

BLUE BOOK

ON

AGRICULTURAL AND INDUSTRIAL DEVELOPMENT

IN

COCHIN

1910

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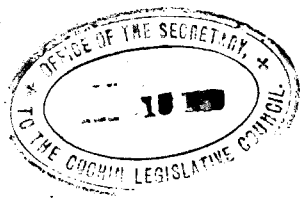
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PROCEEDINGS OF THE DIWAN OF COCHIN

REVENUE DEPARTMENT.

(Agriculture).

Order dated 5th October 1907, Ref. on C No. 79/83.

According to the Census Report of 1901, about 50.77 per cent of the total population of the State is maintained by agriculture. The percentage is 54.7 in the rural tracts. Land holders and tenants form about 25%, agricultural labourers 22% and growers of special products 3%. All lands excepting the Forest tracts are divided in equal proportion between the State and private land-lords, but there is little difference between the tenants of the private land-lords and those of the State.

The improvement of agriculture is therefore a subject in which both the Sirkar and private land-lords are equally interested. Within the recent few years there has been a great advance made in agricultural enterprise and in the diffusion of agricultural knowledge throughout the world. The Government of India have recently formulated an elaborate policy of developing agriculture by establishing scientific agricultural institutes and opening demonstration and experimental farms in each tract of allied agricultural conditions. In foreign countries such as the United States, Japan &c., the policy of initiating agricultural activities under proper system of scientific investigation and experiments through official agency has already been recognised as one of the important duties of the Government. In India itself in every province there is an agricultural department employed for collection of agricultural information and publication of bulletins for the demonstration and experiment of new agricultural methods and products and for the diffusion of knowledge among the ryots through official publications. Latterly in Madras the formation of voluntary agricultural associations has been a marked characteristic of the signs of the times in regard to the general awakening amongst the people of the importance of agriculture. It is also to be noted that the Governments of many Native States in India are alive to the importance of agricultural improvements and have special agricultural departments to foster the growth of agricultural knowledge and to stimulate agricultural enterprise by the opening of demonstration farms. Taking the example of Travancore, the neighbouring State, the conditions of which are very much similar to that of Cochin, it is observed that the movements for agricultural improvement in that State were organised more than 20 years ago. During Mr. Grigg's time the agricultural department was first established and the scheme was then described by the Darbar in the following words:—

"The measure which was finally adopted included the establishment of a farm near Trivandrum for purposes of demonstration and experiment and the employment of a competent Superintendent: the exhibition on the farm of the most approved seeds and implements employed in agriculture: the demonstration of these to ryots and others interested in agriculture, and the introduction of crops and products new to the country. It is intended to work the farm on these lines for two years, and should its success within that time, both financially and as a means of demonstration, be sufficient to warrant its continuance, it is further intended to use it as a school of instruction in agriculture." In conclusion, the Darbar observed that "the country possesses remarkable facilities for the development of agriculture and if with these facilities and his scientific knowledge the Superintendent succeeds in working the soil so as to show that a departure from the primitive method of culture is of decided benefit and within the reach of the average farmer, the scheme now introduced cannot fail to popularize itself and lead to substantial progress."

A demonstration farm was accordingly opened in 1894. It is enough to note that the existence of such movements elsewhere and even so close to us as in the Travancore State indicates a clear necessity for initiating a similar movement in Cochin. The movement should start on two parallel lines, one under official initiative and guidance, and the other under a voluntary and independent organization among the land owners. In an agricultural State like Cochin, there should be an organized department to

collect information annually as regards cultivation under various crops, irrigation, condition of cattle, condition of the peasantry and such other cognate matters. It is impossible to deny that agriculture has been stationary in these parts for centuries and will remain so for many years to come, unless the State take the initiative, create some interest among the ryots, and afford them facilities for gathering information in regard to new and improved implements, methods of cultivation, new manures and different varieties of agricultural products, and improvement of the general condition of agricultural cattle. The country being blessed with innumerable natural facilities the cultivator seems to have little or no enterprise and is inclined to leave everything to nature. If he is to keep abreast of the people of his class in the surrounding parts of the country he is bound to introduce improvements and adopt the new methods gradually. On the other hand the larger number of cultivating land owners who are not farmers or cultivators of the soil but merely rent receivers and who supply neither capital nor labour but indulge in an easy-going mode of existence in towns should be awakened to a sense of their responsibilities in regard to their position as holders of land. The duty of the Sirkar seems to be clear as regards this important matter especially having regard to the fact that the recent settlement has increased the State demand on the lands in many parts by over 50%. Whatever justification there may be for the increase of assessment from the point of view of Settlement purposes, the ryots as a class deserve the encouragement and support of Government in the improvement of the principle vocation of the bulk of the population, viz., agriculture. It is however doubtful if any progress will be made unless the Government show a desire to help the agriculturists. In regard to the duty of the Government in this direction it will be sufficient if a small agricultural department is opened and a demonstration and experimental farm started at some central spot or one in each taluk if possible, with a view to introduce different kinds of agricultural implements foreign to the State, new varieties of manure and more valuable agricultural products and to demonstrate improved methods of agricultural operations.

It is therefore notified for the information of His Highness' subjects throughout the State that from the 1st Dhanu next an agricultural department will be constituted in charge of a trained agricultural Inspector and Superintendent of Farm Operations, on a salary of Rs. 80 rising to Rs. 100. His duty will be to collect important and useful agricultural information published in agricultural Magazines, bulletins &c. render them into colloquial Malayalam language so that it may be published weekly in the village sheets of the Government Gazette which will be distributed free of cost to the land holders from each Proverthy Outcherry. He will be in charge of the farm operations and render service whenever necessary to agricultural associations by way of advice and instructions in regard to agricultural improvements, new implements, manures, irrigation appliances and so on. He will be expected to study the existing methods of cultivation and the climatic conditions of the different taluks and investigate into the question of improving paddy cultivation in particular and the introduction of valuable dry crops for parambas or dry lands.

At each Taluk Head Quarters a depot will be opened from the above date in charge of the Taluk Tahsildar in which a set of each kind of agricultural implements of the improved pattern will be available for exhibition. A sufficient quantity of seed for sowing purposes of different varieties of crop such as Banku paddy, ground nut, indigo, fodder crops &c, will also be kept in stock for sale to those who wish to make experiments.

Agricultural loan will be advanced to those land holders who wish to invest in new implements or machinery for cultivation or irrigation purposes such as oil engine &c, on such terms as the Diwan may be pleased to fix and notify from time to time in the Government Gazette.

A Veterinary Dispensary will be opened at Trichur in charge of a Veterinary Hospital Assistant and be equipped with all the necessaries for the practice of veterinary science. The Veterinary Assistant will be deputed to any taluk or village where any cattle disease is prevalent and do the needful to prevent its spread. The Government will encourage the formation of voluntary agricultural associations in each Taluk amongst land holders and co-operative credit societies in important centres of the State.

As soon as a suitable block of land is secured an experimental and demonstration farm will be opened. An annual agricultural show will be held in the State in which Government will award prizes for the best agricultural live stock and for the best agricultural products. Details will appear in the Government Gazette in due course.

To carry out all the above schemes necessary provision will be made in the revised estimate of the budget for the current Malabar year 1083.

The Diwan trusts that the leading land holders will form themselves into an independent working association with a view to create among the ryots an intelligent interest in the matter of agricultural improvements. They may form a medium of communication between Government and the agriculturists as a class in all matters connected with agriculture.

(True extract)

T. V. KASTURI RANGA IYER.

Secretary to the Diwan.

To

The Diwan Feishkar.
All Tahsildars and Deputy Tahsildars.
All departments of the Huzur Office.
The Sarvadhikariakar (with covering letter)
The Chief Engineer.
The Conservator of Forests
The Gazette.

ADDRESS DELIVERED BY THE DIWAN AT THE INAUGURAL MEETING OF THE
AGRICULTURAL ASSOCIATION.

Your Highness,

With your Highness' permission I will address a few words this afternoon to the leading land holders of Your Highness' State who have gathered here today to celebrate the inauguration of an agricultural association in Cochin. Gentlemen, in my Proceedings of October last in which I formulated certain proposals for the constitution of a small agricultural department in this State, I expressed the hope that the leading land holders may form themselves into an independent working association with a view to create among the ryots an intelligent interest in the matter of agricultural improvements. I also indicated that such an association should form a medium of communication between the Government and the agriculturists as a class. It therefore gives me great pleasure to find that the land holders have joined together to carry out the suggestion. Gentlemen, as you may be aware this is not the first occasion on which I am addressing agriculturists who have assembled together with the object of combining in a business-like manner to foster agriculture and promote agricultural enterprise. If therefore I repeat any of the observations which I may have made on previous occasions of a similar nature I hope you will bear with me with patience and indulgence. It is needless for me to impress on you, after what His Highness' Government have already expressed on the subject, the keen interest that they feel in regard to the improvement of agriculture and the condition of the agricultural classes of the country. His Highness' presence here this afternoon is a clear manifestation of his personal sympathy with your cause. I am thankful that I have now an opportunity to express to you in person our deep sympathy with you and the object with which you have met this afternoon, *viz.*, giving a start to the first agricultural association in Cochin. I consider that I could not do better than to explain to you the difficulties that lie in your path and suggest to you a few practical solutions of these difficulties in the light of the little experience that I have been able to gain of your country and your local conditions, by a few observations that may give you the knowledge of the existence of those difficulties and the necessary courage and confidence to face them with success. On the occasion of the inaugural meeting of the Kumbhakonam Agricultural Association in 1905, I addressed the land holders in the following terms:—

"I do not wish to trouble you today with the theory of agricultural improvements, the value of different kinds of manure, on the intensive cultivation and such other scientific topic. The time has past when agriculture was merely a subject for academic discussion. You can see that, whenever it is discussed, the discussion has taken a practical turn. I would therefore advise you to keep the practical side and use less words and show more work. You may urge that associations are useless, individual ryots may introduce improvements as they like, it is unlikely that they will make any sacrifice and take advantage of the experience gained in agricultural farms conducted on a big scale. You cannot, however, deny that individual effort in respect of agricultural improvements can only be spasmodic and desultory and often abortive, owing to want of experience, capital and concentration. It is therefore necessary to promote a feeling of co-operation and united action so that, with diffusion of knowledge, the experience of a few can be readily accepted by the rest of the agricultural population. This is, I presume the main object of these associations. At the present day, the various methods of improved cultivation, the substitution of more valuable crops, the use of different kinds of manure, the improvements of the methods of irrigation and various other allied subjects are being discussed from a scientific as well as practical stand point. The ordinary uneducated man in the street must leave the scientific discussions to his more intelligent fellow creatures but must be ready to follow in their wake when it is demonstrated that any change that is advocated is for the better. It is for the intelligent Mirasadars to acquire more knowledge, take advantage of the information embodied in the many agricultural bulletins and pamphlets that are published, supplement them by their own ideas based on actual experience and help in the formation of small libraries, at convenient centres. All valuable information that may be of practical use to the ryots should be translated and circulated to the literate, and in the case of illiterate some means of imparting oral instructions must be adopted. There must be progress in agricultural knowledge, skill and invention. To promote such progress must be the aim of agricultural associations. The average ryot of this country is ignorant and conservative. The standard of his intelligence is low. He needs demonstrations and positive proof and not mere problematic assertions. Very little can be expected of him. The rich Mirasadars have a serious responsibility in the matter and, if they wish those below them to follow their lead, they must evince a genuine interest and become agricultural experts in theory and practice."

I ask your permission to place these observations before you for your consideration.

