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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

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16. *Remedial measures for cause (a).*—The remedial measures I would propose to ensure better supervision and registration, to prevent surreptitious irrigation and to secure a proper and real looking after the interests of the canal are five.

The first is the appointment of a special revenue officer on the canal. If the financial condition of the canal is really to be improved and if the canal is to be made "less of a dismal failure," it is, I think, absolutely necessary that, as recommended by Mr. Kough, there should be placed on it, at least for some years, a special revenue officer of tact, patience, zeal and industry who would work in consultation and accord with the Engineer and make the advancement of the canal his sole study; and my opinion is that it would be quite enough if, with an Executive Engineer like Mr. Johnston, the special revenue officer stands on the canal for 4 or 5 years. It is true that, in theory, Divisional Officers and Tahsildars are now expected to look after and watch the interests on the canal, but it is practically impossible for them to pay to canal matters the amount of attention they deserve in the present condition of the canal. Even if Tahsildars are relieved of their magisterial duties and are thus enabled to take more interest and pay greater attention, they may, perhaps, be able to supply the existing want to some extent, but what the canal really requires is a revenue officer who would pay undivided attention and his whole time to its affairs; and this the ordinary revenue establishment can never be expected to do so long as its members have other duties to attend to. If there is a special revenue officer on the canal, he would not only be able to effectually check and remove the evil of surreptitious irrigation by constantly moving along the canal and suddenly checking irrigation in villages here and there, thus punctually supervising the work of Revenue Inspectors and Karnams and bringing delinquents to punishment whenever necessary, but would also supply the great want of a link, as it were, now so much felt, between the ryots and the Public Works Department, to lay the wants and grievances of the former before the latter, and to render prompt assistance to the latter wherever required in the acquisition of lands required for channels, &c. He would also be able to bring about a large extension of irrigation by awakening a general interest in ryots, and by encouraging and by giving them instruction and advice in matters on which they require it. Nor will the appointment of a special revenue officer with a small establishment be, I think, a useless burden on the finances of the canal, inasmuch as I am sanguine that the check he exercises and his exertions towards extension of irrigation would, in a couple of years, result in a permanent increase of revenue more than enough to cover the extra charge with every prospect of further rise in subsequent years. The annual saving of Rs. 3,492 to be effected if the irrigation superintendents are abolished, as proposed, would also be a partial set-off against this additional charge. The fact, moreover, that the special inspection made this year promises to show an increase of about Rs. 10,000 over the figures for last year, notwithstanding that lots of doubtful cases have been omitted, deserves consideration in this connection. The special officer may, as it were, be a canal divisional officer, subordinate to the Collectors of Kurnool and Cuddapah, and to him must be entrusted the administration of canal revenue including settlement of water-rate. The Tahsildars of canal taluks will, of course, be his assistants in canal matters; and to make him really useful, the special officer must be given power to punish canal village officers for faults committed by them on the canal side, subject to appeal in the usual manner. The special officer's establishment may consist of four clerks, three peons, an attender and a mashalchi; and, of the four clerks, it would be better if two are men of the stamp of classifiers with good field knowledge so that they may be able to assist the special officer in the check of irrigation and thus be doubly useful. The least costly arrangement would, I think, be to depute a permanent officer to the special duty on deputation allowance. At present canal water-rate settlement is, in the majority of cases, being conducted by officers who have practically no knowledge whatever of the areas irrigated, and who, for charge or remission, have consequently to rely upon what a body of interested ryots, or a timid or delinquent karnam or, perhaps, an indifferent or an unscrupulous Revenue Inspector represents at the time of jamabandi. This, however, will not be the case if a special revenue officer is placed on the canal. I use "timid" in the case of the

Karnams because, instances are not wanting where ryots undertook to thrash or otherwise molest karnams when the latter attempted to expose frauds on the part of the former.

17. The second remedy I propose under head (a) is that the canal work in each important canal taluk should be assigned to one Revenue Inspector, who should not be saddled with other kinds of work. Excluding the unimportant taluks of Jammalamadugu and Koilkuntla, there are six canal taluks and I believe each of them has

Taluka.	Number of canal villages.	now a staff of four Revenue Inspectors.
1. Rámallakót	11	The number of canal villages in these six taluks being as per margin, I think
2. Nandikótkur	41	one of the four existing Revenue Inspectors may in each taluk be safely and
3. Nendyál	27	conveniently deputed for canal work, some canal villages of the Nandikótkur
4. Sirvel	20	taluk nearer to Kurnool being tacked on to the charge of the Rámallakót taluk
5. Proddutur	27	canal Revenue Inspector, to make their charges equal. In making this arrange-
6. Cuddapah	22	ment, the work of the non-canal villages and the ordinary work of canal villages
Total	154	should be distributed among the remaining three Revenue Inspectors in each taluk, and, considering that they will be relieved of the most important and responsible

work of inspection of tirwajasti cultivation in the canal villages, I believe the other Revenue Inspectors will have no cause to complain of heavy work. The Canal Revenue Inspectors should be made subordinate to the special canal officer and their diaries submitted to him through the respective Tahsildars. When thus relieved of other kinds of work, the Canal Revenue Inspectors will no longer have an excuse to fall back upon for shortcomings noticed, and, as their field-work will be subject to frequent check by the special officer in his tours, their inspection of tirwajasti cultivation will certainly be more punctual and efficacious. The canal karnams maintained for important canal villages should also be similarly relieved of all other duties. At present they are, in many cases, being made to do other work also.

18. The third remedy I have to propose is that, in order to act as an additional check on surreptitious irrigation, it should be made a rule, at least as far as this canal is concerned, that water-rate should invariably be charged at least at one and one-fourth the prescribed rate in all cases where water is taken by ryots without application. Of course paragraph 10 of Standing Order No. 4 which seems to apply to irrigation under this canal as well, gives the Collector power to impose prohibitory rates whenever water is taken without permission; but, being only permissive, that rule has practically been a dead letter hitherto, so that ryots do not, in fact, know that the Revenue authorities have power to fine surreptitious irrigation. I have no doubt whatever that, in addition to laxity in supervision and other causes on the part of Karnams and Revenue Inspectors, the absence of distinction between cases of application and cases of non-application has also been a cause, to some extent, of the large amount of surreptitious irrigation that exists under this canal. During the company's time cases of surreptitious irrigation used to be invariably visited with some fine or other, so that there does not appear to have been so much of surreptitious irrigation then; but now the ryot who knows that there is no line of distinction between irrigation on application and irrigation without application, very often prefers taking water without darkhast, leaving discovery to chance, as, in that case, he knows he may possibly escape charge of water-rate altogether if the case is not detected, whereas, if detected, he will have to pay the same rate as if he had originally applied for water. The Board may, perhaps, fear that it would interfere with extension of irrigation under the canal, if the proposed rule is sanctioned, but I am sure it will not, and I have taken care to make the penal charge as low as possible. I do not think it good policy to encourage surreptitious irrigation in the expectation of future extension of irrigation; and my humble opinion is that, when put into the scale, the former will be found to be more prejudicial to the interests of the canal than the latter can be favorable.

When a rule like the one proposed is passed, of course it will be necessary to take the requisite precautions to prevent abuse of power by the village officers, and for this, I think, it will be enough if, in addition to the close supervision that the separation of the Revenue Inspector's duties and the appointment of special revenue officer must result in, village heads are ordered to issue duly dated permits to applicants from printed books to be supplied to them with counterfoils and with pages consecutively numbered. The permit book must always be in the village in charge of the village head, and, during his absence from the village, in charge of the second reddi, if any, or of the karnam, failing both.

19. The fourth remedy to be proposed is grant of remuneration to canal village officers, not on the entire water-rate revenue of the village, but on any increase that may hereafter result over and above the average water-rate demand of the village, say, for the last five normal years. During the company's time they used to grant remuneration to karnams at one anna in the rupee on the entire canal revenue; but that was abolished by paragraph 6 of Government Order, No. 448 I., dated 6th June 1882 (Public Works). I now make the proposal again, but on a far reduced scale, because I am sanguine that the hope of getting some additional remuneration would, in the majority of cases, stimulate karnams into accurate registration of extents irrigated, and thus bring under charge of water-rate extents that may otherwise escape charge. It may also tend to awaken a kind of general interest in the village officers in canal matters. The remuneration hereafter to be granted may also be at the rate of one anna in the rupee; but instead of being paid to the karnam alone, it should, I think, be distributed among the reddi and the karnam at the rate of 4 pies in the rupee to the former and 8 pies to the latter. I propose a share for the reddi because the permit duty is to be assigned to him and because he may, as a more influential man in the village and out of jealousy, otherwise try to undo whatever the karnam may do to bring about an increase in the canal revenue. I propose double the reddi's share to the karnam because the more difficult work of field inspection and measurement which must precede discovery of surreptitious irrigation and the maintenance of the dharkhast register devolve on the latter. The canal revenue will not certainly be affected in any way by the grant of this remuneration, inasmuch as it is only on the future increase that it is proposed to be calculated.

20. The fifth and the last remedy is to introduce a proper dharkhast register form. I think the form (enclosure No. 5) I propose, and to be found among the enclosures, will sufficiently answer the purpose. I have taken care to provide separate columns for extents applied for and those irrigated without application, so that karnams can no longer have an excuse to omit to register extents surreptitiously irrigated.

21. This is another important cause which, in my opinion, has been retarding extension of irrigation under the canal, and the good that can be done in this direction must necessarily depend upon the zeal and ability of the special officer. It seems to me that there are several points on which useful instruction can be given to the ryots under the canal with the certainty of bringing about an extension of irrigation, and the following are some of the points that have suggested themselves to me.

(b) Want of instruction to ryots on matters connected generally with the cultivation of wet and garden crops. Now with regard to the cultivation of paddy there are three different ways of raising it. The first and the best method is that of transplantation, the second is that of sowing the seed broadcast, and the third and the last is that of sowing the seed with the drill like a dry crop without bedding and bunding the fields; and it is a well-known fact that the outturn in the first case is nearly double that of the second, and that in the second case nearly double that of the third. In almost all the canal villages of the Kurnool district, however, the first-crop paddy is being raised after the third or the inferior method, and the reluctance of the Kurnool ryots to take to paddy cultivation more extensively seems to be due, at least to some extent, to the comparatively small profit they make now from an acre of paddy. I need hardly

point out in this connection that a field not bedded and bunded cannot derive any benefit from manure applied to it, inasmuch as the manure is washed away by the flooding the field receives.

A native gentleman of the Nizam's Dominions who obtained a block at Pagidela in the Nandikotkur taluk came there a few years ago and started cultivation of paddy in that quarter by the second method, and I find that the people of the surrounding canal villages of Pratakota and Ganapavaram have already begun to appreciate this new method and show themselves prepared to adopt it for the future. So that I think it would certainly be an advantage if, instead of ryots being left to think for themselves, an officer who would freely mingle with and talk to them frequently goes about the canal villages explaining to the ryots the different methods of paddy cultivation and the advantages attending each. Of course, lack of manure is commonly put forward by the Kurnool ryots as the main cause to which their inability to adopt the higher methods of cultivation of paddy is due, but it will be observed that, further on, I propose a proper and an easy remedy for that also. In the Cuddapah district the second method is generally in vogue, and the adoption of the first method may similarly be encouraged there.

22. Another point on which it seems desirable to give instruction to the canal ryots of both Kurnool and Cuddapah is that, by not taking water for their paddy crops till September or October, they are losers in that the water becomes clear by that time and does not bring down any alluvial deposit with it as it does in July and August. The ryots of Kurnool put down their paddy crop early enough, but the system generally in use being that of sowing with the drill as I have already stated above, they do not take water for the crop till October. In the Cuddapah district the sowing itself is late. They generally begin it in September. It would certainly be an advantage to teach the Cuddapah district ryots to begin their paddy crops earlier. They would then have the additional advantage of having more flooding for their second crops (generally indigo and gingelly) before the closure of the canal. I have asked some of the ryots of Chennur and other places in the Cuddapah district why they do not put down their first paddy crop earlier, and they seem to be labouring under the impression that July and August are not favorable months for paddy sowing. But I have explained to them that it cannot be true, because paddy sown in July or August under the Nandyál tank and elsewhere under the canal on the same broadcast system they have in use, is generally coming off very successfully; and some ryots of Chennur have told me that they would try a change in the ensuing first-crop season.

23. In the Kurnool district first-crop paddy is harvested generally in the month of December and except, perhaps, under a few tanks fed by the canal, and in a few other places where paddy and vegetables are generally raised as second crops, there is hardly any other kind of crop raised as a second crop under the canal; so that in the majority of cases, lands on which first crops have been raised lie waste from January to the closure of the canal which will not generally be till middle of April.

In the Cuddapah district, on the other hand, lots of acreage is generally placed under second crops which are generally indigo and gingelly, and this notwithstanding the fact that their first paddy crops are harvested late in February or even the early part of March sometimes. I am sanguine, therefore, that immense good both to the ryots and to the State would follow if only pains are taken to explain well to the ryots of Kurnool the advantages of raising similar crops as second crop on lands they now allow to lie idle. In fact, I have already suggested this to the ryots of Ganapavaram, Sirvel and a few other villages of the Kurnool district and they showed themselves immensely pleased at the idea. In this connection, I beg to suggest that it be made clear whether the compound rate of Rs. 6 for flow and Rs. 4-8-0 for lift shown as item 3 in the scale of water-rates given in the appendix to Board's Standing Order No. 4, applies only where both the crops are wet or whether a ryot applying for the concession is allowed the discretion to raise any two crops he likes. For my own part, I think it could not have been meant that it should be binding on the ryot to raise two wet crops and Government, moreover, lose nothing by a ryot choosing to raise a garden or a dry crop in the place of wet crop. I venture to suggest the

issue of clear instructions on the point because many ryots under the canal seem to labour under an impression that both the crops must be wet, and this impression seems to be due to the fact that, in the scale, item 3 providing a compound rate follows immediately items 1 and 2, both of which speak of wet crops. Even if it was originally meant to apply to cases of two wet crops alone, I beg to recommend that the rate be now declared applicable to any two crops the ryot may choose as, if so declared, I feel sure the concession will be largely taken advantage of by ryots wishing to grow paddy as first crop and indigo or gingelly as second crop.

24. Another point on which ryots would generally be glad to get information (this must be timely) is the time as near as possible when the canal will be closed each year; and, as far as the interests of the canal are concerned, it is only necessary that such information should be given them; for a ryot having no knowledge on the subject generally prefers to raise no crop at all to running the risk of raising a crop in uncertainty.

25. Alluvial deposit is certainly a very rich manure, especially for wet and garden crops; and still I was surprised to see that the ryots of Gopalasingavaram and some other villages did not know this till I pointed it out to them. As there are many canal villages having either the Tumbadra or the Pennér or the canal itself close by, I think it would be an advantage if the matter is well explained to ryots raising wet and garden crops under the canal; and it would be conferring a boon on the canal ryots if, whenever they wish to do so, they are allowed to take deposit silt from the bed of the canal free of charge when the canal is closed.

26. Remedial measure.—It may, perhaps, be thought that, to instruct ryots on points like the above, publication of circulars in the village sheet may suffice; but I beg to submit that, as far as my experience of it goes, instruction given to ryots through circulars published in the District Gazette is only formal and not real and practical, and that it can never stand comparison to instruction given personally on the spot by an officer interested. If a special officer is appointed on the canal, as suggested in paragraph 16 *supra*, want (b) will therefore be removed altogether.

27. This is really a potent cause that has been operating against extension of irrigation under this canal, and the excuses
(c) Lack of manure and its costliness. "no manure" and "manure is costly" are to be heard of almost everywhere under it.

It is a complaint which both the rich and the poor make equally, and it is mainly for want of manure that the Kurnool ryots seem to have taken to the sowing-with-the-drill system. In the Cuddapah district, however, the "tuvva" lands on which paddy is generally raised do not seem to require so much manure as other kinds of lands (regar and masab), and there is, moreover, the fact for consideration that the ryots of the Cuddapah district are generally more industrious and enterprising than their Kurnool brethren who are generally idle and indifferent. Of all the villages under the canal in the Kurnool district, the ryots under the Nandyál tank are the best and the most industrious, and many of them raise the first-crop paddy under the second or the broadcast system. I have noticed that many of these Nandyál ryots go for leaf manure even as far as Velgode in the Nandikotkur taluk, a distance of nearly 20 miles. A good deal of leaf manure is generally necessary for an acre of paddy crop under the second system, and ryots often spend as much as Rs. 20 or Rs. 25 an acre for leaf manure alone. It is true that, in the Kurnool district, the fact that ryots under the canal generally possess large extents of rich regar lands remunerative in their own way is an obstruction, to some extent, to the extension of wet cultivation; but I am confident that, if we can only manage to remove or at least to minimize the want of leaf manure, there will be some very good extension of irrigation under the canal gradually.

28. Remedial measures.—With the view of supplying this long-felt want, I suggested to the Commissioner in December last the purchase of hemp seed (ಎಸೆಂಜೆ ಸೇವ) at Guntur, and its sale to the canal ryots here at cost price, hemp plant being a highly fertilizing leaf manure already in extensive use as such under the Godavari and Kistna canals; and the Commissioner having been pleased to send for

50 bags of this seed from Guntur, I have already sold as many as 45 bags duly explaining to the ryots how to make use of it both as manure and otherwise, the sale being one of fourfold use. Indigo refuse leaf is the best leaf manure hitherto known to ryots in these parts, but I am sure that they will soon find that the hemp plant is equally fertilizing, if not more. The ryots who purchased the seed intend trying it for the first-crop paddy of the coming fasli 1301 (season 1891-92), and if only they see from actual experiment that the plant answers the purpose, as necessarily it must, I dare say there will be any amount of demand for the seed in future years, and extension of paddy cultivation may become inevitable. Although indigo refuse leaf is a leaf manure already known to the ryots under the canal, it is not all that can be had for an acre of land for Rs. 2 or Rs. 2-8-0, including a water-rate charge of Re. 1 if it is found necessary to irrigate the hemp crop; and even this cost may be reduced still further if the ryot raises the requisite quantity of seed on his dry lands by mixing a small quantity of it with his cholam or other dry crops.

The simplest course to raise a crop of hemp for manure will be to sow with the drill like a dry crop not less than 12 or 15 Kurnool measures of hemp seed on an acre of land on which it is intended to raise the paddy crop, and to water and plough down and spoil this hemp crop when it begins to bud, which will generally be in about six weeks after the sowing of the seed, thus converting the land into a puddle for the following paddy crop. Of course any small quantity of dung manure that the ryot can afford to procure may, with advantage and as usual, be added to the puddle in addition to the hemp manure. By adopting the above course of growing hemp manure on the paddy land itself, the ryot necessarily saves the expenses of reaping and carting it which he would have to incur if the plant is to be raised on a separate piece of land. I have thus very great hopes of the hemp seed supplied, and only hope that Tahsildars will take some interest in the matter and see that the ryots duly carry out the promised experiments.

29. It would be an additional help and encouragement to the ryots under the canal if the Government can find its way to grant them free permits for all kinds of leaf manure whenever they wish to fetch it from forest lands. At present there are different rates of seigniorage fixed in the Cuddapah district for all kinds of leaf manure to be fetched from reserved lands and for many kinds to be fetched from unreserved lands, whereas in the Kurnool district the collection of leaf manure from reserved lands is prohibited altogether. The only stuff which ryots are now permitted to collect free of charge is "leaves of shrubs," such as "tangedu" in the Cuddapah district, and "shrubs from the unreserved lands" in the Kurnool district. But ryots are generally afraid to avail themselves of these concessions, because of the nice distinctions which they find it difficult to draw, and which they say occasionally launch people into either molestation or criminal prosecutions. Hence my suggestion that, if possible, free permits may be granted for all kinds of leaf manure.

30. As I have already stated above in paragraph 25, the grant of permission to ryots to take deposit silt from the bed of the canal free of charge would also be a help to them in the way of manure.

