 4 12 0	8,432 10 0	10,863 29 5 2	12,194 10 2	940 8 2	2,108 2 3	3,048 10 5

CHITTOOR, 28th July 1864.

(Signed) G. S. FORBES, Collector.

From G. A. BALLARD, Esq., Collector of Malabar, dated Calicut, 5th August 1864, No. 190.

1. With reference to Board's Circular noted and their Official Memorandum, dated 27th November 1863, I have the honor to state that as reported in my letter of the 10th August 1863, there has been no marked increase of disease among cattle in this District in the last five or six years. On the contrary the number of cattle is on the increase.

2. On receipt of the Board's Circular I called for a statement of the ordinary diseases prevailing with their symptoms and common remedies, as ascertained from the Ryots, from the Tahsildars.

3. I have received sundry reports; some very lengthy; but in general the descriptions of the symptoms and treatment are too vague to be of any practical use, and I shall not trouble the Board with them unless desired to do so.

Ed. J. Wright

Enclosed a letter ... to the
 Secy to the Ohio River to the
 Secy to Govt. and dated 5th
 January 1865 No 48.

Rev. 69/10

File of replies reys
the growth of firewood
& collecting of agric.
statistics.

Box 2 - May/65 S 896.
1022825.

Rev D. S. L.

63

Proceedings of the Madras Government
No. 896
Suffered date 22 May/65

Read the following
Pro. of the Bd. of Rev.

John

(Here enter 6th Jan^y / 65 M⁴⁸)

1. ^{above recorded} Their letter, re the
Board's reply to 4 Q. 6.

November 1863 Rev. Dep.

No 1994 on the subjects of

encouraging the growth

of Firewood on Waste

lands, and collecting

Agricultural Statistics.

With their better the Poore

also forward the replies.

of the collectors whom

they consulted on these

questions.

2. As regards the

Growth

growth of Serewood, the
 Topo rules passed in
 1848 allow Waste Land
 to be taken up for this
 purpose, free of assess-
 ment for 20 years, and
 during this period the
 holder is allowed also
 to cultivate the spaces
 between the trees, free
 of tax. At the end of
 the 20 years, the fixed
 assessment of the land
 is charged. Almost all
 the officers, by the Board
 consider that these rules
 hold out as much en-
 couragement as can be
 legitimately offered by
 Government. They have produced a result
 which is very satisfactory.
 Mr. Wedderburn
 the late acting collector
 of Bellary however proposes

that in the Ceded Districts
 by grant of land
 are lots of Waste land,
 free of tax for ever, for
 planting purposes.
 Mr. Morris, the late
 collector of South Canara
 suggests that the "Pau-
 sany" system of that
 District might with
 advantage be extended
 to some other Districts.
 According to this system
 each ryot is allowed
 the usufruct of the un-
 cultivated land to the
 distance of one hundred
 yards from the bound-
 aries of his cultivated
 land. being restrained
 from cultivating it
 and from felling the
 more valuable trees with-
 out payment

Handwritten signature or initials.

Handwritten notes and signatures at the bottom of the page.

payment.

5. The Director of Revenue Settlement.

Mr P.C. Master, proposes that where waste lands are not available, as is frequently the case in the Delta Villages of the Godavery, a

remission of half the assessment should be allowed on a limited extent of each ryot's holding to be devoted to planting purposes.

6. Mr Bannister, the late Acting Collector of Madras, recommends the formation by Govt. of two large plantations of Casuarinas on the sandy tracts North and South of Madras.

I don't agree to this but in some cases a piece of land might be allotted in each village free or partially free of assessment for a village who is to be used for planting purposes.

Let Govt. then limit the liability for planting.

I don't think this proposal is very good. It will be a waste of money.

The Board of Revenue approve of the principle of the Casuarina plantation system and deem it deserving of consideration whether proportionate allotments out of the waste, tax free or long or uncultivated, might not be attached to every Ryot's holding in the country for the purpose of encouraging the growth of fuel and increasing the supply of vegetable manure, while the plots when enclosed might often, with advantage, be used as small grazing paddocks. They would allow any trees to be planted in these plots except Cocanuts, Betel palms and plantains.