It is needless for me now to impress on you the importance of these associations. Sufficient experience have already been gained in other parts of this vast continent to justify this assertion that without the co-operation of the land holders in addition to Government aid and individual effort and enterprise there is no hope of any agricultural prosperity in the country. Sometime ago I read an account of progress of agriculture in Travancore and from that account I gathered that in spite of every effort being made by the Government of the country to foster agriculture by various means in their power, very little practical result has been achieved owing chiefly as Mr. (now Sir) Nicholson rightly observed in his review of the Travancore Administration Report for 1873, to the fact that if serious agricultural work is to be done there must be a system and organization. I imagine that by the expressions 'system' and 'organization' Sir Frederick Nicholson, who has always been a keen observer and a student of agriculture in this country, meant a system under official guidance and direction based on expert knowledge and an organization under independent and non-official combination of the people which takes advantage of the facilities afforded by the State and which forms the medium as it were through which the influence of the State works itself down to the individual land holders and agriculturists as a class in the villages. In his most interesting note on agriculture in Japan, Sir Frederick Nicholson has remarked that agricultural associations in Japan were the most remarkable evidences and were becoming more powerful instruments of agricultural progress in the country. To quote his own words:—

"It is impossible for a Government to influence individually millions of petty peasants: they are individually too isolated, too suspicious, too shy to accept new ideas, to undertake experiments in new methods: similarly they are too poor, too powerless to produce the best products, to get the better of the middleman and the best of the markets. There must be some organisation which enables Government to act upon a body of men at once and to serve as intermediary between the Government and the individual: an organisation which can be advised, educated, reasoned with, and listened to, which will discuss together the suggestions of authority, and will through its better educated or bolder members, provide intelligence to absorb new ideas, find courage and funds to attempt new methods, and combine both for the improvement of products and for the better sale of the same. Similar views actuated not only the Government but the thinkers of Japan, and the result is that practically the whole agricultural population of Japan is united in various forms of Association: probably there is no country in the world, not even Germany where associations have taken such hold and though dating only from the last few years, are beginning to exert such influence. The object of the Government is gradually to shift the work of agricultural development from the shoulders of Government to those of the people themselves, recognising that it is not that which is done for the people but that which is done by the people that is truly beneficial, and that real progress can come, only from within: this shifting of work is impossible unless there are popular bodies to take on the work. Not only so, but there is much that even the most highly organized Government, short of that in an imaginary socialist Utopia, cannot possibly do or that it would be well for them to do if they could, for fear of obliterating self-help as a national virtue: Government can experiment and point the better way and educate the people into a readiness to accept that better way, but it is only the people themselves who can work out the several improvements. It is here that the Associations step in: their experts and the more intelligent of the members receive and assimilate the new knowledge and not only work this knowledge into local fact but influence the more conservative or ignorant members into following their lead."

I do not think it is possible for me to express in more forcible language the true objects of such associations and their indispensable necessity. I would only tax your patience if I quoted instances of other countries such as Belgium, Germany, Italy, and Holland in which there is co-operation among the farmers and cultivators out of which gigantic movements have sprung up conferring lasting benefits on the agricultural and industrial population of those countries in the shape of increased return from land, improvement in the material condition of the tilling classes and a general awakening in the direction of individual and economical progress. From what has been done already in other parts you may probably gain an idea as to the advantages that may be derived by such combination as you have now resolved upon, but it may perhaps help you if I indicate briefly the direction in which you should concentrate your energies thereby helping your own interests and promoting the prosperity of the State to which you belong. I have already indicated the lines in which the activities of the agricultural department are to be directed and as this is a matter in which your own private interests individually and collectively are vitally concerned you will know how best to utilise the facilities His Highness' Government have now resolved to offer you in the matter of improving your agriculture. Amongst yourself, however, there are various other matters in which Government cannot practically intervene but in which your concentrated efforts may produce results which will be of immense boon to you. Whereas the State efforts to foster agriculture can at most assume an academic aspect, more practical work can be done by voluntary associations formed by the land holders themselves. The State by constituting an agricultural department can collect particulars of information regarding the area cultivated, fallow and waste, area under irrigation, the area under each crop, number of live-stock, ploughs &c., incidence of the land revenue on area and population, transfer of lands by proprietors and tenants, estimates of the yield of important crops and so on. It may also constitute an agency through which knowledge

in regard to agricultural improvements, appliances and methods can be imparted to the ryots, it may establish demonstration and experimental stations at certain typical centres under the guidance of agricultural experts both in theory and practice of the science of agriculture. It may advance agricultural loans for being devoted to large agricultural schemes which are beyond the resources of individual land holders. It may suggest new agricultural implements and new manures and it may also adopt various approved methods of agriculture with a view to show improved results. It may establish institutions for the practice of Veterinary science. In spite of all these, however, Government organization best equipped and intended to diffuse knowledge and awaken interest among agriculturists of the country, can but reach only a few unless and until the agriculturists themselves combine, work together under some organisation and become an established medium to receive Government influence and Government assistance for and on behalf of the agricultural population in the villages who have not got the means or the opportunity to come in contact with new ideas and new influences. I told the Tanjore Mirasadars that wealthy and influential as they were there was a great aloofness between themselves and the agricultural labourers owing to the fact that they were accustomed to lease out lands to the middle men, thereby allowing the actual work of agriculture which requires a most intelligent discrimination to those who have no interest in the land but who have only one object, viz, to get as much out of the cultivating labourers as possible. I pointed out that owing to the want of sympathy between the land holders and the labourers agriculture had run down into a neglected condition and suggested that the land holders who are most of them educated men, should manage their own property and make experiments in their own holdings. Sir Frederick Nicholson in his recent book on Japan agriculture describes how in Japan the lead is taken by the wealthy land holders and how their less fortunate brethren follow their example. This is therefore the first obstacle that lies in your way and when once this is overcome you will enter into a combination so full of sympathy and enthusiasm that will benefit not only yourself but also your tenant farmers on whose prosperity depends your own. Exclusiveness of the land lord and the abject poverty and ignorance of the tillers of the soil appear to me to be the great stumbling blocks in the improvement of agriculture in the State. Once you have overcome them and learnt to co-operate as well as to exercise individual effort there is no reason why your association should not be one of the most successful of its kind in Southern India. Whatever the Government may do in the way of diffusing agricultural knowledge through bulletins, proceedings, pamphlets and through itinerant course of lectures by agricultural experts in the villages and even by the institution of agricultural instruction in the primary schools of the State, I doubt if any substantial progress in practical agricultural knowledge will be made unless you take upon yourself the duty of educating your people by your own example to remove from their minds their conservatism by convincing them of the efficiency of the new methods which you yourself feel convinced must be introduced in course of time. You must encourage new ventures and introduce new methods. Eleven years ago when your present Hon: Secretary prepared a note on Cochin Agriculture he made the observation that 'of all the means of improving agriculture that by force of example is by far the best and the most likely to influence the people at large'. When the cultivator is told by practical demonstration that his present methods are unsuccessful or do not produce the best results owing to such and such causes and that he would achieve better results if he attempted certain remedies or introduced certain changes in the methods of cultivation, ploughing, irrigation or manure as the case may be and when he is told at the same time that improved results have been obtained by some private land lord in his own holding working on these lines, he will be the first to adopt them in his own holding. There is a lurking suspicion in the minds of the ordinary ryots against the introduction of improved methods of agriculture that is practised in Government farms under expert management and the suspicion is due to the fact that individual land holders cannot command the same capital, labour and scientific treatment of crops and the results achieved in the farms cannot be a safe criterion as to the results obtainable in ordinary cultivation under ordinary conditions. There is a good deal of reason in the suspicion above mentioned and it can only be overcome by examples of demonstration by the members of your associations united in a common policy independent of the Government organisation.

There are various matters on which your attention may be assiduously bestowed and as you are already, by past experience, aware of the existing defects in Cochin agriculture, it is needless for me to enter into any details. Your Hon: Secretary who has carefully studied the question has given you his views in an exhaustive paper and I would advise you to work together and find out the means to remove the defects which he has so ably pointed out and which now stands in the way of real agricultural progress. I can assure you that the Government will help you in every possible way and it rests in yourselves

to take advantage of the opportunities that are put before you. You can in the first place try and improve your local agriculture before introducing any new crops or altogether foreign systems of agricultural practice. There is much that strikes a casual observer as very defective in the present system of paddy cultivation. In regard to this I would invite your attention to the very interesting note of Mr. Francis, the Collector of Malabar on the subject. In the note he says.--

"Certain defects in the present systems which are more ruled by old custom than in almost any part of the Presidency, are well known, and the Agricultural Associations might set to work at once to try and cure them. For instance, in Palghat Taluk great difficulty is often found in raising a second crop for want of water, and what is required there for the second crop is a quick growing paddy which does not mind scarcity of water. Banku paddy would probably succeed well. Again some single crop land has more than enough water for one crop but not quite enough for two crops and on this might be grown some of the six months varieties from the Wynad, which produce very heavy crops. Then weeding cannot be done properly in fields sown broadcast, but if the grain were sown carefully in the furrows made by the plough, as is already done in many of the amsons weeding would be quite easy. Again sowing is done too thickly in the seed beds, and the seed beds are not sufficiently manured, so that the seedlings are weak. Transplanting is also too thick as many as 10 or 15 seedlings being put down together in one spot so that more than half of them never grow at all. Green manuring is done without science, any kind of jungle leaves being used instead of those which are best as manures. The seed is very much mixed, every field containing three or four kinds instead of only one, which lowers the prices obtained for the crop and causes other difficulties. The cattle, again, have plenty of food during the monsoon but almost no grazing in the dry months, and it may be possible to grow some fodder for their use at that period."

Your dry cultivation is also neglected and susceptible of vast improvement. The attention bestowed on nilons in Cochin is disproportionately greater than that bestowed on parambas except those which are utilised as gardens. In this connection I would invite your attention to the peculiar characteristics of Japan agriculture which are given by Sir F. Nicholson.

"Japanese farming is very much more careful and more to be compared with scientific horticulture. Japanese field cultivation is very remarkable: it utilizes every accessible square foot of soil and tills that soil with the greatest thoroughness. The second characteristic is the thorough tillage of every foot of ground under cultivation: there is no slovenly cultivation, no carelessly worked areas: all seems on general level of excellence and is like one vast well worked garden. It is however the deep and constant tillage which so forcibly strikes a Madras observer since its methods contrast so strongly with the *perfunctory scratching of the ordinary field cultivation of the Presidency*."

Your irrigation methods also are very primitive. The reason for this is not far to seek. Wet lands are for the most part leased out and the actual cultivators who expect very little for their toil have no enterprise nor resources to keep up any methodical system of irrigation or invest capital. They leave everything to natural conditions which during certain parts of the year are sufficiently favourable for wet crop cultivation. They cannot however raise a second crop with any success every year and so far as dry cultivation is concerned I understand the system of well irrigation has developed but little in the State.

You have now a properly constituted irrigation department to help you with proper advice and Government is prepared to undertake works on behalf of the ryots in any particular locality who have only to combine and pay the necessary contribution. In the case of villages the irrigation and drainage systems of which are very defective, Government are making the necessary investigations. As you well know irrigation works on a large scale depend entirely on the question of finance. But an agricultural association like that of yours can do a good deal of useful works in bringing together ryots who have perhaps conflicting interests, in settling differences in villages by agreement and arbitration and by placing before Government any feasible scheme that should legitimately be carried out by the Sirkar or executed at the expense of private land holders.

I do not wish to tell you how important the subject of manure is to agriculture. You know better than I do how insufficient the present methods of manuring in Cochin are. I understand that human excreta and farm yard manure are hardly if ever used and the use of mineral fertilizers is also unknown to the bulk of agriculturists. Fish manure which has during the past 20 years so rapidly developed in Japan has a splendid future before it in Cochin, but how little it is utilised here! The capitalist is tempted to make a large investment by seizing the natural facilities and exploiting the natural resources of the sea and the backwaters, with a view to find profitable market for this valuable article in distant countries. Your association should carefully consider this aspect of the question and educate your cultivators to learn the value of fish manure. Your association could also educate the cultivator in regard to the suicidal policy of setting the forests on fire for obtaining the burnt residues of young forest growth with the advent of the first monsoon. The influence of the forest on the rainfall is I believe well known to most land holders in Cochin and gratified as Government must feel, at the concern of the land against any denudation or exploitation of the forest areas beyond proper limits the people regard with grave anxiety the unchecked habit of the cultivators of setting adjacent forests

on fire for manure purposes a habit to check which Government cannot enforce any efficacious prohibition. Your association should take up this important matter.

Gentlemen, you have in Cochin more perhaps than in any other parts of the Southern Peninsula of India such immense facilities to improve agriculture that one wonders why the progress is so little or in fact why you have remained stationary in spite of the increased population which is pressing heavily upon the land and in spite of the fact that the rents are going up and prices are on the increase. Extension of wet cultivation which only produces the staple food of the country is not possible except by encroaching upon forest areas and this you well know will be a policy suicidal to your true interests. I do not overlook the fact that much improvement is possible in the cultivation of dry lands but I refer now specially to niloms. Cochin is truly a garden of paddy lands which go into the very recesses sometimes of the jungle. There must be a sharp demarcation between cultivable land and forest land. The policy of allowing occupation in forest areas requires to be carefully revised. The forest settlement operations will soon commence and the Government hope that you will co-operate and give every assistance to our officers to preserve in fact all forest reserves. Strictly speaking, all private rights of course will be extinguished wherever there is no real hardship by the payment of proper compensation. You should encourage intensive cultivation and study carefully Japanese methods from which you can gain many a valuable lesson in improved agriculture. The position of the pattadars of Cochin under the Pandaravaka verumpattom tenure is no longer under the new settlement what it used to be, for he is a peasant proprietor like the Madras Presidency ryots and there is therefore now no reason why he should continue to be indifferent in improving his agriculture. He should however try and avoid minute sub-division of his holdings which I find is a common characteristic of Cochin. Here much wet land is wasted by banks and much inconvenience to cultivation is the result. Minute sub-division causes not only inconvenience to the cultivators but indirectly to the agriculturists of the neighbourhood also for rival interests are created and a homogeneous block is often subdivided into several fields each under a different owner. In this connection permit me to draw your attention to the importance of preserving your land and boundary marks. Although Government have constituted a department of Land Records, without your co-operation the work will be difficult. It is to your advantage to have all your boundary marks in tact. You thereby avoid disputes with your neighbours as well as disputes with Government. The drainage and irrigation canals close to your holdings are kept also in tact and cannot be encroached upon for the benefit of the few and to the disadvantage of the many. I have already referred to paddy cultivation. Coconut gardens have become most valuable now owing to the sudden development of the export trade of copra and I would invite your attention to the grave danger that threatens the coconut plantations viz the coconut palm disease. It behoves you to set to work to find out the remedy and to introduce altogether different method of cultivation if necessary of the coconut palm.