31. When an important canal, nearly 200 miles in length like this, is taken

(d) The situation of some of the existing channels in unfavorable localities and the absence, on the other hand, of channels in favorable and promising localities.

through tracts of different soils, it is, I think, absolutely necessary that, in giving fresh distributaries or in extending the existing ones, great care should be taken by the officers concerned to see mainly (a) whether the soils through which a new channel is proposed to be taken are suited for wet cultivation, (b) whether there is population enough, and (c) whether the people have a real desire for water or not. If these points are not considered at all, and if a channel is given simply because there is a good commandable extent, the channel provided will, in the majority of cases, be a failure, whereas the outlay incurred would go to

unnecessarily swell up the capital; and it seems to me that this was unfortunately the case with some of the distributaries already given. The Tudicherla and the Yetur channels, for instance, cannot be said to have resulted in anything like success. The former was intended to command about 19,400 acres and the latter 7,680 acres. But the extents they actually irrigate dwindle into nothing compared to the extents originally estimated. Even in the case of the Suddapalli channel, for which an amount of Rs. 7,900 was recently sanctioned in G.O., No. 697 I., dated 27th November 1890 (Public Works), communicated with Board's Proceedings, Mis. No. 40, dated 6th January last, I found on personal inquiry in the three villages concerned that on the whole the people are not for the channel at all and that there were offers only for 13 acres, whereas it was originally estimated that upwards of 900 acres in aggregate would be watered. As soon as I saw a copy of the above Government Order, I began to entertain doubts on the subject, inasmuch as two of the three villages involved in the project have already some extents irrigable by other existing channels from the canal, and they have not shown themselves interested in wet cultivation under those channels. Of course I have duly communicated the result of my inquiry to the Executive Engineer and I believe he will get the sanction cancelled.

32. In the course of my investigation, I found, on the other hand, that people at certain quarters under the canal are really very anxious to have either new channels or extensions of existing ones made out for them, soils suiting. There were also instances where people promised to extend irrigation if repairs needed are executed to existing channels. In all such cases I laid the representations of the people before the Executive Engineer then and there, as can be seen from enclosure No. 4, referred to in paragraph 15 *supra*; and although I am required to confine my investigation mainly to area commanded by existing distributaries, I respectfully beg and venture to invite the particular attention of Board and Government to a project which I have discovered under the canal, and which seems to deserve special mention and consideration in consequence of its highly promising nature. The project, I mean, is about Chopad in the Proddatur taluk, where the people of more than half a dozen villages are extremely anxious to get a channel. The lands commanded are almost all of them of rich "tuvva" soil, and are thus the very best for wet cultivation. The ryots of seven villages have already presented statements offering to take water for about 4,000 acres the very first year a channel is given them, and, in proof of their earnestness for a channel from the canal, they state in writing that they would not avail themselves of the block and cowle rate concessions allowed by rules, and that they would, on the other hand, pay water-rate according to the prescribed scale from the very beginning. The extent the ryots offer to irrigate the first year is 4,000 acres, but there is every probability of its growing up to over 8,000 acres within the next four or five years. If only a channel can be given here, I dare say this quarter will, before very long, beat hollow Chevur and all other irrigation sections under the canal; and, in my humble estimation, an eventual maximum income of from Rs. 40,000 to Rs. 50,000 per annum will not be too much for Government to expect from it including both crops.

To bring a channel to this group of villages, the simplest and the cheapest course will be to take the channel across the Kundu river in iron troughs; and this the Lower Sub-Divisional officer, Mr. Dennehy, who has seen the place and got levels taken at my request, says would be possible. Until a regular estimate has been prepared by the Public Works Department, one cannot say what the precise cost of the project may come to; but, considering (a) the large extent (about 10,000 acres) of land available for irrigation, (b) the uncommonly favorable nature of the soil, (c) the anxiety of the people to get a channel, and (d) the annual income that may fairly be expected in consequence, I think that it is no exaggeration to say that the work would comparatively be a cheap one on the whole. As the people are really very anxious to have this channel, and as, if given, this one channel alone would be enough to make the canal more than self-supporting, I beg to recommend that necessary steps be taken to have orders issued for the Public Works Department taking up this project in hand at once. The ryots are really eager to get the channel at least for the second-crop season of the coming fasli 1301 (1891-92) if possible. Of course the Public Works Department seems to have got the Maidkur and some other

big projects in hand already, but my humble opinion is that all other projects must be made to make way for this as one of highly promising nature. It is really a pity that this quarter was not hit upon and the channel given before this, or else the canal would not, I submit, have been a source of so much anxiety to Government.

To irrigate the group of villages in question, the Public Works Department may, perhaps, think of bringing a channel from the Rajoli anicut in the Sirvel taluk. But I believe that would be unnecessarily too long and expensive, as more than two thirds of the channel would have to be taken through pure regar soils where people, far from liking irrigation, seem to object to the excavation of the channel itself. The cost, moreover, may be much more than that of the cheap and simple course now suggested.

A second important work I came across and proposed to Mr. Johnston is the restoration of the big tank at Kotakandukur, in the Sirvel taluk, and its storage with canal water. At my instance, Mr. Johnston went and had a look at this tank and quite approved of the work proposed. This is a work which, if executed, would permanently increase the canal revenue by from Rs. 1,500 to Rs. 2,000 annually, including both crops, whereas the cost of restoration would be comparatively very small.

33. *Remedial measure.*—Cause (c) will be removed by the appointment of a Revenue officer on the canal, as suggested in paragraph 16 *supra*, provided the officer is one who works with industry, patience and real interest.

34. There is hardly any mundla (tailed or coarse) paddy in the Rámallakót, Koilkuntla, Jammalamadugu, Proddutur and Cuddapah taluks, and its growth is almost entirely confined to the remaining three canal taluks, viz., Sirvel, Nandyál and Nandikótkur, where, as I have already stated above in paragraph 14, the ryots have fallen into the habit of taking canal water surreptitiously, causing what may fairly be termed artificial overflow. In the current fasli the Sirvel taluk has got nearly 2,800 acres of mundla paddy in 23 of its canal villages, while the Nandyál and Nandikótkur taluks have 600 and 370 acres in 19 and 14 villages, respectively. Ryots raising mundla paddy with the aid of stolen water no doubt allege that it is a crop which can successfully be grown almost everywhere with the aid of falling rains alone; but their allegation is not true. To raise a crop of "mundla" paddy successfully with the aid of rain alone, the place must be either a low one, such, for instance, as a tank-bed retaining more than average moisture, or low lands at the bases of hills whereinto water from the adjoining hill sides occasionally oozes. It cannot certainly be grown on flat even plains like those of Zillella, Yallur and Kotapad without the aid of irrigation at all. Like good paddy it does not require standing water. It only requires some floodings, generally from its third month; and, as far as my inquiries go, it is the high rate of Rs. 4 per acre that is being hitherto charged on it that has mainly led ryots to steal water for it, pleading percolation afterwards. The ryots of some villages under the canal, not reputed for stealing water, have told me in the course of my investigation, and some of them have even presented memorials saying that there would be extension of registered irrigation, and consequently increase of revenue under the canal, if the rate for "mundla" paddy is reduced from Rs. 4 to Rs. 2 per acre, and I observe that the same reduction has been recommended by the Collector of Kurnool in his letter No. 967, dated 7th May 1891, read in Board's Proceedings, Mis. No. 1632 dated 8th April last. In his letter, Disposal No. 1460-Ver., dated 27th April 1891, read in Board's Proceedings, Mis. No. 2218, dated 6th May last, the Collector of Cuddapah has expressed an opinion that Re. 1 per acre would be a proper rate for "mundla" paddy, but I am afraid that if it is reduced so low, the present good paddy extent will materially and inevitably suffer. A crop of "mundla" paddy, moreover, generally requires more water than a purely dry crop, such, for instance, as "arika," and it should not therefore be placed on the same level with purely dry crops. Again, the price of "mundla" paddy is generally half or a little over half that of good paddy and certainly higher than that of "arika." The value of "mundla" paddy is also enhanced by its susceptibility to be mixed up with different kinds of good paddy—a mercantile trick very often resorted to in the rural tracts.

35. *Remedial measure.*—If the rate is reduced to Rs. 2 per acre, which, in my humble opinion, is the fittest rate for "mundla" paddy, I feel sanguine that the present evil of ryots taking water for it surreptitiously will gradually disappear and some good extension of irrigation follow.

36. The present arrangement for the distribution of water does not seem to have been satisfactorily working, and numerous complaints have been made to me on the subject by ryots in the course of my tours and investigation. The Public Works Department seem to have a small staff of 26* lascars intended for the distribution of water under the whole length of the canal; but these lascars seem to have been practically of very little use; and, to speak the truth, people are not generally satisfied with their way of working. In the majority of cases distribution is practically left to take care of itself, and the ryots do not generally like to go and complain to the Public Works Department officers against the lascars, as they (the ryots) are unfortunately under the impression that the Public Works Department is a foreign element altogether, and as they are, moreover, afraid that the lascars complained against may do more harm than before if no notice is finally taken of the complaint. The number of lascars, furthermore, seems quite inadequate. To make any system of distribution work smoothly and satisfactorily, it is, of course, absolutely necessary that the distributing agency should be placed under the orders and supervision of an individual really interested in the saving of crops and in the welfare of ryots; and who can generally be this individual in villages except the reddy of the village? The Public Works Department Irrigation Superintendents, under whose immediate supervision the lascars are supposed to be working, cannot certainly be said to have so much interest in the cause of ryots as the reddy of a village who is generally a ryot himself and a resident of the place. Indeed, there may be instances where there are factions in villages and where the reddy sides with one of the factions. But such cases are comparatively few and far between, and no real hardship can, even in such rare cases, be expected to be caused by the reddy to the members of the faction opposite to him, because he will generally have the fear that his conduct will at once be noticed either by the Revenue Inspector, the Tahsildar or the Divisional officer in their official tours.

Section.	Number of lascars.	Pay.	For what period employed.
		RS.	MONTHS.
1st section ..	4	6	9
2nd do. ..	6	6	8
3rd do. ..	2	6	12
4th do. ..	3	5	12
5th do. ..	3	5	12
6th do. ..	8	5	12

There was recently an instance where a Public Works Department Irrigation Superintendent on this canal undertook to criminally prosecute certain ryots who seem to have raised a dam across a distributary with the view of raising water to their fields and, what seems more surprising to me, is the Magistrate's fining one of the accused in the sum of Rs. 50 and another in the sum of Rs. 25. I have not seen a copy of the Magistrate's judgment in the case nor is it my province to criticize the doings of a Magistrate. But I beg to submit that my own humble opinion is that, as far as the interests of the canal in the way of future extension of irrigation are concerned, it would have been better if the Irrigation Superintendent had let off the ryots concerned with a warning, or if the Magistrate had let off the parties with nominal fines. I leave it to the Board to consider how irrigation under the canal can be expected to improve if the very agency distributing water chooses to treat ryots in the above manner instead of trying to advance the interests of the canal by securing the confidence of the ryots by kind treatment and conciliatory manners. As I have already stated above in paragraph 10, the Irrigation Superintendents on this canal may be done away with altogether, if the remedial measures proposed by me under cause (a) are approved of and sanctioned.

37. *Remedial measures.*—I think the best arrangement to be made will be to disperse with the services of the Public Works Department lascars and to appoint nirgalis or water-distributors in their stead on the revenue side on, say, Rs. 4

each per mensem. For the present, one nirganti may be appointed for every 200 acres of first crop irrigated under each main distributary of the canal, and nirgantis thus appointed should be placed under the immediate orders and supervision of redds of villages. Beats for the nirgantis can easily be defined afterwards by the local authorities. The Public Works Department will, of course, continue to be responsible for the upkeep of all the main distributaries, both large and small; but I think it would be far better if the distribution of water is in all cases left in the hands of village redds, even the keys of sluices being kept in their charge. The Canal Revenue Inspectors, Tahsildars and the Special officer moving about the canal villages will necessarily see that this arrangement does not result in any unnecessary wastage of water.

In fixing the average for each nirganti, I say "200 acres of first crop," because the second crop will generally be on the same or a portion of the same extent. As regards provision for the pay of the nirgantis, I beg to submit that I think it can easily be met from the Village Service Fund payable on canal water-rate. Nirgantis must be kept on all the year round, as it would be decidedly better to have permanent men instead of temporary men coming and going. During the one or two dry months when the canal is closed, they can be made to attend to the repairs of the distributaries not under the Public Works Department maintenance.

38. There is no doubt whatever that this is one of the causes contributing to the backwardness of irrigation under the canal, at least to some extent. Under the canal itself, there are here and there A and B class lands, some of which people show themselves anxious to take up for wet cultivation. I noticed that irrigation in some villages of the Ramallakot taluk went somewhat low in fasli 1300 (1890-91) in consequence of prohibition by jamabandi officers of cultivation of lands of this kind. I have been given to understand that one reason why these lands are not allowed to be taken up by ryots for cultivation is that the Public Works Department contemplate to convert them into palmyra or other trees departmentally; but my humble opinion is that it would be more profitable to give them over to ryots for cultivation. Having received applications to the extent of over 500 acres of this kind of land, I have addressed the Collector of Kurnool on the subject, and I am sure the lands will be granted in due course. It is my opinion that whenever applied for, such lands may safely be granted on, at least, miscellaneous pattas, subject to the condition of ryots subsequently surrendering any portions actually required in connection with repairs to the canal without claiming compensation.

39. Again, in some cases lands applied for by ryots for wet cultivation seem to have been refused on the ground that they are reserved for fuel or grazing purposes. I have come across an important case of this nature at Alladapalli in the Proddutur taluk, where a block of about 150 acres applied for by a native gentleman of Bellary has been refused on the ground that the block contains babul trees and is required by the Forest Department for reservation for fuel. I have seen the block in question in the course of my first crop inspection. It is all excellent land for wet cultivation, and the block bears a dry assessment of nearly Rs. 230. If the block had been granted for cultivation, there would not only have been the chance of Government getting canal water-rate eventually on the whole extent, but the land assessment of Rs. 230 would have been secured from the very first year. The Forest Department does not appear to have been getting from this block any income worth the name, and still that department seems anxious to retain it. My own opinion is that, in all cases where the interests of two different departments clash like this, the criterion for disposal should generally be, which is decidedly the more profitable of the two courses as far as the interests of Government are concerned. This does not, however, seem to have been considered in the present case before refusing the application for cultivation. I may add that I have already referred to the case in question in my diary for the fortnight ending 15th February last.

40. Remedial measure.—If, as proposed in paragraph 16 *supra*, a special revenue officer is appointed to look after the interests of the canal, cause (g) will be removed

altogether; for the special officer, as one interested in the advancement of the canal, will naturally begin to dispute whenever he sees that the interest of the canal are likely to suffer, and there will then be the guarantee that questions connected with the canal or in which the interests of the canal are in any way involved will not be decided on one-sided representations.

41. There is, no doubt, a large amount of purely regar soil in the canal villages, especially of the Nandikotkur, Koilkuntla and Jammalamadugu taluks; but (a) The large amount of regada soil in commanded lands. cannot be said to be altogether an insurmountable difficulty, for we see that,

where there is the will, regar lands have in many cases been converted into successful paddy or garden crop lands and irrigated with canal water. There seem, however, to be two main reasons why ryots owning regar lands commanded by the canal generally prefer to raise dry crops on them. One is the fact that, provided there is good and seasonable rainfall, the ryots can, with comparatively very little trouble and cost, raise on such lands successful crops of cholum, cotton, indigo, Bengal gram, wheat, linseed, &c., whereas the cultivation of paddy is a source of great trouble both to themselves and to their cattle and is generally attended with a good deal of expenditure. There is, moreover, the fact for consideration that an acre of paddy generally costs the ryot as much trouble and time as 10 acres of dry crops. The case of "tuvva" (sandy) and masab (mixed) soils, however, is different. People resort to them more freely with wet and garden crops, because the valuable dry crops mentioned above cannot be grown on them as successfully as on regar lands and because they cannot retain moisture as long as regar lands, and consequently require more frequent moistening either by rainfall or by irrigation. The second reason why, in the case of regar lands, ryots generally prefer to raise dry crops is that a piece of pure regar land generally takes more time and costs more to be converted into a paddy land than a piece of "tuvva" (sandy) or masab (mixed) land. Saline efflorescence is more in the former than in the latter.

42. Remedial measures.—As long as there are natural advantages attending the cultivation of regar lands with dry crops, it seems useless to attempt to do much in the way of removing this cause; but still I think that something in the direction can be done if an officer taking special interest goes about teaching and encouraging the holders of regar lands in the Kurnool district to raise ragi and cummin crops on them with the aid of irrigation as people in some villages of the Proddutur taluk have been doing with success. The application of hemp plant as manure, where people become convinced of its utility as such, will, it is hoped, also tend to bring more of regar land under irrigation inasmuch as the popular opinion is that leaf manure checks saline efflorescence with greater efficacy than anything else. I need hardly add that it is only in normal years that these regar lands do not go in so much for water and that in seasons of drought or famine they also take water extensively for dry crops.

43. Some instances of this kind have come to my notice in the course of my investigation, and whenever such objections are raised by the holders of fields higher up, the ryots wishing to get existing channels extended to their fields to bring them under irrigation generally give up the idea, preferring inaction to dispute with neighbouring ryots. On some occasions, persons wishing to extend channels to their fields no doubt come forward and represent their cases, but it does not appear that taluk authorities generally attend to them with promptitude in the absence of pressure from above, and of course the Public Works Department cannot extend channels as long as people higher up continue to object. Some cases of the kind have come to my notice in the Nandyal and Cuddapah taluks. It seems that it is at times years before such cases are disposed of.

44. Remedial measure.—If there should be a special officer on the canal as proposed in paragraph 16 above, there will be no need for inaction on the part of people wishing to have channels extended to their fields, nor will any unreasonable and

unavoidable delay be allowed to occur in the disposal of cases either on the part of the Public Works Department or the taluk revenue authorities.

45. In the Kurnool district there are four tanks and in the Cuddapah taluk about half a dozen "kuntas" (small tanks) which generally get additional supply from the canal, but it does not appear that the canal has been getting to its credit invariably in all cases a fair value in return for water supplied by it. In paragraph 8 of G.O., dated 6th June 1882, No. 448 I., Public Works, the Government approved of a proposal made by the committee appointed by G.O., dated 1st August 1881, No. 479 I., and decided that when canal water is supplied to Government tanks in consequence of deficiency in their natural supply, the value of water supplied should be credited to the canal and deducted from the revenue credited to the tanks; and from the appendix referred to in paragraph 6 of the committee's report, it is clear that the above value is to be arrived at by calculating at Re. 1 for every 1,440 cubic yards of water supplied. But this system, however, does not seem to be in force anywhere under the canal. In fact, no registers are now maintained by the Public Works Department to show the quantity of water run into different tanks or the exact dates on which it is run, and the discontinuance of the registers seems to be in consequence of a communication from the Collector of Kurnool to the Executive Engineer, Kurnool Division, dated 24th September 1888, No. 2979, wherein it was said that "the old rate of Re. 1 per 1,440 cubic yards is entirely superseded by G.O., dated 6th June 1882, No. 448 I., Public Works." The system once in force of the canal being credited with value of water supplied on bills presented by the Public Works Department having thus fallen out of use, the present practice is different in different places. In the Kurnool district, the amount of revenue derived only from the second crops under tanks is being generally credited to the canal notwithstanding that even the first crops often benefit by canal water run into tanks. Under the practice now in force the canal generally gets nothing from dry or "tirwajasti" lands irrigated under tanks during the first crop season whatever the extent of such lands may be. Under almost all the tanks fed by the canal, there is generally a good deal of dry or tirwajasti extent irrigated in addition to the wet ayacut, and it seems but fair that the canal should get something to its credit when such extension is due mainly to the aid it renders to the tank. In the current fasli, the tirwajasti cultivation under the three important canal-fed tanks of the Kurnool district is as per margin, and unless some practical and uniform rules are passed on the subject of tank storage generally for future guidance, I am afraid the canal revenue would unnecessarily suffer in that direction, inasmuch as the tirwajasti cultivation may grow to any extent as long as there is the canal for the tank to get the requisite additional supply from. I beg to invite particular attention to the figures against the Aiyavarikodur tank where the tirwajasti extent is shown as

Name of tank.	First crop cultivation extent.	
	Ayen wet.	Tirwajasti or dry irrigated.
Nandyal tank	ACR. 974-45	ACR. 264-61
Aiyavarikodur tank	125-29	223-23
Kadala tank	217-16	48-84

nearly double the wet ayacut extent itself. Of this total tirwajasti extent of acres 223-23, acres 50-58 are situated under the tank and acres 177-65 above it, and a curious statement that the karnam and ryots concerned make, and which the Taluk Tahsildar strongly supports, is that the acres 177-65 situated above the tank owe their irrigation not to canal water, but to the natural supply channel of the tank unassisted by the canal notwithstanding that the so-called natural supply channel was reported to have breached so long back as in 1884 or 1885 and has never been repaired since. I have also satisfied myself by a communication from the Public Works Department that canal water was let into all these three tanks during the first crop season of the current fasli 1330 (1890-91). Of course, the karnam and ryots of Aiyavarikodur have an object in saying that canal water was not taken and that it was exclusively by the

natural supply channel of the tank that the tirwajasti lands have been irrigated, for they know that, if canal water is admitted to have been used, they would be charged water-rate at Rs. 4 an acre instead of Rs. 3 with which they have been fortunate enough to escape all along. I am afraid I may be taken as going into unnecessary details, but I refer to the above case of the Aiyavarikodur tank simply to illustrate how the canal generally loses in connection with tank storage, and to convince the Board of the necessity there is for the appointment of a special officer to guard against all such losses.

