

Educational (1916.) Department.

mis SERIES.

G.O. No. 514 - 401

DATED 11-5-16

[Despatch Abstract.]

Recording letter from the Director of Livestock
 stating that no restriction in the strength
 of his office establishment can be made
 consequent on the transfer of the pumping
 & boring operations to the Department
 of Agriculture

PAPERS PUT UP WITH CURRENT No. _____

Papers of the department to which the current belongs.

Number.	Date.	Original (= O) or spare copy (= S.C.).	Remarks. (In this column such of the papers as have been removed for copying, printing, etc., should be marked with a cross.)	Initials of Referencer with date in token of return to Reference department

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Department.	Number	Date.	Original (= O.) or spare copy (= S.C.).	Initials with date of (1) Referencer acknowledging returns of the paper concerned or (2) Despatcher to denote the return of the papers to the department concerned.

Government of Madras.

REVENUE DEPARTMENT.

Recd.

Regd.

} 1916.

Enclosures

Spare copies

G.O. No. 523, 7th March 1916

Pumping and boring operations.

Passing orders on the proposals for the appointment of an Agricultural Engineer and of an Assistant Agricultural Engineer in the Agricultural Department and the transfer of the — to that department.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following papers :—

I

Official Memorandum No. 614 C.15-1, Revenue, dated 8th April 1915.

With advertence to the debate on Resolution No. XX moved at the Legislative Council meeting of the 13th March 1915 by the Hon'ble Mr. K. R. V. Krishna Rao and to the accompanying extract from the notes of Mr. Coventry's recent tour in this Presidency, the Board of Revenue is requested to favour Government with its considered opinion on (i) the suggested transfer to the Director of Agriculture of the control of pumping and boring operations and (ii) the proposal to create a special appointment of Agricultural Engineer.

In so far as the former change can be given effect to independently of the recruitment of a trained Agricultural Engineer, the Government would welcome a practical scheme worked out in some detail. The Board should endeavour to frame such a scheme in consultation with Messrs. Chadwick and Tressler whose opinions on the general issues also should be furnished to Government.

L. DAVIDSON,
Secretary to Government.

To the Board of Revenue (Revenue Settlement).
" " (Land Revenue).
" Director of Industries.
" Educational Department.

II

Letter—from D. T. CHADWICK, Esq., M.A., I.C.S., Director of Agriculture, Madras.
Dated—the 6th July 1915.
No.—R.O.C. 253-B.

I have the honour to reply to Board's Reference No. 671, dated 15th April 1915, on the subject of the transfer of the pumping and boring operations to this department and to Board's Reference No. 799, dated 6th May 1915, on the appointment of an Agricultural Engineer.

2. To Mr. Chatterton, C.I.E., is due the credit for being the first to endeavour to popularise among ryots the use of oil-engines to raise water from wells for the purpose of agriculture and as the following figures show considerable progress—probably greater than in any other part of India—has been achieved by him and by his assistants :—

Year.	Number of irrigation plants installed with the aid of departmental assistance and advice.						
1904-05	...	...	...	...	...	...	9
1905-06	...	...	...	...	...	...	21
1906-07	...	...	...	...	...	...	20
1907-08	...	...	...	...	...	...	44
1908-09	...	...	...	...	...	...	53
1909-10	...	...	...	...	...	...	36
1910-11	...	...	...	...	...	...	49
1911-12	...	...	...	...	...	...	48
1912-13	...	...	...	...	...	...	55
1913-14	...	...	...	...	...	...	63
1914-15	...	...	...	...	...	...	15
Total	...	...	...	...	...	...	413

Besides these, a considerable number of well-borings have been made, thus in 1912-13, 539, in 1913-14, 494 and in 1914-15, 641, whilst on 31st March 1915, there were 75 applications in hand. A system of annual inspection has been developed and in 1914-15, 459 plants were on the inspection list. Many of these are industrial concerns, e.g., rice hullers in Tanjore, but very many are pumping machinery attached to scattered wells. The development and adequate supervision of the scattered village work connected with pumping and boring entails much attention to small details and requires wide scattered local supervision. I believe I am correct in saying that the former now interferes with the attention which the Director of Industries has to give to his work on industries proper and industrial education both of which have developed vastly in the last year and promise to develop still further; while these same latter duties render it difficult for the superior staff of that department to do village inspections. It would appear that if this work among the agricultural population as distinct from that of industries proper, which require more capital and are more centralized, is to be further developed, a district organization somewhat similar to that recently sanctioned for the Agricultural department will be required and the consideration naturally arises whether there is any need to duplicate that.

3. Also from the point of view of the ryot the use of machinery for the better cultivation of his land and for the immediate treatment of his raw products and for the raising of water from wells is inextricably mixed up with questions affecting his crops and methods of farming. It causes delay and is distinctly inconvenient for him to be referred to different departments for two branches of what appears to him to be one problem.

4. From the point of view of the Agricultural department, an Engineer to work on the problems connected with the adaptation of machinery to the conditions and resources of the Indian ryot is also required. As the Agricultural Adviser to the Government of India says "much field work and knowledge of field conditions is required to carry through innovations in testing and trying machinery suited for Indian farming." For instance Mr. Tressler cannot with all his varied projects in hand spend some days actually with a motor plough seeing and realising the actual defects in the operations from the farmers' point of view. Mr. Wood when he went on leave last year took specimens of many of the Indian grains home with him and showed them to several of the large firms telling them that cheap threshers and winnowers are needed to deal with these. The result has not been altogether satisfactory and such efforts are spasmodic. An officer to work on engineering problems connected with agriculture is as much needed in an Indian Agricultural department as one to work on crop pests and insects. Such officers have already been appointed as members of the Agricultural Department in several of the other provinces.

5. I am thankful to say that provision has recently been made for the development of the Agricultural department especially in the way of district staff, and although that cannot be in actual working order for some time, yet I am prepared to take over this engineering work at once, provided there is a good prospect of obtaining an Agricultural Engineer in the near future. To the Industrial department belongs all the credit for showing the way. This change now under consideration is merely a step—I trust it will prove a forward one—in logical progress and development.

6. The three main lines of work in progress are pumping, boring and inspection and at present the district staff consists of ten supervisors with their complement of mechanics, fitters, etc., whilst all supervision, accounts and routine are done in the Central Office, Madras.

The ten divisions already in existence correspond very closely with the proposed seven Deputy Directors' divisions and where they do not, can very easily be made to fit in. If the work be given over to this department, an attempt will be made to decentralize it as far as possible. That is, much of the account work, diaries of supervisors, routine and complaints that annual inspections have not been done will devolve on the Deputy Directors who also will have the main say in the distribution of work in their divisions. They will consult the Agricultural Engineer on all engineering matters. This will make the supervisors and others a more integral part of the Agricultural department. If this be not done the Agricultural Engineer will

soon be simply tied to his desk unable to devote adequate time to any experimental work he may be required to do. He will probably always have more district work than the mycologist or entomologist, etc., but he will be like them in that when he has reduced a thing suitable for being pushed among the ryots practically to routine, then that part of the work will devolve largely on the Deputy Directors with his expert assistance always to hand.

7. The extent to which this decentralization can be carried out varies in the different branches of work. Obviously Deputy Directors can pass establishment bills, see whether inspections of plant are readily and regularly carried out, that work is intelligently concentrated and time not wasted in dashing about, that sufficient advertisement of the advent of boring parties to a taluk is given, that the fees therefor are properly paid, etc. In fact most of the administrative work connected with inspection and boring can be left to them. This would free the Agricultural Engineer considerably but for the present, with our large divisions would mean an extra clerk in each of the divisional offices. But in regard to advice to ryots as to the choice of oil-engines and pumps, the selection of engines, the placing of orders and repairs, etc., reference would have to be made to the Agricultural Engineer at head-quarters and all that work would be in his hands and in that of his own staff, the Deputy Directors only having a say about the feasibility of a project on the agricultural side. I have been into this with Mr. Tressler and he has emphasised a very important point in this connection. The Agricultural Engineer must be free to tour. This is absolutely necessary especially if, as I should wish, he can pay attention to other agricultural problems than those of pumping and boring—e.g., power ploughing (Bombay is doing well here and is ordering additional plant), threshers for ragi and the tightly coated grains, jaggery boiling, etc. Yet it does not do to leave the Central office without an Engineer there permanently. Ryots apparently not infrequently come to Madras musing on the purchase of an engine and they call at the office for advice. There must be some one there to talk matters over with them and advise them. It is absurd to refer them to some one who may be at Hagari or Manganallur. Also plans have to be prepared for the erection of plant. These must be done in the Engineering office and not in the Deputy Director's and these require scrutiny. Also, which is still more important, I am told that breakdowns, and delay in supplying spare parts, or mistakes in sending wrong sizes or patterns are always liable to cause waste of time and money unless they are attended to in the Central office by some one who is prompt, methodical and thoroughly understands the points at issue. Thus a well trained competent man at head-quarters is essential in any case in addition to the actual Agricultural Engineer.

8. *Qualifications in the men required.*—I would therefore request that an Agricultural Engineer be appointed. He must be a mechanical engineer not a civil one, possessed of energy and drive and prepared to travel. He ought to be made to pass a test in a vernacular similar to that which Deputy Directors take. I would submit that he be put on grade pay equal to that of Deputy Directors, viz., 400–80–500 and then 500–50–1,000 or something very similar thereto. I do not know of anyone so qualified at present but am told that such men could be obtained from some of the firms in India if advertised for.

9. I believe all the other senior officers on the executive side are described as supervisors. The establishment of the Industries department on the executive side is as follows:—

Pumping and boring.							Number of appointments sanctioned.	Number of posts filled.
Supervisors	...	...	...	...	...	...	14	12
Mechanics	...	...	...	...	...	...	24	21
Boring maistris	...	...	...	...	...	...	40	38
<i>Sugarcane experiments.</i>								
Supervisor	...	...	...	...	...	...	1	1
Mechanics	...	...	...	...	...	...	2	...
<i>Industrial experiments.</i>								
Supervisors	...	...	...	...	...	...	4	3
Mechanics	...	...	...	...	...	...	1	1

* Exclusive of six persons on temporary wages.

Of these practically the first section would come over, the rest remain. There are ten circles for each of which one supervisor is required, and one of the rest is required at head-quarters; consequently at least eleven supervisors are required. I submit that eleven of these together with 22 mechanics and 40 maistris can come over as they are. If Mr. Tressler wishes, the sugarcane experiments may also come but I would prefer that those waited for a year until the pumpers and borers are assimilated. Most of the supervisors with better qualifications are Bachelors of Engineering and are graded on the Public Works department establishment list and are liable to recall. This Agricultural Engineering is a particular branch of work and there are obvious disadvantages in frequent change of personnel. Yet it is hard to see how to offer commensurate prospects in this branch. But whilst reserving permission to address Government later on this subject, if necessary, I would submit that for the present the existing arrangement may hold with one possible modification and that is that the officer at head-quarters be particularly selected and if he is of sufficient seniority be made a gazetted officer on Rs. 200—12½—400. Until an Agricultural Engineer be appointed, he will be my Chief Engineering Assistant and always will have a certain amount of administrative dealings with the supervisors, etc., in the districts; and he undoubtedly has higher status as a gazetted officer. This is the scale sanctioned for Assistant Directors in the Agricultural department and it is desirable that the officer who is permanently at head-quarters for engineering matters has not a lower status than that of Assistant Directors or of the Assistant Principal at the College. The scale is a recognised one in this department and fits in well with the Public Works department grades which run 150, 200, 250, 300, 350 and 400. I presume they would at any rate for a few years until at least things were more settled, second a fairly senior officer about 200 to 250 grade as my head-quarter Engineering Assistant, and allow him to remain for four or five years if necessary. I would therefore request that two gazetted posts in this department be created as the nucleus of the Agricultural Engineering branch, viz., that of Agricultural Engineer on a pay similar to that of Deputy Directors and one on Rs. 200—12½—400 for the Assistant Agricultural Engineer at head-quarters.

10. *The future.*—It is difficult to foresee how many posts may be needed in the districts and I would prefer to take the rest of the staff over just as it stands. When the Agricultural Engineer gets to experimental work more supervisors will most probably be needed. But if, as I hope may be the case, this line of work results in considerable development I would hazard the opinion that I should like to see it develop as follows.

11. There is a distinct limit to the complexity and cost of the machinery which ryots will or can profitably purchase for agricultural uses. Whilst I hope expansion may mean that we shall require in time more trained men in the districts, yet it is doubtful whether Bachelors of Engineering will be required for all the district work after the pioneering stage is passed. It should be sufficient if most of the supervisors of the future are fairly trained mechanical engineers with an agricultural bias. At present I understand there is no one available between the Bachelor of Engineering and the mechanic. In the revised course at Coimbatore the students are given a two years' course in agriculture into which a little mechanical work enters. The better of them who become our upper subordinates have another eighteen months in science, etc. If some of them who showed an aptitude for mechanical work could instead of undergoing this eighteen months' course in science, etc., get two or three years in an industrial school (I believe one is to be developed at Coimbatore itself) or in works they would give us a cheaper and yet thoroughly useful class of men for district work. They would be graded and paid like our other upper subordinates and have proportionate prospects either starting on Rs. 50 or 75 and rising to 75—5—125, 150, 175 and 200. If this work so develop it will very probably then be necessary to have some more highly trained men—one for two or three divisions according as there was need, i.e., three all told for the districts to assist the Deputy Directors on the Engineering side and to relieve the Agricultural Engineer and Central office.

These senior officers of whom there would probably be four, viz., three in the districts and one at Central office should be of Assistant Director grade. This means probably three posts on Rs. 200—12½—400 with one on higher grades. These men would mostly come from the Engineering College and it would probably be necessary to admit them into the upper subordinate grade at something above bottom pay say

Rs. 100—5—125 or 85—4—125 and then onwards. The upper subordinate service on the engineering branch of the Agricultural department would then consist of supervisors some of whom had come through the Agricultural College and mechanical schools and were on Rs. 50—5—125 exactly the same as Agricultural subordinates and a very few with more theoretical and practical engineering knowledge starting in the same scale at a higher point. Both could look forward to three or four gazetted posts equal to and ranking with Assistant Directors and Assistant Science Officers. I hope this may prove practicable, as it would make for harmony and ease of working. For the present I would take them as they stand only asking that if it be possible the Assistant Agricultural Engineer's post be created at head-quarters a gazetted one on Rs. 200—12½—400 and a good man who knows the work be seconded to it.

12. *The workshop.*—A workshop and store is required for repairs and spares. Mr. Tressler informs me that he is developing his and I do not think there is any need or reason to duplicate it. I should be very glad to be free from the charge of a workshop and he says we may indent upon him for repairs and spares. This seems to be the cheapest and simplest arrangement.

13. *Office.*—Some draftsmen, etc., in the Central office are essential. Here again I would submit that Mr. Tressler's staff may be transferred as they are. We require three draftsmen, three clerks (one pumping, one boring and one registering) and an accountant. Of these Mr. Tressler can spare all except the accountant and the registering clerk. An accountant and a registering clerk are necessary and Mr. Tressler says he cannot spare his on account of the work in the Industries department. I therefore request sanction for an accountant on Rs. 50—2½—70 and a registering and despatching clerk on Rs. 20—1—25. Provision is made in the reappropriation statement for five months, i.e., from 1st October 1915.

14. *Office accommodation.*—My office building is the old Madras Volunteer Guards drill hall which was not designed as an office. It cannot be termed convenient for that purpose, nor is it easily found by any enquirer. In fact I find comparatively few people know where it is. Most have a vague idea that it is in the same buildings as the Board of Revenue. If the department grows much larger, accommodation will be needed, but for the present I would prefer to see any money the Government can spare for this department go into the districts. But I would ask that this need for accommodation be kept in view in any redistribution of offices such as that due to the transfer of the Engineering College, which may take place, or in building new ones. Thus I understand new quarters are to be built for the Director of Industries; there is much to be said for accommodating this office and that of the Registrar of Co-operative Societies in the same building. The Engineer at head-quarters and the draftsmen and office staff can be accommodated in this present office provided the room in our building occupied by the Assistant Director of Fisheries and the portions of the building occupied by the clerks of the office of the Registrar of Co-operative Societies are vacated. If this be not done there is not even standing room. I request that this be done as if I take over this work I should like to have the engineering branch in the same building as myself.

15. *Relations with the Industrial department.*—The relations between the Director of Agriculture and the Agricultural Engineer should be exactly the same as between the Director and any of the other experts, and so also with the rest of the staff except in so far as it must be modified by the fact that some hold permanent appointments in the Public Works department. But it would be well to recognise from the outset that the Director of Industries be kept informed with what is being done and with results and with any information he requires.

16. *Effect on the Agricultural department.*—There is already one engineering post in the department, viz., that of Instructor at Coimbatore. It is the most difficult of all posts to fill and the teaching at present being given is anything but satisfactory. It was for long filled by a man who was purely a Civil Engineer who was taken over from Saidapet. If the engineering side of this department be developed, it will become possible to grade this post with the others and improve considerably the nature and quality of the teaching.

17. *The immediate present.*—I would not attempt any decentralization immediately but for six months or a year would endeavour to run the work on the lines already laid down until I was more familiar with the detail and in a position to issue

full instructions to the Deputy Directors on the several points. But for this I would ask that Mr. Tressler should endeavour to give me for head office as good a man as he could, one conversant with details of the work and prompt and methodical in his work. If I can be given such a man I am prepared to undertake this work even before an Agricultural Engineer is appointed. In fact it would be an advantage to do so as that officer must inevitably be new to the work and I should prefer to be familiar with it before he joins.

18. In these circumstances, I would be prepared to undertake it from September 1st or October 1st for which purpose I would request that the following sums be transferred from Mr. Tressler's budget to mine. They are calculated on the basis that establishment bills, etc., for September are signed by me but not those for August. But I would ask that steps be taken to engage an Agricultural Engineer, to study, co-ordinate and develop the application of machinery to ryots' needs. At present our steps in that direction are somewhat hesitating and doubtful and we frequently refer to the Director of Industries for advice, etc. But to him Agricultural engineering is only a small part of his duties; and on the other side it not infrequently happens that he is unable to push some of his results without the active co-operation of our Deputy Directors, e.g., some of his jaggery boiling appliances on a large scale. Its general adoption is really an agricultural and co-operative question. I submit there is justification for separating the agricultural engineering side from the industrial one and that more cordial co-operation and more effective work should be obtained by attaching the Agricultural Engineer definitely and finally to the Agricultural department. He will not be dangerously isolated from the other members of his profession. There are many Engineers about. Moreover we already have a chemist, a botanist, mycologist, etc., all of whom do effective and good work. Many firms in India employ an Engineer either to develop an engineering section or to manage their own machinery and they do good work.

19. To sum up:

(a) It is logical, more simple and more economical for the Agricultural Department to deal with questions of engineering and machinery adapted for the purposes of agriculture which are within the resources of the ryots than for another department to build up a second district organization for the same purpose.

(b) In pursuance of this I am prepared to take over at once the pumping and boring work which has been so successfully initiated by the Department of Industries, but to ensure further advance I would ask that an Agricultural Engineer be appointed.

(c) The work will be at first managed from my office as at present it is from Mr. Tressler's, but early steps will be taken to decentralize as far as possible the administrative side to ensure more speedy local control.

(d) I would ask that for the supervisor at head-quarters as well qualified and experienced a man be given to me as possible at least for six months or a year and that he soon be given gazetted rank on a similar scale to that proposed for Assistant Directors.

(e) Calculating for five months from October 1st, Rs. 38,358 (vide statement attached) should be transferred from Mr. Tressler's budget to the agricultural one and proportionately more from September 1st.

(f) The Board would kindly endeavour to set free the rooms in my office occupied by the Assistant Director of Fisheries and the Registrar of Co-operative Societies.

(g) Details of plant and stores and stationery can be arranged with Mr. Tressler later. I do not need the motor tractor.

(h) A proposition statement is submitted for an Agricultural Engineer 400—30—500, 500—50—1,000 and for an Assistant Agricultural Engineer 200—12½—400, for one accountant and one clerk. The money may come out of savings on Mr. Tressler's budget on the provision made for Mr. Wills.

20. A copy of this letter has been sent direct to Mr. Tressler who will submit his remarks to the Board direct.

21. A statement is enclosed showing in detail the men to be transferred. The permanent men remain on the Public Works Department list, but I have asked for transfer of funds from Public Works Department budget to 26-A (a) Agriculture as that would keep accounts clearer.

ENCLOSURES.

(1)

Statement of proposition for revision of establishment.

Order sanctioning present establishment. Government of Madras, Revenue Department.		Office to which the proposer refers.		Present scale.					Proposed scale.					Proposition.										
Number.	Date.	3	4	5	Designation.			Pay.			Average cost.	Number.	Designation.	Pay.			Average cost.	Permanent.			Temporary.			
					Minimum.	Increment.	Maximum.	Minimum.	Increment.	Maximum.				Increase per month.	Decrease per month.	Amount.		Increase per month.	Decrease per month.	Amount.				
1	2	3	4	5				6	7	8	9	10	11			12	13	14	15	16	17	18	19	20
																				</				

No. 263 B, dated 6th July 1915.

Please vide letter R.O.C.

814b	2nd November 1914.	..	1	Accountant ..	..	..	..	..	50	2 1/2	70	64 0 0	..	..	..	..	..	..	..
			1	Clerk ..	..	..	..	..	20	1	25	23 12 0	..	..	..	..	..	..	..
			2	Clerks ..	..	..	..	..	25	1	35	63 5 4	..	..	..	..	..	..	..
			1	Head draftsman ..	..	..	..	..	55	3	70	66 4 0	..	..	..	..	..	..	..
			1	Draftsman ..	..	..	..	..	30	4	50	45 0 0	..	..	..	..	..	..	..
			1	Tracer ..	..	..	..	..	..	..	25	25 0 0	..	..	..	..	..	..	..
			7	Total ..	..	..	..	..	..	..	..	287 5 4	287 5 4	..	..	..	..	..	..
			22	Grand total ..	..	..	..	..	..	..	..	3,448 5 4	287 5 4	..	..	..	..	..	..
975	26th April 1915.	Department of Agriculture.	86	Executive subordinates ..	..	..	..	10,727 12 5	..	..	..	..	..	..	..	..	..	..	..
			141	Field subordinates ..	..	..	..	8,877 0 0	..	..	..	..	..	..	..	..	..	..	..
			227	Total ..	..	..	..	19,604 12 5	227	Total ..	..	..	..	19,604 12 5	..	..	..	..	..
			4	Upper subordinates ..	..	..	..	..	..	..	..	200 each	..	..	..	..	..	..	..
			4	Do. ..	..	..	..	..	..	..	..	80 each	..	..	..	..	..	..	..
			2	Mechanics ..	..	..	..	..	50	10	70	120 0 0	..	..	..	..	..	..	..
			9	Do. ..	..	..	..	..	35	2	45	375 0 0	..	..	..	..	..	..	..
			8	Peons ..	..	..	..	..	..	..	..	72 0 0	..	..	..	..	..	..	..
			27	Total ..	..	..	..	..	..	..	..	1,687 0 0	1,687 0 0	..	..	..	..	..	..
			3	Upper subordinates ..	..	..	..	..	..	..	..	300 0 0	..	..	..	..	..	..	..
			11	Mechanics ..	..	..	..	..	35	2	45	458 5 4	..	..	..	..	..	..	..
			2	Maistris ..	..	..	..	..	30	1	35	66 10 8	..	..	..	..	..	..	..
			38	Do. ..	..	..	..	..	20	1	30	992 3 6	..	..	..	..	..	..	..
			3	Clerks ..	..	..	..	..	20	1	25	71 4 0	..	..	..	..	..	..	..
			4	Peons ..	..	..	..	..	..	..	..	36 0 0	..	..	..	..	..	..	..
			61	Total ..	..	..	..	..	..	..	..	1,924 7 6	..	..	..	..	..	..	..
			227	Grand total ..	..	..	..	..	..	..	..	23,216 3 11	1,888 0 0	..	..	..	..	..	..

* Increment, quinquennial.

† Proposed to be transferred from this Department of Industries to the Department.

(2)

REAPPROPRIATION statement to accompany all applications for sanction to expenditure not provided for in the budget, or for additional allotments, Agricultural Department.