I have no doubt that when you have solved your existing difficulties and improved your local agriculture you will devote your attention to the introduction of new varieties of crop such as lemon grass, sugar cane, ground nut, rubber, jute, better sorts of paddy &c. I draw your particular attention to lemon grass and rubber for both of which Cochin presents special facilities which, if taken advantage of, may produce startling results. If you do not walk abreast in the march of time and show no enterprise in the organisation of labour and capital for the development of the resource of your country, perhaps capitalists from outside will in course of time do what should be your pride and your duty to accomplish. You have to pay particular attention to the improvement of your cattle and in this in spite of all that can be urged in your favour regarding the adverse conditions of the climate, I do not consider that the agriculturist is as careful of his cattle as his co-labourers in the East Coast. There is no fodder in the country for a greater portion of the year and you should devote your attention to the growing of fodder crops. The opening of veterinary dispensaries will give you ready assistance at times of need and Government will help as far as possible to prevent epidemic of cattle disease but much depends on your own exertions. The suggestions of your Hon. Secretary in regard to cattle are therefore deserving of your careful and earnest consideration. The agricultural department the Darbar has now constituted, expects the land holders to work in union and every representation that your association may make will I can assure you receive our careful consideration at all times. The department will be always ready to help you with expert advice and place before you latest information regarding agriculture, will have demonstration plots in certain typical centres and will it is hoped work out in co-operation with the educational department, some means by which rudimentary knowledge in practical agricultural and improved manual labour can be imparted in the rural parts to the sons of agriculturists. The department will also undertake the investi

gation of big schemes of improvement on behalf of land holders, e. g. improvement of kolé cultivation, in which I know so many of you are closely interested and will make recommendations if necessary to the Revenue department for the grant of loans in special cases to land holders to carry out any important work after such investigation. The department may take these and many other measures but no lasting benefit will be derived by the agriculturists unless they are alive to the necessity for combined activity and self help amongst themselves.

It is just as well that you should be warned against failure in your work and I therefore hope you will consider me a true friend when I point out the causes that have hindered the work of many associations of this nature:— (1) A disproportionate importance has been attached to constitutions and formalities and very little attention has been paid to practical work. (2) Indifference of most of the leading land holders has often caused lethargy and inaction. Their responsibilities are therefore very great. (3) Want of funds. Owing to a general indifference most of the associations are not able to collect the subscription from their members, which fall into heavy arrears, however small the subscription may be. The Association should enlist almost every land holder of the State who owns five acres and upwards and levy a small minimum subscription for membership leaving richer land holders to pay donations for special objects or schemes. Without funds your association will only exist on paper. (4) Want of practical sympathy between land holders and tenants. This is a crying evil in most parts of the country and the solution of the problem rests entirely with the land lords. No legislation can help in uniting the two interests harmoniously, but only voluntary effort which works to achieve a common prosperity. (5) Want of union amongst members. This union acts as an example to the land holders of the villages. Want of this union and co-operation has reduced the usefulness of many associations.

I think, gentlemen, I have already taxed your patience but I thank you for your patient hearing and hope that my remarks will not be altogether unavailing. I shall feel gratified if they help to some extent to promote the right sort of co-operation amongst you and to set in motion this important movement in the right direction. I shall look forward to you as the representatives of the agriculturists and land holders of the State who are the mainstay of the whole population and I hope that your association will be one of the most brilliant examples of its kind in the Southern Peninsula of India, be a source of special inspiration to all who are interested in the progress of agriculture in His Highness' dominion and be able to exercise a general educative influence towards promoting co-operative enterprise and activity in all matters affecting the common good of the State. I wish you all prosperity and good luck in all your endeavours.

PROCEEDINGS OF THE DIWAN OF COCHIN

REVENUE DEPARTMENT

(Agriculture).

Read again the Diwan's Proceedings dated 5th October 1907, Ref. on C. No. 79 of 83, re: the organisation in the State of a department of Agriculture.

Read also the subsequent correspondence ending with the Sarvadhikariakar's letter dated 4th December 1907, Dis No. 695, communicating His Highness' sanction for the appointment of Mr. K. Sankunny Nair, Superintendent of the home farm of the Parlakemedi Estate, as Superintendent of Agriculture in the State on a salary of Rs. 80 to Rs. 100, on probation for one year.

Order dated 2nd April 1908, Ref on C. No. 79 of 83.

The appointment of K. Sankunny Nair will take effect from the date on which he joins tudy.

2. The Superintendent of Agriculture will attend to the following items of work to start with:—

(i) He should study the existing methods of cultivation and the climatic conditions of the different Taluks in the State by making constant tours and investigating into the question of improving paddy cultivation in particular and the introduction of valuable dry crops for parambas or dry lands.

(ii) He will submit proposals for opening depots in the head quarters of all the Taluks for the exhibition of all kinds of agricultural implements of all pattern and for stocking for sale a sufficient quantity of seed of the improved crop, such as Banku paddy, Carolina paddy, Halki paddy, ground nut of the Mauritius Valley, sugar-cane, jute, &c.

(iii) The Superintendent may visit the Government agricultural depots in the Malabar District to ascertain the different varieties of implements and seeds stocked there at present and submit a list of seeds and implements which should be kept in the Taluk depots of the State.

(iv) The Superintendent will collect all important and useful agricultural information published in agricultural magazines, bulletins, &c., render them into colloquial Malayalam language and arrange to publish them weekly in the Village Sheet of the Government Gazette with the approval of the Secretary to the Diwan. He will also render service, whenever necessary, to agricultural associations by way of advice and instructions in regard to agricultural improvements, new implements, manures, irrigation appliances and so on.

3. The Superintendent will also be placed in direct charge of public parks, Hill Palace, Tullocks Gardens and Trichur Residency grounds. Separate Proceedings will be issued constituting the necessary staff to work under the Superintendent.

4. The office of the Superintendent of Agriculture will, for the time being, be located in the room upstairs in the Huzar Secretariat recently occupied by the Huzar Shroff and the Superintendent will be under the immediate orders of the Secretary to the Diwan. He will submit fortnightly diaries to the Diwan in a narrative form showing the work done. All books and periodicals relating to agriculture recently purchased will be transferred to the Superintendent. The Superintendent will be allowed an establishment of a clerk on Rs. 20 and a peon on Rs. 7. The Secretary will select a competent man for the clerk's place, if possible, one who has some knowledge of survey and settlement work.

5. A note describing the agricultural conditions of Cochin and indicating the general lines on which improvement of agriculture should proceed is under preparation, and the Superintendent will be furnished with a copy of it for his information and guidance when ready.

6. An additional allotment of Rs. 2,000 will be sanctioned under the head "Land Revenue" for the current year to meet the cost of the establishment of the agricultural department, contingencies, purchase of implements, seeds, &c. A new sub-head "Agriculture" should be opened under "1. Land Revenue."

(True extract)

T. V. KASTURI RANGA IYER,

Secretary to the Diwan.

To
Mr. K. Sankunay Nair, Superintendent of Agriculture
The Diwan Peishkar
The Comptroller of Accounts.

PROCEEDINGS OF THE DIWAN OF COCHIN.

REVENUE DEPARTMENT

(Land Revenue).

READ AGAIN

(1) The Diwan's Proceedings dated 5th October 1907, Ref on C. No. 79/83 ordering the opening of a department of Agriculture in the State.

(2) Diwan's Proceedings dated 2nd April 1908, C. No. 79/83, issuing instructions for the guidance of the Superintendent of Agriculture and sanctioning an allotment of Rs. 2,000, for expenditure under Agriculture, during the year 1083.

(3) Diwan's Proceedings dated 1st June 1905, Ref on C No. 3931/83, sanctioning an allotment of Rs. 500 for opening a stable farm for the supply of grass, &c., for the Sirkar horses.

Read also proposals for opening a demonstration and experimental farm, submitted by the Superintendent of Agriculture.

Order dated 29th June, 1908, Ref on C No. 4282 of 83.

In the Diwan's Proceedings dated 5th October 1907, read as 1st paper above, the Government announced their intention to open a demonstration and experimental farm with a view to introduce different kinds of agricultural implements foreign to the State, new varieties of manure and more valuable agricultural products and demonstrate improved methods of agricultural operations. In the Diwan's Proceedings dated 2nd April 1908, read as 2nd paper above, the newly appointed Superintendent of Agriculture was

instructed amongst other things to study carefully the climatic and agricultural conditions of Cochin, and to submit proposals for opening the contemplated farm after selecting a suitable site. The Superintendent has now accordingly submitted his proposals, and the Diwan is pleased to pass the following orders thereon.

2. The proposal to open the farm in the old Viyyore Park in the Trichur Taluk near the Trichur town is approved, as it is evidently the most centrally situated and suitable site available for the purpose. The sketch of the land required for the farm, prepared by the Superintendent is herewith forwarded to the Diwan Peishkar, who is requested to arrange for the transfer of such of the lands mentioned in the sketch as are at the disposal of the Sirkar to the Superintendent of Agriculture. The question of acquiring block IV, which is reported to consist of assigned lands and homesteads, will be considered later on after the farm operations develop. It is however necessary that the block of paddy lands marked V, in the sketch should form part of the farm, so as to facilitate experiments in paddy cultivation. The Diwan Peishkar will arrange to secure this from the land-holders concerned on rent for two years.

3. Arrangements should be made for effecting the following improvements on the ground in 1084:—

- (1) Deepening the existing wells
- (2) Repairing the roads
- (3) Removing the useless trees (selection should be made with care)
- (4) Erecting temporary sheds for cattle and coolies
- (5) Fitting up the the present Vijayapuram Proverthy Cutcherry as the Superintendent's office.

The Superintendent will submit an estimate for the works. They may be started forthwith and completed in 1084.

4. The question of sinking new wells, deepening the tanks, providing a fence for the whole compound with suitable gates and permanent quarters for the members of the farm establishment, sheds for cattle, implements and stores, will be considered in due course.

5. The laying out of the ground should be started forthwith, so that the farm operations may commence as soon as practicable. The Superintendent will have in view the following in working the farm:—

- (1) Experimental and demonstration operations
- (2) Grass farming
- (3) Cattle-breeding, poultry farming
- (4) Dairy farming

Of the above, items (1) and (2) may be started at once. Items (3) and (4) may be started about the middle of 1084, if funds permit.

6. The following items of work should be done under (1) experimental and demonstration operations:—

(a) *Paddy*:—Improving the local varieties of crop by seed selection, economic way of planting paddy, introduction of foreign and improved varieties of paddy, manure experiments, rotation of crops &c., experiment upon cereals.

- (b) Experiments upon pulses
- (c) Experiments upon fibre crops, such as jute, gogu, sann-hemp, aloes, &c.
- (d) Experiments upon industrial crops such as sugar-cane, ground-nut, and oil-seeds, ginger, gingelly, cotton, turmeric, &c.
- (e) Experiments upon pepper.
- (f) Trial of potato cultivation.
- (g) Trial of cultivation of English vegetables, such as peas, beans, caulic flower, tomatoes, &c.
- (h) Demonstrating the cultivation of all the above crops and the use of improved implements after a fair trial.
- (i) Preparation of plantain flour, tapioca and arrow-root flour in a cheaper method.
- (j) Cultivation of *fruit-trees*. Extent for an orchard should be set apart. Graft-mangoes and other fruit-trees should be introduced.

7. A separate block should be set apart for grass farming and for growing stable gram required for the Sirkar horses. Besides planting suitable varieties of grass for consumption in the Sirkar stables, experiments of drought resisting fodder crops of local origin should be made.