46. In the Cuddapah district, where wet lands under tanks bear a consolidated wet assessment, the canal is being credited with water-rate whenever canal water is admitted to have been taken into tanks, the water-rate in the case of wet lands being deducted and paid from their consolidated wet assessment; but even here the karnams and ryots seem to have been making false representations whenever possible. It has been noticed that the karnams of Rochinayapalli, Palampalli and Chinnamatsupalli have made some absurd and anomalous entries in their No. 20 accounts (village manual) for the current fasli with a view to show as if no canal water had been taken into their tanks for the first crops, and these karnams have been duly punished for it by the Collector (please see Cuddapah Collector's letter No. 690-Ver. of 20th May 1891 recorded in Board's Proceedings, Mis. No. 2572, dated 26th idem).

47. There is another point which seems to deserve consideration in regard to tanks having the canal to feed them. The canal is there ready to supply them with water for nearly ten months in the year, and still some of them continued to be called second-class tanks and second-class tirwajasti rates are being charged under them. This seems to be a source of unnecessary loss to Government, and I think that all tanks fed, or susceptible of being fed, by the canal may, for purposes of water-rate charge, be fairly ordered to be treated as first-class tanks.

48. Remedial measures.—Three different remedies suggest themselves to me to remove the above cause and to set the thing on a safe and more definite basis, and any one of the remedies may be selected by the Board at its pleasure. One remedy is to revive the old system of Public Works Department running water into tanks, not whenever they please, but when the Revenue Department formally apply for it specifying the quantity they want and then presenting a bill to the Collector at the close of the fasli year, calculating the value at Re. 1 for every 1,440 cubic yards of water supplied. In case this system is to be adopted, it will, of course, be necessary for the Public Works Department to well secure the feeding sluices and to make them quite independent, so that it may not be possible for people to open them any time they like. At present some of the sluices intended for feeding tanks directly irrigate other lands, and this, I submit, is a loophole. The sluices may be opened by people interested on the pretext of water being taken for direct irrigation, whereas, in reality, tanks are fed. In December last I actually saw a case like this in the Nandyal taluk.

49. The second remedial measure is, now that both the canal and the tanks are Government works, to make over the tanks concerned to the canal, treating them as part and parcel of the canal. In this case an amount equal to canal water-rate on all the lands irrigated (wet inams excepted) under the tanks may be credited to the canal, any surplus left including land assessment and quit-rent on wet inams going to the credit of "Ayen" (Revenue proper). Even the wet inams may, if irrigated, be made to pay water-rate at canal rates in years of drought or famine when the tanks do not get their natural supply properly. Of course, the canal will, in return, have to bear all charges of improvement or maintenance of the tanks wherever such charges are now being debited to land revenue proper. It may not be out of place to add here that in the case of the important tanks in the Nandyal and Sirvel taluks of the Kurnool district thus connected with the canal, the Government wet lands under the tanks bear no consolidated wet assessment and that it is only under the few small kuntas of the Cuddapah taluk that there is some acreage of Government wet lands bearing consolidated wet assessment.

50. The third and the last remedy that occurs to me under this head is to pour canal water freely into tanks whenever found necessary so as to always keep full supply

in the tanks and to credit the canal in normal years with all the tirwajasti or water-rate obtained on dry lands irrigated under them including both crops, as also fasaljasti derived on single crop wet lands, both Government and inam. In years of drought or famine, it would be fair to credit the canal with water-rate on the wet lands also, both Government and inam, calculated at the canal rates, carrying the difference left, if any, to the credit of "Ayen."

51. In the course of my inquiry, I have come across some instances where people owning lands fit for wet cultivation have expressed themselves as unable to begin wet cultivation for want of money to purchase buffaloes and to bed the lands, &c.

(k) Inability of ryots to take to paddy or wet cultivation for want of means to make a start with. Of course, there is already sufficient provision made to meet such cases in the Land Improvement and Agriculturists' Loans Acts and the rules framed thereunder, but special interest on the part of taluk officers seems to be somewhat wanting in the direction. I met some ryots who said they did not know of even the existence of rules authorizing such advances. The men who want such assistance would not certainly like to go and entangle themselves in the hands of the local money-lender, for they know well how ruinous it is to be so entangled.

52. Remedial measure.—If there is a special officer on the canal interested in the development of its revenue, I am sure the above cause will disappear altogether. He will then be able to make inquiries of people as he moves about, receive applications and forward them to the Tahsildars for disposal, and can also watch and see that Tahsildars do not allow any unnecessary delay to occur in their disposal.

12) Alteration
of kistbandi
from 1st to 2nd
month of January
53. I have heard ryots say that December, the first kist month according to the kistbandi now in force, is too early an instalment for canal water-rate, and that it would be a relief to ryots to move it up at least a month further as far as canal water-rate is concerned. In the Kurnool district the first paddy crop is not harvested very often till the latter part of December, and in the Cuddapah district it is harvested still later on. All the ryots that grow crops under the canal are not well-to-do. There are many that rely upon the crop on the land for payment of instalment, and if such people are asked to pay in their kist before the removal of the crop, it would tantamount to asking them to go to the local sowcar or money-lender—a step the evils and ruin resulting from which are too well known to call for description here.

54. Remedial measures.—I think the number of kists for canal water-rate and cesses due thereon may, at least tentatively for a couple of years, be reduced to three, commencing from January instead of December, to see how the change would work. If, after fair trial, the new arrangement is found to be really productive of good to ryots and a source of no loss or inconvenience to Government, it may then be sanctioned permanently, and the question whether any further reduction would be necessary may also be considered.

55. Cases of three crops grown on a piece of land and all irrigated in one and the same year are common in the Cuddapah and Proddutur taluks, where, however, the taluk and village officers seem to be labouring under an impression that it is irregular to charge water-rate on the third crop in the same year. In all cases where all the three crops grown on a

piece of land during one and the same year happen to be irrigated, they have, therefore, been charging only the first two crops watered, reserving the third to be charged the next year; but, if there should be three crops again on the same piece of land in the succeeding year also, there is no other course left for them than to leave the preceding year's third crop uncharged. As far as my knowledge goes, there seems to be no authority on which the above practice can be said to be based. Paragraph 2

of Standing Order No. 17, no doubt, lays down that "no charge is leviable for a third crop," but this, I believe, must have been meant to apply to third crops raised on wet lands alone. Standing Order No. 4, which prescribes rules for the levy of water-rate on dry lands, makes no corresponding provision; and, considering that dry lands differ from wet lands in respect of charge for water, in that the former are free from all restrictions, whereas there is a kind of implied contract between the state and the holders in the case of the latter which bear a consolidated wet assessment, I think it but fair that Government should get the value of water in return, when it is given for third or subsequent crops on dry lands. In the case of dry lands, where it is quite optional with the ryot to take water or not, water must, I think, be considered as a commodity brought into the market for sale; and, because a ryot has chosen to purchase water twice in the year, I see no reason whatever why it should be given him free of charge the third time. The practice of reserving the third crop for the next year for charge of water-rate seems also open to objection as being unsafe and unnecessarily detrimental to the interests of the canal revenue and should not, I submit, be allowed under any circumstances whatever.

56. Remedial measure.—The issue of uniform and distinct instructions on the subject to the effect suggested will remove the cause.

57. In the Proddutur and Cuddapah taluks of the Cuddapah district there is the practice of ryots mixing up indigo with ragi and sowing both together. They apply for water for the ragi crop and take the requisite number of floodings for it. The ragi crop thus raised is harvested generally in the month of January or February, and, when this crop is removed, the indigo plants left will, in consequence of the overgrowing ragi crop having kept them under shade all the while, be short, slender and stunted, so much so that the indigo plants are not affected at all in sickling the ragi crop. Although nominally sown along with ragi, the indigo crop thus sown practically begins its life and growth, proper, after the removal of the obstructive ragi crop, and it generally stands on the ground as an independent crop for over three months subsequently, during which time also canal water is used as far as available. Now the question for solution is whether the canal is entitled or not to separate water-rate for the indigo crop which stood on the ground independently and took water for a reasonably long time after the removal of the original ragi crop, or whether the water-rate that the preceding ragi crop had paid can be taken as water-rate for the indigo crop as well. I think it but fair that the canal should get separate water-rate for the indigo crop inasmuch as the interval between the harvest of the two crops is not small. Over three months is time enough to justify the treatment of a crop as independent, and there are some crops which stand on the ground only for 70 days—the cummin seed for instance. The object of the ryot in mixing up indigo with ragi is simply to gain a little time in the case of the indigo plant, but not to grow and reap them concurrently or almost concurrently as is done in the case of some dry crops. In this connection, it may not be out of place to add that, when more than one cutting are intended, which is very often the case, indigo crop thus raised stands on the ground for even five or six months after the removal of the ragi crop, ryots continuing to take water as long as it is available in the canal.

58. As to charge of separate water-rate on indigo in cases of the above kind, there is diversity of practice. Some officers have been charging, whereas others have been omitting, so that the matter has been one of discretion altogether and not of any fixed principle. In my humble opinion it is not only equitable but also necessary that separate water-rate should be charged in all cases like the above, inasmuch as, by deciding otherwise, people may, taking advantage of the admitted principle, devise several other ways of defrauding Government of its revenue.

59. Remedial measure.—Issue of instructions to the effect that separate water-rate should be charged in cases of the above kind will remove the cause.

60. I have come across a few instances where fields fit for wet cultivation were not cultivated by people who have a desire to bring them under wet cultivation because of inconvenience and difficulty felt in taking their cattle and implements to them in consequence of marshes or swamps in the way formed either by natural streams or by surplus water drainage coming from the canal. There do not, however, seem to be many cases of this kind and the cause may, therefore, be said to be one of minor importance.

61. Remedial measures.—If there is a special officer on the canal, cases like the above will certainly attract his attention, and he can try and remove the cause by addressing either the Local Fund Boards concerned or the Executive Engineer in charge of the canal.

62. There is no doubt whatever that, compared to other districts and tracts having similar important irrigation works, the population of the taluks commanded by this canal is sparse. But this need not, however, be looked upon as a cause capable of making a total failure of the canal; for, as I have already shown in the foregoing paragraphs and as can be observed from the forecast given further on, it is, in my humble opinion, quite possible to make the canal more than self-supporting even with the existing population. Subjoined is a table showing the population per square mile in the tracts commanded by the canal and those commanded by similar works in the Godavari, Kistna, Trichinopoly and Tanjore districts:—

District.	Taluk.	Population per square mile.		District.	Taluk.	Population per square mile.	
		Total.	Agricultural.			Total.	Agricultural.
Kurnool ..	Koilkuntla ..	134	43	Kistna ..	Bapatla ..	223	65
	Nandikotkur ..	55	22		Bandar ..	250	61
	Nandyal ..	83	31		Gudivada ..	166	63
	Ramalakota ..	113	34		Ropallo ..	288	93
	Sirvel ..	92	33		Kulitalai ..	230	110
Cuddapah ..	Cuddapah ..	194	75	Trichinopoly ..	Musiri ..	345	147
	Ramalamadugu ..	149	71		Trichinopoly ..	690	189
	Proddutur ..	189	80		Kumbakonam ..	1,181	313
	Amalapuram ..	449	136		Mannargudi ..	640	210
	Bhimavaram ..	338	134		Mavaram ..	720	207
Godavari ..	Ellore ..	205	60	Tanjore ..	Negapatam ..	907	217
	Narasapur ..	458	144		Nannilam ..	789	259
	Ramachandrapuram ..	552	133		Shiyali ..	717	228
	Tanuku ..	..	..		Tanjore ..	558	162

63. Remedial measures.—This is a natural disadvantage, and, as such, must be left mainly to nature for gradual removal. The special concessional rates sanctioned in the case of blocks of 50 acres (now reduced to 10) and upwards of unoccupied waste lands might no doubt have been intended to remove it to some extent at least. But almost all the good lands having already been under occupation of the local ryots, and nearly all the few outsiders who applied for and took up blocks having suffered losses partly through unsuitability of soils for wet cultivation and mainly through the indifference or faithlessness of agents or middlemen employed by them to look after the cultivation and management of their blocks, the concessional rates have not, as yet, done any appreciable good in the direction of removing the cause.

Now that the minimum limit of a block has been reduced to 10 acres, they may, however, be expected to do some good hereafter, provided lists of cultivable blocks are made out and care taken to give them proper publicity in other districts having sufficient population and wet cultivation already. Speaking of blocks generally, Mr. Johnston, the Executive Engineer, says in his letter, No. 146, dated 22nd May last: "I understand some laboring classes of the Kistna and Godavari districts who cannot afford to purchase lands there will be willing to migrate with their families and settle themselves here, if the agricultural prospects and pursuits are of sufficient encouragement." We cannot expect as much good to result if outsiders taking up

blocks employed local labour, as if the laborers themselves take up blocks and come and work here. Even past experience goes to confirm this view, inasmuch as, although outsiders of higher position and greater wealth who took up blocks under the canal gave them up and had to return to their native places, two "Palla" class laborers who came from a southern district still hold the blocks taken up by them at Allagadda in the Sirvel taluk. These "Palla" laborers built huts in their blocks and thus live actually in their farms, and it is this kind of people that we must try to get in. I think, if there is special revenue officer on the canal, he can do a great deal in the direction, proceeding to the districts concerned if necessary.

64. To sum up, the remedial measures I propose to remove the various causes, which, in my opinion, have been retarding extension of irrigation and keeping down revenue under this canal, are:—

- (1) The appointment of a special revenue officer on the canal.
- (2) Separation of Revenue Inspector's duties and the assignment of canal work alone to one Revenue Inspector in each of the six important canal taluks.
- (3) Charge of a light penal rate on irrigation without application.
- (4) Grant of remuneration to Canal village officers on future increase.
- (5) Introduction of a proper dharkhast register form.
- (6) Issue of clear instructions to the effect that the compound rate (item No. 3) given in the scale of water-rates applies not only to two wet crops, but to any two crops at the option of the applicant.
- (7) Grant of permission to ryots to take for use as manure deposit silt from the bed of the canal free of charge and without any restriction.
- (8) Grant, if possible, of free permits for the collection of all kinds of leaf manure both from reserved and unreserved lands.
- (9) Reduction of water-rate on "mundla" (tailed or coarse) paddy from Rs. 4 to Rs. 2 per acre.
- (10) Abolition of Public Works Department lascars and the appointment in their stead of nirgantis on the revenue side for the distribution of water.
- (11) Adoption of one of the three remedies proposed in connection with tank-storage question.
- (12) Slight alteration of the existing kistbandi as far as the collection of canal water-rate and the cesses due thereon is concerned.
- (13) Issue of definite instructions in the case of charge of water-rate on third crops on dry lands irrigated.
- (14) Issue of definite instructions to the effect that separate water-rate should be charged on indigo sown mixed with ragi, but irrigated and harvested sufficiently long after the removal of the ragi crop.

65. The water-rate for turmeric was Rs. 6 per acre for some years after the transfer of the canal to Government, and during the Company's time it was even Rs. 12 per acre. But in Board's Proceedings, No. 718, dated 24th March 1886, this crop was ordered to be treated as a single wet crop and the rate for it reduced to Rs. 4 per acre. This reduction, however, is quite unnecessary in my humble opinion; and, in fact, the ryots themselves are surprised that the rate has been reduced so low. Turmeric is a crop which stands on the ground for about eight months, and it is very often dug up in the ninth month. The average number of floodings it takes is never less than 25, and, considering that the charge on an acre of garden ragi, taking, perhaps, about a dozen floodings, is Rs. 3, Rs. 4 per acre on turmeric seems unnecessarily too low. Compared to other crops, moreover, turmeric is certainly more remunerative, and I have come across an instance where a crop on about 80 cents went for as much as nearly Rs. 300 this year. It may, perhaps, be argued that, although standing on the ground for a longer time than paddy, turmeric takes on the whole less quantity of water than paddy and that Rs. 4 is therefore an appropriate rate for it. But if this argument is to be admitted in the case of turmeric, it will have to be admitted in the case of all other crops; and there being in fact no other wet crop taking so much water as paddy, the 6-rupee rate may have to be done away with

altogether. I beg that, in these circumstances, the question of raising the rate for turmeric back to Rs. 6 may kindly be considered.

66. In addition to the other proposals made by me in the foregoing paragraphs, I think it would be well if Tahsildars of canal taluks are distinctly made to understand that their claims for promotion will be taken into particular consideration if they exert themselves and bring about an extension of irrigation and increase of canal revenue in their taluks, and that, if they show themselves indifferent in canal matters and thus allow irrigation to fall, they will incur the severest displeasure of the superior authorities and lose all chances of promotion.

67. In his letter, No. 1000, dated 19th February 1891, embodied in Board's Proceedings, Mis. No. 1070, dated 6th March last, Mr. Johnston, the Executive Engineer, suggests that, in the case of garden crops (class 2 of Madras Irrigation and Canal Company's rules) ryots may be allowed to pay one rupee for a flooding and Rs. 3 as a maximum for any number of floodings, and this suggestion has been supported by the Collector of Kurnool. It will, however, be observed by reference to the old Company's rules, that, in drawing a general line of distinction between the second and third class crops, second-class crops are defined as those requiring *frequent* floodings and third-class ones as requiring *occasional* floodings; and in drawing up the new scale of water-rates sanctioned in paragraph 1 of G.O., No. 448 I., dated 6th June 1882 (Public Works), the third-class crops seem to have been included in dry crops, for which the rate is already given as Re. 1 for flow and As. 12-0 for lift. I think that, in the above circumstances, crops taking only one flooding cannot justly be brought under the category of "garden crops" and, if this view is correct, Mr. Johnston's suggestion must be superfluous. In fact, such a distinction is already being observed in some places under the canal,—take for instance the case of ragi crop in Yetur in the Cuddapah taluk in fasli 1299 which was charged at Re. 1 per acre. No doubt, to find out exactly how many floodings a ryot has taken for his crop is always a difficult task, and we cannot always rely upon a karnam for correct information on the point; but, with the additional supervision proposed, I am confident that cases of "frequent floodings" can easily be distinguished in future from cases of occasional floodings.

68. If a special revenue officer is appointed on the canal and if the other proposals made in paragraphs 63, 64 and 65 are also sanctioned as far as may be found reasonable and unobjectionable, I think we may safely calculate upon the canal becoming more than self-supporting and upon the forecast given below being realized, say, in the course of five years.