Major, minor, sub and detailed heads of budget (a).	Heads of estimate proposed to be increased.				Heads of estimate proposed to be reduced.			
	Amounts as in the sanctioned estimate.	Actual expenditure up to date.	Probable expenditure during remainder of the year.	Amount of additional allotment required.	Amounts as in the sanctioned estimate.	Actual expenditure up to date.	Probable expenditure during remainder of the year.	Amount available for re-appropriation.
26. A (a) Agriculture—	RS.		RS.	RS.	RS.		RS.	RS.
I. Director of Agriculture.								
Assistant Agricultural Engineer salaries	..	..	1,000	1,000	..	..	..	..
Establishment	6,630	8,042	1,412	..	..	..	..	..
Agricultural Engineer salaries.	..	..	2,000	2,000	..	..	..	..
Establishment—								
Permanent	..	..	8,500	8,500	..	..	..	..
Temporary	..	..	9,946	9,946	..	..	..	..
Travelling allowance of officer.	..	..	1,000	1,000	..	..	..	..
Travelling allowance of establishment.	..	..	9,000	9,000	..	..	..	..
Supplies and services	..	..	4,000	4,000	..	..	..	..
Contingencies	..	..	1,500	1,500	..	..	..	..
45. Civil Works—Provincial—Public Works Department—								
Establishment—								
Permanent	..	..	..	..	23,094	..	8,500	8,500
Temporary	..	..	..	..	28,358	..	14,358	14,358
Travelling allowance	..	..	..	..	20,000	..	10,000	10,000
Supplies and services	..	..	..	..	30,000	..	4,000	4,000
Contingencies	..	..	..	..	3,000	..	1,500	1,500
				38,358				38,358

(a) The same detail must be given as in the printed civil budget estimate.

(3)

STATEMENT showing the funds available for transfer under the various heads from the budget estimate for 1915-16 under "45. Civil Works—Provincial—Public Works Department, etc."

Detailed head.	Budget estimate, 1915-16.	Amount available for transfer to the Agricultural Department for six months.	Remarks.
1. Establishment—			
Permanent	23,094	(a) 8,500	(a) The provision is for 8 upper subordinates, 11 mechanics and 8 peons.
Temporary	28,358	(b) 14,358	(b) The cost of the existing temporary establishment comes to about Rs. 10,150 for six months (3) upper subordinates, 11 mechanics, 40 boring maistries, 3 clerks and 4 peons), a sum of about Rs. 4,200 is provided in addition to meet the cost of the Agricultural Engineer proposed to be appointed and also of the permanent clerical and drawing staff to be transferred to the Agricultural Department. The cost of which will amount to about Rs. 1,400 and may be met by reappropriation.
2. Allowances—			
Travelling allowance	20,000	10,000	
Grain compensation allowance.	..		
3. Supplies and services—			
Materials, wages, freight, etc.	30,000	(c) 4,000	(c) As the workshop will remain in the Department of Industries the provision of Rs. 4,000 should be sufficient to meet the cost of petty stores, freight on boring tools, etc., the monthly average being about Rs. 500.
4. Contingencies	3,000	1,500	

(4)

Number of appointments sanctioned.	Number to be transferred to Agricultural Department.	Names.	Grade.	Pay now drawn
		PERMANENT.		
		Central Office Establishment.		
..	2	Clerical branch—		
		1 clerk for pumping	25— 1—35	30
		1 do. boring	25— 1—35	28
		Drawing branch.		
3	3	1 head draftsman	55— 3—70	61
		1 assistant draftsman	30— 4—50	33
		1 tracer	25	25
		TEMPORARY.		
		District Office Establishment.		
3	3	1 clerk for Tinnevely	20— 1—25	23
		1 do. Tanjore	20— 1—25	23
		1 do. Coimbatore	20— 1—25	23
		Menial Establishment.		
11	8	Peons	..	9
		TEMPORARY.		
4	4	Peons	..	9
		MECHANICS.		
		PERMANENT.		
12	11	1. P. S. Renganatham Pillai	50— 1 ⁰ —70	50
		2. P. M. Kesava Ayyar	50— 1 ⁰ —70	50*
		3. S. T. M. Venugopal Nayudu	sub. pro tem. 50— 1 ⁰ —70	50
		4. M. Narayanaswami Chetti	sub. pro tem. 35— 2—45	40
		5. P. G. Ranganatha Ayyar	35— 2—45	35
		6. K. Krishnaswami Madali	35— 2—45	35
		7. A. Sachithanatha Ayyar	35— 2—45	35
		8. N. Venkataramaya	35— 2—45	35
		9. P. S. Venkatasubbia	sub. pro tem. 35— 2—45	35
		10. K. Ramachandra Ayyar	35— 2—15	35
		11 & 12. Vacant	..	..
		TEMPORARY.		
12	11	1. C. S. Rajagopala Ayyar	35— 2—45	35
		2. J. Bapu Rao	35— 2—45	35
		3. T. K. Sankara Rao	35— 2—45	35
		4. S. Kasturi Ranga Ayyar	35— 2—45	35
		5. G. H. Venkateswara Ayyar	35— 2—45	35
		6. C. Venugopal	35— 2—45	35
		7. V. Kanakayya Nayudu	35— 2—45	35
		8. G. Ramamurthi	35— 2—45	35
		9. S. Venkatarama Ayyar	35— 2—45	35
		10. Hsan Sehamad	35— 2—45	35
		11. T. R. Parameswara Ayyar	35— 2—45	35
		12. Kalyanasundaram	35— 2—45	35*

* To be retained in the department of Industries.

(5)

MAISTRIES

Names of boring maistries.	Grade.	Pay actually drawn.	Remarks.
<i>Boring maistries, I Grade.</i>			
1. C. D. Srinivasachari	30-1-35	31 2	Personal allowance.
2. Chinnaswamy	30-1-35	30	
<i>Boring maistries, II Grade.</i>			
3. Padmanabhan	20-1-30	30	Tractor driver.
4. Parthasarathi Nayudu	20-1-30	29	Test-engine driver.
5. K. S. Sundararaja Ayyangar	20-1-30	29	
6. Kandaswami Pillai	20-1-30	28	
7. Dandayathapani	20-1-30	27	
8. Jayavolu Mudaliyar	20-1-30	27	
9. M. Subramaniya Mudaliyar	20-1-30	27	
10. Erreddi Ramanna	20-1-30	26	
11. Jayaram Nayudu	20-1-30	26	
12. P. S. Venkatarama Ayyar	20-1-30	25	
13. S. Krishnaswami Mudali	20-1-30	25	
14. K. Veeranna	20-1-30	25	Keystone drill driver.
15. P. S. Vengu Ayyar	20-1-30	24	
16. Guruswami Nayudu	20-1-30	24	Test-engine driver.
17. Parthasarathi Naicker	20-1-30	24	
18. Seetharama Nayudu	20-1-30	23	
19. Appalaswami	20-1-30	23	
20. Subramanian	20-1-30	23	
21. Rajagopal Mudali	20-1-30	22	
22. M. Rajagopal Nayudu	20-1-30	21	
23. L. Ramaswami Nayudu	20-1-30	22	
24. P. K. Seetharama Ayyar	20-1-30	21	
25. M. Krishna Nayar	20-1-30	20	
26. Singaperumal	20-1-30	20	Tractor.
27. P. N. Seetarama Ayyar	20-1-30	20	
28. C. Rajagopal Nayudu	20-1-30	20	Test-engine driver.
29. Veeraswami	20-1-30	20	
30. Chidambara Ayyar	20-1-30	20	Test-engine driver.
31. Ramaswami Pillai	20-1-30	20	
32. Raju Mudali	20-1-30	20	Test-engine driver.
33. Paduraju	20-1-30	20	
34. Doraiswami	20-1-30	20	Test-engine driver.
35. K. P. Visvanatha Ayyar	20-1-30	20	
36. Garudappachari	20-1-30	20	Test-engine driver.
37. Narayanaswami	20-1-30	20	
38. Seetharamayya	20-1-30	20	Test-engine driver.
39. Govindarajulu	20-1-30	20	
40. Panchapakasa Ayyar	20-1-30	20	

(6)

Number of appointments sanctioned.	Number transferred to the Agricultural Department.	Names.	Designation.	Salary.	Remarks.
1	1	1. Vacant	Sub-Engineer.	..	
13	10	<i>Upper Subordinates.</i>			
		2. M.R.Ry. J. Narayanamurthi	Supervisor, I grade.	200	To be retained in the Department of Industries.
		3. " K. Ranganatha Ayyangar	Do.	200	Has applied for transfer to Public Works Department.
		4. " K. Rangachar	Overseer, I grade.	100 + 50 personal allowance.	To be transferred to Agricultural Department.
		5. " A. V. Varadaraja Mudaliyar	Do.	Do.	Do.
		6. " K. Govinda Menon	Do.	Do.	Do.
		7. " C. S. Ramschendra Ayyar	Do.	Do.	To be retained in the Department of Industries.
		8. " C. Sunderarama Ayyar	Do.	100	Do.
		9. " N. S. Yegnanarayana Sastri	Do.	100	To be transferred to Agricultural Department.
		10. " V. R. Venkatarama Ayyar	Do.	100	Do.
		11. " S. Rajagopal Nayudu	Overseer, II grade.	80	Do.
		12. " P. K. S. Ramanaiah Pillai	Do.	80	Do.
		13. " B. Akkiah Nayudu	Do.	80	Do.
		14. Vacant.			

III

Letter—from D. T. CHADWICK, Esq., M.A., I.C.S., Director of Agriculture.

To—the Secretary to the Commissioner of Revenue Settlement, Survey, Land Records and Agriculture.

Dated—the 28th July 1915.

No.—R.O.C. 253-B.

I venture to address the Board briefly in continuation of my letter R.O.C. No. 253-B, dated 6th July 1915, as in that I fear I did not refer sufficiently clearly to point (ii) of the Government memorandum, viz., the need for an Agricultural Engineer in the Agricultural Department.

2. In these days agricultural engineering is as much a special study as is engineering as applied to drainage or water-works. The International Agricultural Bureau of Rome which attempts to co-ordinate in all brief accounts of all important works done in the world on agriculture includes in every one of its monthly bulletins on agriculture a section on "agricultural engineering." It is not only a question of pumping and boring. We are steadily getting more and more enquiries from ryots about the possibilities of machinery for purely agricultural operations, e.g., ploughing, harvesting, threshing. To answer these questions a mere knowledge of machinery is not sufficient. Some knowledge of what is meant by good ploughing, considerable knowledge of how different soils work under the plough is required before any advice worth having can be given. As I said in my former letter when Mr. Wood went on leave he took home samples of many of our Indian grains and visited several of the large agricultural works to see if he could find a machine suitable for threshing our Indian grain. One was adopted and I bought it on trial. It does much of the work very fairly, but we find that with cholam it cuts off wholesale many of those very small little shoots of which every head of cholam is composed, and does not separate the chaff from the grain which is on the little shoots. Now we are in correspondence with the firm. Mr. Wood has very little knowledge of machinery, the firm has never seen cholam being threshed. So it is throughout. An Engineer whose sole idea of ploughing is to tear up the ground will never be able to push successfully power ploughing among ryots. The use of portable engines for agricultural purposes in which America has done so much opens a wide vista of possibilities for India. What is required is an Engineer who has time to work at these, and see how they can be adapted and brought profitably within the resources of the ryots and whose main idea is agriculture and in my proposals I have endeavoured to allow for this.

3. All this and more may be granted but it still may be urged that that Engineer and all his staff could work as effectively if subordinate and responsible to the Director of Industries as I claim he would do if he were solely responsible for the Director of Agriculture. This I submit is unlikely to be the case. The ultimate question is an agricultural one. Whatever Engineer be appointed he will have much to learn agriculturally, which he and his subordinates must learn from the men in this department. He and they will have much greater facilities for absorbing that knowledge if such officers are under the full control of the Director of Agriculture and if the agricultural officers recognize them as members of the same department. When men with different trainings and somewhat different points of view have to work together they have always chance of friction. But these chances are much minimised when both are responsible to the same departmental chief. In the last case if the friction become so acute as to affect work then the blame most frequently lies at the door of the head of the department for ineffective control. When these officers however are in different departments the head of one of which is responsible to the Board of Revenue and the other is directly under a branch of Government unconnected with Revenue, co-ordination of effort is apt to become much more difficult.

4. Again all the problems of machinery to which I refer are to the lay mind purely agricultural ones. Of course it might easily be said that the ryot errs in referring to this department about motor-ploughs or threshers, etc. If so he errs in

good company. Only to-day I have received from the Judicial Department of Government a demi-official letter marked "very urgent" asking me to report whether I recommend them to buy for £100 a second-hand St. Ivel's motor-plough which the South Indian Industrials has for sale. All the previous correspondence which led up to this very natural and direct question was purely agricultural. Yet I have no one person to send who can really give an opinion on the value of this particular implement for this particular purpose. I am doing my best to get Mr. Sampson and Mr. Tressler to hold a joint sitting on it to try and form some opinion if it can do the work required. If Mr. Tressler cannot be found, Mr. Sampson has to try to find Mr. Pierce. If Mr. Sampson cannot get either (he has shortly to go to Bombay) I shall have to go into Madras especially and try and get some one.

5. Then in the agricultural course at Coimbatore we rightly endeavour to give the boys some knowledge and familiarity with agricultural machinery and simple blacksmithery and carpentry. But I admit readily that this engineering course is the worst of all the courses at Coimbatore. The mycological one would probably be as bad if we had to rely upon what the agriculturist (*e.g.*, Mr. Wood) could devise and had to entrust the teaching to an Assistant who had merely gone through the usual botanical course in an Arts College. But every year the mycological course gains in its wealth of illustration, etc., as the knowledge and work of the Mycological section develops. Only last month Mr. Tressler asked me if, when his new Industrial school at Coimbatore was working, I would send all the Coimbatore students there for their engineering training. I agreed provided they would get the kind of instruction we are endeavouring to give them for the purposes of agriculture. The reply came that that was not possible.

6. There is I submit scope and need for an agricultural engineer working directly under and responsible to the head of this department. Pumping and boring is a part, a very important part, but yet only a part of agricultural engineering and must go with it. There is no radical difference between pushing oil engines for the use of raising water or of power plant for ploughing or threshing. In all cases the predominant question is "Will it pay agriculturally?" So-called "scientific agriculture" is in every country nothing but the co-ordination towards agricultural improvement of the efforts of different specialists in different subjects. And in every agricultural department and in every properly organized agricultural college all the specialists work directly under the one head. At Cambridge the Agricultural Botanist has no connection with the large general Botanical school nor the Agricultural Chemist with the University Professor of Chemistry. In India Agricultural Colleges have in every province been definitely severed from the control of the Educational Department. In the old days, in Madras, the Saidapet College was under the Educational Department, the Economic Botanist and the Agriculturist (Mr. Benson) were severally and independently responsible to the Board of Revenue which was also concerned with many other matters; whilst agricultural engineering still goes direct to Government first in one branch then in another; and I believe the reason for appointing a Director of Agriculture was that there should be one officer whose whole time should be devoted to co-ordinating and directing the efforts of these various specialists towards the one goal of agricultural improvement. I venture to submit that the policy has been justified by results. Agricultural engineering is in exactly the same position as any other branch. The only difference is that in regard to this, Government is in a much better position to check unwise expenditure if and when a Director errs than in regard to any of the other branches; because they already possess a very strong engineering staff whose independent opinion they can always take when in doubt. The question is a much wider and more important one than that of relieving Mr. Tressler from the labour of controlling the Pumping and Boring operations. If Mr. Chatterton had never got started on pumping and boring and if the question had arisen now for the first time, I have very little doubt as to where the agricultural engineer would have been placed. I thought this point was clear from the start and so did not labour it in my first letter. I am not now certain that this is the case and hence I trouble the Board with this second letter for which I ask to be excused.

IV

Letter—from K. T. B. TRESSLER, Esq., Director of Industries.

To—the Secretary to the Commissioner of Revenue Settlement, Survey, Land Records and Agriculture.

Dated—Madras, the 12th/20th July 1915.

No.—A. 28-1.

With reference to No. 671, dated 15th April 1915, I have the honour to state that Mr. Chadwick and I have met to discuss the question of the future of the Pumping and Boring Department and that Mr. Chadwick has submitted his proposals to the Board.

It seems to me that these proposals raise two absolutely separate issues and I consider it desirable therefore to deal with the two separately. The two questions to be considered are these:—

(1) Is the Pumping and Boring Department to be organized as a separate unit and if so, what are the practical details of the scheme?

(2) Is the Pumping and Boring Department to be controlled by the Director of Agriculture or the Director of Industries?

In this letter I propose to deal only with the question of organization. This question has been very closely considered by Mr. Chadwick in his note and as I agree with him on all material points it seems to be unnecessary to do more than offer one or two opinions based on practical experience.

2. I concur in the opinion that the department should be organized as a separate unit, that a Special Officer is necessary and that an efficient understudy must be provided at head-quarters. I agree that for the present ten divisions will suffice. As regards pay I consider that the scales for Deputy and Assistant Directors proposed by Mr. Chadwick are suitable and that for the present the actual pay of supervisors may remain as it is.

3. But the matter under consideration is not a temporary make-shift but a general scheme of reorganization and I feel very strongly that in a scheme of reorganization it is necessary at the very start to decide definitely the general lines on which the department is to develop. Mr. Chadwick sketches out his ideas but does not press for an official opinion thereon. My reasons for so doing are based on the fact that the work of the department is highly specialised, that is, it requires a great deal of special preliminary training and unless provision is made at the very start for securing men with suitable qualifications, there will be a complete break down in the departmental organization when the time comes for obtaining extra staff. This time is not so far distant as may be supposed, as my men are now on the Public Works Department list and under existing arrangements have the option of reverting to that department in about one and a half years.

4. Mr. Chadwick rightly remarks that, now that pumping work has been more or less reduced to a matter of routine, the qualifications required of a supervisor are lower than those which the work demanded when it was still in a pioneer stage. Moral qualifications, such as energy, initiative and so on are of course still as important as they ever were, but in using the word qualification I refer more particularly to technical attainments and administrative ability which things are usually associated with higher education both literary and scientific. The majority of the existing staff satisfy the higher requirements described and Mr. Chadwick proposes in the future to draw upon a less qualified class; the class of men trained in the "Subordinate" course of the Agricultural College and given an extra engineering training. So far as I can judge this class of men ought to prove satisfactory (though I should not limit selection to this class only).

5. The scale of pay suggested for the future (50—5—125) seems to me reasonable and deserving, of trial, though I must confess to some misgivings as to its practical success. Indifferent mechanical "Engineers" at present command such an inflated market price that there may be some difficulty in retaining the men. This however is a matter for the future to decide. At present I am dealing only with general principles and on principles the scale of pay proposed for supervisors appears to me sound.

6. Mr. Chadwick next goes on to say that, apart from what I may call the "degraded" supervisor class, another superior class, will have to be developed. Although it is perfectly true that the bulk of the work now coming in is of a character that could be dealt with by a supervisor of the proposed type, nevertheless there is still a good deal that requires the attention of a more competent man. Further, it is absolutely necessary to have a supervising class: who "*ipsos custodient custodes*." These facts are, I believe, generally accepted both by Government and Mr. Chadwick and it is with the idea of improving the administration of the department in the directions indicated that the scheme for the appointment of an Agricultural Engineer has been put forward. It is recognized that I have too much work to give sufficient time to pumping and boring work, but it appears also to be imagined that a Special Officer, with (ultimately) a less technically qualified staff of supervisors will be able to handle the Pumping and Boring Department efficiently. The appointment of a further supervising class is mentioned by Mr. Chadwick as a probable development but I do not think he quite recognizes the fact that this class forms the element on which depends the ultimate success or failure of the whole scheme.

If I may be permitted to use a simile, the Pumping and Boring department machine is at present hopelessly overloaded. It is evident even to the non-technical observer that the governing arrangements are inadequate and hence the present proposals to put in a new governor. But that is not the whole trouble and the technical man will explain that as the engine will not take its load it must be compounded by adding an extra cylinder. This is the point I wish to emphasise: that a special "Agricultural Engineer" with a qualified personal assistant at headquarters will no doubt do better than I could unaided but that even so, he will not be able to carry on the pumping and boring work in a really satisfactory manner unless a district staff superior to supervisors is provided.

7. One Assistant Directorship is now asked for by Mr. Chadwick. At the present moment it is not quite evident where the proposed further Assistant Directors are to come from. The present staff is all Public Works Department staff and will soon revert: (moreover all the men we now have are required to fill the supervisors' posts) and so for the time being it may be necessary to work without Assistant Directors. But if the proposed scheme is to be successful it is in my opinion absolutely necessary to obtain Assistant Directors and immediate steps should therefore be taken to arrange for a supply of individuals of this class.

8. Hitherto the supervisors in the department were recruited on fixed pay and left in hopes of promotion. These hopes have been disappointed and I am convinced that in the future unless a man knows exactly what his prospects are at the start he will not join the Pumping and Boring Department, but accept some other appointment where his prospects are fixed. I have laboured this point in several other letters and will not enlarge upon it here beyond reiterating my firm conviction that, if appointments are not at once provided we must, if we wish to attract men for the Assistant Directors' appointments, make it clear that such appointments will be made as occasion offers.

I do not think that Assistant Directors should be appointed direct to the grade but my suggestion is that they should be made supervisors in the first instance starting on Rs. 100 and on probation for three years. After that time, they would, if satisfactory, be confirmed as supervisors and rise in the ordinary manner. As vacancies occur in the Assistant Directors' grade the men would be promoted thereto. If no vacancies occur they will have to remain supervisors.

The acceptance of a supervisor's appointment under these conditions does introduce some risk but I think this risk a man may legitimately be expected to take: the risk of remaining on fixed pay for eight to ten years in spite of recommendations for promotion (which is what has happened to my supervisors) is not one that men will again take when there are other openings for them.

9. At present, practically the whole of the staff belongs to the Public Works Department and has the option of reverting to that department in about two years. The present staff is, speaking generally, the raw material from which we must hope to obtain Assistant Directors in the future. At the end of the period of deputation

some of these men will ask to revert and some it may be found desirable to revert; if no arrangements have been made for training further individuals, the whole machinery of the department will be thrown out of gear. To get men for training they must be told what their prospects are and what I should like to see definitely laid down therefore are definite rules regarding recruitment somewhat as follows:—

(i) Supervisors in the Pumping and Boring Department of the upper subordinate grade will draw pay on a Rs. 50—5—125 scale with prospects of certain selective higher appointments as now offered in the Department of Agriculture.

(ii) Qualified engineers may also be appointed to the supervisor grade on a pay of Rs. 100 and will be on probation for three years on this pay. After confirmation they are entitled to the ordinary increments up to the maximum. Such engineers, if considered suitable to hold district charge, may also be promoted to Assistant Directorships as and when vacancies occur.

(iii) Assistant Directors recruited as above explained will draw pay on Rs. 200—12½—400 scales with prospects of certain selective higher appointments.

10. These proposals are based on the assumption that when the department is reorganised, the staff will no longer be taken from the Public Works Department as now. So far as I can judge from a year's working, the present system will not prove satisfactory. In its practical application difficulties have arisen, which the Public Works Department, I believe, have also felt. The principal objection to the present system is, however, that it is a purely temporary one, the men reverting after three years. It must be obvious that with specialised work like that in the Department of Industries, it pays neither the Public Works Department nor the Pumping and Boring Department to have men shifted for a limited period. On this question of deputation for the Public Works Department some definite orders are necessary.

11. In view of the difficulties connected with the recruitment of new staff and the time required to train men, I suggest that all the Public Works men now on deputation in the Pumping and Boring Department should definitely remain on deputation for a further period of three years, at the end of which period they must finally decide whether they wish to revert to the Public Works Department or be incorporated in the Pumping and Boring Department. So far as these men are concerned their pay will be that of their permanent Public Works grade plus a deputation allowance (if this is permissible).

Any vacancies that may occur during the coming three years will be filled by independently recruited men on the scale of pay proposed.