8. Experiments should be made also on cattle-breeding. Sires of superior breed should be purchased from Mysore and Nellore for breeding operations and made available for ryots wishing to improve the breed of their ploughing cattle on payment of a nominal fee.

9. The Superintendent will purchase a complete set of agricultural implements of the approved pattern for exhibition and demonstration. Taluk depots may be opened after the Central Farm depot is fully equipped.

10. The proposal of the Superintendent to utilise the sum of Rs. 1,200 the balance available in the allotment of Rs. 2,000 sanctioned for the current year after meeting the establishment charges up to the end of Karkidagam 1083 for meeting the initial items of expenditure (as per details given in Appendix A) connected with the proposed farm is approved, and he is authorised to draw on abstract bills such funds as he may require for immediate expenditure against this allotment of Rs. 1,200. The Comptroller of Accounts will be requested to prescribe the necessary registers and accounts to be maintained by the Superintendent for the expenditure incurred by him. The estimate of expenditure for 1084 for the working of the farm (Appendix B) is also approved. The Superintendent's head quarters will hereafter be Trichur.

11. An Agricultural Exhibition and a Cattle Show will be held in the farm grounds early in 1084, the details relating to which will be published in due course in the Government Gazette.

A. R. BANERJI,
Diwan of Cochin.

To
The Superintendent of Agriculture
,, Diwan Peishkar
,, Comptroller of Accounts
,, Honorary Secretary to the Cochin Agricultural Association
,, Sarvadhikariakar
,, Press bureau
,, Gazette.

APPENDIX A.

Detailed statement of expenditure for Mithunam and Karkidagom 1083 for opening an experimental and demonstration farm at Viyyur.

Serial No.	Particulars.	Amount			Remarks.
		Rs.	A.	P.	
I	<i>Cultivation.</i>				
	(a) Establishment				The amount of Rs. 1,200/- is to be utilised during the remaining period of the current year and to be met from the balance left out of Rs. 2,000/ sanctioned for 1083. My establishment charges up to the end of Karkidagam 1083 may not exceed Rs. 800/-.
	1 maistry on Rs. 15/- for two months	30	0	0	
	8 servants on Rs. 6/- each for two months	96	0	0	
	(b) Casual labour	50	0	0	
	(c) Purchase of manure	...	...	...
	(d) Purchase of seeds	70	0	0	
		246	0	0	
II	<i>Cattle.</i>				
	(a) Purchase of working cattle 7 pairs	700	0	0	
	(b) Feeding charges	42	0	0	
	(c) Contingencies in purchasing and bringing cattle	14	0	0	
		756	0	0	
III	<i>Implements, &c.</i>				
	(a) Purchase of local implements, tools &c, urgently required	40	0	0	
IV	<i>Miscellaneous.</i>				
	Temporary cattle and cooly sheds	100	0	0	
	Manure pit and shed	15	0	0	
	Cleaning one well for drinking water	20	0	0	
	Contingent charges	23	0	0	
		158	0	0	
	Grand total	Rs. 1,200			

APPENDIX B.

Detailed statement of expenditure for 1084 for the working of the Central demonstration farm.

Serial No.	Particulars.	Amount			Remarks.
		Rs.	A.	P.	
I	<i>Cultivation.</i>				
	(a) Establishment				
	1 maistry on Rs. 20—30	...	240—	0— 0	
	8 servants on Rs. 6 each	...	576—	0— 0	
	1 cattle-man on Rs. 5/.	...	60—	0— 0	
	(b) Casual labour	...	200—	0— 0	
	(c) Purchase of manure	...	50—	0— 0	
	(d) Purchase of seeds and plants	...	240—	0— 0	
	(e) Unforeseen	...	24—	0— 0	
			1,350—	0— 0	
II	<i>Cattle.</i>				
	(a) Purchase of 1 pair of working cattle	...	100—	0— 0	
	(b) Feeding charges for 8 pairs	...	384—	0— 0	
	(c) Unforeseen	...	16—	0— 0	
			500—	0— 0	
III	<i>Implements &c.</i>				
	(a) Purchase of implements, tools, carts, &c,	...	505—	0— 0	
	(b) Repairs	...	25—	0— 0	
			530—	0— 0	
IV	<i>Miscellaneous.</i>				
	(a) Purchase of lands	...			Omitted as this should be debited to P. W. D.
	(b) Cost of Buildings	...			
	(c) Contingencies	...	376—	0— 0	
			376—	0— 0	
	Grand total	...	Rs. 2,732		

PROCEEDINGS OF THE DIWAN OF COCHIN

REVENUE DEPARTMENT

(Land Revenue).

Read letter dated 24th April 1909, Ref. on C. No. 2726/84, from the Diwan Peishkar, submitting his final report on the State Agricultural and Industrial Exhibition and Cattle Show of 1909, held in the Government Farm at Viyyur, Trichur.

Order dated 28th April 1909 Dis. No. 506/R. of '84.

Recorded.

2. The report with enclosures will be published as appendices to these Proceedings, for general information.

3. The Darbar are pleased to record their satisfaction that the first Exhibition held in the State has successfully achieved its main object, viz., that of creating an intelligent interest, amongst agriculturists and artisans of the State and stimulating a healthy enterprise and they hope that such interest and enterprise will increase in future years.

4. The Diwan has publicly thanked the non-official gentlemen for their co-operation. The Darbar's thanks are due to the Madras Agricultural Department and to the Director of Industries, Madras, and to the Mysore, Travancore and Pudukotta Darbars, for the assistance rendered.

5. The accounts submitted by the Diwan Peishkar showing a total expenditure of Rs. 3,465—11—11, of which a sum of Rs. 927—4—0 was subscribed by the public in aid of the prize fund, are passed.

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6. In order to give sufficient time to the Exhibition Committee and to ensure a more successful organization and arrangement in the next year, the Diwan Peishkar is requested to submit detailed proposals on or before the 1st Chingom next for the next Exhibition which will be held early in February 1910 and for which a provision of Rs. 3,000 will be made in the next year's budget.

A. R. BANERJI,
Diwan of Cochin.

To
The Diwan Peishkar.
The Comptroller of Accounts.
Copy to the Sarvadhikariakar.

APPENDIX I.

Diwan Peishkar's report dated 24th April, 1909 Ref on C. No. 2726 of 1084.

With advertence to the Diwan's Proceedings Ref on C. No. 856 of 1084, dated 22nd February 1909, I have the honour to submit the following report on the Agricultural and Industrial Exhibition and Cattle show held at Trichur.

2. In accordance with the prospectus issued by the Diwan dated 25th November 1908 and the revised Notification under date the 5th of January 1909, the Exhibition was held in the Government Viyyur Farm from the 8th to 12th February 1909, both days inclusive.

3. The arrangements for the Exhibition were in charge of the executive Committee appointed by the Diwan in his Proceedings Ref. on C. No. 856 of 1084 dated 26th November, 1908. The committee held five meetings in which all the details according to the arrangements were settled. The agricultural Superintendent was in immediate charge assisted by the Tahsildar of Trichur.

4. To secure the co-operation of officers and associations outside the State, copies of the prospectus were sent to them and special requests were made to them to assist us by sending exhibits and deputing officials to give demonstrations. These requests, I must thankfully acknowledge, met with ready response. Meetings of agriculturists and artisans were convened in the various Taluks and the object and scope of the Exhibition were explained to them. Committees of non official gentlemen were selected in these meetings to help the officials entrusted with the arrangements. The most important of these were the Trichur, Chittur and Craiganore Committees which rendered us valuable help not only by inducing the ryots, etc., to take interest in the Exhibition, but also by collecting together and sending a large variety of exhibits

5. The exhibits received were arranged under the several groups and classes described in the prospectus. The agricultural and industrial products were well represented. The collection of cattle was poor. We did not get any cattle from outside owing to the prevalence of cattle disease in and around Trichur and we relied for the success of the Cattle show mainly on the Pollachi breed so largely purchased in our State.

6. The Exhibition was opened by His Highness the Raja who delivered a speech, a copy of which is enclosed. The Exhibition was kept open till the 12th of February and was largely attended. The afternoon of the 12th was specially set apart for ladies. On the 12th His Highness distributed the prizes and the Diwan made a speech drawing attention to the important features of the Exhibition. A copy of the speech forms an enclosure to this report.

7. Arrangements were made for lectures and demonstrations on the Exhibition days. Programme was printed and distributed. The following lectures and demonstrations were given :—

Tuesday, 9th February, 12 noon to 4 p. m.	Demonstration on fly shuttle loom. Simple weaving and fancy weaving.
Do do 4 p. m. to 5 p. m.	Lecture by Mr. Govinda Kidavu of the Taliaramba Farm on the improved methods of cultivation.
Wednesday, 10th February, 12 noon to 4 p. m.	Demonstration of the Japanese loom, plantain fibre extraction.
Do do 4 p. m. to 5 p. m.	Lecture by Mr. A. Subramaniam on "The Treatment of Cattle."
Do do 1 p. m. to 5 p. m.	Demonstration curing fish by a smoking process.
Thursday, 11th February, 12 noon to 4 p. m.	Weaving competition and ploughing competition.
Do do 4 p. m. to 5 p. m.	Lecture by Mr. Kochu Govinda Manur on the experiments conducted on his Farm.
Friday, 12th February, 2 p. m. to 5 p. m.	The Exhibition is opened only to ladies.

8. Accounts of the exhibits—more or less detailed—have appeared in many newspapers. I do not propose therefore to attempt at any lengthy description of them.

9. As might be expected, the Agricultural section has the largest collection of exhibits. Different varieties of paddy had been collected from all the portions of the State. The Madras Agricultural Department, the Pudukotta Agricultural Association and other bodies from outside the State had also sent varieties of paddy—some of them of a superior quality. The number of exhibits under this head was over 2,000. There were varieties of paddy bearing about two hundred different names. It is possible however, that the same variety is known by different names in different localities. It cannot therefore be exactly ascertained how many distinct kinds of paddy were exhibited. The finest varieties of paddy came from the Chittur Taluk. Banku paddy, grown in Trichur was exhibited by Mr. Kochu Govinda Marar.

10. Under other grains and pulses, there was a very good and representative collection—specially from the Chittur Taluk—of ragi, cholam, tenai, chama, red gram, Bengal gram, green gram, cow gram, etc. Oil seeds were also exhibited,—those deserving of special mention being the different kinds of gingelly and castor. Ground nuts came from three of the Taluks of the State—those from the Chittur Taluk being the best. In other Taluks ground nut cultivation cannot yet be said to have taken root.

11. The section set apart for garden produce contained cocoanuts of various sizes, bunches containing a large number of nuts, etc. etc. Arecanuts, especially those from Talapilly Taluk, were generally of good quality. Plantains came next in order of importance. Tapioca was exhibited from three Taluks of the State. Arrow-root was sent from Mukundapuram Taluk. Special mention must be made of the West Indian arrow-root and tapioca exhibited by Mr. Kholoff. These were excellent in quality. Tapioca and arrow-root flour, locally extracted, was also exhibited. Sugar-cane is grown in the portions of Chittur Taluk. The indigenous specimens sent, were, however, poor. The Taliparamba Farm exhibited sugar-canes which attracted much attention. Rubber, coffee and tea were exhibited from Cochin State as well as by Travancore Planters.

The collection of indigenous fruits came mainly from Chittur Taluk and was not a good one. Cocoanut and plantain fibres were exhibited by a large number of persons. Other kinds of fibres were collected by the State Forest Department. The Mysore State has also sent some specimens. The Taliparamba Farm sent some very good varieties of fibres. Jaggery and sugar of different kinds, honey and bees-wax, etc., formed a rather representative collection.

12. The Manure section was fairly good. The Indian Fisheries Company sent specimens of their fish manures, while collections of cattle manure, sardine manure, etc., were exhibited by others.

13. The agricultural implements exhibited formed a noteworthy collection. Ploughs etc., in use in the State, were on view. The Principal of Agricultural Farm sent us an iron plough, a triangular harrow, seed drill, etc. A thrashing machine was also shown by the Coimbatore Farm and Mr. Shepperson was good enough to demonstrate its use. Mr. Govinda Kidavu of the Taliparamba Farm had a demonstration on the sugar-cane mill, which he brought down specially for our exhibition.

14. The Forest section was very interesting. Almost all the exhibits were collected by the Forest Department. Specimens of different kinds of timber, huge sections of teak and rosewood, varieties of cane, bark, etc., were among the exhibits in this section.

15. The Valans' Association, Cochin, undertook to collect together exhibits representing their special department. Different kinds of nets employed in fishing, the various kinds of fish in the State (preserved) specimens of fish manure, etc., were exhibited by the Secretary of the Association.