	Rs.
Average annual revenue for the last 11 years down to fasli 1298 (1888-89)	72,000
Lowest increase that may result from reduction of water-rate for "Mundla" (tailed or coarse) paddy to Rs. 2 per acre	5,000
Increase that may result from proper and punctual supervision consequent on the appointment of a special revenue officer and the assignment of separate revenue inspectors for canal work	15,000
Lowest increase that may result from instruction and encouragement to ryots and attention to ryots' wants by the special officer and from removal of the other causes enumerated	10,000
Minimum income from the Chopad project, if the channel applied for, which is comparatively a cheap one, can be given	38,000
Total increase that may safely be expected by the end of the fifth year	68,000
Grand total, including existing average annual income	1,40,000

It may not be out of place to add that, in preparing the above forecast, I have taken care to be as moderate as possible, so that the real figures by the end of five years after the appointment of a special officer may even be more than the estimate. The canal which is hitherto being worked at a loss may thus be expected to become more

than self-supporting in the course of a few years, Mr. Johnston's intention being to keep annual expenditure on the canal below Rs. 1,00,000 in future. The estimated outlay for 1891-92 seems to be something like Rs. 93,000.

I see that in paragraph 3 of its Proceedings, No. 216, dated 24th April 1890, the Board in the Land Revenue Department remarked that "the experiment of a special officer has been already tried and that it was not very successful," but I beg to submit that, as far as my knowledge and inquiries go, the special officers that sat on this canal before hardly did anything in the way of inspection and check of fields, instruction and encouragement to ryots, grant of extensions of existing channels wherever really required and investigation as to whether there are any neglected localities under the canal really promising extension of irrigation if channels are given. Having seen the villages involved in the new Chopad project, I am really surprised how this quarter escaped the attention of the former special officers if they had really extension of irrigation under this canal in their aim. It is also matter worth consideration that, although there were special officers on the canal before its transfer to Government, there have been none appointed since its transfer and since additional facilities have been afforded to ryots by reduction of rates and by the grant of other concessions. The special officers that were on the canal before seem to have done more in-door work and very little of out-door work, confining their main attention to figures placed before them by Revenue Inspectors and company's amins and to their check arithmetically. The special officer, I propose, however, will be expected to do lots of other work as detailed in the foregoing paragraphs.

69. As desired in the latter part of paragraph 4 of Board's Resolution, No. 325, dated 24th October last (Revenue Settlement, Land Records and Agriculture), I beg to submit herewith, a statement (enclosure. No. 6) in which I have attempted to show villagewar as much information as I could collect from the village and taluk officers and from general investigation in regard to (1) the total area, (2) area under occupation and in fasli 1299 (1889-90), (3) total *irrigable* area, (4) areas irrigated in fasli 1299 and in the preceding years, (5) areas dealt with under the block and cowle rules, (6) cause of non-extension of irrigation hitherto, and (7) prospects of future extension; and although it is very much to be regretted that the information furnished by the Tahsildars of Nandyál and Sirvel is meagre and imperfect, I hope the statement will be found at least of some use. Columns are left blank wherever information could not be got from Village Officers or Tahsildars.

70. I will be wanting in my duty if I close this report without expressing my entire satisfaction at the care and attention with which the Revenue Settlement classifier P. Venkatrayudu and clerks R. Yegnarama Iyer and after him Anantakrishna Iyer, B.A., have done their work under me. Having had to be almost always on the move with me during the cold and hot seasons, in both of which extremes generally prevail in the tracts commanded by this canal, they have really had a hard time of it, but they all bore it patiently and well, and I hope their hard work will not be left unrewarded. I feel particularly sorry that a graduate of Anantakrishna Aiyar's intelligence and attainments is so low in the ladder of public service.

71. I regret the lengthiness of the report, but I have the consolation of having stated all that I thought important and relevant and touching the question referred to me.

READ—also the following letter from C. KOUGH, Esq., Collector of Kurnool, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 9th July 1891, No. 3074 :—

I have the honour to forward the report* of the Deputy Collector on special duty, Kurnool-Cuddapah canal.

* No. 174, dated 30th June 1891, with six enclosures.

2. In doing so, I do not make any attempt to discuss it in detail for this reason. The perusal of the report

Mr. R. not fitting this special officer. appears to have given up all water in the matter - as did all his subordinates.

convinces me more decidedly than ever that the appointment of a special officer for some period to superintend agricultural operations under the canal is essential as originally recommended by me.

3. When I made this proposition, it was considered that an investigation like that concluded by this report was appropriate to determine whether or not the proposition should be adopted. If the Board agrees with me, upon reading the report, that a sufficient case has been established, it will doubtless recommend the appointment.

4. The several measures recommended as remedies, administration and distribution of staff, &c., are all details dependant more or less upon the creation of the special appointment, and I have therefore not thought it of any use to attempt to discuss them apart from it.

5. I entirely concur with the Deputy Collector in believing that past experience shows it is hopeless to expect results such as he prognosticates from the ordinary taluk supervision; quite true it is that theoretically this is responsible that all should go properly, but in practice it is not to be attained from officers whose hands are so full of multifarious duties. Especially is this the case in two important particulars. No Tahsildar can be expected to exhibit a sufficient amount of zeal for development of this one special work of the many he has to deal with, nor can he be supposed to have the knowledge or time to impart it, as to matters of agricultural education, a very essential feature of development.

6. I do not mean to say that when affairs under the canal have once been established upon a widely improved system of administration it will be unreasonable to insist that this be afterwards maintained by the ordinary administration. But I do think that the special agency is necessary and now and that by this practical test it can alone be shown whether or not all the theory started and figures assumed will arrive at a solid outturn. I believe myself the experiment would be eminently satisfactory and remunerative and worth all the writing and statistics that could be ever collected upon the subject. Moreover, if effect is given to the Deputy Collector's proposals for reduction of present establishment, there will be savings apart from the expected increase of revenue to set against the cost of temporary establishment.

Read—also the following endorsement by F. D'A. O. WOLFE-MURRAY, Esq., Collector of Cuddapah, dated Vontimitta, 15th July 1891, Disposal No. 2790-Ver.:—

Forwarded. I have no special knowledge of the canal in this district yet as I have been here so short a time, and that not in the canal season. I purpose a trip thereon when other engagements allow of it. The remarks of the Special Deputy as to the abolition of the canal superintendents seem just. But I would give each taluk in this district a special canal Revenue Inspector, and he should do none but canal work. Even so one man would have 27 and the other 22 villages to look after, which is a proper size of firka.

I do not recommend the Deputy Collector's suggestions regarding the karnams.

I would impose at least one and a half rates or even double on all irrigation without application.

I would certainly give the village officers a percentage of profit on all future increase on irrigation at least for a fixed term of years. The idea of a special revenue officer in charge of the canal for at least five years is good. It is he that must impress the ryots with the necessity for cultivating in June and July, and for using the canal silt to fertilise their lands. In the hot weather he might take a selection of ryots from each village to the Kistna and Gódavari canals and let the ryots learn with their own eyes and ears how things are done there, and that in Kistna at least all the paddy soil is regada soil.

As to the remarks in paragraph 39, about the refusal of the block of soil with trees, I have looked into it; they are the only trees in miles of country and must remain. The cure for saline efflorescence is in Kistna constant floodings given free of charge till the "reh" disappears. This should be done here. I prefer the second system advocated by the Deputy Collector regarding canal supply to tanks.

I think endeavours should be made by offers of land free for a period of years to induce some of the Kistna ryots inhabiting the overcrowded villages of the western delta to come and settle on the canal. There is an enterprising man at Vetapalem in Bapatla taluk. I cannot recollect his exact name. I think it is P. Seshachellum Naidu. He is a Public Works Department contractor and member of the Taluk Board; he is well known to all the chief officials in the district.

He might be offered 500 or 1,000 acres on favorable rates and select his own ground. This canal is at Nandyal now in close touch with the head of the Kistna western delta, and an enterprising and energetic man could manage his property under the canal from the latter, seeing that he has the railway at his gates.

Read—also letter from the Collector of Kurnool, dated 25th July 1891, No. 3516, reporting, with reference to Board's Proceedings, Mis. No. 407, dated 27th January 1891, that there are no grounds for punishing certain karnams of canal villages for alleged omission to charge water-rate, and that a Standing Order directing that all cases of wet cultivation under the canal should, in the first instance, be charged has been issued.

Read—also letter from the Deputy Collector of Adóni Division, dated 31st July 1891, No. 467, submitting a statement showing the area of lands irrigated by the Kurnool-Cuddapah canal and the water-rate derived thereon in the five faslis from 1296 to 1300.

Read—also letter from the Collector of Cuddapah, dated 27th August 1891, Dis. No. 3687-Ver., reporting the area grown with Mundla paddy in the taluk of Jammalamadugu.

Read—also letter from the Collector of Cuddapah, dated 13th September 1891, No. 3951-Ver., reporting that an extent of 13 acres has been grown with Mundla paddy in the village of Kanagudur, Proddatur taluk, in fasli 1300.

Read—also letter from the Collector of Cuddapah, dated 8th September 1891, Dis. No. 3853-Ver., submitting two statements, one showing the area irrigated under Kurnool canal and the amount charged for fasli 1300, and the other showing how much of the area brought to notice by the Special Deputy Collector has been charged, with reasons for not charging the rest.

Read—also letter from the Collector of Kurnool, dated 12th September 1891, No. 4467, requesting early orders on his letter No. 967, dated 7th March 1891, recommending reduction of water-rate on Mundla paddy grown under the Kurnool-Cuddapah canal.

Read—also statement from the Collector of Kurnool, dated 3rd October 1891, No. 4776, showing the area irrigated and the amount charged for fasli 1300 in each village under the Kurnool-Cuddapah canal.

Read—also letter from the Collector of Kurnool, dated 16th January 1892, No. 417, stating the further extent and amount of water-rate charged in Nandyal and Brapukodur villages, Nandyal taluk, in continuation of his office statement No. 4776, dated 3rd October 1891.

RESOLUTION—dated 25th May 1893, No. 204.

Government having decided,* that an inquiry should be made by a Special Deputy Collector into the causes of the increase of irrigation under the Kurnool-Cuddapah canal and into the possibilities for its further extension, † appointed to the duty M.R.Ry. K. Subbarayadu, whose comprehensive report is read above. The

Collector of Kurnool, through which district the canal passes from north to south, forwards the Deputy Collector's report with the unsatisfactory remark that he does not attempt to discuss it in detail, because the Deputy Collector agrees with him in recommending the appointment of a special officer to superintend agricultural operations under the canal. Considering that the Deputy Collector's report, which Mr. Kough allows to pass unchallenged, reveals a condition of things which the Board is constrained to characterise as discreditable to all the revenue officers concerned, it is a matter for surprise that it should have elicited no rejoinder from the Collector, who, as the head of the district, is responsible for the proper administration of the affairs of the canal. While as to the proposal to appoint a special officer to take charge of the canal, the Board may say at once that no necessity for such an appointment is made out.

2. The Collector of Cuddapah also approves the proposal to appoint a special officer and makes certain other suggestions with a view to encourage the extension of irrigation under the canal.

3. The increase of irrigation under the canal in 1888-89 was due, as explained in Board's Proceedings, dated 24th October 1890, No. 325, to improved demand for water owing to deficient rainfall and to temporary reduction of the charge for water sanctioned in G.O., dated 14th September 1888, No. 658, which led to a large increase in the area of dry crops irrigated.

4. The Special Deputy Collector entered on his duties on the 18th October 1890.

Years.	After opening.	Area irrigated.
First period—		ACS.
1863-64		18
1864-65		192
1865-66		816
1866-67		1,398
1867-68		1,138
1868-69		1,078
1869-70		1,164
1870-71		1,516
Second period—	After completion.	
1871-72		7,536
1872-73		9,405
1873-74		13,355
1874-75		13,408
1875-76		14,763

Years.	After the famine.	
Third period—		
1878-79		18,361
1879-80		18,655
1880-81		18,001

Years.	After transfer to Government.	
Fourth period—		
1882-83		17,834
1883-84		19,075
1884-85		21,572
1885-86		20,956
1886-87		21,958
1887-88		21,851

Year of special Deputy Collector's investigation.

1890-91		24,843
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1891-92 (famine year) 73,523

He marched over the whole length of the canal, visiting 133 out of the 168 villages commanded by it, and inspected the land and crops in all important villages, collecting much valuable information by personal observation and by local inquiry. He has carried out his duties in a thorough and satisfactory manner.

5. As the Government is aware, the canal was opened for irrigation in 1863-64, but was not completed till the year 1871-72. It was under the management of the Irrigation and Canal Company up to 1882-83, when it was taken over by Government. For easy reference, the total areas irrigated from year to year are noted in the margin, † under the four well-marked periods of development which the figures indicate. The famine year—1876-77—and the following year have been omitted, as the areas irrigated in those years—90,000 acres and 51,000 acres, respectively, were exceptionally high, as also the years 1881-82, 1884-85 and 1888-89, which were years of partial failure of the rains. The total area commanded by the canal

Fasli.	First crop.	Second crop.	Total.
1299	ACS. 18,722	ACS. 3,129	ACS. 21,851
1300	20,588	4,260	24,843
Difference ..	1,866	1,131	2,997

is 321,515 acres, of which distributaries have been provided for 160,000 acres. Compared with the previous year, the area irrigated in fasli 1300 (1890-91) shows an increase of nearly 3,000 acres as shown in the margin. This increase was due chiefly to the exertions of the Deputy Collector in bringing to light surreptitious

irrigation and partly also to the unfavorable character of the season in Cuddapah, in consequence of which the ryots made use of canal water more freely than the year before.

6. The Deputy Collector discusses in detail what he regards as the main causes which stand in the way of the extensive use of canal water. For the most part these causes have been discussed before, but besides those assigned by the Deputy Collector, the Board is disposed to think that the unwillingness of the ryots to extend the cultivation of paddy may be due to the fact that the sub-soil is of a character which renders drainage imperfect. In this respect the geological formation of much of the country commanded by the canal differs from that of the Kistna delta.

7. But after making all reasonable allowance for physical defects and other causes which operate to retard the development of canal irrigation, it is evident, from what the Deputy Collector has brought to light, that the two potent causes of stagnation are the indifference of revenue officers generally and the corruption of the subordinate officials. Owing to the former, large areas which might be irrigated are still left waste or cultivated with dry crop, and, by reason of the latter, large quantities of water are used and not paid for at all. This is illustrated by the sketches, which form Enclosures II and III of the report.

8. The special inducements held out by the Canal Water-rate rules with a view to attract capital have not met with much success, the areas taken up under the block and cowle systems amounting to only 7,533-22 acres, of which 2,818-52 acres have already been relinquished as shown below:—

Taluk.	Block system.			Cowle system.			Total.		
	Taken up.	Relinquished.	Retained.	Taken up.	Relinquished.	Retained.	Taken up.	Relinquished.	Retained.
1. Ramallakot	2,253-63	1,526-89	726-74	27-83	..	27-83	27-83	..	27-83
2. Nandikotkur	..	..	..	101-48	..	101-48	2,353-11	1,526-89	826-22
3. Nandyal	..	..	..	172-81	2-0	170-81	172-81	2-0	170-81
4. Sirvol	2,168-65	884-95	1,283-70	173-67	..	173-67	2,342-32	884-95	1,457-37
5. Jammalamadugu ..	147-86	..	147-86	37-35	1-0	36-35	185-21	1-0	184-21
6. Proddatur	455-41	393-49	71-92	246-28	20-19	226-09	701-69	403-68	298-08
7. Cuddapah	139-80	..	139-80	1,608-45	..	1,608-45	2,507-67	..	2,507-67
Total	6,166-35	2,795-33	3,371-02	2,367-87	22-19	2,345-68	7,533-22	2,818-52	4,714-70

The size of the blocks to be taken up for cultivation has, however, lately been reduced (Board's Proceedings, dated 4th September 1890, Mis. No. 3631) and with the facilities now afforded by the Bellary-Kistna Railway, which passes through the centre of the district, it may be hoped that a larger area will be taken up in the future. With a view to attract the capitalists of Kistna, Mr. Wolfe-Murray, Collector of Cuddapah, has issued a notice inviting them to take up land under the cowle system and the Collector of Kurnool also has been asked to issue a similar notice.

9. There are 163 Government and 5 shrotriem villages under the canal, Patha Cuddapah shown in the statement received with the Collector's letter, No. 3883-Ver., dated 8th September 1891, not being included in the Deputy Collector's list. Of these villages there is no room for improvement in 57, as they have no suitable land, and in the remaining villages the Deputy Collector considers improvement possible, in most cases, if better supervision be provided, and the ryots be instructed in the manner alluded to below. The total extent under cultivation in these villages is 259,042 acres and the total number of plough-cattle 18,000, which gives an average of

nearly 29 acres for each pair, an area which is undoubtedly high even for dry cultivation, and wet cultivation would require a much larger number of cattle. In the same villages there is a total extent of 65,500 acres of unoccupied waste, a portion of which could be brought under irrigation of the canal, but what this area would be the Deputy Collector has not estimated. He merely says that "some extension" is possible in 64 villages, while in 45 more "extension" and in 2 others "good extension" is said to be possible.

10. The Deputy Collector points out that there is some doubt amongst the ryots as to the conditions governing the compounded double-crop charges for water. This matter should be explained by the local officers to the ryots, as the Government neither desires nor attempts to control the manner in which the ryot crops his land, but merely charges the double-crop rate in cases where water is taken for two crops.

11. The suggestion that timely warning should be given to the ryots every year as to the date on which the canal will be closed, will be brought to the notice of the Public Works Department.

12. In paragraph 31 of his report, the Deputy Collector adverts to what has no doubt much to do with the general failure of the canal, viz., that some of the existing distributaries have been cut simply because they promised to command large areas, but without reference to the suitability of the soils, the ability of the people to carry on wet cultivation, or to the adequacy of the means of the ryots, or their inclinations in this respect. In several cases channels have been provided where the people do not want them; in others they are not provided where they are wanted. In Enclosure IV of the Deputy Collector's letter, he gives cases where the ryots have expressed themselves willing to use the canal water, amounting in all to a total area of 5,869 acres, but of this no less than 4,000 acres relate to what the Deputy Collector describes as the Chepad project, which he strongly recommends. Under the proposed channel, the ryots promise to irrigate 4,000 acres at the beginning and to double that area in the course of five years. It appears from the Cuddapah Collector's letter, No. 3325, dated 8th August 1891, that the Executive Engineer has ordered the preliminary levels to be taken and that the project will be taken up after the execution of two others already on hand, viz., the Maidkur and Patha-Cuddapah projects, expected to irrigate, respectively, 4,000 and 2,500 acres.

13. Another cause which the Deputy alludes to, in paragraphs 36 and 37 of his report, as interfering with the success of the canal, is the present system of water-distribution by means of the Superintendent and lascars of the Public Works Department in the case of channels irrigating more than one village. This plan, he says, does not work satisfactorily and he proposes to transfer the work to munsifs under the orders of the village munsifs. The proposal does not appear to the Board well-considered, as it appears essential, in the case of channels irrigating more than one village, that distribution, as between villages, must be entrusted to a disinterested party, which the munsif of neither village concerned would be.

14. In paragraphs 38 and 39 of his letter, the Deputy Collector makes certain proposals for the disposal of cultivable lands included in the Public Works Department classes A and B, or in forest reserves. The Collector is competent to grant such of the A and B class lands as may not be wanted for canal purposes, for cultivation, subject only to the condition that they should be given up when required. The Deputy Collector's statement No. VI specifies, however, only four villages as containing A-class lands likely to be irrigated under the canal, all situated in the Ramallakot taluk, in which most of the land commanded by the canal is under irrigation, and there is little room for extension generally. With regard to cultivable land included in forest reserves, the Collector must decide whether it is desirable to accept any applications, which may come before him, and in the event of his accepting any such applications, he will of course take such further action as may be necessary.

15. Paragraph 53 and 54 of the Deputy Collector's report deals with the present kistbandi in its relation to the canal water-rate and cesses thereon. There are now four kists or instalments commencing from December, though the paddy crop is not harvested till the latter part of that month in Kurnool, while in Cuddapah the harvest

takes place even later. The proposal to reduce the kistbandi to three instalments—beginning with January—for wet crops under the canal has the Board's approval.