The Board are also

also disposed to remove
much that the limitation
of the free-timber of the
lands, to 20 years be
removed, as they believe
that it has effected
applications for waste
lands.

9. The importance
of affording the people
every reasonable and
legitimate encouragement
to plant trees and grow
such cannot be ques-
tioned. But the first
step is to consider what
causes ^{now} prevent ^{the} people
from planting freely.

10. The first cause is
undoubtedly want of
capital. As a general
rule several years must
elapse before the crop
can repay any return
for his outlay, and mean-
while he is incurring
expenses for land, and

protecting his plantation.
The same capital devoted
to the growth of ^{to} grain, cotton
or indigo brings in
more immediate and
a larger return.

11. Another cause is the
physical inevitability
of certain districts for
the growth of trees. In
Bellary for instance for
~~many years~~ ^{many years} ~~the Government~~
~~large sums of money~~
~~planted~~ the Government
in 1825 commenced planting
trees and a yearly allow-
ance was granted for the
purpose. The result of 28
years' operations was the
rearing of 197,913 trees at
an aggregate cost exclusive
of interest of Rs. 19,500. the
annual return being

Rupar

Pieces 1,908 or less than 1
per cent. It is not sur-
prising therefore that
planting is not a favorite
speculation in Bellary.

12 But the cause which
operates most generally
throughout the Presidency
to deter the people
from planting especially
for fuel is that men-
tioned by the collector
of Bellary viz the exist-
ence of tracts of jungle
whence firewood and
common timber for ordinary
purposes can be procured
more cheaply than
the ryot can grow it.

The

13 The Kumby system
of Cauara is as the
Board point out favored
by the climate, physical
configuration and land
tenure of the district. The
extension of the principle to
other districts differing in
all these respects is of more
than questionable expedi-
ency. The last cent-roll
shows that there are now
2,125,000 ryotwary holdings
in the Presidency and it is
obvious that the attaching
to each of these holdings
a proportionate allotment
of waste, to be held tax free
so long as uncultivated or
is practically out of the
question. Moreover 12,00,000
of these holdings are assess-
ed at less than 10 Rs. per
annum, so that in the case
of one half of the ryots
retates the allotment for
firewood would be an
insignificant

to be
included
81

to be
included
81

insignificant plot. In many villages there is not a sufficiency of waste to admit of such allotments being made. - and even in Cawara itself a large area, owing to the spread of cultivation, annually increasing numbers of ryots have no Kummaly land. - The growth of Limbs and Firewood is governed by the same laws as the culture of other products - it must be profitable, or capital will not be devoted to it. - consequently no bonus that the Govt can hold out - short of a paying price will have any effect in attracting capital to it. - It cannot be alleged that the assessment of such land as is likely to be devoted to Limbs and firewood is too heavy - large tracts in every district are assessed at

at a few pence per acre and every where, grants of waste free of assessment for 20^{or} years with the privilege of cultivating the spaces between the trees can be had for the mere asking. - The mere charge of assessment evidently does not retard or nor will its remission encourage planting. - In some localities the price of firewood has risen sufficiently to

to be remunerative and
as the immediate con-
sequence of planting
has been resorted to
largely. - In the neigh-
bourhood of Madras,
until quite recently, it
scarcely an acre of
land was taken up
for planting under the
rules - no change has
been made in those rules
but the price of firewood
has risen, within the last
2 or 3 years upwards of 2000 acres
have been taken up for planting - &
application

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applications - con-
tinue to be made rapidly
for more land. In many
of these cases too, the
planter pays a consi-
derable sum to buy
out the mirassidar.
The same result will
follow elsewhere, where-
ever the price of fuel
becomes sufficiently re-
munerative - and nothing
short of this - a perma-
nent price - will have
the desired effect.