16. The Industrial section comes next in order of importance. The most important industries in the State—weaving, coir manufacture, bell-metal making, tile manufacture, etc,—were represented by very good specimens.

17. The weaving section was specially good, and in this section the Salem Weaving School assisted us not only by exhibiting a good collection of cloths but also by giving a demonstration on a fly shuttle loom. All the weaving centres in the State sent excellent specimens. The collection from Chittur was specially fine. There are three companies in the State working in a fairly large scale, on fly shuttle looms.

18. Coirrop mats, es, etc., from the various Firms in Cochin were of a superior quality. Some Calicut Firms also sent exhibits under this head.

19. Bell-metal vessels were received from Chittur, Trichur, Cranganore and other places.

20. All the tile factories in the State sent specimens of their tiles to the Exhibition.

21. Wood carving and ivory carving were represented by many exhibits of delicate workmanship from within the State and from the School of Arts, Travancore. The Fine Arts section contained numerous specimens of embroidery, lace-making, clay-modelling, etc., while oil-painting, etc., were also on view.

22. As already remarked, the Cattle show was not a successful one. Some good bulls and bullocks were seen which came from the Chittur and Trichur Taluks. Under the head of Poultry there were some good breed exhibited.

23. The names of the gentlemen who were so good as to serve as Judges are shown in the appended list.

24. The excellent work done by non-official committee had already been referred to. The large amount subscribed by the public towards the prize fund affords another indication of the interest aroused by the exhibition. A list of the donations was published in the Gazette some time ago.

The total amount thus collected was Rs. 927-4-0. Rs. 2,000 was spent in prizes to exhibits in all the sections. This includes the 15 silver medals awarded by Government. In addition, His Highness the Raja presented two silver medals. The names of the prize winners have been already published.

25. The total expenditure on the exhibition was Rs. 3,465-11-11 excluding Rs. 927-4-0 subscribed for by the public in aid of the prize fund, the cost to Government was Rs. 2,538-7-11. Detailed accounts are also enclosed.

26. The success of this, the first Exhibition held in our State is due, in a large measure, to the interest taken by the non-official gentlemen from all parts of the State and especially by those who served on the various local committees. The thanks of the Government are due to the Agricultural Department of the Madras Government and Director of the Industries, Madras, for the help rendered by them. The members of the Committee had to work hard for some days before and during all the days of the exhibition. All the Tahsildars evinced a keen interest; they not only collected exhibits but also what is more important—induced the ryots to take an active part in the Exhibition.

27. The Agricultural Superintendent was, however, the officer in immediate charge of the arrangements. On him fell the brunt of the work, and he discharged the duties, which fell to his share, most zealously.

APPENDIX II.

Account of expenditure incurred in connection with the Agricultural and Industrial Exhibition and Cattle Show.

The following amounts were sanctioned by the Diwan, in connection with the exhibition.—

A. For putting up sheds, &c., (Diwan's Proceedings, R. O. C. No. 856 of 84, date 11-1-09)	Rs. 500
B. For the prize fund (Diwan's Proceedings, R. O. C. No. 856 of 84, dated 26-11-08)	.. 1,500
C. For miscellaneous expenses, (Diwan's Proceedings R. O. C. No. 856 of 84, dated 11-1-09)	.. 500
	Total amount sanctioned .. 2,500

Expenditure under A.

1. For putting up the the exhibition shed and stalls	Rs. 369-0-0
2. For shed for keeping the fish manure, &c. separately as it could not be kept in the general shed	.. 17-0-0
3. For two loom sheds for demonstration &c.	.. 24-9-0
4. For poultry sheds	.. 4-14-0
5. For shed for the Police (bill sent by the Superintendent of Police)	.. 40-11-6
6. For trellis work round the central Pandal which was not provided in the original estimate	.. 1-0-0
7. For decorations for the pandal	.. 8-0-0
8. Conveyance of furniture to the Exhibition ground, and also for spreading coir mats &c.	.. 29-12-6
9. For two latrines.	.. 18-0-0
	Total .. 551-1-0

The increase over the estimate is due to the fact that only item No. 1 was estimated for. The works were let on contract and the materials had to be taken away by the contractor.

B. Prizes

Estimate sanctioned for prize fund (D. P., R. O. C. No. 856 of 84, dated 26-11-08)	Rs. 1,500-0-0
His Highness' special prizes	2 silver medals
Donations received (including 2 medals worth Rs. 16 from His Highness the 12th Prince)	Rs. 927-4-0
	Total 4 medals and Rs. 2,427-4-0

Expenditure.

1 For Certificates.

Cost of 1 ream of paper as per bill by V. Perumal Chetty & Sons	Rs. 25-3-0
His Highness' special prizes	.. 2 medals
Money prizes, (list published in the Gazette)	Rs. 1,730-0-0
Cost of 15 silver medals, from Messrs. P. Orr & Sons	270-0-0
	Total .. 2 medals & Rs. 2,025-3-0

Balance under this head—5 medals worth Rs. 90, 1 medal worth Rs. 8 and Rs. 304-1-0. The 6 medals will be preserved in the Treasury and used for the next Exhibition.

C. MISCELLANEOUS.

1. Expenditure incurred. <i>Improving the Farm Premises</i>	Rs.	37-0-	0
(a) For gravelling and cleaning the central road and two sides	"	35-12	0
(b) For cleaning wells	"		
2. <i>Invitation Cards, &c.</i>	"	21	0 0
Charges for printing the Exhibition Programme, list of Judges, &c.	"	13	13 0
Invitation Cards and envelopes from Addison & Co.	"		
For paste boards for cards to be attached to exhibits as per bill of the Superintendent of Stamps &c.	"	9	80 0
Stationery	"	2	12 0
Postage	"	5	9 0
3. For carriage of Fire Engine (as per bill of the Police Superintendent)	"	3	0 0
4. Lighting charges	"	11	15 6
5. For night watch and watering coolies	"	6	3 0
6. For demonstration arrangements, including cost of fish	"	6	13 0
7. For collection of exhibits	"		
1. By Land Revenue Department	"	97	8 3
2. Trainage, cart hire, &c. for exhibits received from outside the State	"	27	4 0
3. Do for sending back the exhibits received from outside the State	"	33	13 0
8. Enamel vessels and baskets for keeping exhibits (balance after deducting the sale proceeds)	Rs.	16	15 10
9. Conveyance of furniture to guest houses (bill of Chief Engineer)	"	30	7 6
10. Cattle Show	"	50	0 0
1. For fodder for cattle (5,000 bundles of straw)	"	2	15 6
2. Mud tubs for storing water	"	0	13 0
3. For pegs	"		
Total	"	413	5 4

In addition to this, the following bills have been received.—

I. Expenditure by the Conservator of Forests	"	157	15 7
(1) for collection of forest exhibits	"	222	13 0
(2) for sectioning the rose wood, teak, ebony including patam for elephant labour (bill by Mr. Kay)	"		
Total	"	380	11 7

I enclose the detailed bills sent by the Conservator and also a copy of his letter. In the Diwan's Proceedings the Conservator was authorised to incur the expenditure from the imprest. I request sanction for payment

II. Bill from the Tramway Engineer for
A copy of his letter and his detailed bill are enclosed. The articles may be taken charge of and kept in the museum. I request sanction for this expenditure.

The following abstract of expenditure is submitted for information.

A. For putting up sheds, stalls &c.	"	551	1 0
B. For prizes awarded &c.	"	2,025	3 0
C. For miscellaneous expenses	"	889	7 11
Total	"	3,465	11 1

Deduct subscriptions paid for by the public in aid of the prize fund

" 927 4 0

Net expenditure to the State

" 2,538 7 11

APPENDIX III.

Inaugural speech delivered by His Highness the Raja on 8th February 1909.

"Ladies and Gentlemen," The present occasion is one on which it behoves us all to realise our responsibilities in the movement of agricultural and industrial progress. Government sympathy for which is openly manifested to-day in this exhibition the first of its kind in the State which we have organised for your edification and benefit. The agricultural policy of the State has already been announced by our Diwan, and my earnest hope is that by this Exhibition the land-holders and agriculturists will be roused to the necessity of introducing improvements in agricultural methods and practices. I wish you to remember however, that, although Government may spend large sums of money to demonstrate improved methods of agriculture in Government Farms by elaborate and expensive experiments, it is left to the agriculturists—at least the most advanced amongst them—to study and practise such methods in their own holdings. It is our policy for the present not to start farm operations on any large scale, for we consider it extremely improbable that the ryots will be convinced of the chances of their own success and regard these experiments as worthy of imitation in their own holdings, when they cannot command the same capital as well as organised and skilled effort, and, further, cannot afford to invest capital irrespective of considerations as to a sufficient out-turn as Government can do. Even the official department of agriculture has sometimes to learn many a practical lesson from the ryots before they can suggest improvements thereon. We are, therefore, anxious to study local conditions carefully, and this Exhibition is organised partly with that object in view. After this is done, our policy is to prove, by practical illustration of improved methods on a scale of expenditure within the means of the ordinary ryot, that he can reap a better harvest, if he shows a little more enterprise. We know his difficulties as regards enterprise and have, therefore, given orders to help him with loans for agricultural improvements and appliances. It is our hope that the agriculturists will avail themselves of the facilities now offered to them. The agricultural farm which has been opened in this park will, when you assemble here next, be able to show you what can be done to better the out-turn of your ordinary crops and to introduce new and more valuable varieties to which you are not now accustomed but which may suit your soil and local conditions. In the initial stages our efforts may not altogether prove successful, and it is through failures that many a valuable lesson is learnt. But I have no doubt that the results of our continuous efforts, when published, will be found useful in practice to the agriculture in general. We see before us exhibited a large variety of agricultural products of the State, and it would be an interesting and instructive study to enquire into the possibilities of improvement and the existing short-comings. The objects of the Exhibition will have been fulfilled, if a spirit of enquiry and investigation is roused amongst the agriculturists who visit the Exhibition.

Next in importance to agricultural progress is the industrial development of the State. Looking round, we find industrial surveys are being conducted all over India with a view to study existing industrial conditions and suggest measures of improvement of industrial education. In some provinces, the investigating officers have gone so far as to recommend Government initiative to pave the way for private enterprise, in other words, to float new industries entirely on its own responsibility or guaranteeing interest for a certain number of years on capital which might be invested in suitable industries. We see near us the Madras Government have taken some initiative of this nature. I refer to aluminium, chrome leather and weaving.

We ourselves cannot be standing still in this important matter but must move with the times. There is a general awakening in industrialism throughout the country, and so far as my Darbar is concerned, they will soon announce their policy in regard to the measures they propose to adopt for the development of indigenous industries and for promoting industrial education. A large section of the population, much larger than what is commonly described as the submerged tenth, live by industrial pursuits in the State. I refer to the Chedars and Valans who live by coir industry and the submerged tenth, live by (the weavers of grass mats), Chogans and Valans who live by coir industry and the back-water fisheries and a large number of Christians who are to be found amongst all professions and callings. I hope this Exhibition will give some idea of the possibilities of industrial development in the State, although it may, to some extent, open our eyes to the regrettable decadence in many directions. Competition has stifled many a local industry and artisans now lead a precarious existence, with hardly sufficient capital to turn out enough stock. Export of raw products such as hides, oil-seeds, cotton, copra, fibre, jaggery etc., has, in recent years, increased by leaps and bounds. In the port of Cochin, during the last decade, the value of exports

(foreign trade) has gone up from Rs. 67,98,640 in 1898—99 to Rs. 10,716,447 in 1907—08, this has taken away the bread of the artisans whose labour could have been utilized to turn out the finished articles of commerce which, in most cases, come back to the country. It has no doubt enriched the producers who have found lucrative markets in distant countries. On the other hand, demand for the indigenous article of commerce has decreased owing mainly to deterioration in their quality and competition of the imported articles. Stagnation and want of co-operation and enterprise are mainly the causes that have led to the decline of industries, but a stage has now been reached in which state encouragement is clearly indicated. The first step to be taken in this direction is to provide a higher standard of industrial education, and, as the back-ward classes are now educated in the State free, it is my desire that their education should be more practical and less literary, and technical subjects should be introduced gradually into the public schools of the State. With the growth of a higher standard of industrial education as well as manual training, to direct which experts are required, it would be possible to improve the existing industries and start new ones for which there is abundant scope. I refer under the latter class to spinning and weaving, paper pulp, match and pencil factories, flour and rice mills, sugar, oil presses and factories (gingelly, ground nuts, &c.) fibre (jute, plantain, aloe, coir, hemp), cabinet making (bamboo, cane), grass-mat industries, honey culture, tanning, fish-oil, isinglass, edible fish products, &c. I hope you will have seen or learnt at least some of the possibilities in all the above directions from the exhibits collected and the demonstrations given here. I now declare the exhibition open and express the hope that it will prove instructive and beneficial to you all and be an annual institution in the State.