16. In his letter recorded in Board's Proceedings, No. 1070, dated 6th March 1891, Mr. Johnston, Executive Engineer for the canal, recommends that the water-rate for garden crops—class 8 of the canal scale—should be reduced from Rs. 3 per acre for any crop to Re. 1 for a single flooding with Rs. 3 as a maximum charge. Although it is perfectly true that these garden crops require far less water than paddy, yet the practical difficulties in the way of registering whether a crop is frequently or occasionally flooded are great. The Board is not disposed therefore to make any reduction in the present rate. As the rules now stand, garden crops under the canal are more favorably charged than under other irrigation sources where they pay the same rate as a paddy crop.

17. In paragraph 65 of his report the Deputy Collector objects to what he considers the inadequacy of the charge for water for turmeric, viz., Rs. 4 per acre, on the ground that the crop is a very valuable one and that it takes far more water than does a garden crop of ragi. The question was fully discussed in the papers printed in Board's Proceedings, dated 24th March 1886, No. 718, and the Board sees no reason to re-open it. It is impossible to differentiate the charge for crops with reference to the quantity of water supposed to be used in each case, but considering that the charge for sugar-cane, which requires more water and for a longer time than turmeric, is Rs. 6 per acre, the present charge of Rs. 4 for turmeric seems a fair one.

18. In the taluks of Sirvel, Nandyal and Nandikotkur, *mundlavari*, a coarse kind of paddy, is largely cultivated. This crop evidently does not require as much water as an ordinary crop of paddy, as it may even be raised with the aid of the falling rain alone, but it is said generally to require some floodings after the third month of its growth. The Deputy Collector contends that, though the ryots often allege that the crop matures by percolation or merely by rainfall, this cannot happen unless the land concerned is either on a low level or at the foot of hills; but the Collector of Cuddapah in his letter No. 1460 Ver., dated 27th April 1891, states that the crop does generally grow by the aid of falling rain and percolation from an irrigation source, and Mr. Clogstoun satisfied himself by personal enquiry (Board's Proceedings, dated 17th December 1890, No. 5055) that there is no doubt that the crop can be raised by the aid of the falling rain. The reports of the Collectors give the following areas of *mundlavari* in fasli 1299:—

Taluk.	Under the canal.	Under rainfall.	Under Government or other sources.	Total.
<i>Kurnool district.</i>				
1. Nandikotkur	100-99	1,142-19	298-16	1,539-34
2. Nandyal	240-70	3,993-78	112-12	4,346-60
3. Sirvel				
<i>Cuddapah district.</i>				
4. Jammalamadugu		200-42		200-42
5. Proddatur		13-0		13-0
Total	341-69	5,349-39	410-27	6,101-35

19. The Deputy Collector recommends that the charge for *mundlavari*, when irrigated, should be reduced from the present rate of Rs. 4 per acre to Rs. 2 per acre. This rate is also acquiesced in by the Collector of Kurnool, but the Collector of Cuddapah thinks that a charge of one rupee will be fair. Seeing that the crop, according to the Deputy Collector's showing, requires more water than an ordinary dry crop, the Board considers that Rs. 2 per acre will be a fair charge and the sanction of Government to this rate is requested accordingly.

20. Adverting to paragraphs 55 and 56 of the Deputy Collector's report, the Board considers that in regard to further charge no distinction should be made between lands classed as wet and those classed as dry but practically irrigated, and it is of opinion that no charge should be made for third crops in any case.

21. Referring to paragraphs 57 and 59 of the Deputy Collector's report, the Board is not prepared to recommend such a rule as that proposed. When two or more crops are sown mixed and irrigated together on the same land, the charge must be regulated according to the crop longest irrigated, and not by each crop though harvested at different times. In the case under reference the indigo is irrigated longer and the irrigation of the ragi is covered by it; and the only charge that should be made is the water-rate prescribed for one crop (garden).

22. From the Deputy Collector's statement No. I, it appears that he claims to have discovered 3,619.65 acres of surreptitious irrigation not brought to account in 78 villages. This area differs from the total 2,965.4 acres given in the statements received with the Collector's letters noted on the margin. The areas reported by the Deputy Collector, by the Collectors and those finally charged by the jamabandi officers appear as follows:—

Taluka.	As per Deputy Collector's statement.		As per Collector's statements.		As finally charged at jamabandi.	
	Number of villages.	Area.	Number of villages.	Area.	Number of villages.	Area charged.
1. Ramallakot ..	5	125.16	5	125.16	5	125.16
2. Nandikothkur ..	11	294.04	4	158.95	4	158.95
3. Nandyal ..	7	384.26	7	157.06	6	50.88
4. Sirvel ..	12	549.89	12	491.00	8	163.78
5. Koilkuntla ..	2	6.02	..	..	..	..
6. Jamunalamadugu ..	2	45.00	2	41.16	..	..
7. Proddatur ..	21	618.98	19	587.03	19	577.99
8. Cuddapah ..	18	1,629.30	19	1,408.04	17	1,115.03
Total ..	78	3,619.65	68	2,965.40	60	2,197.69

The inclusion of the shrotriem village of Krishnapuram in the Collector's statement has raised the number of villages in the Cuddapah taluk by one, but the other differences are unexplained. Of the area reported by the Deputy Collector, only 2,197.69 were charged by the jamabandi officers for fasli 1300, and the rest was not charged for reasons given in the Collector's statements above referred to. The area charged in 41 out of the 59 villages ranged from 2.73 to 50 acres, in 15 others it was between 50 and 100 acres, and in two of the remaining three cases it was between 100 and 200 acres, and in the third case as much as 234.47 acres.

23. The Deputy Collector proposes the following innovations:—

(a) That an extra charge of 1/4th more than the ordinary water-rate should be imposed on irrigation surreptitiously carried on without previous application. A provision of this sort was contained in the old rules, but was omitted from the revised rules of 1882. The Board, in view of the facts now brought to light, would revive this penalty, making the penal rate 1 1/4 times the single charge. Nothing but demoralization of the ryots results from the existing rule.

(b) That munsifs and karnams should be encouraged to develop irrigation by fees of 4 pies and 8 pies respectively per acre of increase. The Board disapproves of this suggestion. There is no reason for paying officers a reward for doing work which it is their duty to do.

(c) That a new register for lands irrigated by canal water be maintained by the karnams. Upon this the Board observes that the village accounts contain sufficient forms for the record of irrigation and that what is wanted is not a new form but scrutiny of village accounts by the Inspectors and other superior Revenue officers. If the Cultivation account No. 1 and the tirvajasti (water-rate) account No. 6 be regularly maintained, nothing more is needed, but in the latter account separate pages might be set apart to show all canal irrigation.

Enclosure V to report.

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24. Apart from the new projects * in contemplation, the Deputy Collector thinks that, with proper supervision, the revenue under the canal might within five years be raised by Rs. 25,000 and that by lowering the water-rate on *Mundlurdi*, a further increase Rs. 5,000 might be secured.

* Chopad, Maidkur and Patha Cuddapah.

25. The Board has indicated above those of the Deputy Collector's suggestions which it would be disposed to adopt and has deprecated the foremost of them, namely, the appointment of a special officer to take charge of the canal revenue. The Collectorate of Kurnool is notoriously one of the lightest charges in the Presidency and the supervision of the canal lands and the collection of the revenue accruing therefrom form an integral part of the duty of the Revenue officers of the district. That this part of their duty has not been efficiently performed in the past is evident from the report now under consideration, but the Board cannot admit for a moment that this circumstance affords grounds for relieving these officers of their responsibility for the future. One Tahsildar—of Nandyal—of a canal taluk has lately been relieved of magisterial work, and if those of other taluks have still to discharge magisterial duties it is because, their charges are not unduly heavy. It may be admitted that there is no immediate prospect of making the Kurnool-Cuddapah canal a financial success, but if the Collectors of the two districts will determine to interest themselves in its development and will insist upon the exhibition, on the part of their Divisional officers and Tahsildars, of a certain amount of energy in encouraging the ryots to use the water available and in the repression of fraud on the part of the lower subordinates, the Board sees no reason to doubt that a great improvement may be effected and the revenue increased at least up to the estimate framed by the Deputy Collector.

26. In conclusion, the Board desires to express its appreciation of his report and of the satisfactory manner in which he has performed the work entrusted to him.

(A true Copy as per Secretary.)

Secretary.

To the Secretary to Government, Revenue Department, with six enclosures in original. Sent by packet post.

" Collector of Kurnool of Cuddapah.
" M.R.Ry. K. Subbarayadu Garu.
To the Deputy Director, Land Records.
" Chief Engineer for Irrigation.
" Secretary to the Commissioners of Land Revenue.

Exd. A. Grubert.

REVENUE DEPARTMENT.

1893.

Board of Revenue

(Revenue Settlement, Land Records
and Agriculture).

MADRAS.

Printed June 11th.
No. 24

Proceedings, 25th May 1893, No. 201.

Submitting to Government, with remarks, the
Special Deputy Collector's report on the result of
the enquiry ordered to be held in G.O., dated 17th
September 1892, Mis. No. 5582, Revenue Depart-
ment, into the causes of the sudden increase of
irrigation under the Kurnool-Cuddapah canal and
into the possibilities for its further extension.

REVENUE DEPARTMENT.

Current No. 4724 of 1893

From Board of Revenue, R.S. L.R. & A.

Dated 25th May 1893 No. 204 488

FOR ORDERS.

In his notes of inspection recorded in
f.p. of 20th November 89 No 571-I. the
Chief Engineer for Irrigation remarks
that irrigation under the Kurnool-Cuddapah
Canal was not being properly looked
after & that in the opinion of
Executive Engineer there was a
amount of surreptitious irrigation
on which the S.P.W. Dept's officers were
powerless to check. These remarks were
communicated by f.p. of 7, Jan'y. 90. No. 51
to the ~~Collector of Kurnool~~ ^{Comms Board of Revenue}

Papers and G.O. 11 Sep. 90
No 5562 mis.

In replying to this f.p. the Collector
of Kurnool observed that the only prospect of
irrigation under the canal lay in the ap-
pointment of an officer on
Revenue side whose business it should be
to watch the interests of the canal. To

FOR ORDERS.

for this purpose he proposed that either he should have a personal assistant solely for canal work or that his ordinary personal assistant should also be sent to supervise the canal through the whole of the its course in the district.

The Board was averse to appointing a special officer as the experiment had been tried & had failed when the canal is the property of the Irrigation Com.

It however, advocated the temporary appointment of a Dy Collector on special duty to assist the Collector in an enquiry as to the causes of ^{the recent} increase

in canal irrigation & as to the means of keeping up the increases. The Board thought it might be eventually found expedient to either appoint a special officer or to place all the canal duties under a Sub-Collector or again to leave the task of development to the ordinary revenue agency.

The Govt in the P.W. Deptt agreed

to the proposal to appoint a special Dy Co in the understanding that he was to invest only the area commanded by existing distributaries rather than propose new ones. Mr. R. B. Roy, Holikahapadi Subbrigade, Dy Collector of Admi was appointed to the Special Duty for 6 months from October 1890 when term was extended up to 30 June 1891 with the sanction of the Govt of India. On 30th June 1891 this officer submitted his report through the Collectors of Kurnool & Buddapeh. The report with the remarks

of the forwarding officers appears to have been ready for disposal in the Board's office in October 1891 but the D.S.B. renewing it is dated 25 May 1893 No 204.

Nine months later

The recommendations of the Special Dy Collector will be found at p. 23 of the D.S.B. These recommendations may be considered in detail.

The first suggestion relates to the appointment of a special Revenue officer on the canal. At present the only officer who

devotes any considerable time to the Canal
to the Executive Engineer to whose expertise
the recent increase in Canal irrigation
has been attributed. The Collector of Kurnool,
Mr. Hough, argued that it was necessary
to have on the Revenue side an officer of
equal rank to cooperate with the Executive
Engineer & the Special Duty Dy Collector
arrived at the same conclusion.

1/ The Collector of Luddipat, Mr. W. S. Allaway,
was of the same opinion & recommended a
Special officer for at least 5 years. He
said ~~however~~ ^{however} in disposes of the suggestion
with the remark that there is no proved
necessity for a special officer. It is clear
that the causes which have retarded
the development of irrigation under the
Canal, outside the physical difficulties
presented by the soil, are principally two -
viz. (1) the indifference of revenue officers
generally & (2) the corruption of subordinate
officials. The passages of the report on which
these serious indictments are based

note
The increase was also due to
deficient rainfall in 1888-89 &
in 1891-92

* letter printed at p. 25 of B.P.

para 1 of B.P.

para 7 of B.P.

para 7 to 14 of the
Dy Collector's report

abstract of Mr. Hough's
letter d. 25 July 91 - p. 27
of B.P. 25 May 93.

* para 3 of Mr. Croft's letter
in B.P. 20 May 1890. p. 56 &

are those dealing with surreptitious work.
The Dy Collector appears to have found the
more than 3000 acres which had been irrigated
by direct flow from the canal had not
been included in the Kurnool's accounts
either on the pretext of water having been
~~received~~ ^{received} by percolation or because the
village officers were too careless or too corrupt
to bring the defrauders to book. Of these 3000
acres, the Jamindari officers charged 2197
but even this was a large area & the Kurnool
& Revenue Inspectors responsible should
have been adequately punished. The Collector
of Kurnool however seems to have found that
there was no reason for punishing the Kurnool.
Apparently he was inclined to credit the
plea of percolation as opinions have always
been divided as to how far this plea is
founded on fact.
8/ The expediency of appointing a special
Rev. officer for the canal has been often discussed
but the yearly loss incurred by work
upon the canal even without the surreptitious

the special officer has always stood in
 way of such an appointment. There is
 also the fact that even under a special officer
 the canal has not prospered in past years.
 If it was proved that the Revenue
 Officers were doing their best for the canal
 there would be no doubt be some ground
 for giving them extra assistance, but
 the result of every special enquiry
 for the last 10 years has been that the
 canal work has not been properly
 looked after by the Revenue officials.
 The Board ^{therefore} seems rightly to argue
 that so long as this state of things
 exists there is no justification for
 recommending a special establishment. The
 Divisional officers who have charge of
 the canal taluks are the following:-

Revenue officers	Taluk	Miles of Canal
Dy Collector of Oorapalli	Ramalakota	26
H. Q. Dy Collector Kurnool	Nandikotkur	68
R. Acott Collector Kurnool	Nandiyal	22
	Shivel	40
	Koilkuntla	
H. A. Coler Cuddapah	Prodattur	22
Ass ^{to} Coler, do	Cuddapah	18

[o.g. paras 25-38 of Mr Lister's
 special report u/o. 20 May 80 N° 564.]

Also see map of the
 Canal opposite p. 23 of the
 last admin. Report of 1891
 Paramb (1891-92)

C.O. 20 June 1892. N° 628.

para 17 of the report

37
 (which comprises more than a third of the
 As regards Nandikotkur taluk, for has
 ordered that it should form the taluk
 of the Head Quarters Dy Collector, Kurnool
 that that officer will be able hereafter to
 devote much greater time than hitherto to
 the ^{68 miles} of canal lying in his taluk.
 The other Divisional officers have also
 comparatively light work & the Collector
 might be directed to insist more rigidly
 & systematic supervision of the canal by
 the several Divisional Officers. A comparison
 in the amount of the work turned out in
 the different taluks would serve to measure
 each Divisional officer's work & check
 on the others. At present it is believed
 that except during a famine
 at Jamabandi the Revenue officials
 do not give ^{any} thought about the canal
 & the W. Dept officers are left single-
 handed. ~~It is suggested that~~
 In this connexion the ^{General Officer} Dy Collector's suggestion
 that one Revenue Inspector in each of the
 Canal taluks should be took off for canal

It is well worth considering. The Board overlooked the point but it is a fact that Revenue Inspectors who have other duties to perform are very apt to neglect the Canal Villages - the more so if the duty of looking ^{checking} ~~into~~ ^{the} ~~the~~ irrigation ^{accounts} is supposed by Revenue Officers to be the province of Canal Officers only. It would not be difficult to re-arrange the Revenue Inspectors' firkas as proposed by the Dy Collector. The point might be referred to the Board.

As regards the Village Estab^t, the Dy Collector proposes that the Kamanas should be specially remunerated for Canal work by means of a small commission. The practice of remunerating Kamanas in this way existed before 1882 but it was abolished in that year. (fo. 6 June 1882 No 448.) In the recommendations of the Committee which drafted the ^{present} rules for the management of the Canal after its transfer to the Board.

[para 19 of report - (4th recommendation)
B.P. para 22(6)]

10th recommendation - para 36 of the report.
B.P. para 13

No. 20 of June 1882 permitted the K. to supervise distributories which supplied only a single village: but by fo. 20 Nov 82 No 571 I even these distributories were placed under the P.W.D.

The Bt. of adv^t the situation of the D. & L. super-visor on distributories there they might have been the village. (Para 13)

Recommendations (5), (6), (9), (13) & (14).

5th recommendation - para 20 of the report
B.P. para 23(c)

The Board is not prepared to revise practice of granting special remuneration to Kamanas. Nor does the Board consider it necessary as proposed by the Dy Collector to transfer the work of distributing water from the Canal Lascars to the Village Nizanties. At present all distributories are in the charge of the P.W. Deptt & even the minor distributories which used formerly to be managed by Village officers have now been transferred to the P.W. Deptt. (fo. 26 June 1882 No 448 & fo. 20 Nov 82 No 571). The Board considers that an improved system of distributing water cannot be secured by entrusting the work to Village officers & is not disposed to alter the existing system.

13. Next the Dy Collector makes certain proposals regarding the water rate & the connected matters. He proposes a special form of register to be maintained by Kamanas showing all applications ^{for water} made by ryots. It is

It is assumed that the applications need
 to necessarily be in writing. In 1880
 the District strongly condemned the practice
 of requiring written applications & the
 Members of Govt recorded at length
 their agreement in this view. ^{Special Register of applications}
 The Board thinks a ~~form~~ ^{from 20} is unnecessary
 but it does not appear that the existing
 Village account Manual to which the
 Board refers contains any form for
 registering applications nor does it
 appear how the special penal rate
 imposed by the Board
 can be enforced if there is to be no
 Register of applications.
 A second proposal of the Dy Collector
 on this point is that the taking of water
 without application should be punished
 by the imposition of a penal rate
 at 1/2 the regular rate. The Board
 would enhance this to 1/2 but the
 question is, how do the facts that the
 ryot did not apply for water to be punished?
 If a ryot gets a permit as proposed by

G.O. 20 May 1880. N-564.
 Not at all. Hf

* Cultivation Account N-1.
 * Tirunagari Account N-6. ^{as per}
 [please also see the Dy Collector's remarks, as
 the suitability of these forms] ^{not para}

The B's are wrong - a special
 register of applications (which should
 be kept in writing on
 unsupers paper) is very necessary
 Hf

B's ~~are~~ recommendations - para 18 of report
 B.P. para 23(a)

approved by
 N.B. para 23(a)

Hf

If ~~these~~ as proposed by the Board
 these into being special registers
 of applications, the working of
 the penal rate will be rendered more
 difficult.

101
 the Dy Collector in token of his appli-
 cation having been granted; the absence of permit
 will be evidence of application not
 been made. But the absence of the per-
 mit might be due to other causes & the giving
 of a permit ^{one per} ~~permits~~ open the door to
 exactions on the part of Kamams. It
 is to be feared that in these proposals
 for penal rate, the ordinary means at
 the disposal of Govt for detecting fraud
 have not been kept in view; for it is
 the Kamam that should be held responsible
 when any extent for which water has been
 taken is not shown in the accounts. Except
 cases of fraudulent irrigation such as
 those noticed by the Dy Collector ^{in para 7 to 14} might
 be dealt with under Board S.O. No 4, 11.
 This S.O. provides against the fraud
 complained of sufficiently ^{but} if a separate
 penal rate is enforced it is to be feared
 that the Kamam would only be too ready
 to shift the blame on to the ryot particularly
 when the ryot cannot prove the fact of his

making an application except
except the K. nam.

The next proposal regarding water rate
that the rate for Mundlaware should
be reduced from Rs 4 to Rs 2 per acre.

The Board approves of this proposal
if Mundlaware is largely raised in the
bordered districts & the Board thinks that
it would be still more largely raised if
the rate were reduced. As this kind of
paddy takes less water than ordinary kind
a reduction may be sanctioned.