Moreover, it is obvi-
ously inexpedient that the
Govt. should by any
such rule as the Board
propose, require several
millions acres of land to
be kept waste in perpe-
tuity. The great rise in
prices of late years
has rendered the pre-
sent assessment mo-
derate - and the re-
vised

settlements are framed on
very liberal principles -
it would therefore be a
grave error for the Govt.
to fetter the ryot in the
use he makes of his
land or to depart from
the rule - dictated by
policy as well as past
experience - of requiring
the ryot to pay the
full assessment on all
the land he chooses to
appropriate. The assess-
ment is moderate enough
to admit of this rule
being carried out and if
the system of offering
a bonus for special pro-
ducts is to be resorted
to, there is no reason
why it should be re-
stricted to fuel - there
are other necessities
of life for the special
fostering of which
claims may be advanced

with

W.D. 1861
JP

70
with equal force and
the ultimate result ^{would} be - what the agricul-
tural community have
but lately been freed
from - an assessment
varying with each pro-
duct - necessitating rep-
resentations, intimidations
and interference by
subordinate officials
and opening a way for
much fraud and cor-
ruption. ^{The Govt. are} ~~of opinion~~ ^{that} the Board
have not made suit-
any case for extending
the liberal encouragement
already afforded by
the Cope rules; While
the particular measure
^{they} recommend is at-
tended with very serious
objections and holds
out but slender hope
of more than a large
area of waste kept
in

See also the
JP
The Board
of Revenue
are of opinion
that the Board
have not made
suitable case
for extending
the liberal
encouragement
already afforded
by the Cope
rules; While
the particular
measure they
recommend is
attended with
very serious
objections and
holds out but
slender hope
of more than
a large area
of waste kept
in

in an unproductive condition.

15. ~~It appears to me that~~

~~the Govt.~~ cannot now do more, than is proposed in M.B. the

Governor's Minute of 1st Oct. 55

(paras 11-12) viz

to form Zopes in each village, and establish nurseries at suitable places. The

Board state that they have issued orders to this effect, and as means

are available from the

Forest Conservancy

fund, these orders

should be steadily

and vigorously carried

out. - The village officers

16. In Vellore the Govt. have recently

sanctioned an experimental

plantation

+ should be held re-

ponsible for the

main fundance & ex-

penditure. How-

ever rules should

be prescribed for

their guidance.

yes why

should be held responsible

for the maintenance & extension

of these Zopes, and rules should

be prescribed for their guid-

ance.

17. The Govt. further think it desirable that, as an ex-
periment, portions of low
hills, such as those in the
neighbourhood of Vellore
and Arcot, which have
become denuded of trees,
shd. be fenced in, with
the view of ascertaining
whether, if thus protected
from cattle, they might

of firewood, in order
to prove to the people
that in the neighbour-
hood of large towns
distant from prin-
ciples, such a specula-
tion is likely to pay
well. ~~Similar exper-~~
~~iment will be re-~~
~~peated elsewhere -~~
~~at other stations,~~
~~where the Bd. and~~
~~the Bd. have reason~~
~~to believe that the~~
~~measure would be suc-~~
~~cessful.~~

not in a few years, be again
transmuted into Forest. The
Bd. will communicate with the
Collector of Arcot on this point.

if trees should be secured
with the view of ascertaining
whether, if thus protected from
cattle, they might be a suc-
cessful experiment. How-
ever, the Bd. should be held
responsible for the main-
tenance & extension of these
Zopes, and rules should be
prescribed for their guid-
ance.

18. The attention of
the Railway Compa-
ny, who are large con-
sumers of fuel -
might also be directed
to the necessity of
steps
their taking measure
for the growth of fire-
wood to meet their
future requirements.
The

The Conservator of Forests
has already been instructed
to adopt measures
for replanting denuded
portions of the Govt.
Forests, but it is quite
clear that the Govt.
cannot take upon
itself the obligation
of growing firewood
for the people. All
it can safely do is
to husband exist-
ing resources and
not discourage pri-
vate enterprise by
selling below a
fair price. There
is much of truth
in what ^{the Govt. of Nellore} Mr. Dykes
says in his letter on this
but the remedy he
proposes is out of
the question.