APPENDIX IV

Valedictory address delivered by the Diwan on 12th February 1909.

"Your Highness, Ladies and Gentlemen". The first part of this afternoon's programme is the distribution of the awards of the Judges for the exhibits at the Agricultural and Industrial Exhibition which closes to-day. In my opening remarks of the last Monday's Proceedings, I said that I shall reserve my remarks, if any, till the prize giving, and I may, with His Highness' permission, now say a few words on the special features of the Exhibition. It is not necessary for me to make any observations on the Darbar's policy, His Highness' opening speech having already fully dealt with the subject. I express on behalf of the Darbar their extreme gratification that the Exhibition has roused such a keen and intelligent interest amongst all classes of His Highness' subjects. It was this interest displayed that enabled the Committee to bring together within a comparatively short time a variety of exhibits under the different classifications. Unfortunately, the site chosen being three miles out of town has been somewhat inconvenient not only to the originators but also to the general public. It is hoped, however, that with the experience gained this year, future shows of this nature will be devoid of those defects, to point out which critics would not be wanting so far as this year's exhibits are concerned. On the whole it has achieved a fair measure of success and this is entirely to be attributed to the zeal and co-operation of the members of the Exhibition Committee, who, under the guidance of my Diwan Peishkar, spared no effort and used every endeavour to make the show as successful and instructive as possible. I thank them all on behalf of the Darbar.

Thanks are also due to the very large number of official and non-official gentlemen who very kindly served in the capacity of Judges. The work was not particularly easy and caused, I know, a certain amount of inconvenience, and I beg to thank the non-official gentlemen especially for their very valuable co-operation in the matter. Taking the exhibits as a whole, I think the Agricultural section was most successful and instructive in character. There were no less than 2,150 exhibits under paddy alone. There were over 200 distinct varieties of paddy exhibited. Under other grains and pulses, ragi, cholam, tenai, chama, wheat, red gram, Bengal gram, green gram, cow gram, &c., were also exhibited. Under oil-seeds, three varieties of gingelly, three varieties of ground nuts, and four varieties of castor, under oils, coconut oil, gingelly oil, castor oil, mungora oil, cotton seed oil, lemon grass oil and fish oil; under garden products, there were coconuts, a splendid collection, sugar cane, (Red Mauritius), and white local variety, rubber, areca nuts, betel leaves, coconuts, tapioca, arrow root, tamarind, coffee, cardamoms and tea. Under vegetable and fruits, there were 53 exhibits (indigenous) and also some specimens of indigenous fruits, oranges, apples and limes. Under fibre, there were 76 exhibits of coconut and plantain. There were 4 exhibits of sugar, 33 of jaggery and also honey combs, honey and bees-wax. Under manures, oil cakes, cattle manure, fertilisers and sardine fish were shown. Under forest produce, specimens of timber, bamboos, cane, bark, &c. Under agricultural implements and machines, thrashing machines, iron ploughs, sugar cane mills, and triangular harrows, seed drills, and guntika were exhibited. Under textile industries, there were shuttle looms, Japanese looms, pit looms, and plantain fibre extracting machines. Under fabrics different varieties of cloths from several Taluks of the State such as Trichur, Cochin-Kanayannur, Cranganore, Chittur as well as from outside places such as Coimbatore, Salem, were exhibited. The collection from Chittur was excellent in quality and in quantity. There were also coir rope, coir matting and carpets. Under wood carving and decorative works, there were paintings, photos, embroideries, painting in oil colours, statues and modelling, collections of various kinds of bell metal works and a large collection of lace. The Cattle Show was poor owing to the prevalence of cattle disease in certain parts of the State. There were, however, some fine bulls exhibited, and I hope next year there will be a keener interest displayed in cattle, which are proverbially poor in the West Coast. I take the opportunity of expressing the thanks of the Darbar for the co-operation of the Central Agricultural Farm of Coimbatore which sent implements and also deputed one of its Farm officers to give a demonstration and lectures.

Now, Gentlemen, I do not wish to detain you any longer. I sincerely hope that the encouragement the Darbar have given to the exhibitors this year, will induce them to show an all round improvement next year, and give an adequate impetus to the agricultural and industrial progress of the State.

APPENDIX V.

List of Judges.

GROUP I. AGRICULTURAL PRODUCE

Class I. Field produce.

Mr. P. Shangunni Menon

" Kochugovinda Marar

" C. V. Krishniah

Class II. Plantain or Garden products

" Kohloff

H. H. the 12th Prince

Mr. E. Windle

Class III. Vegetables and Fruits.

Mr. Browning

" Parakat Channu Menon

" H. D. Mello

Classes IV & V. Fibres and Fodder plants.

Mr. Mampilli Kochu Vared

" E. H. Johnstone

" Kochugovinda Marar

Class VI. Sugar, Honey, and Bees-wax.

Mr. Kohloff

" Windle

" Paul Louis

Class VII. Manures.

Mr. Gudgeon

" Windle

" K. Sankunni Nair

GROUP II. FOREST PRODUCE.

Mr. Kohloff

" Windle

" Paul Louis

GROUPS III & IV.

I. Agricultural Implements & Machines and Fibre Extracting Machines.

Mr. K. Narayana Rao

" Reid

" H. C. Gill

GROUP IV.

II & V. Textile Fabrics.

Mr. K. Narayana Rao

" T. S. Narayana Iyer

" Deraswami Iyer

" Ferguson

" Muga Sait

Class III. Tanned leather goods.

Mr. T. S. Narayana Iyer

" P. C. Job

" Browning

Class VI. Tiles.

Mr. H. D. Mello

" Browning

" V. K. Narayana Menon

Class VII & VIII. Wood carving and other decorative works and iron steel.

Mr. Browning

" Mc Bean

" Grubb

Class VIII. Bell metal, Brass, Copper, &c.

Mr. P. Sankunni Menon

H. H. the 12th Prince

Mr. C. Anthappavi

GROUP V. FISHERIES

Mr. Abraham B. Salem

" Mc Bean

" Gudgeon

GROUP VI. CATTLE.

Mr. Henry Kohloff

" P. I. Pathappau

Rev. Fr. Pelly

Mr. Reid

" C. S. Mahalinga Iyer

PROCEEDINGS OF THE DIWAN OF COCHIN

REVENUE DEPARTMENT.

(Land Revenue).

READ the following report from the Agricultural Superintendent showing the work done by him during the quarter ending 31st Karkadagom 1084 forwarded by the Diwan Peishkar with his letter dated 19th September 1909, Ref. on P. R. No. 60/85.

"I. *Farm*: The major portion of the quarter under reference has to be spent at the Head quarter on the Farm.

2. Considerable difficulties had to be encountered in saving the crops, both dry and wet, from the effect of a bad system of drainage on the Farm. The drainage water took its material course all over the Farm block, and this being the first rainy season after the institution was started, there was no opportunity of improving the drainage system in advance. Moreover, to ensure a perfect drainage under the present condition of the land, a good sum has to be spent on that work alone. Anyhow, what could be done with the men and means at hand, was carried out during the quarter. Attempts were also made to preserve the water thus drained off through the Farm, from a pretty large catchment area in and around it. But such attempts as have been made are in no way proportionate to the large volume of water lost to the Farm. Some small bunds were raised, and the tank close to the temple situated on the Farm was partly improved. Nearly 10 acres of wet land were reclaimed.

3. The crops put down during the quarter are shown in the accompanying statement (Vide enclosure No. 1)

4. Besides the operations connected with the cultivation proper, the following items of work were also carried out on the Farm.

i. Re-forming that portion of the central road leading from the Mandapam to the eastern boundary.

ii. Forming certain cross roads and field paths.

iii. Cutting side channels for the roads.

iv. Clearing the old side channels and repairing the western half of the old central road.

v. Removing several stumps of old bushes and lantana.

vi. Putting wire fence around the Farm to a length of about 2 miles.

vii. Completion of a poultry house.

viii. Laying out an orchard for different kinds of fruit trees.

N. B. One hundred and eleven grafts of different sorts have been purchased and some of them have already been planted. Some more have been ordered for. Lists enclosed. (Vide enclosure No. 2)

ix. Planting one hundred plantain suckers of different sorts.

x. Rearing 500 jack seedlings, 500 mango seedlings and about 1,000 seedlings of Pungam or lengu for road avenues.

II. *Gardens*.—During the quarter, opportunities were taken to inspect the Hill Palace, Krishna Vilas, Residency and Hannynghton Mandapam.

(1) *Hill Palace*.—Many plants were re-potted and some more are to be re-potted for which pots have been purchased. Some mango grafts and grape vines were planted. It is desirable that all the stable manure from Tripunithura should be carted to the garden for which proposals have been submitted. No definite action could be taken either in improving or extending the garden as the scheme for laying out the ground has not been finally settled yet. All that could be done was maintaining the existing garden which is in a healthy condition.

(2) *Krishna Vilas Palace*.—The small but pretty garden in front of the Palace is flourishing well. There is scope for its extension. Some young cocoanut trees of the garden which was under a lease were attacked with beetles. These were all removed on two occasions.

(3) *Residency and Hannynghton Mandapam*.—In connection with these two gardens, I have to submit more about work to be done than what is actually carried out. Nearly 100 crotons and other plants are ready in pots for the Hannynghton Mandapam. But even these, not to speak of any direct plantation, cannot be arranged unless a whole time servant is posted there.

Besides this, the most important draw-back in the Residency and Mandapam is in their water supply. This draw-back can, I think, be easily remedied, if a system of

pipes is laid out from the District Court compound well to these two gardens. Any attempt in improving these gardens will be successful only when some such arrangements are carried out. In the Residency garden some earth-work was executed in the way of levelling, turfing and preparing lawns.

III *Road avenue*.—Planting was in progress on all the roads proposed for the year.

IV. *Miscellaneous*.—1. Visited the Coimbatore Farm and made a study of the existing crops and the newly purchased implements and machines on the Farm. Jaggery making was going on at the time of my visit. Mr. Hadi, the Assistant Director of Agriculture, North-West Provinces, has invented a new process of jaggery making. At the time of my visit, all the preliminaries, for preparing jaggery according to his new method, were being done by a Farm officer who had been deputed to North-West Provinces to study the method. The peculiarity of this method is that the syrup is provided with three vessels at different levels connected with each other by means of tubes in their three different stages over one single oven. Under this process, the chance of loss in cane sugar has been found to be the least, since there is no over-boiling the syrup.

2. Inspected some cocoanut gardens in the village of Chellanur in connection with a report from that village regarding the out-break of a cocoanut disease there. This disease is entirely different from that which was prevalent in Cranganur some time back. That was a leaf disease whereas this is a disease in the trunk of the tree, caused in both cases by caterpillars of different types. The disease was noticed by the owners only after the damage was quite visible. By the time the report was sent up, the first cycle of the insect's life must have been completed. During my inspection, all that I could see was minute holes in the trunk of the tree with marks of a red exudation from them. On opening some of these holes, the substance inside was rotten. Of course, the insect is a borer and the damage caused so far is very little. But there is every probability of its re-appearance before long, and I have instructed the villagers, to be always on the alert, and to inform me immediately after they see any symptoms of the disease so that I may go and investigate the disease.

3. The following bulletins were published in the village sheet during the quarter. On Human Excreta, Sugar cane, plantain, Banku paddy and Agathi.

4. Ground nut seeds (Mauritius variety) was distributed free of cost to a few raiyats, in all the Taluks except Chittur where the cultivation of this crop is already in progress.

5. It is gratifying to note that ryots, especially in the neighbourhood, have begun to take some interest in the improvements of Agriculture, and are visiting the Farm occasionally to study the different methods of cultivation and crops and the uses of different implements stocked there."

Order dated 27th September 1909, Dis. No. 520/D of 1085.

Recorded.

2. The report which was due in this office on 15th Chingom '85 was received only on 5th Kanni '85. There has thus been a delay of 20 days. This should be avoided in future.

3. The question of water-supply to the Farm is under discussion with the Public Works Department.

4. In regard to the proposal to cart all the stable manure from Tripuniturah to the Hill Palace garden, the Diwan Peishkar is informed that orders have been passed in Diwan's Proceedings dated 23rd September 1909, Dis. No. 32/R of '85, Local and Legislative Department.

5. The garden attached to the Hannyngton Mandapam is now a grazing ground. The Superintendent will submit proposals for improving the above garden as well as the one attached to the Residency.

6. A complete account of the cocoanut palm disease, referred to in para IV (2) of the report should be submitted with specimens of the pests.