The remaining proposals of the Dy
Collector regarding water rates are not
approved by the Board. These are

(1) that where three crops are raised
in the year, the third crop should be
charged & (2) that where a crop of
short duration & also one of longer
duration, such as ragi & indigo, are
irrigated, both should be charged. The Board
points out that in the former case the third crop &
in the latter the crop of shorter duration should not be charged.

9th recommendation - para 33 of report
[The special water rates under the Canal
will be found at p. 5 of the appendix to Board's
Standing orders]

See
B.P. para 20
under the 14th

W

Dry

x 13th recommendation para 55 of report
B.P. para 20
Lagan with 2 D. Col. ~~discontinued~~
166 147 ~~discontinued~~
166 147 ~~discontinued~~

x 14th recommendation - para 57 of report
B.P. para 21

Lagan with 2 D. Col.
166 147
22. W

Rule 6 of
v. Rules at p. 6 of appendix
to Board's Standing orders
20 June 1882. No. 448 I.

My very important point
known, when Tanks are
reopened, the water
is not clear & the
S. Col. in Para 47 - + 48
You have put this on 5th B.P. 4 & 48
they are in the office. The D.C. is in the
house. Para 48 is also in 50 & 51
v. that 2nd B.P. 4 & 48
Conceding the R.O. - 2nd B.P. 4 for the quantity of the
Do this? They are in the report and of the Tank
and some tanks are open & the D.C. is in the
the full capacity of the 5th B.P. 4
of the tanks & the 2nd B.P. 4 at 166 & 51
think the suggestion is
in para 57 is better
I think so too
W

x 12th recommendation
B.P. para 5

16
In para 45 of his report the Dy Co.
states that the Canal is not being irrigated
with the full share of the revenue derived
from tanks which have their supply
wholly or in part to the Canal. The
standing rule on the subject is that the
value of water thus supplied by the
Canal should be recovered from the
Revenue at the rate of 1 Re for every
1440 c. 2 ds of water supplied and
credited to the Canal. The Dy Col.
however states that an account of the
water supplied to the various tanks
is being kept & that the Canal
loses much of the revenue due to it
from this cause. The point has not
been adverted to by the Board but
seems to be one for consideration in the
P.W. Dept.
17
In para 53
the Dy Collector proposes
that the first or December Kist is too low
for ryots under the Canal who do not see
their paddy till well on into January &

that three kists beginning with January
should be advisable. The Board supports
the proposal. A similar concession has been
granted to the talukdar in Nellore.

In order to ^{promote} the cultivation
of paddy under the Canal, the Dy. Collector
proposes that ryots should be encouraged
(by free permits) to take silt from the
Canal beds when it is dry & leaves
for manure from reserved forests.
The Board has not considered these
proposals apparently because it is for
the Collector to regulate the issue of leaves
for an manure at any rate below the
maximum fixed for his district.

The S.D. under which the Dy. Collector
was appointed on special duty explicitly
restricted his powers of enquiring to existing
distributors. ^{He has generally complied with}
~~restriction~~ ^{but has exceeded it only} in order to recommend what
he calls the proposed project. The Board
thinks that this project can be dealt with
after the Maidkur & Patalbeddapur projects.

20. 20000. 88. 12724.
— 19 Dec. 89. 121003

* 7th recommendn - para 25 of report.
* 8th recommendn - para 29 of report.

20. 19 Nov. 1886 121008 -
The point is important.

* para 32 of the report. - 200. para 12
may not be - but it
should be considered
14/1

It is good nothing in the
his reasons for
not being out -
24/1

I think so.

115
which are now engaging the attention
P.W. Dept are completed.

20 On the whole it might appear that
investigations of the Special Officer ^{are}
not ^{likely to lead} to any very radical changes
in fact to no changes except the lower
rate to be charged on Mundlavare. The
change in Kistbandi is not likely to
have a pronounced effect immediately on
increasing canal irrigation though probable
it will prove beneficial to some extent.
The appointment of a Special Revenue
is not looked upon with favour by the
a conclusion which is perhaps sound
considering the lightness of Revenue
Changes in the bedded districts & the
imperfect manner in which existing ^{Revenue} ~~existing~~ ^{existing} ~~existing~~
have accomplished their duties in regard
to the development of irrigation systems.
Supervision of the Canal by the Division
officers who have charge of the several
sections should it seems be insisted on
& the Board might be left to frame & rule

which would bring home this duty to Revenue
 officers. The hands of Divisional officers
 at Feroz Pore, there is reason to believe
 will be materially strengthened by setting
 apart one Revenue Inspector for each
 section of the canal comprised in it. It
 should be an integral part of the
 duties of Revenue officers from Revenue
 Inspector upwards to check the irrigation
 accounts kept by the Kharanis & to
 long and course of indiscriminately
 bringing in force the rules regarding penalties
 that any large increase of irrigation
 under the canals, as the result of these
 or any other possible measures, must be
 a work of time seems clear from the past
 history of the canals. Its use as a protective
 work in seasons of distress has been established
 beyond doubt but even if periods of famine
 are not taken into account the figures
 compared at para 5 of Oct 25 May 93
 seems to indicate improvement only gradual
 if not on perfectly straight lines.

This I think is a good suggestion
 by

Not if proper arrangements are made
 for the + proper supervision for each
 section.

1. 177

The facilities offered by the black cotton
 through which a good part of the canal
 to the raising of inexpensive dry crops
 as Yellow Cholum & Cotton, the alarm
 created in the ryots' mind by the appearance
 of saline efflorescences in the wake of
 canal irrigation, the almost total ignorance
 prevailing in the canal districts re
 the conditions of wet cultivation
 are popularly alleged to be
 the obstacles in the

Obstacles to irrigation being adopted
 generally for black cotton soils.

canal irrigation & they are
 which ^{can} yield only to the
 of time & advancing civilization as well
 as to the competition of trade.

The foregoing facts put all
 the points in which order are
 required clearly & forcibly.
 The main question is as to
 whether a special officer
 should be appointed to take charge
 of the administration of the
 Canal Kharanis, with
 duties that the law takes
 in para 25 of the Board
 Report is found that there
 is no necessity whatever for
 relieving the ordinary District
 Officer of his responsibilities.

Cud
 31.7.93

[illegible]

As this is perfectly well known.
I ~~therefore~~ believe it safe
to state that he is very enough
from his own friends of the
Cavalier.

The canals of the frontier
of the Canal are to be
known to require the
at length and I must
the the administration
will have made it pay
The fact is that it has
taken through a country
where it is not wanted
so the rights can give so
- collect dry crops under a
fading rain in years of
normal rainfall it is not
likely that they will go to
the expense of converting
land into wet fields, period
him expensive work re
for - particularly large
returns - That has been
given in part to the
by Columbus Ry. & I think
it is the main reason why
the water has not been let
down extensively. There have
been other reasons - the cost
of construction was altogether
desirable & the water rates
charged by the Company al-
together too high. But
business was not laid out
to the best advantage & little
has been done to consolidate the
rights & to convey them to
take the water. The efforts
of the management have

in ten or twelve years
by lowering the water rates
+ trying to meet the com-
mercial rights but the
mistake of taking
the land through a country
where there are so many
different privileges. We
do admit of remedy.
Still there is no reason why
we should continue to in-
crease the loss which is
now caused by unexpensive
irrigation. Some of the
land cannot be made
to pay. There is no reason
why the utmost return
which can be got out of it
by good administration should
not be secured.

Then I'd like to remind
something like the former. He
is a very good check which
existed when the Canal belonged to
a Company. The Executive
Supt. that he ordered, in the P. O. D. 6
supply and 25% in 1840. as the
Canal him carefully to determine
register with the quantity of water
discharged through the 100 ft.
pieces of the Canal in the year,
it will give a tank which it
is supplied, the P. O. D. 1840. he at
last of 1440 c. yd. per year to
the P. O. D. - the P. O. D. then
show that was done with the
book. -
This is a statement, in the first
place, that all reports showing
water P. O. make application for
it, nothing to give the 100 ft.
it long of time the last bit
to 100 ft. & the other 25 or 26
a piece was in the year -
These applications were P. O. D. 1840.
(the P. O. D. to the P. O. D. 1840.)
Canal will give - in books -
the P. O. D. 1840. in duplicate form and
the P. O. D. 1840. in duplicate form and

I do not appear from the
Special Report submitted Date
1
Sept
1911
that any radical changes
are required or that any
technical changes improvement
of the regulations under which
the Canal is worked is possible.
The Board has not noticed
the proposal in regard to the
alteration of the Revenue
Expenditure range, which seems
a good one. & report on
this point might be called for.
In regard to the other proposals
I think the Board is right.

[illegible]

57
 before settled the known
 and daily to the fact
 of the application and - Each night
 the Inspector of the known
 an abstract of the nature of
 investigation required for each of his
 with a list of the names of the
 required to the Exam. Eng: a
 to the office of the Inspector
 later. The office of the Inspector
 then reports of the Inspector
 require the other of the
 constitute a complete check
 on the work of the known
 the Inspector. The Inspector
 the latter is then supplied with
 at the end of the season on
 on specified dates to the
 office of the Inspector of the
 a list of the names of the
 for the Inspector of the
 in the form of the
 known reports herewith
 on the 5th. The Inspector
 quantities supplied with
 sent. Due at 10. for
 144000: 50.
 This is for the responsibility of the
 to the Inspector. The
 a good deal of the known
 for the Inspector of the
 to the known - but the
 the Inspector of the known
 when both are counted
 the office. The Inspector
 later supplied. The Inspector
 the Inspector of the known
 on the 5th. The Inspector
 on the 5th. The Inspector
 King of the known
 the Inspector of the known
 could be the Inspector
 the Inspector of the known
 part of the known
 of the known: Eng: at the
 being the year 1850. The
 that the Inspector of the known
 the Inspector of the known
 later. Eng: at the

and its recommendations
might be accepted. May
that I am inclined to agree
with the remarks in the of
late as to the necessity for
a special report of ap-
plications for water-works.
As I have no the
present reach date for
taking into view no applica-
tion is to be looked -
The Dr. Com. K. Selwyn
conducted his inquiry with
much care & thoroughness.
His written is a valuable
report. He is entitled to
commendation. It is a
pity that the Board to
of nearly two years to review
the report but perhaps the
need not be waited -
Dr. Gibson seems to have done
a good deal to clear up the
matters in the Southern
Branch.

Ch.
2 August

Puedu
3/0 J.
93

Early association of
points raised in the
report...

On the question of appointing a Special Revenue
establishment I agree with the Board and the
Secretary.

Uls
12 Aug.

4 Para 62

The control of all the coal
distribution, of all the
trucks in the R.R. yards
with the S. T. & C.

The cheap for water for power
'Lundberg' party 0216
Lundberg & Co. 2 for all

3. A thick cap from the
lower V. for water - rate just
as for sand - cap.
trinitite

4. If ~~you~~ ^{you} 2 cups are from
topper K. cup. for water
or ^{only} for the one which
takes the longest time to
heat.

5. Rypts Rite^{re} enounced to
take ill from the canal
bed. when it is dry - for
reasons which are pass
or change.

6. The Gov. R^y consider the possibility
of giving letters for 4 years
for 1/2 day to right for
himself

This appears to be the same money

I think it w^d. be a mistake to entrust these to the
different addies - It would only lead to fighting ^{the}

1 Hw

1460 W

At, W

Yes - but care should be taken that in doing this they do not alter the level of the bed of the Canal. w
 v. para. 25 of the O.C. 14 for: —

149 w

Mr. Wolfe Newman, appears to have issued a circular to the residents in Kirdra, & the Rural Collector has been asked to do the same. I think there can be no objection to diffusing this information as widely as possible - and I think the Board might be asked to report if any good has resulted from the publication of this circular - and if not, whether they would recommend any other plan.

W

7. The Closed project - R. L. Co.,
Gt. Britain & S. A. Co. since
the thing would not.

There is no point in them
 being in "competition" with the
 market & that is the ^{part of} purpose of
 the population in the Dis. imp.
 of the Canal - I don't think any
 action is needed for it in the
 market - It is with the whole
 of people to migrate to them
 Dis. the rich do... & with
 a greatly increased facility of
 communication & easy access
 of visiting the Dis. immigration
 within every body's reach.

10/890 245

Everything connected with the irrigation under this Canal had apparently got into such a tangle, that I think the Dy^l Collector proposed to put a special Canal officer on invite for the purpose of putting matters straight. This should be approved, with the ^{arrangement} suggested. But I do not see any reason for going further than his proposal - approved by the Board, as to the Revenue Inspectors. After 18 months or so he should be in a position to judge, whether he should be kept on beyond two years - and the localities he taken in charge by the ordinary Revenue collectors. The Collector of Ruerool appears to have been extremely dilatory, and to have contented himself with asking for a man to do his own work. If the Collector of Ruerool and Giddapa (previous to Twelfth Murray) had looked into these matters more closely, the condition of affairs wh. is now revealed could not have occurred.

The hon. Mr. Justice's proposals as to country
 & application forms & regulations seem to me
 suitable & might be adopted, if they do not
 entail a larger establishment than approved
 above. Wm. 15 Aug

C No 4724 of 1873

Report on the result of the inquiry into the
causes of the sudden increase of irrigation
under the Kurnool-Buddapeh Canal.

The Hon. Mr. Gairdner C.S.D.
The Hon. Sir H.E. Stokes K.C.S.D.

H.E. Gairdner

Joint Secretary to Govt., P.W.D., Irrig. Branch
for favor of counter initials

59

c. No 4724

For orders

with reference to para 3 of the draft G.O.
orders are requested as to
the Dy. Collr. who should
be appointed as special
Revenue officer in charge
of the Canal. If a Dy. Collr.
of the last grade is selected
the sanction of the Govt.
is unnecessary. Otherwise
a reference has to be made
to the Govt. It is presumed
that the change will be
Provincial. (please see arts.
97 & 98 of the C.S. Regulations).

The Hon. Mr. Gairdner

opinion as to the advisability
of registering the quantity of water
issued from the Canal & checking
it against the quantity used
has not been embodied in the
G.O., as a ^{separately} established
be necessary for this purpose
& H.E. the Governor is ~~indicated~~
to be not in favor of ~~increasing~~

I don't think that either of my colleagues
colleagues were opposed to my suggestion
regarding the D.M. keeping a register of the
water supplied from the Canal. The
did not object to the large increase
of the water supply suggested by me, but
that is another matter. I proposed this
keeping a register of the amount of water supplied
of the Canal as most important as
affording an effective check on the
Dy. Collr. by the Govt., & in the case
of a check, enabling us to get over the
difficulty raised by the Govt. in
his note, as to the inequality of
the water supply & the inequality of the
Canal when part of such revenue was
to be collected from the water.
There is no doubt that such a
system is the best thing
to be done, after making allowance
for the probable increase in the

the estab^o proposed by the
deputy collector

Para 4 (9) of the draft under the
proposal at para 50 of the Dy Col^r
report as to existing the canal
with a part of the revenue under
tanks wh. may draw water from
the work - This arrangement will
certainly work the canal's receipts
but it is of doubtful equity -
This point should have been
referred to by the Board and
I regret that I omitted to do so in
when sending up the Dy Col^r report.
I would now submit that further
information is desirable before
adopting the Dy Col^r proposal -
I happen to know that just before
going on furlough Mr. Koye
sent up to the Board a canal
proposal to ~~break the tank of the~~
Dank ~~with its~~ ^{to keep it in} ~~the~~ ^{the} ~~the~~
canal and ~~to~~ ^{to} ~~the~~ ^{the} ~~the~~
canal runs on land irrigated
~~by the~~ - knowing the Kanayal
tank will I send back a reply

Cud
1993

C. No 4724 of 1893
Report on Kurnool Cuddapah
Canal

my fair statement of the revenue
going due to the canal water supply.
But this other side, being a matter of fact.
It is more a land revenue & is not
as much in the revenue side. It is
not a matter of income & expenditure
in the Canal side but a question
arising. I think a line should be
added to the report directing the
Dy Col^r to arrange for settling the
quantity of water due to the
From orders ^{each village}
^{& tank - then}
^{to the Govt.}

The Hon. Mr. Gairdner C.S.D.
The Hon. Sir H.E. Stokes K.C.S.D.
- ^{see book for further info.}
^{note appended} ^{to the}
20/9/93
Yes if practicable
W.S.
10
225p

61
REVENUE DEPARTMENT.

Current No.
Dated
189
FOR ORDERS.

From

Dated

189

FOR ORDERS.

to the effect that the irrigation
could not be commenced without
full information regarding
such matters as double crop area,
irrigation, ~~irrigation~~ ^{irrigation} ~~the~~ ^{the} ~~the~~
time & place and change of the
settlement Dept of the Bd. too
business had been from the
Govt. - In regard to this large
Kandial Dams by irrigation.
is that in ordinary years it is
independent of any supply from
the Canal, that a good deal
of the land under it is double
crop and that Fossil & Dams
just annually credited to
Land Revenue is not in-
considerable - and it is quite
possible that this may be the
case

a report of the quantity
of water actually supplied
and given to persons
the difficulty

the other tanks wh., like that of
separating, are capable of being
filled by the Canal - If this be so
it would not be fair to credit
the Canal with the work & find
a fair price on lands under
the tanks being on the ground
that they are commenced by
the work - It is submitted that
the proposal of the Dykes Com.
before being adopted, might be
referred for report to the Com.
Kinnock - Cuddasah -

4/9

FOR ORDERS.

Draft 4.6. on
Kinnock - Cuddasah
Canal -

Hon. L. H. G. G. G.
Hon. L. H. G. G. G.

63

63 For orders

A draft of the ~~add~~ new par.
ordered to be added to the 90
is submitted for approval.
Its place seems to be where
the Dykes Remedies in connection
with the Tank Storage difficult
are reviewed. It is thought
that ~~the~~ ^{Hon. members} ~~now~~ ^{intend}
~~to add~~ the Canal to be
credited with the value of
water supplied to tanks
at the rate of Rs. 1. for every
1440 cub. yds (which is the
present rule, though it is
not attended to — vide
Rule 6 of the Canal Rules in
Appendix to Board's Standing Order
no 4.) — instead of as proposed
in para 50 of the Dykes
report. Also, the passage
enclosed in brackets, will
have to be omitted from
para 3⁴ (9) of the draft 90.
already submitted.

Yes

4/11/93

This is I think
the instruction -

As regards the question
whether the sanction of the Govt
will be necessary for the app't

15
a temporary Dy. Collr. on Rs 250,
the authority conveyed in art. 97
of the Civil Service Regulations
is generally been thought
sufficient. ~~and no sanction has been~~
~~sought for any person an officer~~
~~drawing more than Rs 250 per~~
~~month had to be deputed for more than~~
~~six months.~~ If a Dy. Collr. on Rs 250
would be deputed on special duty,
art. 97 of the C.S.R. would apply
no reference to the Govt would
even then be necessary.

~~Nothing is known in the Dept~~
In regard to the question
as to how Temporary Dy. Collrs. are
affected by the constitution of the
Provincial Service, attention is
solicited to para 3 of letter from
the Govt. of India, printed on
page 2 of G.O. 969 d. 17.11.91
and para 3 of letter from the
Govt. of India of September 1893.
It will be seen from these
that the Local Govt. is ^{still} com-
petent to create Temporary
Dy. Collectorships on Rs 250,
without reference to the Govt.
of India.

all right
M

10/10: *Amos*
10/10/92

re Kurnool Addapah
Canal

Print 7/11

The Am. Museum of Natural History
The Trustees, New York City 1000

from orders

C. G. 964

The Secretary to the Board for
of county hospitals with reference
to the same.

Red back in the
mountain, 1944

69

Imaging No 19
G.C.

Read C. No 4724 of 1893

G.O. of Nov. 1893, no 964

With the Pro. read above, the Board of Re-
solves to receive the report of the special Dy Collector
appointed to enquire into the causes of the temporary
increase of irrigation under the Kurnool-Badami
Canal and into the possibilities of securing
further extension of irrigation. The Dy Coll's
report on this important matter is more

279/53
then two years old & has lain for the greater
part of this period in the Board's office.