12. So far as they affect the proposition statement these suggestions amount merely to a slightly greater degree of definiteness. Mr. Chadwick asks for one Deputy Director Rs. 400—1,000, one Assistant Director Rs. 200—12½—400, and ten supervisors on their present pay. I should like to be a little more precise and would suggest sanction for one Deputy Director Rs. 400—1,000, one Assistant Director Rs. 200—12½—400 and ten supervisors Rs. 50—5—125, the supervisors' and Assistant Directors' posts to be held in the first instance by men on deputation from the Public Works Department and to be filled up as vacancies occur by independently recruited men. At the same time I wish to emphasise the necessity for the fixing of the scales and for the contemplation of a substantial increase in the Assistant Director grade at the earliest possible date if the work of the department is not to be checked.

13. One or two modifications in numbers and detail appear to me also to be necessary. Mr. Chadwick's scheme provides only for the district organisation. In addition at least one man is required to look after the power drills. I have appointed such a man as I find it impossible to get mechanics to work these drills properly without a great deal of instruction. The extra man would also be available as a substitute in cases of leave.

14. I think it also eminently desirable to bring the drawing staff on to the executive establishment. My late head draftsman is now in the district as a supervisor and doing very well: *per contra* a man who has had some district experience makes a much better draftsman than one who has not. Interchangeability between

the appointments will prove a great advantage and will do away with a special scale for the drawing office staff—another advantage. I accordingly recommend that the head draftsman should rank as a supervisor and the assistants as mechanics, first grade.

15. I have no further remarks to make except that I propose to utilise the saving under Mr. Will's pay for the pay of a Deputy Director of my own and doubt if this will be available for reappropriation as suggested by Mr. Chadwick. I think it would be better if an additional allotment were applied for by him to meet possible excesses. I have also to point out that the number of supervisors sanctioned is fourteen.

V

Letter—from K. T. B. TRESSLER, Esq., Acting Director of Industries.

To—the Secretary to Government, Educational Department.

Dated—Madras, the 20th July 1915.

No.—A. 28 (3).

I have the honour to state that in my No. A. 28 (1), dated 12th July 1915, to the Board of Revenue, Settlement Department (a copy of which is enclosed), in which I discuss the proposals for the transfer of the Pumping and Boring department to the Department of Agriculture, I explain that the question raises two issues, viz., those of organisation and control. In that letter I have dealt only with the question of organisation: in this I desire to submit my views on control.

2. I understand that the transfer proposals are based on the view that my duties have now become too extensive to permit of my devoting the necessary amount of time to the Pumping and Boring work. This view is perfectly correct, but the reason why I have in the past had so much of my time taken up by the pumping and boring work is due solely to the fact that that branch was not organised as a separate unit: there was no administrative and higher executive staff. Such a staff is now to be provided under the reorganisation scheme and if it is, the whole argument for transfer on the grounds above mentioned falls away.

3. Under the old system I was in direct executive control of the Pumping and Boring branch, my staff was inadequate, and the work devolving upon me was greater than that which, having regard for my other work, I could efficiently carry out. Under the reorganised scheme a proper staff is appointed and a special officer placed in executive control so that the work of the Director whether of Industry or Agriculture will be limited to that of direction. Such work is clearly much less onerous than that of direct executive control. Moreover when it comes to direction work, I think the Director of Agriculture has just as much to do as I have, so that unless it is argued that he is personally more competent than I am (and this proposition I can hardly be expected to admit) the argument on which the proposal appears to be based falls to the ground.

4. Mr. Chadwick then refers to the necessity for a close co-ordination between Agriculture and the work of the Pumping and Boring department. This argument is a much stronger one. There would undoubtedly be a great advantage in decentralising and making use of a larger district organisation that the Director of Agriculture possesses. But, whilst admitting the strength of his argument I cannot help feeling that the "cons" (which he has not enlarged upon) will, on the whole, outweigh the "pros".

5. To deal first with a point that he mentions: that of "atmosphere" Mr. Chadwick, himself feels that the position of a single engineer completely surrounded by Agriculturists, is not a happy one, but he expresses his belief that the arrangement will work in practice because the position of the Mycologist and Entomologist and other specialists offers a close parallel and these special appointments have proved satisfactory.

6. Personally I know nothing of Mycology, Entomology and such like, but I do not think they are at all comparable with mechanical science. Be that as it may, every technical man will acknowledge the necessity for trying to keep up to date and will explain how surpassingly difficult it is to do so in an isolated appointment. Some individuals thus placed may keep up their reading and may keep in touch with

current developments by dint of perseverance and study out of office hours but it is a great tax on the mind, so that most people will after a time give up the struggle. As I have said, I do not think that the Biological sciences change so much, as does mechanical science and it is therefore, so far as I can judge, less imperative to keep up to date in the former than in the latter. But if I am wrong the position of the Biological officers mentioned cannot be changed and has to be accepted, whether it is the most satisfactory or not. On the other hand there is no compelling reason whatever why the officer in charge of the Pumping and Boring department should occupy an analogous position. If the Pumping and Boring officer remains in the Department of Industries staff he is constantly kept in touch with other engineers and with engineering problems outside his immediate scope but generally having a bearing on his own work. Thus he is by a natural process kept up to date. This keeping up to date is to my mind the most important qualification for the Pumping and Boring officer—in fact the sole reason for the Pumping and Boring department not being incorporated with one of the bigger executive departments—and if we can ensure this qualification by keeping the officer in the Department of Industries it seems illogical to transfer him to the Department of Agriculture where, to say the least of it, the atmosphere is against him. It is difficult to convey to the lay mind the importance of "atmosphere" and I feel that I have scarcely done justice to my argument. But I speak from personal knowledge and if my reasoning is unconvincing I would invite Government to take the opinion of any engineer on the point.

7. Admitting that Pumping and Agricultural work are, or should be co-ordinated, the control of the one by industries and the other by agriculture may be regarded as a kind of dual control. But then, under the scheme of working proposed by Mr. Chadwick, dual control still exists. The Deputy Directors attend to the administrative work: the Agricultural Engineer to technical matters, so that the germs of strife lie concealed in Mr. Chadwick's scheme also. It is true that the two officers have a common Director to decide between them but can he? As the Agricultural Engineer deals only with the technical side such disputes as arise will be on technical questions, and I am sure Mr. Chadwick will pardon my saying that he is scarcely qualified to express an opinion on mechanical matters. He has therefore no alternative but to accept blindly the opinion of his Engineer; who is an interested party in the dispute. Hence the mere fact of a common Director does not minimise the difficulties of dual control which form of control is an unavoidable feature in Mr. Chadwick's scheme.

8. I can see the advantage of the Director of Agriculture taking over administrative control of the Pumping and Boring department by distributing this work amongst his Deputy Directors, but I fail to see how the assumption of technical control by him in any way assists matters. On the contrary if the whole of his scheme is retained, but the Pumping and Boring department kept in the Department of Industries, the only difference will be that, in his relations with the "Agricultural Engineer" the Director of Agriculture addresses a request to an officer in another department instead of issuing orders direct to a subordinate. As the Director of Agriculture is not in any case in a position to criticise the technical proposals of the "Agricultural Engineer" the power of issuing orders is no stronger than the right of making requests. Indeed as the Engineer's subordination to the Director of Industries establishes a court of appeal if the Director of Agriculture feels that the Agricultural Engineer's views require investigation, the arrangement suggested would appear to have marked advantages even from the agricultural point of view. The "Agricultural Engineer" holding independent charge would ordinarily take orders from the Director of Industries only in matters of appeal so that there would be no risk of interference by the Director of Industries in matters of agricultural policy.

9. The situation can be still further simplified by lending the Pumping and Boring establishment to the Department of Agriculture, in which case the Director of Agriculture has the same control for the time being as if the establishment were actually transferred; but there is this important difference, that the establishment is not absolutely divorced from me, as it would be by transfer. Mr. Chadwick has a perfect hold on the men as he is for the time their absolute superior but I have a hold on them too because they belong to my department.

10. The reasons why I attach such importance to retaining a hold on the staff are two-fold. My first argument is *mutatis mutandis* the same as Mr. Chadwick's. He pleads for closer co-ordination between the Pumping and Boring staff and Agriculture—I maintain that the same co-ordination is necessary between that staff and Industry. Take it away and I have no district organisation left—and I require one. All sorts of odd industrial questions arise which have to be investigated by a man on the spot. These questions may not be very numerous and may often be unimportant. The cost of a special Industrial staff to deal with these would at present be prohibitive and if no other arrangements are made, all that can be done is to stop dealing with these questions altogether. Such a solution I would regard as a most retrograde measure and absolutely opposed to the spirit that prompted the establishment of the Department of Industries. The majority of the enquiries may be unimportant, but it is the single ones, here and there, that constitute the nuclei of industrial advancement and to neglect these is to stifle progress.

11. On paper it might be possible to arrange for my investigations being done by subordinates in another department but in actual practice I think Government will admit that this sort of accommodation is not to be hoped for. The heads of departments and the superior staff may be perfectly willing to help but it is contrary to human nature to expect a subordinate who already has work of his own, to do extra work for an officer of another department who has no control over him whatever. That the Pumping supervisors *can* without detriment to their regular duties make industrial investigations for me I know from experience: whether they can be made to do so in the future appears to my mind conditional on their standing in some regular official relation with me. Instructions to them would of course be sent through the Deputy Directors.

12. Apart from this argument, a further point to which I attach very much weight is that, the Pumping and Boring department has hitherto constituted my recruiting ground for Industry. The qualifications required of an industrial man are two-fold. He wants to be a practical Engineer first of all, but over and above that he has to be what I may call a business Engineer also. The two qualifications are distinct. The Pumping and Boring requires and offers scope for only one of them. I require both. Some of the subordinates in the Pumping and Boring department will develop both—and have to waste the second. If I train men of my own they are of no practical use to me until they possess the first: that takes two or three years training and after that they may not develop the "business" side. What a separation of the Pumping and Boring and Industrial establishment therefore leads to is that there is an economic waste of brains on the one side and the chance of a good deal of waste of training on the other.

13. I have had certain temporary appointments sanctioned for industrial work. I have in almost every case had to take some of my old pumping and boring staff to do the industrial work and put the new men into their places in the Pumping department. As pumping supervisors these new men are doing good work, but they are useless to me as industrial assistants at present as they have not had sufficient experience of practical engineering as acquired in the Pumping and Boring department, and it will take some years of that work before I can decide if they have the necessary aptitude for the business side to qualify for industry.

14. Objection may be raised to this argument on the ground that it makes the Pumping and Boring department train my men and gives me the power of skimming the "cream" so to speak off the Pumping and Boring staff. I venture to suggest however that matters of this kind must be considered from the broad public and not the narrow departmental standpoint. At present I have both the Pumping and Boring and Industrial staffs and am quite unprejudiced between the two. My experience is roughly that, out of every ten selected appointments about four are poor (and the men are sacked) six are quite suitable for pumping and boring work, but only one or at most two of the latter are reasonably competent to deal with industrial matters. If I train my own men, therefore, I find after three years that, out of six at least four are not quite suitable for me and their training is wasted; the Agricultural department on the other hand gets two out of six who are themselves

wasted in Pumping and Boring work. Under me the Pumping and Boring work has not suffered by my selecting men for industry (the number required is small) and surely in the public interest it is much better that I should draw on the Pumping and Boring department—taking the men that they really do not require, rather than to make experiments in training my own men with the prospect of a large percentage of comparatively costly failures. Transfers would of course be made in consultation with the Director of Agriculture but to make selection possible—if only in keeping me acquainted with the general character and qualifications of the men—the whole staff must remain with me.

15. To summarise, my arguments are as follows:—

(a) The argument that the Pumping and Boring work is too much for me falls to the ground when the re-organisation scheme is sanctioned.

(b) Mr. Chadwick's argument that Pumping and Boring work must be closely co-ordinated with Agriculture is balanced by mine that the staff at any rate must be closely co-ordinated with industry. If not industrial work will not develop.

(c) Dual control is an inherent feature of Mr. Chadwick's scheme whether he controls the technical establishment or not. Hence, in my opinion, there is no advantage in his so doing.

(d) On the other hand the isolation of an Engineer in another technical department is extremely objectionable not only from the professional point of view but also from that of efficiency. In some cases it may be unavoidable but in this case such a transfer is absolutely unnecessary.

(e) The fact that the Pumping and Boring officer is subordinate to another Engineer makes it very much easier for a non-technical man to deal with him since this subordination constitutes a professional court of appeal.

16. My specific objections to a transfer of control are—

(a) that if my work is to develop I must have some sort of district staff to investigate for me. The work is not sufficient to warrant the appointment of a special staff but must be carried out. I can ensure my work being carried out only if the district staff stand in some official relation with me.

(b) The Pumping and Boring staff is my present recruiting ground for Industry and if this is closed to me this will lead not only to the utmost difficulty in obtaining suitable men for my industrial work but also involve a quite unnecessary economic waste.

17. All the advantages Mr. Chadwick claims in favour of his proposal are based on his administrative control. All the disadvantages I enumerate are based on his technical control. There must be dual control in any case and if the technical staff remains with me and Mr. Chadwick deals with administrative work, it seems to me that most of the disadvantages of the proposal fall away and all the advantages are retained.

18. I wish to add that the work in the Pumping and Boring department would be enormously facilitated if Mr. Chadwick's office and mine were located closer together and I would submit that his suggestion is worthy of careful consideration.

19. Further I venture to remind Government that I am only acting in my present appointment and feel that it will be wise before taking any steps such as those proposed to ascertain the opinion of Mr. Chatterton on the proposal. In any case, I consider that before the Pumping and Boring establishment is absolutely divorced from me my proposal might at least be tried.

VI

Letter—from K.T.B. TRESSLER, Esq., Director of Industries.

To—the Secretary to Government, Educational Department.

Dated—Madras, the 7th August 1915.

No.—A. 28 (3).

In continuation of my letter No. A. 28 (3) of the 20th July regarding the control of the Pumping and Boring department, I have the honour to submit certain further observations suggested by a further letter of Mr. Chadwick's to the Board.

2. From this letter it appears to me that Mr. Chadwick and I are at cross purposes owing apparently to a difference in our interpretation of the functions of the Pumping and Boring department and it may help to elucidate matters if I briefly explain what the Pumping and Boring department really is.

3. In my department the engineering work is divided into two sections termed the "Industrial" and "Pumping and Boring." (The latter term is really a misnomer.)

In the "Industrial" section two classes of work are done—

- (a) Investigation and introduction of new processes or methods;
- (b) practical organization of larger industries.

In the "Pumping and Boring" section three classes of work are done—

- (a) Advice and assistance regarding the erection of plant connected with an industry already introduced;
- (b) loan of plant in the same connection;
- (c) miscellaneous local industrial enquiries.

Thus, if a ryot wants an oil-engine and pump of the ordinary type, his application would be dealt with by the Pumping and Boring department. If he wants a Diesel engine and vertical spindle pump, his application would be dealt with by the Industrial department. The latter type of engine and pump have not yet been tried: their erection would require special attention and the job would be dealt with by a special man in the Industrial department.

If a man wants an engine and rice-huller, the Pumping and Boring department will undertake the work, because both these machines are in common use. If the man wanted an engine and twenty rice-hullers, the Pumping and Boring department could still deal with the work provided the question was one of erection only, but if he wanted assistance in the running of the mill also, his case would be dealt with by the Industrial department as a special man would be required for the purpose.

4. The reason for the system of division adopted will be obvious. The work of the "Industrial" section consists of a small number of important specific jobs, for each of which a man is required. The work is of an advanced technical character and requires special qualifications. The number of jobs in hand at any one time will be comparatively small and so only a small staff is needed. This staff would be attached to head-quarters to go wherever required. The work in the "Pumping and Boring" section, on the other hand, consists of a larger number of comparatively simple jobs requiring much lower technical qualifications on the part of the staff. As, however, the work to be attended to is extensive and scattered, a comparatively large staff, in the form of a regular district organization, will be required. There is therefore a fundamental difference between the character and organization of the staff required in the two sections. There is also a fundamental difference in the character of the duties of the officers in charge of the two sections. They must both be Engineers, but the one has to spend most of his time on experiment, investigation and organization of a business character, whilst the main duties of the second are to see that routine work is properly carried out and to ensure the quality of the work done by frequent personal inspections.

5. In my previous letter I agreed that it might be advantageous for the Director of Agriculture to take over administrative control of the "Pumping and Boring" work. But this was solely and purely for the reason that he has got (or will get) a large superior *district* staff, whereas I have none, am not likely to get one and do not think that, for some time at any rate, I am likely to require one. Therefore he is in a better position than I am to look after a *district* organization. But I always thought that Mr. Chadwick's idea was to take over the section as it stood. I now gather from his letter that this is not the case.

6. As explained, the "Industrial" section deals with experimental engineering work and large undertakings requiring a special staff under the direction of what I may call a scientific officer: the "Pumping and Boring" deals with work that has been reduced to routine and with small undertakings such as an ordinary district staff can deal with. Such a staff would be under the direction of an executive officer. It makes no difference what the work is. The "Industrial" section deals with *all*

experimental work and large schemes which require the services of a special man: the "Pumping and Boring" section looks after all the miscellaneous up-country work, whether this work be industrial, irrigational or anything else.

7. Mr. Chadwick seems to contemplate a different line of cleavage. Apparently he does not propose to take over the district industrial work whilst, on the other hand, he wants to have an officer to do both routine district work and also experimental work in connection with agricultural problems. He considers that such an officer should be under the Director of Agriculture and that the "Pumping and Boring" staff should be subordinated to that officer and therefore be transferred absolutely to the Agricultural department. What Mr. Chadwick in effect proposes to do is to take a bit of the work now being done in the "Industrial" section: a bit of the "Pumping and Boring" work and the whole of my "Pumping and Boring" staff.

8. This proposal leaves my minor industrial work, which has hitherto been performed by the "Pumping and Boring" staff, entirely in the air. It certainly cannot be dealt with by the staff in my "industrial" section because, as explained, the character and organization of the staff is not suited to district work and Mr. Chadwick's scheme leaves me the alternative either of dropping my minor industrial work altogether (and this now represents about 50 per cent of the work of the "Pumping and Boring" section) or else of getting a district staff of my own similar to the one which Mr. Chadwick wants to take over.

9. I think Government will agree that the minor industrial work hitherto done in the "Pumping and Boring" department ought to be continued, and if this is the case, the effect of Mr. Chadwick's proposals is to leave me exactly where I was before, except that I shall have all the trouble of getting a new staff sanctioned: that my men would do 50 per cent. of the work they formerly did whilst Mr. Chadwick's would do the other 50 per cent. *plus* such other agricultural work as they might be given. If Government agree that Mr. Chadwick ought to have a subordinate engineering staff under him to do agricultural work, it seems to me very much simpler to sanction a special staff for him rather than to take away mine and make me collect another.

10. As I have said, I accepted the principle of administrative control by the Department of Agriculture of the "Pumping and Boring" work purely on account of the superior district organization possessed by that department. Mr. Chadwick in his present letter seems to argue that my "Pumping and Boring" work naturally belongs to the Agricultural department. This argument I did not think it necessary to discuss as it was not explicitly put forward, but now that it has been raised, I wish most emphatically to express my inability to accept it. Whatever may be argued to the contrary, the subordination of the "Pumping and Boring" staff to the Director of Agriculture means the subordination of engineering work to Agriculture and this, in my opinion, is fundamentally wrong.

11. As I have said, about half the work of the "Pumping and Boring" section is industrial and the other half is irrigational. Irrigation and minor industry may have some connection with agriculture, but the "Pumping and Boring" work I do is entirely of an engineering character. The fact that other presidencies have assigned pumping and boring work to an agricultural engineer constitutes no evidence of this being the proper arrangement. The argument seems to be that the "Pumping and Boring" work ought to be handed over to the Department of Agriculture, because in some cases the material treated is agricultural produce. On this line of reasoning Mr. Fisher ought to erect his printing machinery himself because he is going to use it afterwards and the boring work ought to be handed over entirely to the ryots who are going to utilize the water. Taluk cutcherries ought to be designed by the Tahsildars who will ultimately occupy them and who will probably know a good deal better what their requirements are than the engineer who builds the buildings, etc. Just as it is justifiable for an engineer to consult his clients and find out what he wants before he starts the work, so also I think it desirable to co-operate with the Agricultural department and have therefore agreed to their administrative control of the "Pumping and Boring" section, but this appears to me the utmost that can be conceded and the transfer of technical control also would to my mind be a retrograde step and absolutely unjustifiable on any grounds.

12. So far as I can see, Mr. Chadwick wants an agricultural engineer to deal with purely agricultural questions and a subordinate district engineering staff for the same purpose. At the same time, I gather that he thinks the amount of special work of this kind insufficient to warrant a special organization and has therefore suggested that his work and my "Pumping and Boring" work should be amalgamated. He naturally wishes the agricultural engineer to work under his orders and considers therefore that the "Pumping and Boring" staff ought to be under his control also.

13. In my opinion his proposal is technically unsound for two reasons. The first I have already given, namely, that "Pumping and Boring" work is engineering and not agriculture. The second is that the officer in charge of the "Pumping and Boring" section is in the main an executive officer and the supervision of routine work (if it is to be done properly) will take up the whole of his time leaving him no leisure for experimental work. My experience, and I think that of every one else who has tried the experiment, is that the same officer cannot do both research and routine work properly. Most of us start with the idea of doing research and practically all of us find that we have to give it up. If Government will refer to Mr. Chatterton's annual reports, they will find that the earlier ones consisted mainly of particulars of experimental work done, but that later ones dealt almost entirely with routine work and this for the reason that as department expanded routine work made experimental work impossible. What the "Pumping and Boring" department wants and what I have not been able to give it is thorough routine control and if the officer in charge of that section were to work under me I should absolutely forbid him to do experimental work of any kind because I know from experience that the routine work of the department, if it is to be done properly, will take up the whole of his time.

14. Apart from these technical objections there is the further practical objection that under Mr. Chadwick's scheme I shall either have to drop my minor industrial work altogether or else get another staff for it.

15. As I have explained, the combination is, in my opinion, technically unsound and I think the whole scheme is based on a misapprehension regarding the character of the work done by the "Pumping and Boring" section. I have no doubt that Mr. Chadwick really does require an agricultural engineer, but I do not see how the work which he expects of this officer is to be combined with the work now being done in the "Pumping and Boring" section, and it seems to me that the proper solution of the problem is for Mr. Chadwick to appoint an agricultural engineer who can devote his whole time to experimental research which Mr. Chadwick wants done. The "Pumping and Boring" section has no connection whatever with the work of the agricultural engineer and should remain in this department, though I would agree to Mr. Chadwick's taking over administrative control as already suggested.

VII

Letter—from D. T. CHADWICK, Esq., M.A., I.C.S., Director of Agriculture, Madras.

To—the Secretary to Government, Revenue Department.

Dated—Coimbatore, the 20th August 1915.

No.—R.O.C. 253-B.

The Board has asked me to make remarks on Mr. Tressler's letter of August 7th which he has addressed to Government. Mr. Tressler sent to me demi-officially and un-officially a copy of his letter, dated July 20th which he had sent to Government but not to the Board. The subject of an Agricultural Engineer had been freely discussed between us and I could not accept that letter as a full statement of the principles underlying the present proposals. I therefore sent my letter of July 28th to the Board and also sent officially a copy to Mr. Tressler. I drew Mr. Tressler's attention demi-officially to the fact that the Board and the Government through the Board, wanted an expression of his views "on the general issues" which fact had apparently escaped his attention. That is the explanation for the somewhat peculiar course of this correspondence.

2. Mr. Tressler now explains that by "Industries" he means "research into Industrial matters" and by "Pumping and Boring" he means all "propagandist and routine work in the districts" connected with engineering whether for pure pumping and boring or industrial purposes. He thoroughly approves of the scheme put forward in my first letter (slightly modified in a few details by his first letter to the Board) for district work, and clearly thinks it qualified and sufficient to undertake all propagandist work in the districts on true pumping and boring and on industrial engineering. He is willing to entrust all administrative control in the districts whether on true pumping and boring or on industrial matters to me and my Deputy Directors on the lines outlined in my original letter. He realises that he has not the time and opportunity to undertake adequately experiments in agricultural machinery, etc., and supports my request for an Agricultural Engineer attached to this Department. In fact he pleads for that officer to be entirely free from all connection with district work so as to devote his time to experiments and research into agricultural machinery. Administrative control must mean power to decide what is to be pushed, what is not to be pushed, where and when it is to be pushed, how and where men are to be posted, what staff is needed, etc., or the words are meaningless.