By

By the immemorial
usage of the country, the
ryots are entitled to use
for agricultural imple-
ments and fuel and
fallen leaves for manure
without charge. A large
number of trees are re-
served and cannot be
cut by the ryots, even for
the purposes above men-
tioned without permis-
sion and payment while
all wood cut for sale
is taxed. Beyond this
the Govt. cannot go. No
doubt it is difficult
to prevent speculation
but this must be at-
tempted by vigilance
and by rigorously en-
forcing the law, not by
abrogating the rights
of the people.
The measures pro-
posed by Mr. Dykes
would involve the invasion
of

of prescriptive rights
highly prized by the
people: and the main-
tenance of an army
of foresters - the Govt
have not the means of
alleviating by public
works, the distress which
he admits that his mea-
sures would entail at
first - nor can they adopt
the continental system
of forestry which ends
in making the Govt
the sole grower of wood.
The principles of the country -
even supposing the pre-
sent system of conser-
vation to be less effective
than it cannot be sud-
denly destroyed - the
scarcity of fuel will
be gradual, its price
will rise concurrently
and private planta-
tions will indubitably
be formed.

formed as the price
becomes remunerative -
19 As intimately con-
nected with the subjects
discussed in His Excell.
dency the Governor's
Minute, the Board also
forwarded a file of letters
from the collectors on
the great diminution in
the Agricultural stock
of the Presidency shown
by the last Quinquen-
nial returns. Accord-
ing to these statements
the number of Telling
Cattle had increased
by $6\frac{1}{2}$ per cent, while
that of Cows and She-
Buffaloes had de-
creased by 13 and 18
per cent respectively. It
does not appear that the
Board caused the accuracy
of the returns to be tested
in each District. It is
obvious that the results
above mentioned may

may be owing to error, in the census itself, or in that of 1856, with which the comparison is made.

The accuracy of the return is impugned by some of the collectors & primarily.

Since, it is unlikely that while cultivation has

enormously extended, & the number of tilling cattle has increased,

the number of Cows and She-Buffaloes should have decreased. Epidemic

disease among cattle has not been more pre-

valent of late years throughout the Presidency than in former years,

nor is there reason to believe that cows & she

Buffaloes are more subject to such diseases than tilling cattle.

The collector's reports contain lists of the cattle diseases prevailing in each district with an

account of their symptoms and the remedies in use. These might

with

The return is little by comparison with the return of 1856.

The return is little by comparison with the return of 1856. I don't think the number of cattle is much more - It

(To come in at a further on)

23 The prevalence of any severe Epidemic should be immediately reported to the Board in order

that they may, if possible, depute an experienced

Veterinary Surgeon to investigate its cause, as has been the case in

Kurnool.

74 with advantage, he is furnished separately and circulated. though they cannot of course be compared with such reports as those recently prepared by Mr. Thacker on the epidemic which lately prevailed in Kurnool.

20 The Board do not submit any recommendation on the collector's report.

21 The mortality among cattle is generally attributed to want of proper pasturage.

In some localities, as the delta of the Godavari, there is no common waste, all the land being cultivated with cereals &c.

These localities, however, are comparatively few.

As a general rule there is ample waste, and it is not deficiency of grazing ground but want of good

grass

Reported to Cincy 17 June/55
N-42 of 1st Mic

Revenue 1865 Sept.
Prorog. Govt. for May

1896.

Proc. of the Madras Govt.
2^d May/65.

Pres of the Board of Rec
of 23 Aug 1866 12844

Pro- of the Board of R.
29 Aug / 66 CA 2922

22-23.

Reviewing the Boards
Bearing the Subject of Growth
of Sherwood Co in the
Districts.

1944