7. The Agricultural Superintendent will take care to see that labours already bestowed are rewarded by proper out-turn of crops, which should be carefully harvested. He should keep a correct record of each Agricultural operation and publish the particulars in due course. The seed and implement depots ordered to be opened in the various centres should be started gradually. The poultry farm should be opened at an early date.

8. The enclosures to the report will appear as appendices to these Proceedings.

A. R. BANERJI,
Diwan of Cochin.

To.
The Diwan Peishkar (with enclosure No. 2)
,, Sarvadhikariakar.
,, Press Bureau.
,, Gazette.

ENCLOSURE No. I.

Crops cultivated on the Vijoor Government farm during the last quarter in 84.

Serial No.	Crop	Extent		Remarks
		A.	C.	
1	Modan		50	Manured with ashes
2	Do	1	50	Unmanured
3	Chama	1		Half with red gram and half alone
4	Ground nut, Mauritius		50	Manured with cowdung and ashes
5	Do		50	With no manure
6	Do		50	Mixed with ragi
7	Do		50	With Parry's special manure
8	Ground nut	1	50	Mixed with red gram
9	Red gram	1		
10	Cow gram		50	Mixed with castor
11	Tapioca		25	In the ordinary country system
12	Do		25	Seeds planted horizontal
13	Do		25	At different distances
14	Do		25	Do
15	Do		50	Country system, subsoiled
16	Ragi		60	Transplanted as usual
17	Do		20	Seedling dropped in plough furrows
18	Sugar cane		04	Striped Mauritius variety manured with "Sardine" manure
19	Do		08	Variety, Coimbatore Puvan Do Do white (Vellai)
20	Maize, Tanjore		20	Both the above are manured half with Sardine and half with Parry's special for sugar cane Damaged by heavy rains at the commencement of its growth
21	Paddy: Chambavu	3		Sown dry (Viruppa Vittha)
22	Cheera		20	Do
23	Navara		20	Sown germinated, in puddle
24	Manure experiments with Chambavu (Sown dry)		20 22 15 12 16 14 12	Fish guano in duplicate plots Parry's special for paddy do Milled fish Farm yard manure With no manure Sown in drill Green manure
25	Chambavu		70	Transplanted with the above manures
26	Banku paddy	1	20	Manured with cowdung, transplanted
27	60 days Samba		05	Transplanted
28	Kar		30	Do Do Tanjore
29	Veththari		70	Sown germinated, in puddle
30	Gogu or Bombay hemp		50	Fibre crop
31	Bengal jute			Do
32	Ground nuts, varieties	in small plots		West African, Spanish, Big Japanese, Small Japanese country
33	Plantains		20	Different varieties including Mauritius
34	Hariali grass	5		Faring well
35	Guinea grass		15	Luxuriant growth

Remarks:--All the crops mentioned in the list are doing well, except, chama, maize a portion of modan and ragi. Considering the utter unsuitability of the soil and the situation of the wet land, the broad casted paddy has an excellent growth. But the transplanted paddy does not fare well owing to the presence of an injurious sub-soil two or three inches below the surface soil. Until this sub-soil is gradually mixed up with the surface soil and improved, the same consequence will follow if paddy is transplanted.

Sugar canes are doing excellently well, so also ground nuts and gogu.

Ragi with ground nut is a good crop. Harvest of chama is over and modan is being harvested.

Fields were under preparation for horse gram and gingelly with a view to bring about 40 acres under these.

Trichur
18th Chingom 1085, }

K. SANKUNNI NAIR,
Superintendent of Agriculture.

ENCLOSURE No. II.

List of graft fruit trees.

No.	Description	Rs.	A.P.	No.	Description	Rs.	A.P.
1	Alphonso		12	9	Guava Benarés	2	
2	Khader pasand	1	8	2	Lime sweet	1	8
2	Badami	1	8	2	Malta lime	1	8
1	Kilimucku		10	2	Limes long	1	4
1	Chittur Hamlet		10	2	Limes pickle	1	
2	Dhill pasand	1	4	2	Orange Coorg	1	4
2	Bangalora	1	8	2	Do Malta	1	8
1	Peter pasand		8	2	Do centra	1	8
2	Sunderasa	1	8	2	Do large	1	4
2	Guddaimar	1	8	2	Pomelso red	1	4
2	Guava Bangaloro		14	2	Do white	1	4
2	Do China	2		2	Do Manjakappu	1	8
2	Pomegranate sweet		14	2	Plums	1	4
2	Do white		14	2	Jack		8
2	Do Uttuckuli		14	2	Grapevine twice mature	2	
2	Citron sweet	1	4	2	Fig English	1	
2	Do sour	1		2	Do Poona	1	
2	Loquet		8	2	Do Bangaloro		12
2	Apple (red)	1	4	2	Do Kabool	1	
2	Do white	1	4	2	Rasberry	1	
4	Grape vine sweet	2		2	Kamarac	2	
4	Do sour	1	8	2	Custard apple		12
4	Do blue	3		2	Black plantain		12
2	Paupua		4	2	Do Sirumulu		4
2	Nicobar cocconut	2		2	Do Green		8
9	Coffee plant (2 varieties)	1	2				

K. SANKUNNI NAIR,
Superintendent of Agriculture.

PROCEEDINGS OF THE DIWAN OF COCHIN

Local and Legislative Department.

Order dated 20th October 1909, Ref on C. No. 763 of 85.

In the inaugural speech delivered by His Highness on the 8th February 1909, declaring the first Agricultural and Industrial Exhibition opened, His Highness made the following remarks:--

* * * * *

"2. Next in importance to agricultural progress is the industrial development of the State. Looking round, we find industrial surveys are being conducted all over India with a view to study existing industrial conditions and suggest measures of improvement of industrial education. In some provinces, the investigating officers have gone so far as to recommend to Government initiative to pave way for private enterprise, in other words, to float new industries entirely on its own responsibility or guaranteeing interest for a certain number of years on capital which might be invested in suitable industries. We see near us the Madras Government have taken some initiative of this nature. I refer to aluminium, chrome leather and weaving.

"We ourselves cannot be standing still in this important matter but must move with the times. There is a general awakening in industrialism throughout country, and so far as my Darbar is concerned, they will soon announce their policy in regard to the measures they propose to adopt for the development of indigenous industries and for promoting industrial education. A large section of the population, much larger than what is commonly described as the submerged tenth, live by industrial pursuits in the State. I refer to the Chedars and Kaikolars who are weavers by profession, Kuravas or Kakkalars (the trial pursuits in the State. I refer to the Chedars and Kaikolars who live by coir industry and the back-water fisheries and a large number of Christians who are to be found amongst all professions and callings. I hope this exhibition will give some idea of the possibilities of industrial development in the State, although it may, to some extent, open our eyes to the regrettable decadence in many directions. Competition has stifled many a local industry and artisans now lead a precarious existence with hardly sufficient capital to turn out enough stock. Export of raw products such as hides, oil-seeds, cotton, coppa, fibre, jaggery, &c. has, in recent years, increased by leaps and bounds. In the port of Cochin, during the last decade, the value of exports (foreign trade) has gone up from Rs. 67,98,640 in 1898-1899 to Rs. 1,07,16,447 in 1907-1908, this has taken away the bread of the artisans whose labour could have been utilised to turn out the finished articles of commerce, which in most cases, come back to the country. It has no doubt enriched the producers who have found lucrative markets in distant countries. On the other hand, demand for the indigenous articles of commerce has decreased owing mainly to deterioration in their quality and competition of the imported articles. Stagnation and want of co-operation and enterprise are mainly the causes that have led to the decline of industries, but a stage has now been reached in which State encouragement is clearly indicated. The first step to be taken in this direction is to provide a higher standard of industrial education, and as the backward classes are now educated in the State free, it is my desire that their education should be more practical and less literary, and technical subjects should be introduced gradually into the public schools of the State. With a growth of a higher standard of industrial education as well as manual training, to direct which experts are required, it would be possible to improve the existing industries and start new ones or which there is abundant scope. I refer under the latter class to spinning and weaving paper pulp, match and pencil factories, flour and rice mills, oil presses and factories (gingolly, ground nuts, &c.) fibre (jute, plantain, aloe, coir, hemp), cabinet making (bamboo cane), grass mat industries, honey-culture, tanning, fish-oil, isinglass, edible fish products, &c."

2. Before adopting any measures for the development of indigenous industries and for promoting industrial education as foreshadowed in His Highness' speech, it is necessary to collect sufficient data by making an industrial and economic survey throughout the State, which will enable the Darbar to accurately judge the possibilities in regard to the improvement as well as the development of the various industries and also to enable them to formulate a sound policy of promoting industrial education, the State activity in regard to which must necessarily be centred in localities populated mostly by different classes and guilds which follow industrial pursuits. A survey such as now indicated will afford proper guidance to the department of education in introducing a new system in village schools inculcating a high standard of practical training in the existing industries. It is necessary also to collect information as to the present condition of the various industries, the scope for their further development, the centres of trade and population which keep these industries going and the means by which the State could afford assistance to the industrial population.

3. With these objects in view, the Darbar propose to direct an industrial and economic survey of the State and are pleased to depute Mr. C. Achyutha Menon, as Special Officer, for this enquiry. He will be placed on this special duty for two months from the date of rejoining after the two months' leave granted to him, i. e. 1st Dhanu, 1085, and he will perform the duties relating to this special enquiry without prejudice to his other duties as Superintendent of Census operations. In submitting his report, Mr. Achyutha Menon will follow the lines of similar reports of the Provincial Governments in British India and direct his special attention to the improvement of education of the backward classes in the State with special reference to industrial development.

A. R. BANERJI,
Diwan of Cochin.

To
Mr. C. Achyutha Menon
The Sarvadhikariakr
" British Resident (with covering letter)
" Press Bureau
" Gazette,

REVIEW OF THE REPORT ON THE WORKING OF THE AGRICULTURAL DEPARTMENT DURING
THE YEAR 1084.

The Agricultural department continued its operations on the same main lines as in the previous year and its activities were confined chiefly to the following branches of work :

- (i) Study of the agricultural conditions of the State including local pests, &c.
- (ii) The management of the Government Farm
- (iii) The organisation of the Agricultural and Industrial Exhibition
- (iv) Instruction of ryots in the improved methods of agriculture, the use of the new implements, &c
- (v) Publication of agricultural bulletins in the Government Gazette.

i. *Study of agricultural conditions.* The necessity for the exercise of close and constant supervision over the operations of the experimental and demonstration farm started in the previous year prevented the Superintendent from making extensive tours. The Superintendent spent 109 days in camp in inspection and investigation work. He investigated the cause and nature of the arecanut palm disease known as 'Mahali' which appeared in Kunnamkulani, and suggested practical remedies to the ryots. He visited the Government Farm at Coimbatore and the Poultry Farm at Calicut to acquaint himself with the mode of operations there. The insect pest on cocoanut leaves that was prevalent in Cranganur was investigated by the Assistant Entomologist to the Government of Madras. His report was published in the Gazette. The disease, however, disappeared altogether during the year. A fresh disease broke out in the Chellanum village of the Cochin-Kanayanur Taluk. It was caused by a caterpillar borer in the trunk of the cocoanut palm, but, as it disappeared, no thorough investigation could be made. There was no out-break of any serious disease in field crops during the year.

ii. *Agricultural Farm.*—The Farm is situated in an extensive and open piece of ground known as the Viyyur Park, near Trichur, covering about 350 acres of land. It was opened in Mithunom 1083. The operations were extended gradually but cautiously during the year. The protection of experimental crops from large herds of grazing cattle necessitated wire fencing on an elaborate scale. Cattle shed, manure shed, and poultry house and yard were also constructed. The work of the farm has been reviewed by the

Diwan for the last quarter of 1909 and published on page 63 of the Gazette dated 2nd October 1909, for general information. Particulars of standing crops have also been periodically published so as to create interest among the ryots. Agricultural operations were conducted with the following objects in view:—

(a) The study and improvement of local cultivation, (b) introduction of new kinds of crops suitable to the locality, such as sugar cane, ground nut, pulses, fibre crops, &c., (c) conservation of farm yard manure on more scientific methods, (d) popularising of new implements, appliances, &c., and (e) improvement of the local breeds of cattle and poultry.