3. The last paragraph of Mr. Tressler's letter therefore means—

(a) that I shall have administrative control over all district engineering work whether concerned with true pumping and boring or with industrial engineering,

(b) that I shall have under my sole orders an Agricultural Engineer employed entirely on experiments in agricultural engineering but unconnected with the district work or with Mr. Tressler,

(c) that there would be Mr. Tressler entirely independent of my orders employed on experiments in industrial engineering and having no administrative connection with the district staff which is to push his results into practice.

All I can say on this is that provided the district staff were sufficiently increased to be able to undertake all the propagandist work which would develop as a result of the work of the Agricultural Engineer in addition to the true pumping and boring and minor industrial propagandist work with which it is now entrusted, it would be a workable scheme so far as agricultural engineering is concerned, for in that branch experiment and district work would be correlated under one head. But in industrial matters experiment and district work would not be correlated at all. In work, the value of which is to be judged by the results attained in the districts I cannot understand one department entrusting all its district work to another. We never did anything so long as we relied on tahsildars to sell cotton seed for us (*vide* this year's annual report on cotton cultivation, G.O. No. 1685, dated 19th July 1915, Board's Proceedings No. 2171, dated 14th August 1915, and my notes on the history of this department).

The only way to make Mr. Tressler's scheme workable would be to make me both Director of Agriculture and of Industry with Mr. Tressler as my Industrial Expert. That is, as far as I am concerned, a position to which I do not aspire, do not covet, and would prefer to decline. My Deputy Directors are, moreover, agriculturists and I do not wish to burden them with district work on industrial matters. I am convinced that agriculture and industries are both sufficiently important and sufficiently distinct each to merit the sole attention of a whole-time officer. Mr. Tressler does not suggest, and I dismiss as impossible in a rural country like India, the idea that a working scheme should be evolved by making the whole of the Agricultural department a branch of the industrial one and subordinate to Mr. Tressler.

4. Mr. Tressler has in his second letter to Government answered the objections he raised in his former letter to the proposal to place a professional engineer under one whose time is mainly occupied in organization and co-ordination of effort, because in his last letter he totally abandons the agricultural engineer to my tender mercies. As for his Taluk offices, engineers are not free to adorn the country-side with these buildings as they deem fit, but control lies with the Government in the Revenue Department.

5. With work as it is and with present tendencies there is need, as Mr. Tressler agrees, for an agricultural engineer. He does not claim that he can do the work I require on agricultural machinery, etc. Co-ordination of effort between agriculture and engineering which at present does not exist, can be obtained in one of two ways either

(a) by merging industries in agriculture which Mr. Tressler in fact advocates though he shrinks from the final step or

(b) by recognising the broad distinction which, I submit, does exist between industries and agriculture and which I advocate.

6. It may not be exactly easy to say in each particular case where agriculture ends and industry begins because in the wider, truer sense agriculture is an industry; but all matters of machinery which a farmer requires either for purposes of cultivation or for immediately handling his raw produce to fit it for sale (whether it be a thresher to remove the grain from the straw, or a jaggery furnace, or churn for making butter) are agricultural matters. There is a broad distinction between industries and agriculture both

(a) in the facts to be considered before starting the enterprise,

(b) in the capital involved, and

(c) in the probable distribution of the work to be done by the departmental officers however they may be described.

In regard to the first of these Mr. Chatterton himself emphasised very ably at the recent Trade Conference in Madras in 1914, that this distinction was so fundamental as to affect the considerations on which even loans ought to be granted (*vide* page 115 of the proceedings of the Agricultural and Trade Conference).

The question in all these matters of agricultural machinery is solely an agricultural one—Will its use make my farm pay better?—the question in industries is—Will the enterprise pay me independently of a farm or anything else? In the first case the cost is limited by the size and nature of the farm and the farmer's capital and the machinery, etc., may be required on any farm in any scattered village. Industries, on the other hand, are controlled by the amount of capital the man can command and the prospects of trade and therefore tend very largely to be located in places much more accessible than farms usually are. Mr. Tressler supports my request for an agricultural engineer. If I have an agricultural engineer I must have in the districts a sufficiently large staff of men familiar with machinery to send them to any farm, *i.e.*, to any remote village and also a sufficiently decentralized organisation to control and direct them in these scattered villages. For the development of industries proper district work is also needed. This I have never denied; but because

(a) the capital involved in starting industries is larger;

(b) the openings for them are not so widespread as for farming;

(c) many of them must tend to start in the more easily accessible places; the district staff required for pushing them

(a) need not for some time be as large as in the case of pushing agricultural machinery;

(b) need not therefore be so wide scattered and should not therefore be so difficult to control from Madras.

7. Mr. Tressler himself admits that it is the control and direction of true pumping and boring work which now causes him the most difficulty; he sees that the retention of that by him can never alone be sufficient justification for the entertainment of a highly organised district staff such as is essential for our general agricultural work; and he agrees that the proposals set forth in my first letter should when in working order provide satisfactory control and direction. I agree entirely with all this; and say that the reason for it is that true pumping and boring is an agricultural and not an industrial question, certainly not a mere engineering one as he now asserts. I cannot follow him in paragraphs 10 and 12 of his last letter. That true "pumping and boring" is an agricultural question was dragged in late in discussion as an after-thought to justify the appointment of an agricultural engineer is incorrect. It appears

in Mr. Coventry's note, which is at the start of all this enquiry and a copy of which Mr. Tressler received before I did, as one among several of the natural and legitimate lines of work of an agricultural engineer. In my first letter I especially took care to give all credit for initiation of this work to the Industrial department and said that I now advocated the transfer to us solely because it was the natural step "in logical progress and development" both from the point of view of an Agricultural department, of that of the ryot to whom a pump and well is an agricultural question and of industries proper which are hampered by all the scattered village work which true pumping and boring entails.

8. Illustrations that true pumping and boring are really agricultural problems are easy to procure from Industrial officers themselves. Mr. Chatterton himself (page 115 *ibid*) says that in case of a loan for a pump and engine "the only point at issue is the suitability of the land and the supply of water" of which the first is solely an agricultural question. The Industries department recently erected for a landholder a series of wells controlled by electricity. The owner's idea was to grow sugarcane and turmeric, etc. When the work—an expensive one—was well advanced he came and asked me (and this was the first I had heard of it) for a loan of an inspector for a year to teach him how to grow cane. This of course was impossible. I had the land carefully inspected and found that much of it had been waste for years. It requires many years' work and improvement to bring the widespread growth of cane within the range of practical possibility. All we could do was to advise him to begin with ordinary crops and to improve his lands. He told me very plainly that he thought I had let him down after he had embarked on his scheme whereas I was helpless.

9. Mr. Tressler has supplied me with figures showing the number and total horse-power of the various irrigational plants erected by his department in the last eleven years and with similar figures for industrial plant in the last five years during which they have been paying attention to this. The average of horse-power of each installation erected in the different years is as follows:—

Irrigational plant—4, 8, $8\frac{1}{2}$, $8\frac{1}{2}$, $8\frac{1}{2}$, 8, 10, 9, 8, 11, $8\frac{1}{2}$.

Industrial plant—16, 13, 18, 21, 23.

There is obviously a difference in character between these and a different tendency; because I submit in one case the capital cost is limited by the agricultural needs of small farmers, in the other more generally by trade considerations and the capital the investor can collect. Our Agricultural Engineer whom Mr. Tressler agrees we require will have to deal with power ploughing and small motors for threshing, etc. Why can he not deal also with $8\frac{1}{2}$ horse-power engines for pumping water in order to grow crops?

10. As for paragraph 13 of his last letter Mr. Tressler thought that the scheme as put forward originally would leave him sufficiently free from routine work to devote time to industrial experiment, why then should it not equally satisfy the agricultural engineer? It was to prevent his being overburdened with inspections that I have contemplated engineering officers in the district of Assistants Directors' grade.

11. Mr. Tressler does need men for his district work on industries and I asked him not to denude himself thereof completely; but he himself made out the list of men to be transferred. He has 18 posts of supervisors sanctioned of which 16 are filled. He therefore now has two vacancies. Thirteen out of this 18 posts are in his pumping and boring section of which 12 are filled. It was originally proposed that I should take over eleven. Mr. Tressler has since added another for boring which makes 12. He thus has one post spare for his district work on industries. But from his statement of pumps and engines with which he has supplied me, it ought to be possible by concentrating work in the first few years (and I believe in concentration in all agricultural work) to work with eight or nine district circles instead of ten as proposed. This would give him at least two more men for his district work on industries or in all three or four on the present total sanctioned scale, leaving in the districts eight men for agricultural engineering including true pumping and boring. The total number of pumps erected so far by the Industrial

department (Mr. Tressler's own figures) is 451 and of Industrial plant 151 so that the proportion of even 8 to 3 (i.e. 8 circles for us and so actually 10 to come to us instead of 12 and 3 to remain with him for district work) is not unreasonable at the start especially as industries are, I should think, less scattered than irrigational plant. That such a temporary reduction in the number of circles to be constituted under this department is not impossible is shown by the following figures given to me by Mr. Tressler.

Head-quarters.	Pumping.					Number for annual inspection.
	Number of completed engines and pumps.		Number of cases for investiga- tion.			
	1912-13.	1913-14.	1912-13.	1913-14.	1914-15.	
Vizagapatam, Godāvari to Ganjam	1	2	8	4	4	4
Bezavada, Kistna, Guntur, Nellore	3	4	8	10	10	9
Gooty, Ceded districts	2	6	6	10	16	8
Vellore, North Arcot, Chittoor, Falem.	9	9	15	8	13	30
Madras, i.e., Chingleput	9	9	21	14	11	27
Cuddalore (South Arcot)	10	12	17	20	8	55
Tanjore (Tanjore and Pudukkotta)	36	40	5	41	34	*156
Trichinopoly (Trichinopoly)	8	10	9	18	3	43
Tiruppur (Coimbatore and Malabar)	14	28	22	29	19	77
Tinnevely (Tinnevely and Madura)	5	10	30	26	24	50

* I imagine this figure must contain many rice hullers.

This judged by the actual amount of pumping work in progress it would seem possible to divide temporarily the first six circles into only four at most leaving two more of the existing staff free for Mr. Tressler for his district industrial work. The two posts so lost would be sanctioned for me next year to be filled by fresh men as I find I could manage the work

12. Mr. Tressler would probably wish to be consulted on these details but considering the line he has taken I submit it would be premature to do this until orders are received on the main question. Meanwhile if I am to take over true pumping and boring I would especially like to begin not later than November 1st because the rains are the slack season for true pumping and boring and April 1st is in the middle of the busy season and to ensure this I am willing to drop two of the Supervisors at once on Rs. 100 each if necessary.

VIII

Reference from the Board of Revenue (R.S., Sur., L. Rds. and Agri.),
No. 1832, dated 17th September 1915.

The Hon'ble Mr. LL. E. BUCKLEY,

Commissioner of Revenue Settlement, Survey, Land Records and Agriculture.

In reply to the memorandum from Government, No. 614/C-15-1, Revenue, dated 8th April 1915, regarding the suggested transfer to the Director of Agriculture of the control of the pumping and boring operations and the proposal to create a special appointment of Agricultural Engineer, the Board begs to submit three reports on the subject received from the Director of Agriculture and one report received from the Director of Industries. It has also received from Mr. Tressler copies of two of his later communications on the subject, dated 20th July 1915, and 7th August 1915, which he has addressed to Government in the Educational Department. The Board will proceed to deal with these reports.

2. In his main report, dated 6th July 1915, the Director of Agriculture considers that it will be simpler and more economical for the Agricultural Department to deal with the questions of engineering and machinery adapted for purposes of agriculture which are within the resources of the ryots than for another department to build up an independent district organization for the same purpose. Accordingly he is prepared to take over the pumping and boring work which has been successfully initiated and carried forward by the Department of Industries. In order however to

ensure further success, he is of opinion that an Agricultural Engineer should be appointed on pay similar to that of Deputy Directors of Agriculture and subject to the Director's control like the Deputy Directors. His work will be chiefly concerned with the improvement of agricultural machinery; and the officer required is a mechanical and not a Civil Engineer. The Board agrees to the transfer of the pumping and boring work to the Director of Agriculture at the earliest date it is possible to arrange for, and the appointment of a Mechanical Engineer as suggested. The Board observes that the Government memorandum deals primarily with pumping and boring, but, in its opinion, it is necessary for the Agricultural department to have an Agricultural Engineer to deal also with agricultural machinery and implements; he will work for the Agricultural department just as any other expert and apply his special knowledge to agricultural conditions. Mr. Chadwick thinks that the services of such an officer may be secured in India if advertised for and this, the Board suggests may be done.

3. The Director's present idea is to run the district work connected with pumping and boring for about six months or a year from his Central office on the same lines on which it is now managed in Mr. Tressler's office and to take early steps to devolve as far as possible the administrative side, that is supervision of such district work as boring, inspection of existing plant and office routine, on Deputy Directors of Agriculture with a view to ensure speedy local control, to bring about the desired intimacy between the two staffs and to set the Agricultural Engineer free to devote his time to experimental work. The Board approves of such an initial policy and recommends that it may be accepted.

4. The Director further points out the need for a well-trained and competent man at headquarters in addition to an Agricultural Engineer. Until the latter officer is appointed, this officer will be the Director's Chief Engineering Assistant. The presence of such an officer at headquarters is necessary not only to set free the Agricultural Engineer when one is appointed to tour in the districts and study agricultural implements and machinery, but also to look after the constant requisitions from the districts and to interview those who call for advice when the Agricultural Engineer is in camp. The Board accordingly agrees with Mr. Chadwick that an assistant such as is contemplated by him is necessary. The question of his recruitment is however not an easy one to deal with. Mr. Chadwick considers that for the present, it will be sufficient if a well-qualified, experienced and sufficiently senior officer is selected from the existing supervisors and appointed to gazetted rank on Rs. 200-12½-400 corresponding to the grade of Assistant Director of Agriculture. The Board recommends this proposal for acceptance.

5. As regards the staff required to carry on the pumping and boring work in the districts, the Director's proposal is that the existing arrangements may be continued even after the transfer is effected, the only difference being that the staff instead of being controlled by the Director of Industries will henceforth be subject to the control of the Director of Agriculture. If this view is accepted, the staff which will be transferred to the latter will comprise eleven supervisors, twenty-two mechanics and forty maistries. There are at present ten circles which will absorb ten supervisors and the eleventh will be the Head-quarter Assistant. Twenty additional hands composed of the clerical, menial and drawing branches both at head-quarters and in the districts will also be transferred. In the result, 93 hands will come under the Agricultural department. The Board approves of this proposal as a temporary measure, subject to the remarks in paragraphs 10 and 11 below. A proposition statement for this number submitted by the Director of Agriculture is enclosed.

6. Intimately connected with the transfer of the existing staff to the Agricultural department is the question of its pay and recruitment both in the immediate present and in the near future. The existing officers will of course draw their present rates of pay. The Director was originally under the impression that all the existing supervisors are Bachelors of Engineering, but he now understands that, as a matter of fact, many of them are overseers and one or two are promoted mechanics. He observes that, as the department develops, and district work becomes more routine in character, supervisors need not be men of high qualifications. They may, he observes, be recruited from a class of people who undergo the subordinate agricultural course

at Coimbatore, on the reorganized scale of pay admissible to the subordinates of the Agricultural department, subject to the condition that selection should be confined to such of them as have shown an aptitude for mechanical work and have undergone a subsequent course in mechanical engineering in an industrial school. These men will start on Rs. 50 or 75, being graded with the upper subordinates of the Agricultural department.

7. Mr. Chadwick suggests that as the department expands, it may be necessary to provide a few officers of superior status to supervise the district staff. In such a case, these men and the Head-quarter Assistant Agricultural Engineer should rank with the Assistant Directors of Agriculture and draw pay at Rs. 200-12½-400. Most of these men will have to be recruited from amongst the B.Es. of the Engineering College. It is, however, not necessary to start them on the scale of Assistant Directors, but a sufficient pay must be given to attract them and they may commence on Rs. 85 or Rs. 100 and rise like other upper subordinates of the Agricultural department. The Director considers that three or four such appointments may be set apart for these men as well as for any of the exceptionally good men amongst those recruited on the starting pay of Rs. 50 or Rs. 75.

8. In his letter, dated 12th July 1915, addressed to the Board, the Director of Industries to whom the Director of Agriculture sent a copy of his first report has offered his remarks on the latter's proposals. Mr. Tressler states therein that two questions are involved in the proposal relating to the transfer of the Pumping and Boring department. They are (i) the question of the organization of the Pumping and Boring department as a separate unit and (2) the question whether that department is to be controlled by the Director of Industries or of Agriculture. He however confines himself in the letter referred to to a consideration of the question of organization alone and in the course of it he agrees with Mr. Chadwick on all material points and has considered it necessary merely to offer one or two opinions based on practical experience. He is of opinion that Mr. Chadwick has not sufficiently realized the importance of having a class of District officers between the supervisor and the Deputy Director corresponding in rank with the Assistant Director, that this class of officers is the backbone of the scheme, and that, if no provision is made either for their immediate entertainment or for the promotion to this class within a reasonable time of men belonging to the supervisor class, the scheme will break down. He thinks that fully qualified engineers should be started on Rs. 100 instead of Rs. 85. There is little doubt that officers of this class will be required sooner or later; it will be for Mr. Chadwick to form his opinion after some experience, if it is decided to hand over the staff to him. The difficulty will lie in staffing this grade. While the men trained as proposed by Mr. Chadwick may be more suitable than supervisors for the lower grade as their minds will be turned towards agriculture and mechanical engineering rather than to civil engineering, it may be found that the higher grade will require men of a higher education, in which case it will be necessary to recruit a certain number of graduates from the Civil Engineering College. For fully qualified engineers a starting pay of Rs. 100 may be found necessary as suggested by Mr. Tressler.

9. Mr. Tressler suggests that in view of the difficulties connected with the recruitment of the new staff, all the Public Works Department men now on deputation in the Pumping and Boring department should be required to remain definitely for a period of three years with the option to revert or remain at the end of that period. He further suggests that a deputation allowance may be given to such of the men as choose to remain if that is permissible. So far as the period of deputation suggested is concerned, it would be an advantage to be sure of having the present officers for another period of three years. As regards deputation allowance, the Board sees no justification for it.

10. Mr. Tressler further observes that in addition to the establishment proposed by the Director of Agriculture for district organization, at least one supervisor is required to look after the power drills, that an extra man is already working on these drills and may be used as a leave reserve. The Board accepts this proposal and if Government agree, this post may also be added in the proposition statement. He also suggests that the drawing staff should be brought on to the executive establishment

and that, if this is done, it will obviate the necessity for a separate scale of pay for the drawing office staff. Mr. Tressler accordingly recommends that the head draftsman should rank as a supervisor and the assistant draftsmen as mechanics, first grade. The Board submits that the Public Works Department may be consulted on these suggestions.

11. In his later letters submitted to Government in the Educational Department, Mr. Tressler deals with the question whether after the Pumping and Boring Department is organized as a separate unit, its control should be retained in his own hands or should be transferred to the Director of Agriculture and expresses himself against the latter alternative. The objections raised by Mr. Tressler have been met by Mr. Chadwick in his letters dated 28th July 1915 and 20th August 1915. Mr. Tressler believes that the proposals for transfer are based on the assumption that his duties have now become too extensive to permit of his devoting the necessary amount of time to the pumping and boring work. He concedes this fact but contends that as the department is going to be reorganized by the appointment of a proper staff under the executive control of a special officer, the work of the Director, whether of Industry or of Agriculture, will be limited to that of direction. This work, he adds, is less onerous than that of direct control and, moreover, when it comes to direction work, Mr. Tressler thinks that the Director of Agriculture is less fitted to direct the pumping and boring work than himself. The assumption that the proposals for transfer are made with a view to relieve Mr. Tressler of his work is an erroneous one. The proposals are put forward because it is considered right that certain branches of Mr. Tressler's work should more properly be looked after by the Director of Agriculture—not only pumping and boring work but experiments on agricultural implements of all kinds and on such machinery as is required for preparing raw agricultural products for the market. The object in view is to apply engineering to agriculture and the end is more likely to be attained if the direction is in the hands of one who has been trained in agriculture. Those who have not been so trained are not readily able to realize the practical ends to which engineering skill is to be adapted and their efforts consequently fail of success. Another justification for the proposal to transfer the direction of the staff to the Director of Agriculture is the circumstance pointed out by Mr. Chadwick that pumping and boring work and experiments in agricultural machinery require wide scattered local supervision in villages and so interferes with real industrial work which lies more in the towns.

Mr. Tressler further argues that an Engineer cannot work under a non-professional man. The Director rightly observes that scientific agriculture is in every country nothing but the co-ordination towards agricultural improvements of the efforts of specialists in all subjects and that in every Agricultural department all the specialists work directly under one head. The reason for the appointment of a separate Director of Agriculture was that there should be one officer whose whole time should be devoted to co-ordinating and directing the efforts of these various specialists towards the one goal of agricultural improvement. The only objection of some moment urged by Mr. Tressler to the proposed transfer is that, if the pumping and boring staff is taken away, he will lose much of the staff he relies on for his industrial work. The Board believes that Government will be prepared to give him such staff as he requires for this purpose. It is a question of expansion and adjustment. In view of this objection, however, Mr. Chadwick is prepared to concentrate work and thereby reduce the number of the circles from 10 to 8 to begin with, and to effect a corresponding reduction in the number of supervisors at first proposed to be taken over by him (paragraph 5 above), so that Mr. Tressler may have two more men for his district work on industries. The Board has no objection to this being done.

12. The Board considers that pumping and boring work should properly be transferred to the Agricultural department and, as already stated above, suggests that the transfer may be made as early as possible. It would add that the question of the appointment of an Agricultural Engineer who will, amongst other things, take over pumping and boring has been under the consideration of the Director of Agriculture and the Commissioner for the past twenty months, but they had some hesitation in making the suggestion because they realised how much the Department

of Industries had done in this direction and how great a share of the department's success this branch of work could claim, and it seemed scarcely fair that the Agricultural department should suggest that the Department of Industries should be relieved of its most successful operations.

13. In order to cope with the work in the Director of Agriculture's office in the event of the proposed transfer being effected, the Director wants one accountant on Rs. 50—2½—70 and a clerk on Rs. 20—1—25. The Board supports these requests.

14. A reappropriation statement for Rs. 38,358 submitted by the Director of Agriculture is enclosed. Provision is made in it for five months' expenditure, on the assumption that the transfer, if approved, will be given effect to from 1st October 1915 and that the cost can be met from savings in Mr. Tressler's budget. Mr. Tressler, however, says that he proposes to utilize the savings for the pay of a Deputy Director of his own.

15. If the work is transferred to the Director of Agriculture, the portions of his office now occupied by the Assistant Director of Fisheries and the clerks of the Registrar of Co-operative Societies will have to be set free for the accommodation of the head-quarters staff of the pumping and boring branch. The Honorary Director of Fisheries and the Registrar have already been requested by the Board to state what arrangements can be made to transfer their offices elsewhere by the time the rooms occupied by their staff are required. The former promises to vacate the portion occupied by his assistant on finding a suitable building for him and obtaining the sanction of Government for renting it. The latter has not yet replied.

T. RAGHAVIAH,
Secretary.

To the Secretary to Government, Revenue Department, with copies
of the letters from the Director of Agriculture
and the Director of Industries.

IX

Endorsement No. 614-C/15-3, Revenue, dated 3rd November 1915.

Referred to the Accountant-General for very early remarks.

(By Order.)

A. H. A. TODD,
Under Secretary to Government.

To the Accountant-General with copy of current file.

X

Letter—from A. NEWMARCH, Esq., Accountant-General, Madras.
To—the Secretary to Government, Revenue Department.
Dated—the 29th November 1915.
No.—G.A. 40-17639.

In reply to Government endorsement No. 614-C/15-3, Revenue, dated the 3rd November 1915, I have the honour to state that the entries in the column "present scale" of the proposition statement appended to the letter of the Director of Agriculture No. R.O.C. 253-B, dated the 6th July 1915 have been compared with those in the registers of this office and found to be correct.