Subject has been part of this period in the Board's office.
9th day & date relation This delay in treating the subject is much
to his death go. upon is to be regretted. The report also reveals
the condition of affairs which is discreditable
to all the revenue officers concerned & which

I span except the sum about the
appointment of a Special Deputy Atty.
It is laid in the note. That the app't.
if of a man in the lowest grade, is
within the powers of this Govt. I
am not quite sure of this, & wish the
point explained. It seems rather odd
about Temp. D. Atty. - but however
then affected by the constitution of the
Govt. Lewis. Yes

1150
20 Sep

Could not have occurred if the permanent
Collectors of Kurnool & Buddapuz had
devoted more attention to
~~looked more closely into~~ canal matters.

2- The increase of irrigation under the canal in 1888-89 is explained to be due to improved demand for canal water owing to deficient rainfall & to temporary reduction of the water rate ^{both of causes} which led to a large increase in the

area of dry crops irrigated by Canal water.
Except however in exceptional years (like
the great famine of 1876-77 & the lesser
one of 1891-92) the ^{extent of} irrigation under the
canal ^{has been} far from commensurate with its
length & capacity & the greatest extent
irrigated except in the two years mentioned
above is 25000 acres, whereas the canal
& its distributaries are estimated to be
capable of irrigating 160000 acres. The Dy
Collector deals fully with the various causes
which have retarded the extension of
irrigation under the canal & kept down the
revenue from this source. Of the remedial
measures suggested by him which are
summarized in para 4 of his report
the Board has ^{not noticed} overlooked a few to which
attention is drawn below.

3. The inspections made by the Dy Collector
resulted in the discovery of surreptitious
irrigation to a very great extent which
proves that even the revenue which ought
to have been obtained from actual irrigation

69

The sanction is necessary

11/11

11/11

67

3

has not been realized in full owing to want
of proper supervision & enforcement of response.
The Dy Collector proposes therefore the
temporary appointment of a special
Revenue officer who will devote his undivided
attention to the Canal work. The Collectors
of Tumool & Gaddapah are in favour
of this proposal but the Board observes that
the necessity for the appointment of a
special officer has not been made out.
His Excellency the Governor in Council however
is of opinion that in the present state
of things special supervision is absolutely
necessary for a time. [The sanction of the
Govt. will accordingly be sought
for deputing ^{for} this special work an officer
of the Dy Collector's standing ^{will be deputed} for two years
with the estate proposed in para 16 of
the report. The special officer will be required to
submit a report at the end of every six months
it will be decided later on whether the appoint-
ment should be continued beyond two years
& whether the work should be entrusted

tercepted to the ordinary district establishment.
4. The Govt. will now pass orders series in the remaining proposals of the Dy Collector enumerated in para 64 of the report:-

(1) Assignment of canal work alone to one of the existing Revenue Inspectors in each of the six important canal taluks. The Govt. attaches much importance to this suggestion although the Board has not noticed it. Revenue Inspectors who have other duties to perform are very apt to neglect the canal villages - the more so if the duty of checking the irrigation accounts is supposed by them to devolve on canal officers. The Govt. considers that the Dy Collector's proposal should be given effect to at once as it will not be difficult to re-arrange the Revenue Inspectors' firkas as proposed by the Dy Collector in para 17 of his report.

(2) Change of a light penal rate on irrigators without application - The Board has accepted this proposal but has fixed the penal rate

71
instead of at 1 1/2 times the ordinary charge. The Board has suggested by the Board is approved.

at 1 1/2 times the ordinary charge. The Board has suggested by the Board is approved.
(3) Grant of remuneration to Canal village officers on future increase. The Govt. is not prepared to sanction this proposal. It agrees with the Board in considering that there is no reason for paying officials twice over for doing their legitimate work.
(4) Introduction of a proper Dakhkhast Register form. This suggestion has not met with the approval of the Board but the Govt. considers that to enforce the penal rate on surreptitious irrigation it will be necessary to maintain a register of applications for water. The form appended to this order appears to be a suitable one & should be adopted. ^{Copies of the form} It should be printed in duplicate & supplied to the Karmams of canal villages after being ^{first} serially numbered & bound into books. The Karmams should keep the originals & give the ryots the duplicates. A register of applications should be maintained ^{by the karnam} in the same form & shown to the Revenue Inspectors.

(7) Reduction of water rate on "Munda" (coarse) paddy from Rs 4 to Rs 2 per acre. The Govt sanctions this proposal the

by to supply the lands fairly with
canal water and to credit
the canal ^{for} the ordinary years with
all fixed just (water rate on
dry lands) and flexible (water
rate for second crop or single
crop lands) and ^{is} in years of drought
with water-rate at canal rate
on the whole area cultivated.]

with the full share of the revenue derived
from tanks ^{that} ~~which~~ one they supply either
wholly or in part to the canal. He suggests
three different remedies, leaving the
Board to select any one of them but
the Board has not adverted to the point
[The ~~fact~~ considers that the suggestion in
para 50 of the report should be acted

XXHE = * *Power*
more power

4. The Dy. Collector's suggestion that all tanks irrigated or susceptible of being fed by the canal meshould for purposes of charging water rate be treated as first class tanks is also approved. All these tanks should be made over to the P.W. Dept. if they are not already in ^{its} charge.

5. (10) Slight alteration of the existing Kistandi
for as far as the collection of canal water rate
the cases are there is concerned.

The Dy. Collector points out that the first or December kist is too early for the
under the canal who do not reap their crops
until the latter part of that month and
The Board accordingly
proposes that there should be two kists
beginning with January for wet crops
under the canal. This proposal which

is supported by the Board of Revenue
is approved & sanctioned.

(11) Levy of water rate on third crops
(on dry lands irrigated by the canal). The Dy.
Collector proposes that water rate should
be charged on the third crop raised on

75
to come after the 1st of June
has not been added to the
point in para 4 (9)
of the draft G.O.

No. Para 25 6

The existing rule on the subject is that laid down in G.O. 6 June 1882, No. 448.I. (P.W.D.); viz. that the value of water supplied to Govt. tanks of which the natural supply may be deficient should be credited to the canal at the rate of Rs. 1 for every 1440 cubic yards. This rule implies that the P.W. Dept. should keep an account of the water supplied ~~left out~~ from the canal to every such tank. No such account is, as pointed out by the Deputy Collector, maintained at present; but the Govt. considers that it is very important in the interests of the canal to register the total quantity of water discharged from ^{it} the canal for purposes of ^{irrigation} ~~registered~~ ^{register}. Incidentally this ^{register} ~~system~~ will furnish the ~~most~~ ^{best} equitable data for apportioning in an equitable manner the revenue derived from tanks ~~to which~~ ^{to} ~~the~~ ^{also} owe their supply to the Canal: but it will ^{also} serve as a direct check on surreptitious irrigation. Accordingly orders will issue in the P.W. Dept. for the maintenance of a register showing

submitted
2/8
6/11/90
The
2/11/90

the quantity of water ^{supplied} ~~discharged~~
by the canal into each tank
~~for village supply~~

77

77
Dry land when all the three crops are grown
one & the same year & irrigated by canal water
but the Board is not in favour of this proposal.
The fort, however, is inclined to accept
the view taken by the Dy Collector. Where
three dry crops are raised in the year
water rate should in future be charged
on the third crop also.

(12) Levy of separate water rates on indigo
down mixed with rice but irrigated & harvested
sufficiently long after the removal of the
rice crop. This proposal does not
commend itself to the fort. As observed,
the Board water rate should be charged
only for the crop which ^{takes longer} ~~the longer~~ time
to mature.

The Dy Collector adverts to the inadequacy
of the water rate for turmeric which was
reduced in 1886 from Rs 6 to Rs 4 per acre.
The fort agrees with the Board in considering
that the existing rate is a fair one.

5. At para 32 of his report, Dy Collector
draws attention to what is by him called

by a hopak project. He recommends that the project be taken in hand at once & is of opinion that this single project will suffice, if carried out, to make the canal more than self-supporting. The project will be brought to the notice of the P. W. Dept in view to its being carried out on the completion of the Maidkur & Pathalabadi projects now on hand.

6. The Dy Collector advertises at para 62 of the report to the sparseness of ^{the} population in parts of the districts irrigated by the canal. The fact observes that Mr. Wolfson ^{of the Govt of Madras} has issued a circular to the Capitalists in Krishna drawing their attention to the ^{advantages} afforded by the canal irrigation & that the Collector of Tumkur has been requested to do the same. This information should be diffused as widely as possible.

The Board of Revenue will be requested to report the result of ~~the project~~ ^{the project} after a reasonable lapse of time. If it does not prove successful, the Board should consider the advisability of recom-

29
mending ^{some} other plan. His Excellency the Governor in Council desires to place on record his appreciation of the care & thoroughness with which Mr. R. Subbarayudu has conducted his special enquiry as well as of the excellent report submitted by him.

4/4
Ruedel
14/10
9

To the Comr. of R. L. & A. ^{with enclosures}
" Comr. of Land Revenue
" P. W. Deptt (Irrigation).
copy to the Chief General ^{with}
17.93

17/11/93
17/11/93

Appendix

Date	Village	ryot's name	area for which water is wanted	How long wanted	What crops to be grown
1	2	3	4	5	6

C. No 4724 of 1893

Draft f.p. on the report on
the Kurnool-Cuddapah canal

G. Secy 7 Nov 1893 1896

7TH NOVEMBER 1893, No. 964, REVENUE.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 25th May 1893, No. 204:—

Read—again Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 24th October 1890, No. 325.

ABSTRACT.—Issuing instructions regarding the investigation to be made by the Special Deputy Collector in connection with the irrigation under the Kurnool-Cuddapah canal.

Read—the following letter from M.R.Ry. K. SUBBARAYADU, Garu, Deputy Collector on Special Duty, Kurnool-Cuddapah canal, to the Secretary to the Board of Revenue, Revenue Settlement, Land Records and Agriculture (through the Collectors of Kurnool and Cuddapah), dated Kurnool, 30th June 1891, No. 174:—

I have the honour to submit the following report on the special work to which I have been appointed by G.O., Mis. No. 5582, dated 11th September 1890, communicated with Board's Resolution, No. 325, dated 24th October last.

2. I arrived at Kurnool on the 18th October 1890, and obtaining from the Collector the loan of a small establishment consisting of a clerk, an attender, two taluk peons and a mashalchi, marched along the canal from almost its very head down to its end at Krishnapuram, visiting important canal villages, inspecting lands and crops, making investigation of people and minutely observing things connected with cultivation and irrigation under the canal. The inspection of the first crops having resulted in the discovery of surreptitious irrigation to some conspicuous extent, I started from Kurnool and went down the canal a second time, now inspecting second-crop cultivation at all important quarters. There are in all 133 main villages commanded by the canal in both the districts, and of these I have visited as many as 133. P. Venkatrayudu, the classifier deputed to assist me in the inspection of fields, joined me at Nandyál on the 6th December last, and has been working under me ever since.

3. In paragraph 1 of G.O., No. 420-I., dated 6th August 1890 (Public Works), the points to which the special officer should direct his investigation are stated to be two, viz. (a) what are the causes of the sudden increase of irrigation under the Kurnool-Cuddapah canal in fasli 1298 (1888-89), and (b) what possibilities exist for the further extension of irrigation under the canal.

There seems, however, to be hardly any necessity for me to touch upon point (a) inasmuch as the sudden increase noticed by Government has already been explained by the Board in the Department of Revenue Settlement, Land Records and Agriculture in paragraph 3 of its Resolution, No. 325, dated 24th October 1890. The increase was confined to the Kurnool district, and, as pointed out by the Board, was due to deficient rainfall in the year in that district, and to the increase of dry crop irrigation in consequence of the reduction of charge for water for dry crops from one to half a rupee per acre, sanctioned in G.O., No. 658, dated 14th September, communicated with Board's Proceedings, No. 5541, dated 18th September 1888 (Land Revenue). Speaking of season and rainfall, the Collector of Kurnool in his jamabandi report for fasli 1298 (1888-89) remarked:—

"The season was not favorable for agricultural operations in consequence of scanty, partial and unseasonable rainfall, the average being 21.25 inches against 29.76 inches in the previous year. The tank supplies were deficient throughout the district. The drought in October rendered serious scarcity imminent, but the rain which came in the beginning of November removed all anxiety and saved the greater portion of the dry crops."

4. Point (a) being thus disposed of, I now proceed to point (b) which is really one difficult of solution. To arrive at a proper and satisfactory conclusion on this point, it becomes necessary to subdivide it into two heads, viz. (1) what are the causes that, at present, operate to prevent extension of irrigation under the canal, and (2) what remedial measures, if any, are to be adopted in order to remove those causes; and I shall, in the following paragraphs, attempt to set forth the result of my investigation on both the heads.

5. In paragraph 8 of his report, No. 252, dated 15th August 1878, embodied in Board's Proceedings, No. 1370, dated 21st May 1879, Mr. Lister, then on special duty in connection with this canal, enumerated a number of causes as then existing, and contributing to the failure of the canal; but some of those causes do not now exist, while there are others that seem to me to deserve mention. As far as my observation and inquiries go, the following is a list of the causes which now operate to prevent extension of irrigation under the canal, and I give them in what seems to me to be the order of their importance:—

- (a) Lack of proper supervision on the part of taluk and village officers and want of sufficient interest in, and attention to, canal matters on the part of the former.
- (b) Want of instruction to ryots on matters connected generally with the cultivation of wet and garden crops under the canal.
- (c) Lack of manure and its costliness.
- (d) The situation of some of the existing channels in unfavorable localities and the absence, on the other hand, of channels in favorable and promising localities.
- (e) The highness of water rate for "mundla" (tailed or coarse) paddy.
- (f) Want of proper and adequate arrangements for the distribution of water.
- (g) Difficulty felt by ryots at times in getting lands fit for wet cultivation.
- (h) The large amount of bad soil in the commanded lands.
- (i) Difficulty felt by ryots in extending existing channels to their fields in consequence of objections raised by holders of lands higher up.
- (j) Failure of the canal to get to its credit a fair share of revenue on account of water run or taken into tanks.
- (k) Inability of ryots to take to paddy or wet cultivation for want of means to make a start with.
- (l) The unsuitability of the present kistbandi for canal water-rate.
- (m) Omission on the part of the Revenue authorities to charge water-rate on the third crop when all the three crops grown on a piece of land in the year are irrigated.
- (n) Diversity of practice in the charge of water-rate on indigo crops sown mixed with ragi, but irrigated and cut long after the removal of the latter crop.
- (o) The bad state of tracks and consequent inaccessibility of fields.
- (p) The sparseness of population.

"The want of communication and the absence of local markets for rice" was mentioned by Mr. Lister as a cause, but I am not inclined to look upon it as one of the causes operating, inasmuch as the same communications that serve for the transport of other kinds of produce may serve equally for the transport of paddy, and because the same stations to which other produce is transported generally provide markets for rice as well. There is, moreover, the fact for consideration that Nandyál, an important station on the line of the canal, has now a railway passing through it.

6. Having thus enumerated the various causes to which, in my opinion, the backward condition of the canal as an irrigation work is mainly attributable, I shall now take up and deal with each cause *separatim*, proposing at the same time what seem to me to be the best remedial measures to be adopted in each case.

7. I regret I am constrained to put this down as one of the causes operating.

- (a) Lack of proper supervision on the part of taluk and village officers and want of sufficient interest in, and attention to, canal matters on the part of the former.

I have already reported in my diaries from time to time what extent of irrigation not brought to account by karnams has been discovered by me in the different parts under the canal; and, from the detailed statement (enclosure No. 1)

enclosed, it will be observed that the grand total extent discovered comes to over 3,500 acres; and, although the ryots and the karnams concerned may naturally allege that canal water was not taken for the extents so discovered, the former with the view of avoiding payment of water-rate and the latter with that of escaping punishment, there is not the least doubt that all that was discovered was actual surreptitious irrigation. The special inspection conducted having had to be begun rather late in the season, after removal of crops for the most part, I have generally taken care to recommend for charge of water-rate only such cases as appeared to be most positive and certain from marks of irrigation existing at the time of inspection, giving the benefit of doubt invariably to the ryots wherever marks appeared less distinct and perfect and the cases as in any way doubtful. Mr. Johnston's surmise that "there is under this canal a large amount of surreptitious wet cultivation which does not find its way into the accounts" is not without foundation. The jamabandi of all the canal taluks is not yet over, and I am not therefore in a position to say what the exact increase in the canal revenue of the current fasli is over the figures for the last year, but I think I will not be far from the mark if I say that I guess it to be something over Rs. 10,000.

8. Of the eight taluks commanded by the canal, two, viz. Jammalamadugu and Koilkuntla, are not of much importance, and there is hardly any surreptitious irrigation in them. In the Rámallakót taluk where the area commanded by the canal consists of a narrow strip of land bounded almost by the Tungabhadra on one side, and by the canal itself on the other, natural facilities for concealed irrigation are generally wanting, and nearly all the extent irrigable by the canal and fit for wet cultivation having, moreover, become an almost settled land for wet cultivation, surreptitious irrigation is very limited in this taluk also. The remaining five taluks, viz., Nandyál, Nandyál and Sirvel, of the Kurnool district, and Proddatur and Cuddapah, of the Cuddapah district, have each of them comparatively more of surreptitious irrigation; and, considering that large extents have had to be omitted as doubtful in the Sirvel taluk, it is my opinion that surreptitious irrigation is more here than in any other taluk under the canal.

9. Surreptitious irrigation having been found to exist, the question naturally arises what is it due to; and to this the answer certainly is "lack of supervision and defective registration in consequence." During the Company's time there used to be a joint settlement, and, as at the time of settlement, the karnams' areas used to be carefully compared with the Company's amins' figures, any differences noticed being duly reconciled by further inspection if necessary, the system itself used to act as a mutual check, and registration was certainly far better and supervision more real and efficacious. The Company's officers, moreover, used to look into things generally with greater interest and a closer eye. But since the transfer of the canal to Government, the work of registration of areas irrigated has been left exclusively to the karnam, and the Firka Revenue Inspector being the only superior Revenue officer expected to check any registration made by him, the karnam knows well that, if he can only secure the connivance of his Revenue Inspector somehow or other, he may do as he likes with perfect impunity. Water-rate or tirwajasti cultivation under the canal is generally never checked by Tahsildars, except, perhaps, when there is a "takrar" or dispute, if any at all (I say "if any at all" because we cannot naturally expect any disputes to arise as long as the karnam's omission to register is favorable to the ryot) and a Revenue Inspector choosing to connive at defective registration knows, therefore, that he can do so generally with safety. There is, moreover, the fact for consideration that it was only recently that the status of Revenue Inspectors was raised and endeavours made to introduce men of greater efficiency and promise into the grade, and that men below the mark were not wanting among the old stock. Subba Sastri recently transferred from the Yellur firka in the Sirvel taluk may, I think, be mentioned as a fair specimen.

10. There are no doubt the Water or Irrigation Superintendents now on the Public Works Department side, and it may, perhaps, be questioned why not these men supply the place of the old Company's amins. But I beg to submit that, as far as I can judge from what I have seen of their work, they do not appear to have been

of any practical use. The very lines on which they have been working appear to me to be wrong. Instead of going to a village and invariably checking *all* the irrigation therein up to date, independently of the karnam, and then finding by comparison with the karnam's register what extents actually irrigated the karnam has omitted to bring to account, duly intimating to the Tahsildar the numbers so omitted by the karnam, if any, these Irrigation Superintendents seem to have been confining their check generally to the extents already registered by the karnam. If the Irrigation Superintendents had all of them done their work properly, so much surreptitious irrigation as was brought to light by the special inspection, would not certainly have been left unregistered. In connection with the uncommonly large extents of surreptitious irrigation discovered at Zellella, Kotapad and Yallur, three canal villages of the Sirvel taluk, I sent for the diaries of the Superintendent for that section to see whether any mention was made by him of the extents omitted by the karnams and discovered at the special inspection, but I was surprised to find that he did not touch upon the subject at all. Nor could I find from any of the diaries when canal water was let into the different tanks in the section. If check of irrigation is all that these Superintendents are intended for, my own humble opinion is that they may safely and with advantage be dispensed with altogether, provided the proposals I am going to make below to ensure better supervision and registration of irrigation meet with the approval and sanction of Government.