The question of water supply being difficult of solution, the Chief Engineer was requested to suggest means of improving it in consultation with the Diwan Peishkar and his final proposals are awaited. Experiments were made in the cultivation of paddy of 7 varieties, ground nut, sugar cane, fibre crops, e. g., Bengal jute and gogu, and Tapioca. It is satisfactory to note that the results so far achieved are reported by the Diwan Peishkar to be encouraging. A complete account of the season operations giving detailed particulars of the manner of cultivation, manuring, outturn, &c., should be published in due course by the Diwan Peishkar after all the crops are harvested. It is hoped that the budget estimate of receipts under this head will be fully realised. The stable farm in which guinea and hariali grass as well as gram are under cultivation requires continued attention.

iii. *Exhibition.*—An Agricultural and Industrial Exhibition in conjunction with a Cattle Show was held in the Government Farm at Trichur in the year for the benefit of the ryots, artisans and other industrial classes of the State. It was opened by His Highness the Raja. The Agricultural section was best represented. The important industries in the State weaving, bell-metal &c., sent the best specimens of their workmanship. The Cattle Show, however, happened to be poor owing to the prevalence of cattle disease at that time. Lectures were delivered on subjects bearing on agriculture and treatment of cattle. Demonstrations were held. There were also weaving and poughing competitions. Prizes in the shape of medals and money and certificates of merit were given for the best specimens of exhibits. The cost of the Exhibition was Rs. 2,538. The Proceedings connected with this show was published in detail in the Government Gazette and reviewed by the Diwan in his Proceedings dated 28th April 1909, Dis No. 506/R of '84.

iv. *Instruction of ryots.* The Agricultural Superintendent in his tours gave instruction to several jemmies and tenants on improved methods of cultivation and an agricultural association was formed at Trichur in the year. Its members took practical interest in agriculture and applied for help from the Department. Ground-nut seeds were distributed to many ryots in all the Taluks and the improved implements were also lent for making experiments on private holdings. These are no doubt encouraging features. The experiments on different varieties of manure should also be notified to the ryots—as likely to be generally useful—for no less than 7 varieties were tried viz, sardine fish, milled fish, fish guano, Parry's fertiliser, Parry's ground nut fertiliser, Parry's sugar-cane fertiliser and bonemeal. The stock of agricultural implements should be further improved and more demonstrations shown to ryots. The Diwan notes that the wooden ridge plough, improved country plough, triangular harrow and clod crusher were tried with good results on the farm.

v. *Agricultural bulletins.* Practical notes in colloquial Malayalam were published in the village sheet of the Government Gazette on 21 Agricultural subjects, the most important of which are:—

- (1) Use of ground-nuts and their cultivation.
- (2) Conservation of cattle manure.
- (3) Tapioca and preparation of flour from its roots
- (4) Arecanut palm disease.
- (5) Single seedling system of transplanting paddy.
- (6) Report on Parasa Lepida (cocoanut palm disease).
- (7) Pepper cultivation.
- (8) Cassava as a famine food.
- (9) Plantain.
- (10) Banku paddy.

The Agricultural department cost the Darbar Rs. 8,893—11—0, including a sum of Rs. 1,095—8—2 on account of erecting sheds, &c.

The Diwan is pleased to record the Darbar's satisfaction that the several branches of work in the Agricultural department were continued with an intelligent interest and earnestness and that the results achieved so far are satisfactory. The Diwan hopes that

the agricultural population will take every advantage of the efforts now being made to improve agriculture in the State.

5. *Agricultural Loans*.—An allotment of Rs. 2,000 was sanctioned under this head. Five applications were received during the year, of which two were rejected, two were held over for the current year for want of budget allotment and one was sanctioned for the total budget grant of Rs. 2,000 and disbursed during the year. The Darbar have sanctioned a sum of Rs. 10,000 under 'Loans' in the current year, and the Diwan Peishkar's assurance that the entire sanctioned allotment will be utilised is noted.

PROCEEDINGS OF THE DIWAN OF COCHIN

Local and Legislative Department

(Education)

Read correspondence ending with letter dated 26th November 1909, R. O. C. No. 632/85, from the Special Educational Officer.

Read also letter dated 6th December 1909, R. O. S. C. No. 547/85, from the Diwan Peishkar.

Order dated 14th December 1909, Ref on C No. 478 of 85

The Assistant to the Special Educational Officer proposed in his letter dated 26th September 1909, R. O. C. No. 632/85, to give the Normal School students practical lessons in agriculture at the Government Farm, Viyyur, and also to request the Agricultural Department to prepare a Malayalam hand book. The proposals were referred to the Diwan Peishkar for remarks and he seems to be of the opinion that the Agricultural Superintendent cannot undertake giving practical lessons without detriment to his own duties. The Diwan concurs in this view. The question of agricultural training is a very important one and no half measures need be introduced; but what is required is a carefully thought out scheme. The Agricultural Department will give every assistance but cannot be asked to undertake the duty of imparting agricultural education. The Diwan considers that it is necessary to appoint an Agricultural Instructor for the Normal School on the present staff who will be required to give a course of training to all the pupils so as to qualify the latter to give lessons in village schools in elementary and practical agriculture. The Instructor can make use of the Government Farm whenever necessary for his practical and object lessons. The Special Educational Officer will be requested to make arrangements accordingly and submit proposition statement.

2. The Diwan Peishkar reports that the Malayalam hand book is under preparation by the Agricultural Department and will be issued in two months. The arrangement of subjects and the final draft of the hand book should be approved of by the Educational Department.

A. R. BANERJI,
Diwan of Cochin.

To

The Special Educational Officer.
" Diwan Peishkar,
" Sarvadhikariakar
" Press bureau.
" Gazette.

Short note on the different crops cultivated on the Farm during the year 1084—1085.

In commenting upon the working of the Farm during the year the state of the Farm and the condition of the different fields are to be kindly considered.

Paddy. Manurial experiments.

Manurial experiments were conducted with the variety locally known as chambavu a 4 months' crop. The various manures used and the results arrived at are given in Appendix A.

For arriving at definite conclusions, the experiments will be repeated next season. Besides the experimental cultivation the same variety as well as some others were also tried as incidental cultivation. (Vide Appendix B).

Thus the total area under paddy including the experiments under wet cultivation was 5 acres. 59 cents. Some of these plots were inferior in quality; the total outturn as seed-paddy may however be considered encouraging.

Banku paddy was tried during the year. But, as a portion of the crop was washed away by an accidental flood as soon as it was transplanted, no definite results could be obtained this year. It will be tried again. It is interesting to note that a private land owner who was supplied with seed from the Farm had a bumper crop on his field.

Ground nuts

The total area under this crop was 3 acres 30 cents. Of these 2 acres were experimental and the remaining incidental. The latter was almost smothered by weeds and thorny plants and damaged by rats. Appendix C. shows the treatment of the crops and the results of the experiments.

Gogu

The seed was obtained free of cost from the Madras Agricultural Department. Half an acre was put under this crop on ordinary dry land. The plants grew to a height of about 8 to 10 ft. Seed has been collected for sale. No special treatments was given to this crop. The suitability of this crop to this kind of soil is unquestionable. Appendix D shows the cost of cultivation and income. Though this fibre can find a market in Cochin the cultivation can more easily be extended if a gunny bag industry is started in the Central Jail at Ernakulam. Other incidental cultivations are shown in Appendix E.

Standing crops

Sugar cane.—The following 4 varieties are cultivated.

1. Red mauritious,
2. Striped mauritious,
3. Coimbatore Pouan,
4. Coimbatore Vallai.

These are manured with fish-manure and Pary's special fertilizer in different blocks. The total area cultivated is only 20 cents. The crop is only 7 months old and the specimens of these canes are exhibited)

Tapioca

The following methods of cultivation are under trial.

1. Local method of close planting on ridges.
2. Do. at a greater distance.
3. On ridges subsoiled.

The total area under this crop is $1\frac{1}{2}$ acres. A few cents were cultivated at the earlier part of the season and some roots of these are exhibited.

Yams

80 pits are planted with elephant foot yams. These will be lifted now and replanted on a larger area.

Pepper.

50 standards were planted with the local vines. There are vines on 30 standards now.

Fruit trees.

The following fruit trees were planted and are doing well.

1. Different varieties of mango fruits
2. Varieties of oranges
3. Varieties of limes
4. Varieties of Pumelas
5. Citrons
6. Varieties of guavas
7. Pomegranate
8. Peaches
9. Rose apples
10. Saposia
11. Lichies
12. Mangosteen
13. Figs
14. Papua
15. Varieties of grape vines
16. Some pine apples

Guinea grass.

This has a luxuriant growth and a cluster of it is exhibited. Seeds have been collected for extending the cultivation and for sale.

Concluding remarks.

Of the operations carried out on the Farm during the year the following important results arrived at may specially be noted.

1. An increased expenditure by manuring paddy with manures mentioned in Appendix A will be compensated for by increased outturn especially on a poor soil like that of the Farm.
2. Suitability of the local soils for ground nuts.
3. Do sugarcane
4. Do gogu
5. Do Guinea grass

APPENDIX A.

Manure applied.	Area cultivated	Average yield per plot		Yield per acre				Receipt in cash				Expenditure	Profit per acre						
		Grains in lbs	Straw in lbs	Grain		Straw		Grain at 10 as. per para	Straw at 1 Re per 100 bundles										
				in lbs	in parahs.	in lbs	in bundles.												
Milled sardine 240 lbs. per acre ..	0.15	9/10	284	1566	119	1900	950	74	6	0	9	8	0	29	8	0	54	60	
Fish guano 150 lbs per acre ..	0.20	3/20	320	400	1600	122	2000	1000	76	4	0	10	0	0	29	8	0	52	120
Sardine fish 300 lbs. per acre ..	0.15	2/1	231	270	1540	117	1800	900	73	2	0	9	0	0	29	8	0	56	100
Farm yard manure 10 cart loads ..	0.12	1/8	193	190	1053	81	1585	792	50	10	0	7	12	0	29	8	0	38	140
Parrys' special fertilizer 190 lb per acre	0.22	3/6	345	345	1527	116	1525	762	72	8	0	7	10	0	29	8	0	50	100
Green leaves 100 loads per acre ..	0.10	3/21/10	120	921	70	1200	600	43	12	0	6	0	0	29	8	0	30	40	
Nosmanure ..	0.16	1/7	140	671	51	875	437	31	15	0	4	6	0	29	8	0	12	130	

APPENDIX B.

Varieties of paddy	Area cultivated	Average yield per plot		Yield per acre				Receipt in cash				Expenditure	Profit or loss			
		Grain in lbs	Straw in lbs	Grain		Straw		Grain at 10 as per parah	Straw at 1 Re per 100 bundles							
				in lbs	in parahs	in lbs	in bundles									
Chambavn ..	1.94	1717	2100	885	74	1083	540	46	4	5	6	21	2	25	10	...
Modan ..	1.50	1317 $\frac{1}{2}$	1628	878	66	1086	543	41	4	5	6	21	2	30	10	...
Navara ..	.25	79	100	316	24	400	200	15	...	2	...	21	...	25	10	...
Cheera ..	.40	132	160	400	25	400	200	15	10	2	...	21	...	-4	...	...
Veluthari ..	.70	461	550	785	50	790	400	31	4	4	...	21	...	-3	6	...
Bunku ..	1.20	395	480	330	25	400	200	25	...	2	...	25	...	14	4	...
														2		...

* Calculated at Re. 1 per acre.

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APPENDIX C.

Manure applied	Area cultivated	Average yield per plot lbs.	Yield per acre in lbs	Expenditure per acre	Receipt per acre	Profit or loss
No manure	0.50	337	674	36 8 0	50 8 9	14 0 9
Cow dung and ashes	0.50	545	1090	44 8 0	81 12 0	37 4 0
Parrys' special manure	0.50	475	950	44 8 0	71 4 0	26 12 0
Ground-nuts mixed with Ragi	0.50	325 + 4 paras of Ragi	650 + 8 paras of Ragi	42 8 0	48 12 0 + 8 0 0	14 4 0

Weeding was a costly item of expenditure due to the overgrown condition of the plots.

APPENDIX D.

Name of crop	Area cultivated	Actual yield of fibre in B mds	Yield per acre in B mds	Cost of cultivation &c. per acre	Receipt per acre at Rs. 8 per md	Profit
Gogo or Bombay harp	0.50	435 lbs of fibres	870 lbs or 10 5/8 Bengal mds	21 8 0	85 0 0	63 8 0

APPENDIX E.

Name of crop	Area	Expenditure	Yield	Money value	Remarks
Cow gram	0.50	3 9	...	...	Damaged by cattle before the farm was fenced
Chama	1.00	7	4 paras	4	Do by heavy rain
Bengal jute	0.50	3	...	...	failed
Pepper	standing crop	...	...	...	Not lifted
Elephant foot yarns	0.50	4	...	...	Plots were too weedy & the crops poor
Horse gram	10.00	100	100 paras gram & straw	126	Poor germination
Gingely	2.00	12 8	5 paras	10	