2. The proposals as recommended by the Board of Revenue, on their financial side are:—

(i) to appoint an Agricultural Engineer, on pay similar to that of Deputy Directors of Agriculture,

(ii) to appoint a gazetted Engineering Assistant to the Director of Agriculture on pay similar to that of Assistant Directors of Agriculture, and

(iii) to revise the scale of pay of the staff required for the pumping and boring operations for the future, so as to correspond with the scale of pay sanctioned for the upper subordinates and the lower subordinates of the Agricultural Department.

In the absence of more definite information regarding the last proposal the financial effect of the whole scheme cannot be worked out. The existing staff of the Pumping and Boring Department are apparently to continue on their present rates of pay as a temporary measure, with the permanent addition of an accountant and a clerk to the establishment of the Director of Agriculture.

3. All the three proposals should, however, be considered as forming parts of a single scheme, viz., the placing under the supervision of a single officer, viz., the Director of Agriculture, not only the pumping and boring work but experiments on agricultural implements of all kinds and on such machinery as is required for preparing raw agricultural products for the market—vide paragraph 11 of the Board's reference, and as the first proposal will require the sanction of the Secretary of State under rule III (3) of the audit resolution (article 277, Civil Account Code), the whole scheme should be submitted for the approval of the Secretary of State—vide note 2 under rule II (2) of appendix B, Madras Supplement to the Civil Service Regulations.

4. In compliance with paragraph 4 of G.O. No. 544, Financial, dated 26th August 1915, a reappropriation statement has already been submitted to Government in the Financial Department with my letter No. Bud. 66-16409, dated the 11th November 1915, proposing the transfer to the head "26-A. AGRICULTURE" of the whole provision for the "Pumping and Boring Department" made under "45. CIVIL WORKS" in the current year's budget estimate. Any additional allotment under "26-A. Agriculture—Pumping and Boring Department" that may be required to meet the extra expenditure involved in the current year will have to be sanctioned by Government.

Order—No. 523, Revenue, dated 7th March 1916.

The lack of a qualified Agricultural Engineer has long been regarded as a defect in the organization of the Agricultural Department and the expediency of remedying this deficiency has for some time past engaged the attention of Government. The question also formed the subject of discussion in connection with a resolution moved at the meeting of the Legislative Council held on 13th March 1915. The Director of Agriculture and the Board of Revenue strongly support the proposal to create such an appointment and His Excellency the Governor in Council accepts their view. He is accordingly pleased to sanction the creation of a post of Agricultural Engineer on a salary of Rs. 400—25—800 per mensem, as also that of an Assistant Agricultural Engineer on a salary of Rs. 200—12½—400 per mensem. Such assistance is clearly requisite, if only, in order that the Engineer himself may be at liberty to tour in the districts and study local conditions and requirements without allowing current work at headquarters to fall into arrears. Both posts will be treated as gazetted appointments.

2. A corollary to their creation is the transfer to the Agricultural Department of the pumping and boring operations now under the control of the Director of Industries. The exact date of this transfer will be settled later after the consequential arrangements have been worked out in detail.

3. The Government will next indicate the nature of some of the changes which appear to be necessary:—

(i) They approve the proposal of the Director of Agriculture that for the present one of the supervisors in the Pumping and Boring Department should be specially selected for the post of Assistant Agricultural Engineer, the cadre of the Upper Subordinates of the Public Works Department being simultaneously reduced by one appointment.

(ii) With the transfer of the pumping and boring operations the following staff will also fall to be transferred to the Agricultural Department:—

	Number of officers.	Pay.
EXECUTIVE STAFF.		
Supervisors	10 *	Pay and allowances admissible in the Public Works Department.
Mechanics	22	3 on Rs. 50- $\frac{1}{2}$ -70 and the rest on Rs. 35-2-45.
Maistries	40	8 on Rs. 30-1-35 and the rest on Rs. 20-1-30.
CLERICAL STAFF.		
<i>Central office establishment.</i>		
Head draftsman	1	Rs. 55-3-70.
Assistant draftsman	1	" 30-4-50.
Tracer	1	" 25.
Clerks	2	" 25-1-35 each.
<i>District office establishment.</i>		
Clerks (temporary)	3	Rs. 20-1-25 each.
<i>Menial establishment.</i>		
Peons	8	Rs. 9 each.
Peons (temporary)	4	" 9 "

* Including one to be appointed as Assistant Agricultural Engineer.

(iii) For work connected with pumping and boring operations in the office of the Director of Agriculture, it will be necessary to entertain an accountant on Rs. 50-2 $\frac{1}{2}$ -70 per mensem and a clerk on Rs. 20-1-25 per mensem. This post should not carry grain compensation allowance.

(iv) The Government approve the recommendation of the Board of Revenue that the officers of the Public Works Department who are now working under the Director of Industries and who may be transferred to the Agricultural Department should be retained in that department for a further term of three years with the option of reverting at the end of that period.

(v) Separate orders will issue with regard to the suggestion made by the Director of Industries that the drawing staff of the Pumping and Boring Department should be brought on to the executive establishment and that the head draftsman should rank as a supervisor and the assistant draftsmen as mechanics of the first grade.

(vi) The Government accept the recommendation of the Director of Agriculture that boring tools and machinery should continue to be kept in the charge of the Director of Industries who will be responsible for their repair and for their issue to the Department of Agriculture on receipt of indents.

(vii) The Government also approve the proposal to transfer the control of sugarcane experiments to the Agricultural Department.

(viii) Practical experience of the effect of the contemplated changes is required before further consideration can be given to the suggestion of the Director of Agriculture to recruit supervisors from candidates who have undergone the subordinate agricultural course at the Coimbatore College.

4. Questions of personnel and the provision of funds unavoidably defer the immediate introduction of the arrangements contemplated in this order and the date from which they shall take effect will be decided later on.

(True Extract.)

J. P. BEDFORD,
Acting Secretary to Government.

To the Board of Revenue (Revenue Settlement).
(Land Revenue).
" Director of Industries.
" Educational Department.
" Public Works Department.
" Financial Department.

Editors' Table (paragraphs 1 and 2 of order only)

Est. Department
[C. N. G. B. W. S.]

Memo No. 1135-1. 261, 27.3.4.16

The attention of the Director of Industries is requested drawn to G.O. No. 5-23 Revenue, (cf.) dated the 7th March 1916, and he is requested to report what reduction in the strength of his office establishment can be made, in addition to that mentioned in the above G.O., when the pumping & boring operations and the sugarcane experiments are transferred to the Department of Agriculture.

Transferred by
para 2 & 3 (vii), pgs 33 & 34
of G.O. No. 5-23 Rev (cf.)
7.3.16

8A
20.3.16. 2
31/3/16

5/4/16

The S. I.

Noted in 1/3
5/4/16

DEPARTMENT.



Received 191 . Registered 21 4 191 .

Subject.

Regarding reduction in the establishment of the Director of Industries.

ENCLOSURES
No.
Spare copies

No. A 28

Station Madras , Dated the 11th April 1916.

From (Name) K.T.B. Tressler, Esq.,
(Designation) Director of Industries,

To The Secretary to the Government of Madras,
EDUCATIONAL Department.

Sir,

With reference to Memorandum No. 1135^{Edl} dated 5th April 1916 I have the honor to state that the transfer of the Pumping and Boring operations to the Department of Agriculture takes away the whole of my staff^{in that section} and only part of the work that I used to do. For the Sugar Cane Experiments, 1 Temporary Supervisor on Rs.100 and 2 temporary Mechanics on Rs.35 each are sanctioned and these can be transferred when the experiments are transferred. Otherwise, the effect of the transfers above mentioned will be, if anything, to necessitate an increase rather than a decrease in staff. ^{no reductions can be made}

I have the honor to be,
Sir,
Your most obedient servant,
[Signature]
Director of Industries.

page 35 supra

No. 1189^{Edl}
21.10.14

SK

REVENUE DEPARTMENT.

NOTES CONNECTED WITH G.O. No. 523, REVENUE, DATED
7TH MARCH 1916.

[SUBJECT.—Transfer of the Pumping and Boring Department to the Director of
Agriculture.]

Previous papers :

G.O.	1333	Press,	23rd Dec.	1903	G.O. Mis.	312	Rev.,	30th Jan.	1914
"	365	"	31st Mar	1904	"	326	"	2nd Feb	"
"	138-9	Edl.,	7th "	1905	"	892	"	21st Mar.	"
"	259	Press,	18th "	"	"	368	Edl.,	1st Apl.	"
"	374	"	2nd May	"	"	1645	Press,	6th June	"
"	884	Press, (Confdl.)	15th Sept	"	"	761	Edl.,	1st July	"
"	664	Press,	14th July	1906	"	2381	Press,	17th Aug.	"
"	960	"	27th Sept.	"	"	983	Edl.,	18th "	"
"	1226	"	14th Dec.	"	"	1675	W.,	28th "	"
"	249	"	2nd Feb.	1907	"	2795	Press,	15th Sept.	"
"	251	"	"	"	"	Mis. 2937	"	9th Oct.	"
"	910	"	20th Apl.	"	"	1189	Edl.,	22nd "	"
"	2135	"	24th Aug.	"	"	1191	"	"	"
"	88	"	11th Jan.	1908	"	Mis. 1267	"	11th Nov.	"
"	2894	"	17th Oct.	"	Lodged C.2981	"	Rev,	13th "	"
"	1945	"	19th July	1909	G.O.	3271	Press,	"	"
"	3446	"	27th Oct.	1910	B.P.	45	"	8th Feb.	1915
"	54	"	7th Jan.	1911	Memo.	1261-C	"	16th "	"
"	1093	"	18th Apl.	"	G.O.	975	"	26th Apl.	"
"	1316	"	4th May	"	"	1200	"	21st May	"
"	2147	"	14th July	"	"	544	Finl,	26th Aug.	"
"	479	"	2nd Aug.	1912	"	1656	Press, (Confdl.)	15th July	"
"	3129	"	16th Oct.	"	"	1685	"	19th "	"
"	3851	"	30th Dec.	"	B.P.	215 Sett.	"	28th "	"
"	607	"	28th Feb.	1913	Lodged C. 2920	"	"	25th Nov.	"
"	297	Finl.,	23rd Apl.	"	G.O. Mis.	330	"	12th Feb.	1916
"	2087	Press,	12th July	"					

NOTES CONNECTED WITH RESOLUTION REGARDING THE REVISED
FINANCIAL STATEMENT.

The Hon'ble Mr. K. R. V. KRISHNA RAO :—

XX. This Council recommends to His Excellency the Governor in Council that to enable the Department of Industries to devote its undivided attention to its legitimate work of developing the existing industries, encouraging the establishment of new ones, and organising and placing on an efficient working basis the Bureau of Industrial Information by conducting a systematic industrial survey in the Presidency,

(a) the Director of Industries be relieved of the work connected with the Pumping and Boring Operations, that work along with the necessary portion of the Pumping and Boring staff being placed under the control of the Director of Agriculture, and two of the Upper Subordinates now under the Director of Industries being appointed as Deputy Directors of Industries on the same scale as the Assistant Directors of Agriculture or Public Works Department Provincial Assistant Engineers and that the extra cost be met from the allotment of Rs. 10,000 made for the Bureau of Industrial Information under 26-B. SCIENTIFIC, ETC., DEPARTMENTS (detailed account 26 B (m).),

(b) an additional appointment of an Engineer on Rs. 500 a month be made to be in charge of the Pumping and Boring Operations under the Director of Agriculture, the cost being met from the allotment of Rs. 7,010 provided for a Sub-Engineer and an Assistant to the Director of Industries in charge of the Pumping and Boring Operations.

Please see the Resolution above. The main question is whether, as suggested by the Additional Member, the pumping and boring operations should be transferred from the control of the Director of Industries to that of the Director of Agriculture. These pumping and boring experiments were started by Mr. Chatterton in 1903 and when his proposals were sanctioned, the Government directed that they should be carried out under the control of the Director of Agriculture as the primary object of the experiments was to spread among the ryots a knowledge of improved agricultural methods. Mr. Chatterton was subsequently put directly under the Board Member in charge of the Department of Agriculture and continued to

G.O. No. 1333, Revenue, dated 23rd December 1903.

See also paragraph 2 of G.O. No. 365, Revenue, dated 31st March 1904.

Vide notes to G.O. No. 138, Educational, dated 7th March 1905, and G.O. No. 259, Revenue, dated 18th March 1905; also G.O. No. 249, Revenue, dated 2nd February 1907.

work under the Board till October 1908 when the Department of Industries was first created. As Director of Industries in charge of the new department, Mr. Chatterton worked directly under the Government. In October 1910 when the Secretary of State's orders were received abolishing the Industries department the Government asked the Board whether it saw any objection to placing under the control of the Director of Agriculture the pumping and boring operations which were then under the Director of Industries. The Board saw no objection to the proposal but stated that the Director of Agriculture should have the assistance of a mechanical engineer for direct supervision of the operations. As the question of addressing the Secretary of State for a reconsideration of his orders was then under consideration, the Government decided that Mr. Chatterton should as a temporary arrangement continue in charge of the operations in addition to his duties as Superintendent of Industrial Education. Soon after that Mr. Chatterton applied for assistance in carrying on the pumping and boring work, and the Government decided to place Mr. Chatterton directly under the Commissioner of Agriculture. Subsequently, however, it was decided to place Mr. Chatterton in charge of these operations, Mr. Tressler being given charge of industrial education. The question was then raised whether Mr. Chatterton should work under the Board or directly under the Government, and it was decided that he should work directly under the Government. The reasons for this decision will be found in the notes at pages 2-3 of notes to G.O. No. 2147, Revenue, dated 14th July 1911. The deciding factor was the personal equation of Mr. Chatterton; he had not worked smoothly with Mr. Castle Stuart Stuart.

Paragraph 3 of G.O. No. 2894, Revenue, dated 17th October 1908.

Paragraph 6 of G.O. No. 3446, Revenue, dated 27th October 1910.

Board's Proceedings at page 10 of G.O. No. 54, Revenue, dated 7th January 1911.

G.O. No. 54, Revenue, dated 7th January 1911.

G.O. No. 1093, Revenue, dated 18th April 1911.

Mr. Tressler in charge of the operations to G.O. No. 1316, Revenue, dated 4th May 1911.

being given charge of industrial education. The question was then raised whether Mr. Chatterton should work under the Board or directly under the Government, and it was decided that he should work directly under the Government. The reasons for this decision will be found in the notes at pages 2-3 of notes to G.O. No. 2147, Revenue, dated 14th July 1911. The deciding factor was the personal equation of Mr. Chatterton; he had not worked smoothly with Mr. Castle Stuart Stuart.

2. The officer in charge of the pumping and boring operations has since then been under the Government. The department of Industries was reconstituted in April 1914 and the Director of Industries took over the pumping and boring work also. The question for consideration is whether it is necessary or expedient to transfer this work now to the

Agricultural Department! In addressing the Secretary of State for a reconsideration of his orders abolishing the Industries department, the pumping and boring work was cited as practically the most important and useful branch of the department, and until recently this work formed the main portion of the work of the department. The Additional Member suggests that this work may be taken off the hands of the Director so that he may be free to devote his undivided attention to his legitimate work of developing the existing industries, etc. The necessity for giving relief to the Director has been recognized by the Government and he has been given the assistance of a full-time mechanical engineer for charge of the pumping and boring work alone. So far as this branch is concerned the Director's work will hereafter be confined mainly to general supervision and control. But even if this work is taken off from his hands it is likely that as the department develops he will have enough to do with the remaining functions of the department. There is also this to be said in favour of the proposal that the operations are purely for agricultural purposes as opposed to industrial. But in addition to pumping and boring work the department now furnishes expert advice as to the best types of machinery such as motor-driven pumps, etc. and this, it is submitted, is a legitimate function of the Industries Department rather than of the Agricultural Department. It has also to be considered whether the Agricultural Department would now be able to take over this work. As already stated above the Board did state in 1910 that there would be no objection to the Agricultural Department taking over the work, provided the Director of Agriculture be given the assistance of a mechanical engineer. The Director of Agriculture (Mr. Couchman) also stated that he could carry on the administrative work including the purchase of machinery and the negotiations for loans if a suitable increase was made in his office establishment. The Director of Industries has now an engineer assistant solely in charge of the pumping and boring work. This assistant and a portion of the Director's office staff can be transferred to the Agricultural Department with all the pumping and boring supervisors, mechanics and maistries. But the assistant to Mr. Tressler has been sanctioned only temporarily for one year and if the work is to be transferred to the Agricultural Department the appointment of a permanent assistant to the Director of Agriculture will be necessary. This point is, however, immaterial as it is quite likely that the assistant to the Director of Industries will have to be retained permanently. The Agricultural Department has, however, expanded considerably since 1911 and it is a question whether the Director of Agriculture can very well be saddled with the additional duty of looking after the pumping and boring work even if he is given the assistance of a mechanical engineer.

Paragraph 8 of letter at pages 4-5 of G.O. No. 3851, Revenue, dated 30th December 1912.

G.O. No. 2795, Revenue, dated 25th September 1914.

Paragraph 5 of his letter at page 3 of G.O. No. 54, Revenue, dated 7th January 1911.

G.O. No. 2795, Revenue, dated 25th September 1914.

Department the appointment of a permanent assistant to the Director of Agriculture will be necessary. This point is, however, immaterial as it is quite likely that the assistant to the Director of Industries will have to be retained permanently. The Agricultural Department has, however, expanded considerably since 1911 and it is a question whether the Director of Agriculture can very well be saddled with the additional duty of looking after the pumping and boring work even if he is given the assistance of a mechanical engineer.

3. In case the proposal is accepted there seems to be no objection, it is submitted, to meeting the cost as proposed by the Additional Member. The question whether any reduction is possible in the provision made for the Bureau of Industrial Information is for the Educational Department to decide. The file may be sent to that department for remarks. On its return the file may be circulated to the Honourable Member for orders (1) whether he would take charge of the resolution, (2) whether further information should be collected and (3) whether the resolution should be discussed in the Executive Council.

K.A.M.—6-3-15.

M.R.N.—6-3-15.

This note should go at once to the Honourable Member. Reaching me as it does only on the 8th, there is not time for further circulation to Educational. The question who shall take charge of the resolution must be left over for settlement in the Executive Council.

So far as the resolution concerns Revenue, there is much, I think, to be said, for the transfer of pumping and boring to the Director of Agriculture together with other problems of agricultural engineering. Mr Chadwick told me a few weeks ago that this very change had been suggested to him by Mr. Coventry, the Agricultural Adviser to the Government of India, who was down here on tour a few weeks ago, and noticed that while ahead of other provinces in almost every other direction Madras was relatively backward as to agricultural engineering. Mr. Chadwick said he had mentioned the matter to Mr. Tressler who was quite ready to accept the change. It would leave him free to concentrate his attention on industrial developments, a subject of rapidly growing importance, and in regard to mechanical questions his advice would still be at the service of the Agricultural Department. A further reason in favour of the change is that several deputy directors of agriculture divide up the Presidency and could more conveniently supervise pumping and boring operations than a single officer like Mr. Tressler.

An agricultural engineer may or may not be requisite, but the details of such a change in the administrative system must be carefully worked out and no budget alterations can well be made in anticipation.

I would therefore decline to alter the budget, but at the same time promise to examine the suggestion to place pumping and boring operations under the Director of Agriculture.

L. DAVIDSON—8-3-15.

EDUCATIONAL DEPARTMENT.

The Director of Industries is now in charge of—

- (1) Industrial education,
- (2) the development of industries, and
- (3) the pumping and boring operations.

To assist him in the educational branch of his work an Inspector of Industrial Schools has been sanctioned. The Secretary of State's despatch, dated 10th October 1913, on page 29 of G.O. No. 892, Revenue, dated 21st March 1914.

G.O. No. 2795, Revenue, dated 25th September 1914.

The Revenue Department consider that the appointment will in all probability be continued. The Director's work in regard to these two sections will, when the department has been fully organized, be of the nature of general supervision and control.

The development of industries proper is thus in sole direct charge of the Director. As observed by the Revenue Department, this subject is rapidly growing in importance and the present war has increased the activities of the department. Experiments in connection with oil, soap, paper, glass and pencil manufactures have recently been started. The Director stated that Dr. Marsden who has studied the question of manufacture of paper would look after the experiments connected with it. As regards pencil a specialist was recently engaged. In respect of other experiments, four temporary supervisors have been sanctioned. If these and other activities have to be sustained, some permanent assistance to the Director will be needed. It is not likely that the limitations imposed by the Secretary of State's orders prohibiting the undertaking of experiments on commercial scale and by financial conditions will minimise to any large extent the need for assistance to Mr. Tressler. But as it is, Mr. Tressler has not yet applied for any such. Apparently, he considers it premature at present to propose any *permanent* arrangements. In his proposals for the development of the Bureau of Industrial Information, Mr. Tressler has asked for an establishment headed by a Registrar on Rs. 10—120. Even this is not immediately required, as the

Page 3 of G.O. No. 3271, dated 13th November 1914.

G.O. No. 1267, Educational, dated 11th November 1914.

Paragraph 46, page 8 of G.O. No. 983, Educational, dated 18th August 1914.

buildings necessary for establishing the bureau will not become available for some time. It is not possible to gauge with the data at present available whether the activities in regard to the development of existing industries, the encouragement of new ones and the conduct of systematic survey will need any additional establishment and if so, of what nature. When the need is established, the establishment required for the purpose will, in the usual course, be sanctioned. Even as it is, enough work could not be found for the experts already employed by the Government. If the proposal to transfer pumping and boring operations to the Agricultural department is finally approved, sufficient relief would have been given to the Director to attend to the question of development of industries. The creation of Deputy Directors of Industries as proposed in the resolution is thus premature. Further, it involves the abolition of two appointments of upper subordinates, who are now doing duty in the pumping and boring section. This is inadmissible, as that department is not overstaffed. It is therefore for consideration whether these facts also may be placed before the Council when promising to examine the proposals as suggested in the Revenue Department.

C.R.—8-3-15.

I agree with Mr. Davidson that the transfer of pumping and boring operations to the Agricultural Department would be an advantage to the Department of Industries by leaving Mr. Tressler free to concentrate his attention on industrial developments. Mr. Tressler's services would of course continue available—to the Agricultural Department—in regard to mechanical questions.

P. RAJAGOPALA ACHARIYAR—8-3-15.

WORKING OF THE DEPARTMENT OF INDUSTRIES.

The Hon'ble Mr. K. R. V. KRISHNA RAO :—

"In placing this resolution before the Council for acceptance, I beg leave to mention that I do not propose any extra allotment whatsoever. I do not propose any extra expenditure on this head; but I propose only a readjustment of the duties and the allocation of the amount already provided in the budget estimate. At present the Pumping and Boring Department is under the direction and supervision of the Director of Industries who has been practically doing the whole work. But in order that the Director of Industries may be able hereafter to give a greater part of his attention—and in fact his entire attention—towards the development of the existing industries and also towards finding out the possibilities of starting new ones, I propose that he shall henceforth be relieved of this duty of supervising the pumping and boring operations and that that duty be placed under the Director of Agriculture.

"My Lord, in the Bombay Presidency pumping and boring operations are under the supervision and direction of the Director of Agriculture. An engineer qualified in agricultural engineering is placed to supervise the pumping and boring operations and made to work directly under the Director of Agriculture. Here also I propose to do the same thing. There is some provision in the budget for a few technical and industrial schools and also for a bureau of industrial information; and this necessarily involves a large quantity of work and greater supervision for the Director of Industries hereafter. For this purpose I propose that the work connected with pumping and boring operations may be placed directly under the control and supervision of the Director of Agriculture, that the Director of Industries be relieved of that work entirely and also that the Director of Industries be given the assistance of two Deputy Directors of Industries of the same grade as Assistant Directors of Agriculture or Provincial Assistant Engineers in the Public Works Department, so that they may be going about the country gathering information with regard to several matters, and supplying the bureau of information with much useful industrial knowledge which may be disseminated to all people who may be interested in the development and establishment of industries.

"My Lord, I have also made provision for an engineer to be in charge of pumping and boring operations, and to work under the direction and supervision of the Director of Agriculture without entailing any more cost than what has been already budgeted for this year. With regard to the expenditure towards pumping and boring operations, I have taken the figures from the budget for the year 1913-14 as also for the year 1914-15. At present according to the budget the entire amount that is provided both for pumping and boring operations as well as for industrial concerns is Rs. 1,63,008. According to my proposal the cost of the Pumping and Boring Department alone comes to Rs. 1,11,110; and this amount I propose may be allocated to the Agricultural department, the whole staff connected with pumping and boring operations being transferred to the Agricultural Department. The balance of Rs. 51,958 will be enough for the needs of the Department of Industries without curtailing anything whatsoever. Thus within the amount allotted in the budget my suggestions can be carried out. I am only proposing that this necessary transfer may be made in order that both the departments may be more efficiently worked than at present.

"The Director of Industries and Commerce in Mysore suggested the desirability of appointing a qualified engineer for each district in that province; and under his advice five engineers have been appointed in addition to the three engineers already existing. As the thing advances, it may be found necessary to employ more engineers to work under the Director of Industries; but for the present, if this arrangement is made, I hope that the purpose will be served. I therefore commend this resolution to your Excellency's Government and hope that my proposal will be approved."

The Hon'ble Mr. A. G. CARDEW:—"The suggestion which is contained in this resolution is one which has been put forward from other sources before. The reasons which the Honourable Member who moved this resolution has brought forward do not seem to me to be very convincing. His principal object, as far as I followed him, was to make both the departments more efficient. That is the whole question of fact which has to be considered. At present pumping and boring work is done under the supervision of the Director of Industries. This is due to the fact that the first permanent Director of Industries took a special interest in this subject and started the pumping and boring work. As long as he was here, he naturally retained it as one of the industrial ventures that he was promoting. It does not necessarily appertain to the Department of Industries. It is doubtful whether, under ordinary circumstances, it would have been taken under the Department of Industries. That is how it came to be under the Department of Industries. It might possibly be placed under the Public Works Department—Irrigation—as that would be the natural allocation of pumping and boring work. But the Honourable Member who moved the resolution thinks that it should be placed under the Director of Agriculture. Something may be said in favour of that view. No doubt the appointment of an agricultural engineer cannot very long be postponed. In some form or other the Director of Agriculture will require engineering assistance. If he has an engineer for agricultural work, it is probable that the pumping and boring work might go to him.

"But there are practical difficulties in carrying out this change. One such difficulty—and one that for the moment determines the position—is the provision of workshop accommodation. Pumping and boring work involves the use of a very large number of boring tools; pipes have to be put down and have to be sent in for repair to be put in order. The question is, if this work is transferred suddenly (as the resolution suggests) by a stroke of the pen to the Director of Agriculture, who is to carry on the work of repairs? At present it is done in the workshop of the Director of Industries. He has got the tools. So long as he has tools, it is most convenient that pumping and boring work should go on under his supervision. At present therefore we think that it is better that the thing should continue under the supervision of the Director of Industries. He has at the present minute a special officer to look after this branch of the work, but it is possible we may lose that officer and, if we do, we shall have to replace him. Until that is settled, and until it is settled where the repairs have to be executed, we must adhere to the present arrangement which keeps this work under the Director of Industries. It does not interfere with Mr. Tressler's work, though he would not be sorry to part with it as he has got his hands full of work. At present it is most convenient to carry it on, as it is, as a temporary measure, though it may be convenient later to place it under the Director of Agriculture, especially if an agricultural engineer is recruited to work under the Director. But at present the Government prefer to let it go on as it is. The Honourable Member's suggestion will be considered, and may possibly be carried out, but I do not think that we can undertake to alter the budget at present."

The Hon'ble Rao Bahadur P. KESAVA PILLAI:—"I am glad to hear from the Hon'ble Mr. Cardew that the appointment of an agricultural engineer would not be postponed for a long time, and that it will come in time. An agricultural engineer is very necessary to carry on the operations of the Pumping and Boring Department in the interests of the agricultural population, especially an Indian engineer who can mix freely with the Indian people, understand the sentiments and difficulties of the ryot population and speak their dialects. However sympathetic a European engineer may endeavour to be, he cannot carry on the work that the Government intend to do because he could not understand the vernaculars and properly comprehend the difficulties of the communities interested in agriculture. I am glad that the Government have in contemplation the appointment of an agricultural engineer.

The Industrial Department has to do a great deal in improving the industries of the country. Now the enemy is not supplying us with indigo dyes; and I think it will be interesting to know if the Department of Industries is making experiments in making the indigo dyes so that they may supply them to the people. I am glad to hear from the Hon'ble Mr. Rajagopala Achariyar that the Government are going to make experiments in extracting oil. I believe that it is the ground-nut oil that he is referring to."

The Hon'ble Diwan Bahadur P. RAJAGOPALA ACHARIYAR:—"All kinds of oil."

The Hon'ble Rao Bahadur P. KESAVA PILLAI:—"The ground-nut cakes are useful as fertilizers of the soil. By exporting oil-seeds people are losing first-class fertilizers of the soil, and the ryots are suffering. Further I am told that some of these oil cakes are used for feeding cattle, so that, if the Government should succeed in extracting the oil and encouraging the people to follow them, the people would become much richer and the soil will also be better fertilized. I am glad to have on the whole an encouraging reply from the Government that they will try their best and introduce this industry in course of time. If they do not alter the budget it does not matter; but if they have in contemplation to follow the lines indicated by the Honourable the Zamindar of Polavaram, I would be satisfied, and be thankful to the Government."

The Hon'ble Rao Bahadur M. RAMACHANDRA RAO:—"There is only one point that I should like to state in this connection. I have always confessed to a feeling of some dissatisfaction with the Department of Industries, in that a great deal of its work has been dominated by the Pumping and Boring Department attached to it. I feel and several Honourable Members of Council feel that real industrial work has been much hampered by this department being managed by the Director of Industries; and I for one would like to see that, as far as possible, he is relieved from this branch of work. Its real place should be more under the Revenue Department than under the Public Works Department. When the question of the appointment of an agricultural engineer is considered, the work of this Pumping and Boring Department is of vital importance to the ryot; and it is certainly of much more consequence that the ryot and the department with which he is more in touch—the Revenue Department—should work together with the Director of Agriculture. This department has a great future for expansion. I was reading several monographs with reference to pumping and boring, such as deep well-boring in America. I think this question of agricultural well-boring has been very much behindhand in most districts of this Presidency and I trust that the department will be placed under the Director of Agriculture and that Mr. Tressler's department will be relieved of it as early as possible. If this is done, it will conduce to the progress of both the departments. I trust that this aspect of the question will receive some consideration."

His Excellency the PRESIDENT:—"I do not know what the Honourable gentleman desires to do with reference to this resolution. He may be content, I think, with having elicited this discussion."

The Hon'ble Mr. K. R. V. KRISHNA RAO:—"I thank the Government for the assurance given that they have been contemplating in the direction of the transfer suggested in this resolution as soon as the Agricultural Engineer is appointed. I do not press the resolution and I only hope that the Government will give their favourable consideration to the views placed by me before the Council."

With the permission of His Excellency the President, the resolution was withdrawn.

*Extract from notes on a tour in the Madras Presidency by Bernard Coventry, Esq.,
C.I.E., Agricultural Adviser to the Government of India.*

8. *Agricultural Engineer.*—Before bringing my report on my visit to Madras to a close, I should like to say a few words about the need for an agricultural engineer—Madras was probably the first to start any organized attempt to improve agricultural appliances and the work of Mr. Chatterton while Director of Industries in introducing pumps and oil-engines for irrigational purposes deserves all praise. While, therefore, giving full recognition to the excellent pioneering efforts of the Department of Industries in this line, I think the time has come when it should be recognized that agricultural engineering as a subject is a very special one. At present, this work is entirely in the hands of the Director of Industries and the Agricultural Department has nothing to do with it and does not even mention it in its reports. I consider this to be a grave defect in organization. The Madras Department of Agriculture is admittedly most forward in its organization and development and the absence of an agricultural engineer is a defect. The Director of Industries not only has (or should have) his hands full in connection with industrial problems other than the agricultural, but he has not got the necessary facilities for research and experiment into agricultural engineering problems or the adequate means of submitting his results to practical tests in the field. I need only mention a few instances where this is the case. There is required a great deal of field work and the knowledge of field conditions to carry through such important innovations as improved ploughs, threshers, reapers and other agricultural implements; the further prosecution of well-boring and suitable irrigational outfits, and such enterprises as improved methods in the field of jaggery or *gul* manufacture. There are a great many economic and practical considerations which have to be thought of as well as the co-operation amongst cultivators to make most of these improvements succeed. In all other provinces where an agricultural engineer is entertained, he is a member of the agricultural department, I strongly urge that Madras should similarly appoint an agricultural engineer to their agricultural department.

My last day in Madras I discussed with the Hon'ble Mr. Buckley, Member of Revenue and the Director of Agriculture, many of the problems concerned with the Department, some of which I have referred to in this note.

I left Madras on the evening of 2nd February 1915, for Bangalore.

Thanks. Mr. Coventry seemed a practical, though perhaps not very inspiring, sort of person. The question about the agricultural engineer, or rather the transfer of pumping and boring to the Director of Agriculture, is rather pressing. I should like to know whether Mr. Wills is going to the military as soon as anything certain is ascertained. If he goes, we shall want another man at once.

A. G. [CARDEN]—24-3-15.

The main file has been sent to press as directed by the Secretary.

2. The Public Department (war section) may be requested to furnish the information referred to at A in the Honorable Members' note *supra*.

R.R.—29-3-15.

C.R.—29-3-15.

A. H. A. TODD—30-3-15.

30 10
NOTES TO G.O. 523, REVENUE, 7TH MARCH 1916

9
The war section has since sent to this department the file about Mr. Wills' joining the flying corps. Mr. Wills will be leaving immediately. The question of appointing a successor to him is dealt with separately.

K.A.M.—31-3-15.

M.R.N.—31-3-15.

C.R.—31-3-15.

A. H. A. TODD—31-3-15.

Please draft a reference to the Board asking for proposals, framed in consultation with Messrs. Chadwick and Tressler for the change in system. Government cannot decide without a practical scheme worked out in detail.

L. DAVIDSON—2-4-15.

Please see draft submitted below.

M.R.N.—5-4-15.

A.H.A.T.—6-4-15.

I have written a fresh draft, which may issue at once without prior acceptance in Educational being only an intermediate reference. Then send to Educational and Honourable Member for perusal in proof leaving the case down in Madras for the Press.

I spoke to Mr. Chadwick about this last night and understand that both he and Mr. Tressler have already considered the practical difficulty of storing and repairing boring implements. The solution will probably be found in an arrangement by which for this purpose the Department of Industries will be treated like the Public Works Stores having custody of the tools and issuing them on indent.

L.D.—8-4-15.

[Official Memorandum to the Board of Revenue (Revenue Settlement),
No. 614 C/15-1, dated 8th April 1915.]

The file has been printed. It may now be sent to Educational for perusal and on its return circulated to the Honourable Member.

K.A.M.—20-4-15.

P.C.—20-4-15.

A.H.A.T.—21-4-15.

Educational Department u.o.

EDUCATIONAL DEPARTMENT.

Submitted that the above notes may be perused and the file returned to Revenue.

S.K.—23-4-15.

C.R.—23-4-15.

P. RAJAGOPALA ACHARIYAR—26-4-15.

Revenue Department u.o.

REVENUE DEPARTMENT.

Submitted that the file may now be submitted to the Honourable Member for perusal.

K.A.M.—28-4-15.

P.C.—28-4-15.

Submitted to Honourable Member.

A.H.A.T.—29-4-15.

A. G. C[ARDEW]—30-4-15.

EDUCATIONAL DEPARTMENT.

Letter from the Director of Industries, dated 20th July 1915, No. A-28-3.

The Director of Industries submits his views in regard to the proposal to transfer the pumping and boring work to the Department of Agriculture. It is submitted that on this subject there was a resolution at the meeting of the Legislative

Council held on the 15th March last. The Government then undertook to consider the suggestion that an Agricultural Engineer should be appointed for the Presidency and that the pumping and boring work should be transferred to the Agricultural Department. The Revenue Department have asked the Board of Revenue to report on the suggestion in consultation with the Directors of Agriculture and Industries. From Mr. Tressler's letters in the current file it appears that Mr. Chadwick has sent his report to the Board and that it is under the consideration of the latter. It would be convenient if Mr. Tressler's present letter were considered with the proposals that may be received from the Board. The file may therefore be forwarded to the Revenue Department. That department will no doubt consult Educational before deciding the question.

S.K.—27-7-15.

C.R.—29-7-15.

C. G. TODHUNTER—30-7-15.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

The Board's report on the proposal to transfer the Pumping and Boring Department to the Director of Agriculture has not yet been received. Submitted that its receipt may be awaited.

K.A.M.—4-8-15.

Yes. For perusal of Mr. Tressler's letters.

A. H. A. TODD—5-8-15.

Meanwhile please save time by printing these papers.

L. DAVIDSON—6-8-15.

To the Educational Department u.o.

EDUCATIONAL DEPARTMENT.

Letter from the Director of Industries, dated 7th August 1915, No. A. 28 (3).

Mr. Tressler's letter No. A. 28 (3), dated the 20th July 1915, regarding the transfer of the Pumping and Boring section to the Agricultural Department was sent to the Revenue Department on the 30th July last. The present communication from him may also be sent to that department for consideration along with the main question when the Board's reply on the matter is received.

S.K.—17-8-15.

C.R.—18-8-15.

C.G.T.—18-8-15.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

The receipt of the Board's report on the subject may, it is submitted, be awaited. In the meanwhile Mr. Tressler's letter will be printed.

K.A.M.—20-8-15.

Yes.

A.H.A.T.—20-8-15.

Proceedings of the Board of Revenue (Revenue Settlement), No. 1832, dated 17th September 1915.

The Board's reply has since been received and is at pages 31-34, current file. The various points for orders are dealt with below.

2. The Director of Agriculture agrees to take over the pumping and boring work. Mr. Tressler, however, considers that, if the Pumping and Boring Department is organized as a separate unit, there is no reason why its control should not be retained in his own hands, and he points out certain objections to the transfer of the control to the Director of Agriculture. In paragraphs 11 and 12 of its Reference the

Board has examined these objections and has come to the conclusion that they are not tenable. The Board agrees with the Director of Agriculture that the pumping and boring work should properly be transferred to the Agricultural Department and suggests that the transfer may be made as early as possible. Mr. Tressler's chief objection is that, if the pumping and boring staff is taken away, he will lose much of the staff he relies on for his industrial work. Mr. Chadwick is willing to allow some of the pumping and boring supervisors to remain under Mr. Tressler and to manage with the rest of the staff for the present. At the time the question of transfer was discussed in the Legislative Council the chief difficulty anticipated was that of workshop accommodation. On this point

Vide portion A of the Honourable Member's speech at page 6 above.

Mr. Chadwick says that as Mr. Tressler is developing his workshop there is no need or reason to duplicate it. Mr. Tressler seems to have told Mr. Chadwick that the Agricultural Department may indent upon him for repairs and spares. Mr. Chadwick considers this the cheapest and simplest arrangement, and says that he would be very glad to be free from the charge of a workshop.

It is submitted that the transfer of the pumping and boring work to the Agricultural Department may now be approved.

5. The initial policy proposed to be adopted by Mr. Chadwick is to run the district work connected with pumping and boring for about six months or a year from his central office on the same lines on which it is now managed in Mr. Tressler's office and to take early steps to devolve as far as possible the administrative side, that is, supervision of such district work as boring, inspection of existing plant and office routine, on Deputy Directors of Agriculture with a view to ensure speedy local control, to bring about the desired intimacy between the two staffs, and to set the Agricultural Engineer whom it is proposed to appoint free to devote his time to

A. H. A. TODD—7-10-75.

experimental work. This policy which is recommended by the Board may, it is submitted, be accepted.

4. Mr. Chadwick and the Board consider the appointment of an Agricultural Engineer highly necessary. The Agricultural Engineer should be under the control of the Director of Agriculture. His work will be chiefly concerned with the improvement of agricultural machinery, and it is stated that the officer required is

This suggestion may be approved.

A.H.A.T.—7-10-15.

G.O. 2135, 24th August 1907.

a mechanical and not a civil engineer. Mr. Chadwick proposes to make him pass a test in a vernacular just as the Deputy Directors of Agriculture. Mr. Chadwick

does not know of anyone qualified for the post, but he thinks that such men could be secured in India if advertised for, and the Board suggests that this may be done. It is submitted that the proposal to appoint an Agricultural Engineer may be approved,

A.H.A.T.—7-10-15.

and an attempt made to secure a qualified man by advertisement.

5. The pay of the Agricultural Engineer is for orders. Mr. Chadwick proposes to put him on grade pay equal to that of Deputy Directors of Agriculture, viz., Rs. 400—30—500 and then Rs. 500—50—1,100. It may, however, be pointed out that if the pay exceeds Rs. 800 the sanction of the Secretary of State will have to be obtained. To avoid this, it is

for consideration whether the maximum pay of the appointment may not be fixed at Rs. 800. It may be observed that the Agricultural Engineer in United Provinces is paid Rs. 700 and in Bombay Rs. 550—50—750.

6. Mr. Chadwick wants a well-trained and competent man at head-quarters as the Director's Engineering Assistant. The presence of such an officer at headquarters is considered necessary not only to set free the Agricultural Engineer when one is appointed, to tour in the districts and study agricultural implements and machinery,

but also to look after the constant requisitions from the districts and to interview those who call for advice when the Agricultural Engineer is in camp. The Board agrees with Mr. Chadwick that such an assistant is necessary. The pay proposed for the Assistant is Rs. 200-12½-400 corresponding to the grade of Assistant Directors in the Agricultural Department. Mr. Chadwick considers it desirable that the officer who is permanently at head-quarters has not a lower status than that of Assistant Directors or of the Assistant Principal of the Agricultural College. To this gazetted appointment to be newly created Mr. Chadwick proposes to appoint a well-qualified, experienced and sufficiently senior officer selected from the existing supervisors. The

A. H. A. TODD--7-10-15.

proposal is supported by the Board and may, it is submitted, be approved. If

this Assistant be given Mr. Chadwick is prepared to take over the pumping and boring work even before an Agricultural Engineer is appointed.

7. In addition to the supervisor to be appointed head-quarters assistant, Mr. Chadwick proposes to take over from the Pumping and Boring Department ten supervisors for the existing ten circles, together with 22 mechanics and 40 maistries. In view, however, of Mr. Tressler's objection that he will be deprived of his men for industrial work, Mr. Chadwick is prepared to concentrate work and thereby reduce the number of the circles to begin with from ten to eight, so that two more of the supervisors may be left in the Industries department for industrial work. The Board has no objection to this being done. It is submitted that the proposal may be approved. An extra supervisor is required to look after the power drills, who may also be used as a leave reserve. Thus altogether ten supervisors may be transferred from the Pumping and Boring Department to the Agricultural Department.

The supervisors are now borne on the Public Works Department cadre, and they have now the option of reverting to the Public Works Department after three years. Mr. Tressler suggests that, in

view of the difficulties connected with the recruitment of the new staff, all the Public Works Department men now on deputation in the Pumping and Boring Department who may be transferred to the Agricultural Department should be required to remain definitely for a further period of three years with the option to revert or remain at the end of that period. As the Board states, it would be an

A.H.A.T.--7-10-15.

advantage to be sure of having the present officers for another period of

three years. The proposal may, it is submitted, be approved with the concurrence of the Public Works Department.

Mr. Tressler further suggests that a deputation allowance should be given to

I submit there is no apparent reason why such an allowance should be given.

A.H.A.T.--7-10-15.

such of the men as choose to remain. The Board sees no justification for the

grant of such an allowance. The Government may agree with the Board.

8. Mr. Chadwick also proposes to take over from the Pumping and Boring Department one head draftsman (Rs. 55-3-70), one assistant draftsman (Rupees 30-4-50) and one tracer on Rs. 25. Mr. Tressler has suggested that the drawing staff should be brought on to the executive establishment and that if this is done it will obviate the necessity for a separate scale of pay for the drawing office staff. His suggestion is to rank the head draftsman as a supervisor (grade pay Rs. 100 and above) and the assistant draftsmen as mechanics (first-grade pay Rs. 50-10-70). The Board requests that the Public Works Department may be consulted on this sugges-

A.H.A.T.--7-10-15.

tion. This may, it is submitted, be done, but it may perhaps be done separately

instead of complicating the disposal of this case with this side ; issue.

Chun

9. As regards the clerical staff, Mr. Chadwick requires in the central office three clerks (one pumping, one boring, and one registering) and an accountant. Mr. Tressler is willing to spare two clerks for pumping and boring, but he is unable to spare the third clerk or the accountant on account of the work in the Industries department. The existing staff in Mr. Tressler's office is shown at page 33 of G.O. No. 1191, Educational, dated 22nd October 1914. There is no separate clerical staff for the Pumping and Boring branch, but there were originally three clerks in the pumping and boring section—two permanent and one temporary. Mr. Tressler apparently wants to continue the temporary clerk in his office. Mr. Chadwick's proposal to appoint an accountant on Rs. 50-2½-70 and a registering and

Paragraph 3 of Mr Tressler's letter at page 2 of G.O. 1191, Educational, 22nd October 1914.

A. H. A. Todd—7-10-15.

despatching clerk on Rs. 20-1-25, which is supported by the Board, may, it is submitted, be sanctioned.

10. In addition to the clerical staff for the central office, the three temporary clerks under the supervisors at Tinnevely, Tanjore and Coimbatore will also be transferred to the Agricultural Department. Eight permanent and four temporary peons attached to the Pumping and Boring section will also be transferred to the Agricultural Department. The establishment for the pumping and boring work under the Director of Agriculture will thus be as follows:—

Executive staff.

One Agricultural Engineer.
One Engineering Assistant at head-quarters.
Eight supervisors for eight circles.
One supervisor for power drills.
Twenty-two mechanics.
Forty maistries.

Clerical staff (Central office).

One head draftsman.
" assistant draftsman.
" tracer.
" accountant.

This should be—

" Three clerks (Central Office).
" " temporary clerks (District Office)".
L.D.—29-11-15.

Three clerks (in the districts).
" clerks (temporary).

Menial staff.

Eight peons—permanent.
Four " —temporary.

11. Mr. Chadwick considers the above staff sufficient for the present, but he considers that as the department expands it may be necessary to provide a few officers of superior status to supervise the district staff. Paragraphs 7 and 8 of the Board's Reference deal with this question. It seems unnecessary, it is submitted, to discuss at this stage such details as how this supervising agency should be staffed, what pay should be given to the staff, etc. The Director of Agriculture may be left

I think no definite orders are needed on this at present.

The Director of Agriculture may be left to submit detailed proposals after he has gained some experience of the working of the department.

A.H.A.T.—7-10-15.

12. As regards the recruitment of the pumping and boring staff in the future, Mr. Chadwick proposes to recruit them from the candidates who undergo the two-year agricultural course at Coimbatore on the reorganized scale of pay admissible to the subordinates of the Agricultural Department, subject to the condition that selection should be confined to such of them as have shown an aptitude for mechanical work and have undergone a subsequent course in mechanical engineering in an

industrial school or in works. It is proposed to start these men on Rs. 50 or Rs. 75, being graded with the upper subordinates of the Agricultural Department.

A. H. A. Todd—7-10-15.

Mr. Chadwick's proposal may, it is submitted, be approved.

13. Mr. Chadwick proposes to meet the extra expenditure from savings in Mr. Tressler's budget, but Mr. Tressler has stated that he proposes to utilize the savings for the pay of a Deputy Director of his own. It is not known how far the proposal to appoint a Deputy Director of Industries has matured. In any case it seems only equitable, it is submitted, to transfer to the Agricultural Department the provision that now exists in Mr. Tressler's budget on account of pumping and boring. If Mr. Tressler wants a Deputy Director to be appointed, he can apply for

Educational may be consulted on this point.

A.H.A.T.—7-10-15.

an additional allotment. The remarks of the Educational and Financial Departments may, it is submitted, be invited.

14. As regards the future relations of the Pumping and Boring Department with the Industries Department, Mr. Chadwick proposes to keep the Director of Industries informed of what is being done and the results achieved and to furnish

A.H.A.T.—7-10-15.

him with any information that he requires. This may, it is submitted, be approved.

15. The Board is taking the necessary steps to provide the additional office accommodation that will be required by the Director of Agriculture. Mr. Chadwick proposes to settle later on with Mr. Tressler the details of plant and stores and stationery. Mr. Chadwick would like to take over the work by the 1st of November if possible. The file has to go to Educational, Public Works and Financial for remarks. Perhaps the current file and notes may be printed and copies sent to these departments for very early remarks. The Board should have submitted the case through the Accountant-General but presumably did not do so as it was asked to submit its report urgently.

A printed copy of current file may also be sent to the Accountant-General for remarks.

K.A.M.—30-9-15.

C.R.—5-10-15.

The current file contains a number of arguments put forward by Mr. Chadwick and Mr. Tressler, the former advocating and the latter deprecating the transfer of the Pumping and Boring Department to the Director of Agriculture.

The argument as to duplication of establishment would appear to cut both ways, but the balance on this point would appear to be in favour of the transfer, as the Department of Industries would need a larger extra staff properly to carry on Pumping and Boring work than it will need for the minor local investigations into industrial questions referred to in paragraph 10 of Mr. Tressler's letter, dated 20th July 1915.

2. Mr. Chadwick's argument as to the inconvenience caused to the ryot by the present system is, I submit, strong. The Department of Agriculture must always be far more closely in touch with the ryots than the Department of Industries, the greater part of whose work lies in the larger towns.

3. Mr. Chadwick insists on the necessity for an Agricultural Engineer, and Mr. Tressler, while agreeing as to his necessity, uses this appointment as an argument against the transfer of the department. He says that the Agricultural Engineer will be isolated and out of touch with other Engineers and without an "engineering atmosphere," while disputes between the Agricultural Engineer and Deputy Directors of Agriculture, which must, he thinks, always be on technical points, will have to be decided by a non-technical departmental head who is not qualified to give any decision. However in paragraph 15 of his letter on page 26,

current file. Mr. Tressler abandons this argument altogether. I submit it is not a very strong one; Mr. Tressler's suggestions that he should *lend* the Pumping and Boring establishment to the Director of Agriculture, or that Mr. Chadwick should send *requests* to the Agricultural Engineer, who is working in a wholly separate department, seem both unsatisfactory solutions.

4. Mr. Tressler's objection that the transfer of the Pumping and Boring Department will leave him with no district staff is met by the Board by the suggestion that Government should give Mr. Tressler such staff as he needs.

Mr. Tressler seems to give away a good deal of his case in paragraph 4 of his letter on page 24, current file, where he says that the Pumping and Boring section deals with simple work, and that the duties of the officer in charge of it are to see that routine work is properly carried out, and to ensure the quality of work done. There does not seem to be much "engineering atmosphere" about this.

As regards the more obscure problems dealt with by the "Industrial section," it will always be possible to apply to Mr. Tressler for advice, should such problems arise and seem likely to be beyond the capacity of the Agricultural Engineer.

I submit that the Board's proposal to transfer the pumping and boring establishment to the Director of Agriculture may be accepted.

5. As regards the pay of the Agricultural Engineer, the maximum may perhaps at first be fixed at Rs. 800, to avoid the delay involved by a reference to the Secretary of State. If necessary, he can be applied to later for sanction to raise the maximum pay above Rs. 800, if it is found desirable to increase it above this amount.

6. As the file is very urgent, Mr. Chadwick desiring the transfer to take place immediately, current file and notes may be printed and copies sent to Financial, Public Works and Educational for remarks.

A. H. A. TODD—7-10-15.

Yes: please. I am in general agreement with the Under Secretary throughout and will reserve any detailed comments until the stage when the remarks of Public Works, Educational and Financial have been received. I am afraid there is little prospect of getting orders out before 1st November. The method of direct and simultaneous reference to Public Works, Educational and Financial has this drawback, that financial scrutiny may again be requisite with reference to modifications proposed by Public Works or Educational.

L. DAVIDSON—9-10-15.

Three copies of the current and notes files are submitted in the three linked files

L. DAVIDSON—3-11-15. | below. They may, it is submitted, be sent to the Public Works, Financial and Educational Departments u.o. Orders are also requested as to whether a copy of the

L.D.—3-11-15. | current file may be sent to the Accountant-General for remarks as suggested in

paragraph 15 of the office-note on page 14 *supra*.

T.R.T.—2-11-15.

M.R.N.—3-11-15.

A. H. A. TODD—3-11-15.

Yes: please. The main file with references should be sent to Honourable Member today as he is expecting to discuss the question with Mr. Chadwick sometime this week. Mr. Chadwick returned this morning.

2. The references to Public Works Department, Financial, Educational and the Accountant-General should be marked urgent.

L.D.—3-11-15.

Returned with thanks.

A. G. C[ARDEW]—6-11-15.

EDUCATIONAL DEPARTMENT.

1. This file reached me yesterday and, in view of the request for very urgent treatment, I have had to scamp the reading of it somewhat.

2. On the question immediately in issue I am entirely in favour of the transfer and hope it will include, as Mr. Coventry suggested, the experiments with sugarcane *aso*. It is somewhat doubtful if the proposed arrangement for a joint workshop will be a success.

3. At the same time it cannot be denied that it will leave Mr. Tressler, a Director, with practically no one to direct. The Board says Government will give him a staff. He has asked for one repeatedly but with little success and is likely to meet with none in the present time of financial stringency.

4. The fact is, it is very doubtful, whether things are ripe yet for a separate Department of Industries. Everything connected with the subject is tentative and experimental and Government cannot afford to sanction permanent appointments. At the same time it is very disheartening for the Director and his men to be kept on a temporary basis with no knowledge of what their prospects are. In addition he sorely needs a district agency of some sort.

5. It may be added that the pay sanctioned for the Director is not adequate for an independent head of a department and that a man of the standing for which that pay is adequate needs more immediate control than Government can give. It is rather anomalous that Mr. Tressler should be directly under Government, while Mr. Chadwick is under the Board. Nor is his office adequate to see that his schemes are sent up in proper shape.

6. Mr. Chatterton was originally under the Board and the grant of an independent position to him, which was the result of a clash of personalities, was, I submit, unfortunate. Mr. Chadwick now points out that "the only way to make Mr. Tressler's scheme workable would be to make me both Director of Agriculture and of Industry with Mr. Tressler as my Industrial Expert." He naturally does not suggest such a conclusion and I doubt if Revenue would favour it. From the point of view of Industries, however, some such arrangement would have manifold advantages in that—

- (1) the Director of Industries would be under control,
- (2) he would be able to draw his men from a large permanent staff to which temporary additions could be made when necessary,
- (3) he would be able to pursue his enquiries through the district staff of the Agricultural Department,
- (4) his proposals would be examined by a responsible head of a department and his office and those that passed scrutiny would be likely to receive early sanction.

7. The only industries with which Mr. Tressler is doing any good, such as oil pressing, jaggery manufacture, revival of indigenous dyes and pumping, are really branches of agriculture, and there are very few in prospect which would not draw their raw materials from agriculture. The two departments therefore dovetail into one another continually.

8. For the sake of Industries, therefore, I hope the time may soon come when a Development Commissioner or Member of the Board will take charge of Agriculture, Industries and Co-operation with a comparatively junior Director in charge of each branch.

9. Under such an arrangement Industries would have a chance of going ahead. The present position is fairly hopeless and will be infinitely worse when pumping and boring are taken away.

10. The file will no doubt be circulated to His Excellency the Governor.

C. G. TODHUNTER—5-11-15.

PUBLIC WORKS DEPARTMENT

The remarks of this department are invited on paragraph 7 of the Revenue Department office-note on page 12 *ante*, where it is proposed to transfer from the Department of Industries to the Department of Agriculture 10 out of the 13 upper subordinates of this department who are now working in the Department of Industries, and to allow them to remain in the Department of Agriculture definitely for a period of three years with the option of reverting to the Public Works Department or of remaining in the Department of Agriculture after that period. There is no objection to the proposed transfer, for so far as the Public Works Department is concerned it is immaterial whether the men work under the Director of Industries as now or under the Director of Agriculture as proposed.

2. It is however brought to notice that difficulties will arise in the future as explained in paragraphs 3 and 4 *infra* if the present system of recruitment from the Public Works Department is changed as contemplated in paragraph 12 of the notes on page 13 *ante* or if the men who are given the option of remaining in the Department of Agriculture after three years do so.

3. When it was decided to recruit the Sub-Engineer and Supervisors of the Department of Industries from the Upper Subordinate Establishment of this department, the following addition was made to the cadre of that establishment:—

G.O. 983, Educational, 18th August 1914,
printed on page 2 of G.O. 1675 W., 28th
August 1914.

	As sanctioned in paragraph 1 of G.O. No. 1675 W., dated 28th August 1914.	As modified temporarily by paragraph 3 of G.O. No. 1675 W., dated 28th August 1914.
Sub-Engineer, 6th grade	1*	1*
Supervisor, 1st grade	2	2
Do. 2nd grade	2	2
Overseer, 1st grade	3	6
Do. 2nd "	4	1
Do. 3rd "	2	2
	14	14

* This post was filled up by a subordinate lent from this department. He has since reverted to the Public Works Department and no one was sent in his place.

The men of the Department of Industries who were appointed to the above posts are—

- | | | | | | |
|-----|-----------------------------|----|----|----|--------------------------|
| 1. | M.R.Ry. J. Narayanamurthi | .. | .. | .. | } Supervisor, 1st grade. |
| 2. | " K. Ranganatha Ayyangar | .. | .. | .. | |
| 3. | " P. S. Ramaswami Ayyar | .. | .. | .. | } Supervisor, 2nd grade. |
| 4. | " C. J. Rangaswami Ayyangar | .. | .. | .. | |
| 5. | " V. Ranga Achari | .. | .. | .. | } Overseer, 1st grade. |
| 6. | " A. Varadaraja Mudaliyar | .. | .. | .. | |
| 7. | " K. G. Menon | .. | .. | .. | |
| 8. | " C. S. Ramachandra Ayyar | .. | .. | .. | } Overseer, 2nd grade. |
| 9. | " C. Sundararama Ayyar | .. | .. | .. | |
| 10. | " C. Kameswara Rao | .. | .. | .. | } Overseer, 3rd grade. |
| 11. | " S. Rajagopala Nayudu | .. | .. | .. | |
| 12. | " P. K. S. Ramanujam Pillai | .. | .. | .. | |
| 13. | " B. Akkaiah Nayudu | .. | .. | .. | |

Vide Appendix to 1261 C., dated 16th February 1915.

It will be seen that these men have been appointed to the posts which were created for them. They are now on one combined list with the Public Works Department upper subordinates and have been given positions on that list some at the bottom of the grades to which they were appointed and some the places they would have occupied if they had joined the Public Works Department, direct from the college. Of these Nos. 2, 3, 4 and 10 have been transferred to the regular work of the Public Works Department and four other men have been sent in their places to the Department of

Industries. If as proposed in paragraph 12 on pages 13 and 14 *ante* it is decided at any future time to recruit the men from the Agricultural College, the four men of our department who are now in the Industries Department will have to come back to the Public Works Department and the four men of the Industries Department who are now working in the Public Works Department will have to go to the Agricultural Department.

4. With these remarks the file may be returned to Revenue who may be requested to let Financial see these notes.

T.S.R.—9-11-15.

If by any change in the method * of recruiting for the Agricultural Department the Public Works Department cadre is reduced by 14, that is the number of additional appointments created when the subordinates from the Industrial Department were transferred to the Public Works Department list then, it is submitted, the services of the men from the Industrials who were brought on to the Public Works Department list under that arrangement should be replaced at the disposal of the Agricultural Department and the subordinates who have been sent subsequently to the Industrial Department from the Public Works Department may be brought back to the Public Works Department.

W. G. MOLESWORTH—10-11-15.

S. B. MURRAY—10-11-15.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

As requested in paragraph 4 of the Public Works Department note above, that department's note may, it is submitted, be sent to the Financial Department. The remarks of the Financial Department have not yet been received.

T.R.T.—11-11-15.

M.R.N.—11-11-15.

A. H. A. TODD—11-11-15.

To the Financial Department u.o.

FINANCIAL DEPARTMENT.

The Public Works Department notes above may be perused and the case returned to Revenue. The adjustment of the personnel dealt with therein will be a matter for special consideration between the Revenue and the Public Works Departments

† In G.O. 1675 W., 28th August 1914.

* It is not known when this will take place.

when a change in the present † system of recruitment for the posts of supervisors in the Pumping and Boring Department is actually ‡ made.

C.P.K.—11-11-15.

Yes, we are not much concerned at present.

L. E. KERSHAW—12-11-15.

To the Revenue Department u.o.

FINANCIAL DEPARTMENT.

The proposals as approved by the Revenue Department for the transfer of the control of the Pumping and Boring operations from the Director of Industries to the Director of Agriculture involve the following changes:—

	Extra cost per mensem. RS.
Paragraph 4 of Revenue Department note on page 11 <i>ante</i> .	
(a) Creation of an appointment of Agricultural Engineer on Rs. 400 — Rs. 800 to work under the Director of Agriculture	* 696½
Paragraph 5, page 11 <i>ante</i> .	
(b) Creation of a post of Assistant Agricultural Engineer on Rs. 200-12½-400 and the appointment thereto of a supervisor who is to be transferred from the Department of Industries to the Agricultural department	308½
(c) Transfer of the following appointments from the Department of Industries to the Department of Agriculture:—	[minus saving on account of a supervisor.]
Nine appointments of supervisors.	
Permanent.	
1 head draftsman (55-3-70)—1 assistant draftsman (30-4-50).	Nil.
1 tracer (25)—2 clerks (25-1-35).	
2 mechanics (50-10-70)—9 mechanics (35-2-45).	
8 peons (9)	
Temporary.	
11 mechanics (35-2-45)—2 maistris (30-1-35).	
38 maistris (20-1-30)—3 clerks (20-1-25)	Nil.
4 peons (9)	
(d) Creation of the following appointments to be added to the office of the Director of Agriculture:—	
1 accountant on Rs. 50-2½-70	64
1 registering and despatching clerk (20-1-25)	23½
Total extra cost	1,093½ per mensem.
[minus saving on account of the abolition of a supervisor's appointment.]	

[* This is the average cost of an appointment on Rs. 500-50-800, and this has been taken here, since till he reaches the stage of Rs. 500 the officer will be on probation.]

2. Item (a).—The Director of Agriculture and the Board recommend that the pay should be similar to that of Deputy Directors of Agriculture. The pay allowed to the latter is as follows:—

400	...	...	first year	} of the probationary period.
430	...	...	second year	
460	...	...	third year	
500-50-1,000	...	...	thereafter.	

(with no exchange compensation allowance).

In the present case the Revenue Department propose to place the maximum at Rs. 800 with a view to avoiding a reference to the Secretary of State. The rates of pay granted to Agricultural Engineers appointed in other Provinces are as follows:—

Bombay—500-50-750.
United Provinces—700.

I think Financial has omitted two clerks for the Central office (*vide* paragraph 13 at page 6 of current file) and three temporary clerks for district establishment (see page 12 of current file).

L. DAVIDSON.

As the intention appears to be to fill up the post now in question invariably by an officer recruited in India, the proposal of the Revenue Department is within the sanctioning powers of the Local Government. The sanction of the Government of India will, however, be required under Article 773 (a) of the Civil Account Code if a European is to be appointed to the post. Orders are solicited whether the rate of pay proposed by Revenue may be accepted.

Cf. Rule II (1) and (2) on page 3 of G.O. 479, Financial, 2nd August 1912.

L. E. KERSHAW—10-11-15.

We may accept.

L.E.K.—10-11-15.

3. *Item (b).*—The rate of pay of Rs. 200-12½-400 is proposed on the analogy of a similar rate of pay now drawn by Assistant Directors of Agriculture, and may, it is submitted, be accepted.

L.E.K.—10-11-15.

The Supervisors of the Pumping and Boring section are recruited from the ranks of the Public Works Department, the cadre of which department has been specially strengthened to provide for the same. On the creation of the new appointment on Rs. 200-12½-400 now proposed, a reduction of one appointment in the Public Works Department upper subordinates cadre will have to be made. The Public Works Department will have to take the necessary action.

L.E.K.—10-11-15.

L.E.K.—10-11-15.

As above stated, under the existing arrangement all the supervisors belong to the Public Works Department cadre. Their salary, while in the Department of Industries, is the same as that which they would draw from time to time if in the regular line. It is proposed to continue the existing arrangement for the present. It is intended that later on the recruitment should be from the class of people who undergo the subordinate agricultural course at Coimbatore and the rate of pay should be the same as those of the upper subordinates * of the Agricultural Department.

* Paragraph 16 of Letter 1646, Revenue, 6th June 1914.

When this system of recruitment is introduced, the appointments included in the Public Works Department cadre to provide for these nine supervisors will have to be abolished, and a corresponding number of appointments added to the cadre of the Agricultural Department.

5. In paragraph 5 of G.O. No. 983, Educational, dated 18th August 1914,

This is an administrative matter — (vide paragraph 17 of Mr. Tressler's letter, 16th January 1914.) We may leave it to Revenue Department to decide.

L.E.K.—10-11-15.

they vacated their posts. In the proposition statement on pages 9-10, current file, 11 mechanics to be transferred from the Department of Industries to the Agricultural Department are shown under permanent establishment. It might be made clear that the orders referred to at M above, will hold good even after the transfer of the mechanics to the Agricultural Department.

6. *Item (d).*—The rates of pay proposed may be accepted. Revenue may be requested to rule that the new clerk will be ineligible for grain compensation allowance.

L.E.K.—10-11-15

7. *Provision of funds.*—In G.O. No. 544, Financial, dated 26th August 1915, it has been directed that with effect from 1st April 1915 the charges on account of the Pumping and Boring Department should be shown under "26-A. AGRICULTURE" instead of under "45. CIVIL WORKS" and the ACCOUNTANT-GENERAL has been asked to forward a re-appropriation statement for transferring from the latter to the former head the provision made in the budget estimate for 1915-16 on account of the Pumping and Boring Department.

As regards the extra expenditure involved in the present proposals, it is submitted that the course proposed in paragraph 13 of the Revenue Department note, viz., to accept the proposal of the Director of Agriculture to utilize the savings in the budget provision for the Pumping and Boring Department, is appropriate and

L.E.K.—10-11-15. | may be accepted. The re-appropriation statement which will be forwarded by the

Accountant-General with reference to paragraph 4 of the Government Order mentioned above will cover the transfer of funds required in the present case.

8. The arrangement sanctioned in paragraph 3 of G.O. No. 544, Financial, dated 26th August 1915, will require modification when the proposals now under consideration are given effect to. Under the present proposals, the whole Pumping and Boring Department operations will be under the Director of Agriculture, excepting those of the workshop which will remain under the Director of Industries.

The Director of Industries and the Director of Agriculture will have to be requested to report in consultation with the Accountant-General what change in the arrangement laid down in paragraph 3 of the Government Order mentioned above will be necessary. Revenue may be requested to add a sentence to this effect in the orders to be issued.

9. It is likely that some expenditure will have to be incurred on account of office accommodation—please see paragraph 15 of Board's Proceedings on page 34, current file. Pending receipt of definite proposals, no remarks are called for.

10. In the proposition statements on pages 9-10, current file, fixed rates of pay are shown against upper subordinates. This is not correct, since the pay of the men

L.E.K.—10-11-15. | will vary from time to time. The incorrect entry is no doubt due to the fact that

the distinction between transfer of personnel and transfer of appointments from one department to another has not been clearly kept in view. The correct method is to

L.E.K.—10-11-15. | enter against the appointments, "pay and allowances admissible in the Public Works Department."

Again, the appointments of upper subordinates, mechanics, etc., which are to be transferred from the Department of Industries to the Department of Agriculture have not been shown in the column "Existing scale," the result being that the cost of such appointments is shown as extra expenditure in the proposition statement.

I don't think this is necessary now. We are Perhaps, to make things clear, the Director of Agriculture and the Director of Industries may be requested to forward through the Accountant-General a proposition statement embodying the orders to be issued on this case.

C.P.K.—9-11-15.

We may accept the proposals. The Financial position need not be allowed to interfere with the scheme.

L. E. KERSHAW—10-11-15.

The transfer of the pumping and boring work to the Director of Agriculture will result, after allowing for the abolition of the supervisor's appointment, in an additional cost of about Rs. 10,000 a year. But I understand that, independently of this question of transfer, the need for an Agricultural Engineer is felt and Financial need not, therefore, object on the ground that the new arrangements result in doing the same work at extra expense. I am afraid, however, that the extra cost will not be limited to what is given above. In paragraph 10 of his letter on page 22 of current file, Mr. Tressler objects that the transfer of pumping and boring men to the Agricultural Department will deprive him of the district organization which he requires in connection with the disposal of industrial questions. The Board comments

on this that Government will presumably be prepared to give the Director of Industries district staff for the purpose of industrial inquiries. It is, therefore, likely that the change now contemplated will involve additional appointments in the form of local assistants to the Director of Industries but we have no information as to what such additional establishment is likely to cost. A small saving may possibly be made in the cost of the scheme as now estimated by cutting out of the establishment of the Director of Industries an accountant and clerk to counterbalance the accountant and clerk whom it is proposed to appoint in the office of the Director of Agriculture and it is possible that other small reductions might be made in the office establishment of the Director of Industries. This matter should be examined but does not affect the question materially.

See page 24 infra.

L.D.—29-11-15.

Honourable Member (Financial) should see the file.

A. BUTTERWORTH—11-11-15.

REVENUE DEPARTMENT.

Attention is solicited to this department's notes at pages 10-15 *supra*. The Secretary, Educational Department, is in favour of the transfer of the Pumping and Boring Department to the Director of Agriculture.

2. The Financial Department accept the creation of the following appointments: (1) Agricultural Engineer on Rs. 400—800 per mensem, (2) Assistant Agricultural Engineer on Rs. 200—12½—400 per mensem and the transfer to the Director of Agriculture of the appointments shown in paragraph 1 (c) in page 19 *supra*. With reference to the Chief Secretary's suggestion that an accountant and a registering and despatching clerk required by the Director of Agriculture may be transferred from the office of the Director of Industries, attention is solicited to paragraph 13 of Mr. Chadwick's letter at page 6 of current file in which he states that Mr. Tressler is unable to spare the accountant and a clerk for registering and despatching work. There is only one accountant in the office of the Director of Industries—(*vide* page 33 of G.O. No. 1191, Educational, dated 22nd October 1914).

No consultation necessary, I think. Educational by silence may be assumed to endorse Mr. Tressler's view as stated by Mr. Chadwick.

L.D.—29-11-15.

The Educational Department may be consulted as to whether it will be possible to spare the accountant and a clerk for registering and despatching work. That department may also be requested to

consider the suggestion of the Chief Secretary as to the feasibility of further reduction of the establishment.

3. The Public Works Department have accepted the proposal that the officers of that department now on deputation in the Pumping and Boring Department who may be transferred to the Agricultural Department should be retained for a further period of three years with the option to revert or remain in the Agricultural Department after that period.

4. If the pumping and boring staff should be recruited from candidates trained in the Agricultural College, the Public Works Department suggest that the men originally in the Department of Industries who were placed on the Public Works Department list should be transferred to the Department of Agriculture, the men subsequently transferred from the Public Works Department to the Department of Industries being sent back to the Public Works Department.

5. The Educational Department supports Mr. Chadwick's proposal in paragraph 9 of his letter No. 253-B., dated 6th July 1915, that the sugarcane experiments should be transferred to the Agricultural Department.

6. The Educational Department does not approve of Mr. Chadwick's proposal in paragraph 12 of his letter at page 6 of current file that indents for repairs and spares should be sent to the workshop of the Industries Department.

7. In paragraphs 5 and 10 of the note at pages 20 and 21 *supra* the Financial Department suggest certain alterations in the proposition statement submitted by the Board. The proposition statement has been referred to the Accountant-General and his remarks have not yet been received. A draft telephone reminder is submitted for approval. The proposition statement may, it is submitted, be altered after the remarks of the Accountant-General are received.

M.R.N.—24-11-15.

A. H. A. TODD—24-11-15.

The case must now go in circulation. The proposition which Revenue puts forward is—

(a) The transfer of Pumping and Boring operations with the staff as detailed in statements (4), (5) and (6) at pages 12-13 of the current file to the Agricultural Department.

(b) The creation—but not necessarily *at once*—of a post of Agricultural Engineer on Rs. 400—800.

*This will mean a reduction of one post in the Public Works Department cadre.

(c) The immediate creation of a post of Assistant Agricultural Engineer on Rs. 200—400 to be held by one of the transferred supervisors.*

(d) The immediate creation of posts of accountant (Rs. 50—70) and registering clerk (Rs. 20—25) to supply deficiencies in central office staff which cannot be met by transfer from the Industrial Department;

(e) The transferred supervisors, who are borne on the Public Works Department cadre, will be lent for another term of three years.

(f) Future recruitment to the supervisor grade may perhaps be made from the Agricultural College, but this is matter for later consideration, as also the consequential arrangements in the Public Works Department cadre.

(g) The Board is arranging for additional office accommodation, which may be required by the Director of Agriculture; and reappropriation of funds is another matter which will require orders when the date of transfer is decided;

(h) Sugarcane experiments may be taken over by Revenue, when—but not before—the post of Agricultural Engineer is filled;

(i) The Director of Industries will keep custody of machinery and boring tools, issuing on indent and seeing to repairs.

2. The real crux of the matter concerns Educational rather than Revenue. I refer to the isolated, staffless position in which the Director of Industries will be left, if and when the pumping and boring staff and operations are made over to the Agricultural Department. Revenue cannot take over this work without the staff. Nor can the Director of Industries get on without assistants. He has probably been making use of pumping and boring hands for other industrial work, and even if this is not the case, they must have formed a useful recruiting ground for his industrial assistants. I see no remedy but the creation of additional appointments as occasion requires; that, however, is matter for Educational to decide.

3. Mr. Chadwick's time is fully occupied and he could not possibly take over industries with Mr. Tressler as an assistant in charge. Industrial development wants a full-time man and it is not likely that an officer who has enjoyed the position of departmental head would be willing to work in subordination to another departmental head of much about the same standing. Personally, I believe, the ideal

Paragraph 199 at page 112 of the report of the committee on co-operation. solution might be found in the suggestion of the committee on co-operation to appoint a Development Commissioner in

general charge of agriculture, fisheries and industries. But the incumbent of such an office would require very special qualifications. Mr. Chadwick would probably fill the bill, four or five years hence; he is too junior now. The emoluments and position should be similar to those of a Member of the Board. It is hardly the

time, I fear, to propose the creation of any such appointment, especially as we have only recently asked for a fifth Secretary to Government to take charge of much the same branches of work without the intervention of any controlling head of department.

L. DAVIDSON—29-11-15.

From the Accountant-General, No. G.A./40-17639, dated 29th November 1915.

The Accountant-General submits his remarks on the Board's reference No. 1832, dated 17th September 1915.

2. In the proposals submitted by the Board of Revenue the pay proposed for the Agricultural Engineer is Rs. 400—1,000 per mensem (vide paragraph 19 (K) of Mr. Chadwick's letter and paragraph 2 of the Board's reference. As the pay proposed by the Board for the Agricultural Engineer exceeds Rs. 800 per mensem the Accountant-General points out that the sanction of the Secretary of State will have to be obtained for the creation of the appointment (vide rule III (3) at page 3 of G.O. No. 297, Financial, dated 23rd April 1913) and that the whole scheme for the transfer of the Pumping and Boring department will have to be submitted to the Secretary of State for approval. In order to avoid a reference to the Secretary of State it has been proposed that the pay of the Agricultural Engineer should be fixed at Rs. 400—800 per mensem (vide paragraph 5 of Under Secretary's note at page 15 supra, paragraph 2 of the Financial Department note at pages 19 and 20 supra and paragraph 1 (b) of Secretary's note at page 23 supra). If the pay is fixed at Rs. 400—800 per mensem no reference to the Secretary of State will be necessary (vide note 2 under rule II (2) in appendix B to the Madras supplement to the Civil Service Regulations).

3. In G.O. R. No. 353, Financial, dated 19th November 1915, the Government have sanctioned the transfer of the whole provision for the "Pumping and Boring Department" made under "45. CIVIL WORKS" in the budget estimate for the current year to "26-A. AGRICULTURE." The extra expenditure involved in the proposals can be met from the above provision (vide paragraph 19 (K) of Mr. Chadwick's letter and paragraph 7 of the Financial Department note at page 21 supra). If any additional allotment is found necessary, the Director of Agriculture will come up to Government.

T.R.T.—4-12-15.

M.R.N.—6-12-15.

A. H. A. Tonn—6-12-15.

There is nothing in this which affects the notes above or need delay circulation.

This case starts with Official Memorandum No. 614, dated 8th April 1915. The scheme therein called for is examined in

Revenue note from foot of page 10 supra to page 15.

Educational note, pages 15-16.

Public Works Department note, pages 17-18.

Financial note, pages 19-22.

Revenue for the note page 22.

Revenue Secretary's final summary of proposal at page 23.

(Pages 24-25 merely relate to the Accountant-General's remarks * and need not be read.)

* Received on 30th November 1915.

L. DAVIDSON—7-12-15.

The necessity for the creation of an Agricultural Engineer was strongly urged upon us by Mr. Coventry, the Agricultural Adviser to the Government of India, after his visit here last February. Mr. Chadwick has in his letters of 6th July 1915 and 28th July 1915 given good reasons in support of this proposal and I think there can hardly be two opinions that the addition of an engineering assistant to the Agricultural Department cannot be avoided. Mr. Tressler objects that an Agricultural Engineer placed in the Agricultural Department will be isolated and cut off from Engineering "atmosphere" but as the Board of Revenue states the reason for the appointment of a Director of Agriculture was to provide an officer who would co-ordinate the efforts of the various specialists working at agricultural problems. The agricultural chemist is equally isolated from other chemists but that is not held to be an objection and it is not claimed that the Agricultural Chemist, the Cinchona Chemist, and the Chemical Examiner cannot keep in touch with one another and with the progress of chemistry because they are in separate departments. I think, therefore, Mr. Tressler's objection undoubtedly fails, and I would accordingly accept the proposal to create an Agricultural Chemist on Rs. 400-25-800, with an Assistant on Rs. 200-12½-400.

2. If an Agricultural Engineer is thus created in the Agricultural Department, it is natural that he should take over the control of the Pumping and Boring Department of the Director of Industries. This proposed transfer of the Pumping and Boring work to the Director of Agriculture has met with general acceptance. Mr. P. Rajagopala Achariyar (at page 4) noted that it would be an advantage to the Department of Industries by leaving Mr. Tressler free to concentrate his attention on industrial developments. Mr. Todhunter (page 15) is entirely in favour of it. Mr. Chadwick has agreed to take over the work and the Board of Revenue approves.

* See also Mr. Davidson's note, 8th March 1915, at page 3 of notes. Mr. Tressler himself at first was favourable, as I personally asked him about it,* but he subsequently raised difficulties in his letters, dated 20th July 1915, and 7th August 1915. The difficulties are that the transfer of pumping and boring operations to the Agricultural Department will deprive him of a district staff to investigate for him. But it is not shown what a district staff is to investigate if the Director of Industries works at industrial problems such as aluminium, chrome leather, oil, pencils, glass, paper, etc. In his letter, dated 20th January 1913, Mr. Tressler submitted an elaborate note on the functions of the Department of Industries and appendix V thereof gave in short space a list of the schemes he then had in view. None of those schemes required district organization (except for Pumping and Boring) and the staff he needed and asked for was a staff of assistants and experts for experimental work. Mr. Tressler's second objection to the transfer is that it will deprive him of the recruiting ground for his industrial staff. This is doubtless true, but Mr. Tressler can hardly expect that the pumping and boring work should be retained under him merely that he may use it as a training ground for candidates to be employed in his pencil-making, glass-making or paper-making experiments. I would therefore sanction the transfer of the Pumping and Boring Department to the Director of Agriculture.

3. There is one suggestion in these papers which may be noticed, viz., that Mr. Tressler himself should be placed under Mr. Chadwick's direction. Mr. Chadwick disclaims any desire for such an arrangement and Mr. Davidson thinks it would overweight Mr. Chadwick. If, however, Mr. Tressler could be brought under some one's direction, his undoubted energy and enthusiasm might perhaps be turned to better use than is now possible.

A. G. C[ARDEW]—12-12-15.
I accept the proposal to create these new appointments but I do not know that we shall be able to find the money until the war is over.
H. A. S[TUART]—13-12-15.
I agree to the transfer of the Pumping and Boring to the Department of Agriculture.
P[ENTLAND]—14-1-15.
Draft and with draft submit my note overleaf with any comments requisite. Financial should see the draft.

L. DAVIDSON—17-1-16.
Mr. E. Howe, A.C.G.I., B.S.C., LOND., Assistant Engineer on Rs. 460, now on Twenty five years of age. L.D. Cauvery gauging work, likely to cease in a week or two. Mr. Tressler thinks he would do well to take on pumping and boring, whether it is transferred to the Agricultural Department or not. He suggests a deputation allowance of Rs. 100 which he himself received on first appointment to industries.

Vide G.O. 88, Revenue, 11th January 1908.
Mr. Howe has passed in Tamil, has Canadian experience and good technical qualifications. Colonel Ellis thinks he might be spared.

L.D.—17-1-16.
I have since ascertained by telephone from Mr. S. B. Murray, that if his services were temporarily required Mr. Howe could probably be spared. He has just been posted to an ordinary sub-divisional charge and while lacking the experience necessary for permanent charge might be considered as a stop-gap pending recruitment of a qualified Agricultural Engineer. Public Works Department could lend his services—

an arrangement which would, I presume, cut down expenditure to the State.

L. DAVIDSON—17-1-16.

If Mr. Howe is appointed Agricultural Engineer, the pumping and boring operations may, it is submitted, be transferred with effect from 1st February 1916. A draft order is submitted for approval. It may be sent to the Educational, Public

A.H.A.T.

Works and Financial Departments for acceptance.

2. Under article 81 of the Civil Service Regulations Mr. Howe can be given a deputation allowance of one-fifth of his pay, viz., Rs. 92. To give him a deputation allowance of Rs. 100 the sanction of the Government of India will have to be obtained.

A.H.A.T.

T.R.T.—20-1-16

M.R.N.—22-1-16.

A. H. A. TODD—24-1-16.

Paragraph 9 of the draft is altogether premature. It has not yet been ascertained whether Honourable Member or His Excellency would be prepared to nominate and appoint Mr. Howe as a temporary arrangement, and any such appointment would be premature before it is ascertained that Financial can provide the necessary funds—see the Hon'ble Sir Harold Stuart's note, dated 13th December, at page 26 supra.

2. It is, however, desirable to get out a draft order at once, and in the circumstances I think the best form for it to take it will be a brief acceptance of the proposals which are (i) accepted or (ii) reserved for separate or further consideration,

This will then form the take off point for examination of financial and appointment aspects. Financial will no doubt accept a draft order as indicated above without demur.

L.D.—24-1-16.

and a final paragraph stating that separate orders will issue with regard to the date from which the introduction of the new arrangements will take place. An Editors' Table order will be wanted.

We cannot publish all the discussions and the Editors' Table order can only read the pages in abstract.

L.D.—24-1-16.

A revised draft order is submitted. Paragraphs 1 to 3 of the order may be placed on the Editors' Table.

Only the abstract of the papers being read, paragraphs 8-9 should be transposed.

T.R.T.—25-1-16.

M.R.N.—26-1-16.

A.H.A.T.—26-1-16.

As Mr. Davidson knows this file, it would perhaps tend to speed if he could see whether this draft meets his views. When it is marked "very urgent" and I should have to delay it in order to study the file. I am sorry to cause this trouble.

J. P. BEDFORD—26-1-16.

The draft is not "very urgent" and ought before issue to be seen by Honourable Member and accepted by Public Works Department, Educational and Financial. I have altered it considerably and it may be printed, carefully scrutinized as to substance and then resubmitted to the Secretary.

L.D.—26-1-16.

The draft has been printed and scrutinized. It may be sent to the Public Works, Educational and Financial Departments for acceptance before circulation to the Honourable Member.

T.R.T.—3-2-16.

M.R.N.—4-2-16.

A.H.A.T.—4-2-16.

To the Public Works Department }
 „ Educational Department } u.o.
 „ Financial Department }

PUBLIC WORKS DEPARTMENT.

The draft order may be accepted and the file passed on to Educational.
P.S.K.—8-2-16.

The ten supervisors referred to in paragraph 3 (ii) of the draft include one to be appointed to the post of Assistant Agricultural Engineer. The Revenue Department may be requested to make this point clear in the draft.

T.S.R.—8-2-16.

W. G. MOLESWORTH—9-2-16.

S. B. MURRAY—9-2-16.

To the Educational Department u.o.

EDUCATIONAL DEPARTMENT.

Please see this department note on pages 15 and 16 supra. His Excellency the Governor has accepted the proposal to transfer pumping and boring to the Department of Agriculture. The draft order may therefore be accepted in this department.

2. Mr. Tressler has separately asked for a small staff with adequate pay and prospects for the industrial section of his office. The proposal is lying over pending decision of the question of transfer of the pumping and boring section. From the draft order it would appear that effect is not to be given to the transfer in the immediate future. When such transfer takes place Mr. Tressler's proposal for a separate staff may be taken up for consideration. The file may be passed on to Financial.

S.K.—16-2-16.

V.G.—17-2-16.

P. RAJAGOPALA ACHARIYAR—18-2-16.

To the Financial Department u.o.

FINANCIAL DEPARTMENT.

[Please see Financial notes on pages 19-22 ante and the Honourable Member's and His Excellency the Governor's notes on pages 25-26 ante.]

The Revenue Department have now decided that the annual rate of increment in the pay of the appointment of Agricultural Engineer should be limited to Rs. 25, the scale of pay being thus fixed at Rs. 400—25—800 (=617½). This rate

L.E.K.

may, it is submitted, be accepted in Financial.

2. With regard to the suggestions of the Chief Secretary that the establishment of the Director of Industries might be further reduced by one accountant and one clerk and that other small reductions might be made in the same office establishment, the Revenue Department have noted that a reference to Educational on the point is not necessary. For orders whether, with a view to economy, this department may not again request Revenue and Educational to be so good as to see whether a saving cannot actually be effected in the direction indicated by the Chief Secretary.

For orders.

L.E.K.

Yes. Revenue could make a separate reference about this.

A.B.

3. With reference to the marginal remarks of the Revenue Secretary on page 19 ante, it is respectfully submitted that the items referred to in the Revenue Secretary's note were not omitted in the calculations made by Financial office (please see items underlined on page 19 ante).

L.E.K.

4. Paragraph 3 (ii) of the draft.—Submitted that it would appear necessary to indicate in the draft the rates of pay attached to the appointments which it is now proposed to transfer from the Department of Industries to the Agricultural Department (please see the former portion of paragraph 10 of Financial office-note on

Yes.

L.E.K.

A.B.

page 21 ante.) The point referred to in the Public Works Department office-note above will also have to be brought out in the draft.

48 28

page 23
Supra

P. K. R.

5. *Question of provision of funds and the date from which the scheme can be introduced.*—Please see note by Honourable Member (Financial), dated 13th December 1915, on page 26 ante, and paragraph 4 of the draft order.

Assuming that the scheme is to be introduced with effect from 1st April 1916, an additional provision of about Rs. 8,000 will be required for expenditure in 1916-17

	Minimum pay.
	RS.
1 Agricultural Engineer	400
1 Assistant Agricultural Engineer	200
1 Accountant	50
1 Registering and despatching clerk	20
Total ...	670 per mensem.
Deduct saving on account of 1 appointment of supervisor ...	100 (say).
Net total ...	570 per mensem.
Cost for eleven months in 1916-17 (11 × 570)	6,270
Travelling allowance	1,730 (roughly).
Total ...	8,000

[This estimate of Rs. 8,000 does not take into account any expenditure that may be required on account of increase in the executive staff of the Department of Industries.]

The Revenue Department have not stated whether the introduction of the

The last paragraph of the draft leaves this matter for further consideration and there is no need to touch on the subject now.

A.B.—24-2-16.

I would not do so.

B.A.—24-2-16.

under the minor head "26-A-a. Agriculture—Agriculture." For orders whether the Revenue Department may be informed accordingly.

6. The draft order may, it is submitted, be accepted in Financial, subject to the remarks in paragraphs 2, 4 and 5 ante.

C.P.K.—23-2-16.

I do not read Honourable Member's note of the 13th December 1915 as meaning that the scheme should not be introduced at once. If Revenue think it is a matter of urgency we can make provision as suggested by office.

L. E. KERSHAW—24-2-16.

This matter can be considered later. The draft is accepted subject to the remarks above.

A. BUTTERWORTH—24-2-16.

To the Revenue Department, u.o.

REVENUE DEPARTMENT.

With reference to the Public Works Department note on page 35 supra a footnote has been added to paragraph 3 (ii) of the draft orders to the effect that the ten supervisors to be transferred to the Agricultural Department include one to be appointed as Assistant Agricultural Engineer.

2. As suggested in paragraph 4 of the Financial Department office, note on page 28 supra, the rates of pay attached to the appointments to be transferred to the Agricultural Department have been entered in paragraph 3 (ii) of the draft order.

3. With reference to Chief Secretary's marginal note against paragraph 2 of the Financial Department office-note at page 28 supra, it is submitted that after the issue

A.H.A.T.—4-3-16.

A. G. C[ARDEW]—4-3-16.

of the order (1) the Educational Department may be requested to consider whether the establishment of the Director of Industries may not be reduced as suggested by Chief Secretary in his note, dated 11th November 1915 (at page 22 supra) and (2) the Public Works Department may be requested to offer their remarks on the suggestion to rank the draftsmen with supervisors and mechanics.

4. In paragraph 12 of his letter No. 253-B., dated 20th August 1915, Mr. Chadwick stated:—

"Meanwhile if I am to take over the pumping and boring I would especially like to begin not later than November 1st, because the rains are the slack season for true pumping and boring and April 1st is in the middle of the busy season."

It is for orders whether Mr. Chadwick will be requested u.o. to state at once whether he is prepared to take over pumping and boring operations with effect from 1st April 1916. The Financial notes appear to indicate that they will have no objection to provide funds even if the transfer is effected at once.

5. Another point for orders is Mr. Davidson's suggestion on page 26 supra to appoint Mr. Home as Agricultural Engineer. It would perhaps be better if Mr. Chadwick is consulted on this point. It may be mentioned in this connection that the transfer of the pumping and boring operations need not necessarily be deferred until after the appointment of an Agricultural Engineer.

6. Honourable Member's note at A (page 26) is presumably to be considered in the Educational Department. Nothing need be done. The matter has been raised separately by His Excellency the Governor.

A. G. C[ARDEW]—6-3-16.

7. The file may now be submitted to Honourable Member—vide Mr. Davidson's note on page 27 supra.

T.S.R.—3-3-16.

I think Mr. Chadwick may be consulted u.o. about Mr. Howe, and also about the date from which he would like to take over the department. If he would like Mr. Howe, or would like to take the department at once, we can then ask Financial if they can provide funds for 1916-17.

The draft order may be submitted to Honourable Member before issue.

A. H. A. TODD—4-3-16.

J. P. BEDFORD—4-3-16.

There is no need to refer to Mr. Chadwick before the draft Government Order issues, because paragraph 4 (which has rather unfortunately been inserted) leaves the date of introduction still uncertain. However it will be something gained to get the draft out; it has taken just a year to reach this stage; and I shall be glad therefore if the order can be issued at once and before the approaching meeting of the Legislative Council at which we shall probably be questioned on the subject.

2. As soon as the Government Order has been issued, the Director of Agriculture should be asked by separate official memorandum from what date he is prepared to take over the Pumping and Boring Department. The selection of an officer for the post of Agricultural Engineer is a matter for His Excellency the Governor. I know nothing about Mr. Howe but probably Mr. Chadwick will know all about him. The Secretary might mention his name to Mr. Chadwick through the telephone or direct, so that he may be known to be a candidate. These, however, are details.

A. G. C[ARDEW]—6-3-16.

Issue the draft.

J.P.B.—7-3-16.

[G.O. No. 523, Revenue, dated 7th March 1916.]

vide also para. 3
of this Dept's note
at p. 30 supra.

REVENUE - C
9802

Op. final
22.3.16

Repd. 23.3.16. R.J.

Est. no.

22.3.16

22.3

Rev. no. 8020/16.1



CN. 1135 Est

23.3.16

SK

Est. Department
Submitted that the Director
of Industries may first be
asked to state what reduction
in his establishment can be
made when the pumping + boring
operations are transferred to
the Dept. of Agriculture. A
draft memo is submitted for approval.

30.3.16

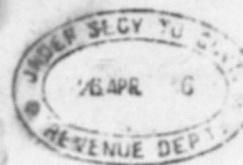
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[Memo No. 1135-1 Est. & 5. 4. 16]

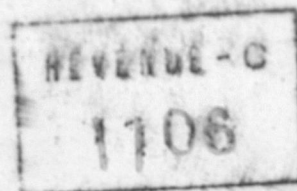
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CIV-1501. From the D. I., No. 428, of 11.4.16.

Please see the Director's letter on page 36 of c.f. He does not consider that any reduction in his establishment will be feasible. It is submitted that the Department of Industries has a large number of industrial ~~experiments~~ experiments in hand & these will necessitate the maintenance of accounts &c. As the Director has to collect information ~~from~~ about industrial matters from all parts of the Presidency, there will be considerable work in the correspondence section also. It does not therefore seem advisable to make any further reduction in his establishment. If this is approved, the file may be sent to the Financial Dept. through the Revenue Dept.



Jaw



Prgd. 26.4.16
\$1274

Encls 1135-2
25.4.16

SK 22.4.16 CR 23.4.16

W. J. L.
P. L.

25/4/16

Revenue Dept

To under Secy

Submitted that the file may be passed on to Financial, after perusal.



26.4.16

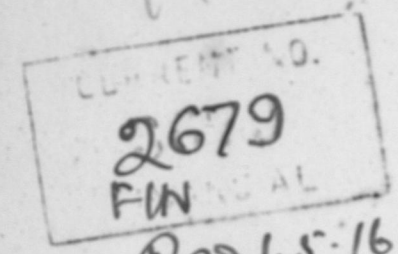
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REGD 1.5.16

Financial Dept.

For the Asst. Secy.

(C.S. note on p. 23, para 2 of Rev. note on p. 23, para 27
Fin. note on p. 28, para 3 on p. 30 quoted & C.S. may be read)
Submitted with reference to Mr. Butler.

with this note ~~on~~ 11-11-15 on pages 22-23 ante,
and para 2 of Financial note on page 28 ante
In the circumstances stated by the Director of
Industries on page 36 C.F. and the Ed. Dept. on
page 32 ante, Financial may agree that no
^{further} reduction is feasible in the office establishment
of the Director of Industries. The case may be
returned to Ed. after perusal.

Jrs. Edue 28.5.16



Fin. no 2679-1

6.5.16

Notes in en

9/5/16

3.5.16

4.5.16

ES. Department.

Submitted that these papers may
now be ^{one more} ~~be~~ 514 Edl mis 11-5-16
Recorded.

$\frac{8K}{9.5.16.}$ $\frac{Ca}{9.5.16.}$ *[Signature]*
6/5/16

[Faint handwritten notes and stamps, including a circular stamp with "RECEIVED" and "11-5-16"]

Financial Dept

For Mr. C. B. Day

Submitted with reference to Mr. B. H. Butler
with note of 11-11-16 on page 22-23 and
and para 2 of Financial note on page 22
for the circumstances stated by the Director of
Industries on page 26 of and the C. B. Day
page 22 and Financial note on page 22
reduction is feasible in the office establishment
of the Director of Industries. The case may be
referred to C. B. Day for further

[Faint rectangular stamp with "RECEIVED" and "11-5-16"]

[Faint circular stamp with "RECEIVED" and "11-5-16"]

Financial Dept

For Mr. C. B. Day

Submitted with reference to Mr. B. H. Butler
with note of 11-11-16 on page 22-23 and
and para 2 of Financial note on page 22
for the circumstances stated by the Director of
Industries on page 26 of and the C. B. Day
page 22 and Financial note on page 22
reduction is feasible in the office establishment
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A = Copy in full.
B = Not to be copied.
P = Copy abstract only.
Q = Copy heading only.