11. In the Kurnool district the karnams of canal villages maintain what they call the darkhast register; but in this extents for which ryots take water *without* darkhast or application are not generally shown, on the ground that it is only a register of darkhasts or applications, so that there is a defect or loophole in the form itself. I looked into a number of these darkhast registers and was surprised to find that some of them bore no initials of the Firka Revenue Inspectors at all. In the Cuddapah district there is no register whatever. One only record of irrigation under the canal there is a monthly account called the *canal "masavari"* which the karnams of canal villages prepare from the ordinary monthly cultivation account (Account No. I of the Village Manual) and send to the Firka Revenue Inspector month after month; but even here there is the chance of the canal masavari being wrong, if, under any circumstances, a karnam omits to enter the "source of irrigation" against an entry in the ordinary masavari account No. I. There is thus not only want of uniformity, but also some drawback in the method of registration itself in both the districts. No doubt forms B and C referred to by the Committee appointed by G.O., No. 479 I., of 1st August 1881, in paragraph 8 of their report, were approved of by Government in paragraph 4 of its order, No. 448 I., dated 6th June 1882 (Public Works), but they are not now in use, nor do I think they can be used without being revised. They are evidently forms drawn up with reference to the old rules in force during the Company's time, and will not certainly do now.

12. The tirwajasti patti or village account No. 6 is no doubt an account intended to show all the tirwajasti cultivation in a village, but this is being prepared by the karnam only a short time before the jamabandi with reference to the so-called darkhast register or canal "masavari," and I observe that Revenue Inspectors are generally in the habit of undertaking check of tirwajasti cultivation late in the season, often after receipt of tirwajasti patties from karnams and not before. In the early part of December last, a Revenue Inspector stated before me "Karimaddula karnam sent me a tirwajasti patti in the beginning of November and I have checked the fields entered in the patti. Kakkanne and Yerraguntla karnams have not yet sent me any patties, but I have examined some of the fields irrigated in those villages on Monday and Tuesday last. I have not yet completed examination of irrigated fields in those villages." I need hardly point out that, in the absence of proper and complete registers and of punctual and thorough check, it would be too much to expect the low-paid karnam to bring to account all the extent actually irrigated. Punctuality and frequency are, I think, of vital importance in the inspection and check of irrigation; and it is here that inspection of irrigation seems to me to differ from inspection of cultivation. For instance, the cultivation of a piece of waste land can easily be detected any time before the removal of the crop, or often even after the removal of

the crop with the aid of the stalks left on the ground, but, unless inspected in time, it would be difficult to detect the irrigation of a garden or field crop for which a few floodings have been surreptitiously taken, as it would be possible for the ryot to plead that the marks are in consequence of rainfall or as he may spoil the marks altogether by harrowing.

13. It seems, however, fair to point out that one reason why canal matters have not generally been receiving a proper share of attention from Revenue Inspectors seems to be that, even in the important canal taluks, the Revenue Inspectors looking after canal work are saddled with other work of the canal villages and with some non-canal villages in addition, so that inspection and check of tirwajasti under the canal forms one of the many duties that a Revenue Inspector has to perform; and for all shortcomings on the canal side, he has naturally the excuse that he has had various other calls to attend to. In the Kurnool district the 41 canal villages of the Nandikótkur taluk stand distributed among four different Revenue Inspectors, the 27 of the Nandyál taluk among two and the 26 of the Sirvel taluk among four Revenue Inspectors again. There is no such internal distribution, however, in the remaining five taluks commanded by the canal.

14. As far as my observation goes, the ways in which fraud resulting in surreptitious irrigation is being mainly practised are two. The first is by ryots applying for water for comparatively few acres here and there in a block consisting sometimes of 20, 30 or even more acres, and then surreptitiously using water thus brought into the block for the mundla (tailed or coarse) or good paddy raised by them in the intermediate fields of the block. Whenever fraud of this kind is contemplated the ryots generally take care to select for application for water such fields or portions of fields as are conveniently situated for the purpose meant by them, and they generally make surreptitious use of water by causing it to overflow either by raising temporary dams across the minor distributaries or by deliberately letting in too much water into the fields for which they have chosen to apply for water. Overflow of this artificial nature the

* Please *cite* my letter, No. 156, dated 31st May 1891, on "percolation."

ryots concerned subsequently call "percolation,"* and on this plea obtain exemption. This kind of fraud is almost entirely confined to the Sirvel, Nandyál and Nandikótkur taluks of the Kurnool district, and, as an illustration, I beg to enclose, for the

kind perusal of the Board, a sketch (enclosure No. 2) of Kotapad, a canal village of the Sirvel taluk, showing therein in different colours (a) extents for which ryots have chosen to apply for water, (b) those omitted by the karnams but recommended by me for charge of water-rate on distinct marks of irrigation found at the time of inspection, and (c) those grown with mundla (tailed or coarse) paddy also omitted by the karnams, but not recommended for charge, marks being less perfect at the time of inspection and the benefit of doubt being consequently given to the ryots. I am sure that, if there had been a proper and *timely* inspection, much more extent chargeable would have been discovered. I beg to invite particular attention to field No. 314 in the sketch as that one case alone would, I believe, suffice to convince one of the existence of fraud of this kind. The second or the other way in which fraud is being practised is by ryots having wells within area actually commanded by the existing distributaries of the canal making surreptitious use of canal water by bringing nominal short channels from such wells and connecting them with our canal distributaries at some convenient point or other, and then pleading that they have utilized water lifted from their wells and not canal water, although, in fact, it is the canal water that they use. I have actually caught a man at Rampalli while taking canal water after this manner. It may not be out of place to add in this connection that the cost of lifting water from a well, say for an acre of ragi crop, comes to more than Rs. 30, whereas canal water can be had for that extent for Rs. 3. I beg to enclose, for the perusal of the Board, another sketch (enclosure No. 3) showing how common channels like the above are generally made by ryots when it is intended to take canal water in the above manner. Fraud of this kind is almost exclusively confined to about half a dozen villages of the Proddutur and Cuddapah taluks. Of course, with straightforward and faithful karnams who would at once check and bring to account every cent irrigated then and there, frauds of the above kind can

never occur; but such karnams are unfortunately rare, and I am afraid that absence of timely and proper check on the part of Revenue Inspectors, whatever its causes may be, has also contributed a good deal towards the evil.

15. In the course of my tours and investigation, I have come across several cases where people earnestly applied either for new channels or for extensions of existing ones or for other similar works, promising to bring fresh extents under irrigation, or wanted some repairs to be executed to existing channels; and in some cases the applicants have even represented to me that they have been asking for the things for a very long time past. Enclosed is a statement (enclosure No. 4) showing the applications received and the action taken by me on each. There were also cases in which the channels, &c., applied for could not be given by the Public Works Department because of non-settlement of compensation. In Chennai there is a case even now which seems to have been pending for some years. When in December last, he came to Nandyál, the Commissioner himself noticed a case or two where hindrance to extension of irrigation was caused in consequence of difficulty felt in getting minor irrigation channels constructed, and he was even pleased to issue general instructions to the effect that "Tahsildars should be directed to interest themselves in the matter." Please vide paragraph 4 of Board's Proceedings, No. 22, Press, dated 15th January 1891.

My own impression is that canal matters have not, on the whole, been receiving from taluk revenue authorities that amount of attention which they deserve and which would be absolutely necessary if the condition of the canal is to be improved financially. If taluk authorities had really paid any attention worth the name, fraud of the kind referred to above would certainly have been nipped in the very bud. I have already shown in my letter No. 118, dated 25th April last, to the Collector of Kurnool, how the canal was about to lose some good amount of revenue (about Rs. 900) this year in connection with the Aiyavarikodur tank of the Nandyál taluk. It does not appear that Tahsildars of the canal taluks generally care even to compare year after year and see whether the canal "beriz" (demand) is growing or sinking in each village, with a view to investigate into the causes of decrease, if any. Or else, the large fluctuations and decreases that have been occurring in several places since the transfer of the canal to Government should naturally have attracted their attention.

Below is given a statement showing the average annual extent irrigated in each taluk before the transfer of the canal to Government as well as that irrigated subsequent to the transfer, the average being struck in the former case on the figures for faslis 1289 to 1291, and in the latter case on the figures for faslis 1292, 1293, 1295, 1296, 1297 and 1299 (faslis 1294 and 1298 omitted as exceptional years in the Kurnool district); and it will be observed from this statement that, notwithstanding that rates have been considerably reduced and other concessions granted since the transfer of the canal to Government, there has been in the extents under irrigation a falling off of 12 per cent. in Proddutur, 26 per cent. in Nandikotkur, 27 per cent. in Jammalamadugu, 34 per cent. in Nandyál and 41 per cent. in Koilkuntla. Although Sirvel and Cuddapah taluks show 47 and 37 per cent. increase, respectively, my own opinion is that, judged by the actual state of irrigation in those taluks, they should have shown still higher percentages, more especially the Sirvel taluk:—

Taluk.		Average annual extent under irrigation previous to the transfer of the Canal to Government.	Average annual extent under irrigation subsequent to the transfer of the Canal to Government.	PERCENTAGE OF	
				Rise.	Fall.
1. Proddutur	..	5,184	4,819	..	12.1
2. Cuddapah	..	5,707	7,820	37	..
3. Jammalamadugu	..	78	55	..	27.6
4. Nandyál	..	2,840	1,860	..	34.8
5. Sirvel	..	1,007	1,337	47.4	..
6. Koilkuntla	..	524	100	..	41.3
7. Ramabakot	..	1,259	1,684	25.7	..
8. Nandikotkur	..	3,832	2,820	..	26.6

16. Remedial measures for cause (a).—The remedial measures I would propose to ensure better supervision and registration, to prevent surreptitious irrigation and to secure a proper and real looking after the interests of the canal are five.

The first is the appointment of a special revenue officer on the canal. If the financial condition of the canal is really to be improved and if the canal is to be made "less of a dismal failure," it is, I think, absolutely necessary that, as recommended by Mr. Kough, there should be placed on it, at least for some years, a special revenue officer of tact, patience, zeal and industry who would work in consultation and accord with the Engineer and make the advancement of the canal his sole study; and my opinion is that it would be quite enough if, with an Executive Engineer like Mr. Johnston, the special revenue officer stands on the canal for 4 or 5 years. It is true that, in theory, Divisional Officers and Tahsildars are now expected to look after and watch the interests on the canal, but it is practically impossible for them to pay to canal matters the amount of attention they deserve in the present condition of the canal. Even if Tahsildars are relieved of their magisterial duties and are thus enabled to take more interest and pay greater attention, they may, perhaps, be able to supply the existing want to some extent, but what the canal really requires is a revenue officer who would pay undivided attention and his whole time to its affairs; and this the ordinary revenue establishment can never be expected to do so long as its members have other duties to attend to. If there is a special revenue officer on the canal, he would not only be able to effectually check and remove the evil of surreptitious irrigation by constantly moving along the canal and suddenly checking irrigation in villages here and there, thus punctually supervising the work of Revenue Inspectors and Karnams and bringing delinquents to punishment whenever necessary, but would also supply the great want of a link, as it were, now so much felt, between the ryots and the Public Works Department, to lay the wants and grievances of the former before the latter, and to render prompt assistance to the latter wherever required in the acquisition of lands required for channels, &c. He would also be able to bring about a large extension of irrigation by awakening a general interest in ryots, and by encouraging and by giving them instruction and advice in matters on which they require it. Nor will the appointment of a special revenue officer with a small establishment be, I think, a useless burden on the finances of the canal, inasmuch as I am sanguine that the check he exercises and his exertions towards extension of irrigation would, in a couple of years, result in a permanent increase of revenue more than enough to cover the extra charge with every prospect of further rise in subsequent years. The annual saving of Rs. 3,492 to be effected if the Irrigation Superintendents are abolished, as proposed, would also be a partial set-off against this additional charge. The fact, moreover, that the special inspection made this year promises to show an increase of about Rs. 10,000 over the figures for last year, notwithstanding that lots of doubtful cases have been omitted, deserves consideration in this connection. The special officer may, as it were, be a canal divisional officer, subordinate to the Collectors of Kurnool and Cuddapah, and to him must be entrusted the administration of canal revenue including settlement of water-rate. The Tahsildars of canal taluks will, of course, be his assistants in canal matters; and to make him really useful, the special officer must be given power to punish canal village officers for faults committed by them on the canal side, subject to appeal in the usual manner. The special officer's establishment may consist of four clerks, three peons, an attender and a mashalchi; and, of the four clerks, it would be better if two are men of the stamp of classifiers with good field knowledge so that they may be able to assist the special officer in the check of irrigation and thus be doubly useful. The least costly arrangement would, I think, be to depute a permanent settlement is, in the majority of cases, being conducted by officers who have practically no knowledge whatever of the areas irrigated, and who, for charge or remission, have consequently to rely upon what a body of interested ryots, or a timid or delinquent karnam or, perhaps, an indifferent or an unscrupulous Revenue Inspector represents at the time of jamabandi. This, however, will not be the case if a special revenue officer is placed on the canal. I use "timid" in the case of the

never occur; but such karnams are unfortunately rare, and I am afraid that absence of timely and proper check on the part of Revenue Inspectors, whatever its causes may be, has also contributed a good deal towards the evil.

15. In the course of my tours and investigation, I have come across several cases where people earnestly applied either for new channels or for extensions of existing ones or for other similar works, promising to bring fresh extents under irrigation, or wanted some repairs to be executed to existing channels; and in some cases the applicants have even represented to me that they have been asking for the things for a very long time past. Enclosed is a statement (enclosure No. 4) showing the applications received and the action taken by me on each. There were also cases in which the channels, &c., applied for could not be given by the Public Works Department because of non-settlement of compensation. In Chennai there is a case even now which seems to have been pending for some years. When in December last, he came to Nandyál, the Commissioner himself noticed a case or two where hindrance to extension of irrigation was caused in consequence of difficulty felt in getting minor irrigation channels constructed, and he was even pleased to issue general instructions to the effect that "Tahsildars should be directed to interest themselves in the matter." Please vide paragraph 4 of Board's Proceedings, No. 22, Press, dated 15th January 1891.

My own impression is that canal matters have not, on the whole, been receiving from taluk revenue authorities that amount of attention which they deserve and which would be absolutely necessary if the condition of the canal is to be improved financially. If taluk authorities had really paid any attention worth the name, fraud of the kind referred to above would certainly have been nipped in the very bud. I have already shown in my letter No. 118, dated 25th April last, to the Collector of Kurnool, how the canal was about to lose some good amount of revenue (about Rs. 900) this year in connection with the Aiyavarikodur tank of the Nandyál taluk. It does not appear that Tahsildars of the canal taluks generally care even to compare year after year and see whether the canal "beriz" (demand) is growing or sinking in each village, with a view to investigate into the causes of decrease, if any. Or else, the large fluctuations and decreases that have been occurring in several places since the transfer of the canal to Government should naturally have attracted their attention.

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5. Sirvel	1,007	1,337	47.4	..
6. Koilkuntla	524	100	..	41.3
7. Rameswaram	1,259	1,684	25.7	..
8. Nandikotkur	3,832	2,820	..	26.6

16. Remedial measures for cause (a).—The remedial measures I would propose to ensure better supervision and registration, to prevent surreptitious irrigation and to secure a proper and real looking after the interests of the canal are five.

The first is the appointment of a special revenue officer on the canal. If the financial condition of the canal is really to be improved and if the canal is to be made "less of a dismal failure," it is, I think, absolutely necessary that, as recommended by Mr. Kough, there should be placed on it, at least for some years, a special revenue officer of tact, patience, zeal and industry who would work in consultation and accord with the Engineer and make the advancement of the canal his sole study; and my opinion is that it would be quite enough if, with an Executive Engineer like Mr. Johnston, the special revenue officer stands on the canal for 4 or 5 years. It is true that, in theory, Divisional Officers and Tahsildars are now expected to look after and watch the interests on the canal, but it is practically impossible for them to pay to canal matters the amount of attention they deserve in the present condition of the canal. Even if Tahsildars are relieved of their magisterial duties and are thus enabled to take more interest and pay greater attention, they may, perhaps, be able to supply the existing want to some extent, but what the canal really requires is a revenue officer who would pay undivided attention and his whole time to its affairs; and this the ordinary revenue establishment can never be expected to do so long as its members have other duties to attend to. If there is a special revenue officer on the canal, he would not only be able to effectually check and remove the evil of surreptitious irrigation by constantly moving along the canal and suddenly checking irrigation in villages here and there, thus punctually supervising the work of Revenue Inspectors and Karnams and bringing delinquents to punishment whenever necessary, but would also supply the great want of a link, as it were, now so much felt, between the ryots and the Public Works Department, to lay the wants and grievances of the former before the latter, and to render prompt assistance to the latter wherever required in the acquisition of lands required for channels, &c. He would also be able to bring about a large extension of irrigation by awakening a general interest in ryots, and by encouraging and by giving them instruction and advice in matters on which they require it. Nor will the appointment of a special revenue officer with a small establishment be, I think, a useless burden on the finances of the canal, inasmuch as I am sanguine that the check he exercises and his exertions towards extension of irrigation would, in a couple of years, result in a permanent increase of revenue more than enough to cover the extra charge with every prospect of further rise in subsequent years. The annual saving of Rs. 3,492 to be effected if the Irrigation Superintendents are abolished, as proposed, would also be a partial set-off against this additional charge. The fact, moreover, that the special inspection made this year promises to show an increase of about Rs. 10,000 over the figures for last year, notwithstanding that lots of doubtful cases have been omitted, deserves consideration in this connection. The special officer may, as it were, be a canal divisional officer, subordinate to the Collectors of Kurnool and Cuddapah, and to him must be entrusted the administration of canal revenue including settlement of water-rate. The Tahsildars of canal taluks will, of course, be his assistants in canal matters; and to make him really useful, the special officer must be given power to punish canal village officers for faults committed by them on the canal side, subject to appeal in the usual manner. The special officer's establishment may consist of four clerks, three peons, an attender and a mashalchi; and, of the four clerks, it would be better if two are men of the stamp of classifiers with good field knowledge so that they may be able to assist the special officer in the check of irrigation and thus be doubly useful. The least costly arrangement would, I think, be to depute a permanent settlement is, in the majority of cases, being conducted by officers who have practically no knowledge whatever of the areas irrigated, and who, for charge or remission, have consequently to rely upon what a body of interested ryots, or a timid or delinquent karnam or, perhaps, an indifferent or an unscrupulous Revenue Inspector represents at the time of jamabandi. This, however, will not be the case if a special revenue officer is placed on the canal. I use "timid" in the case of the

karnams because instances are not wanting where ryots undertook to thrash or otherwise molest karnams when the latter attempted to expose frauds on the part of the former.

17. The second remedy I propose under head (a) is that the canal work in each important canal taluk should be assigned to one Revenue Inspector who should not be saddled with other kinds of work. Excluding the unimportant taluks of Jammalamadugu and Koilkuntla, there are six canal taluks and I believe each of them has

Taluk.	Number of canal villages.
1. Rāmālakōt	11
2. Nandikōtkur	41
3. Nandyāl	27
4. Sirvel	26
5. Proddutur	27
6. Cuddapah	22
Total ...	154

now a staff of four Revenue Inspectors. The number of canal villages in these six taluks being as per margin, I think one of the four existing Revenue Inspectors may in each taluk be safely and conveniently deputed for canal work, some canal villages of the Nandikōtkur taluk nearer to Kurnool being tacked on to the charge of the Rāmālakōt taluk canal Revenue Inspector, to make their charges equal. In making this arrange-

ment, the work of the non-canal villages and the ordinary work of canal villages should be distributed among the remaining three Revenue Inspectors in each taluk, and, considering that they will be relieved of the most important and responsible work of inspection of tirwajasti cultivation in the canal villages, I believe the other Revenue Inspectors will have no cause to complain of heavy work. The Canal Revenue Inspectors should be made subordinate to the special canal officer and their diaries submitted to him through the respective Tahsildars. When thus relieved of other kinds of work, the Canal Revenue Inspectors will no longer have an excuse to fall back upon for shortcomings noticed, and, as their field-work will be subject to frequent check by the special officer in his tours, their inspection of tirwajasti cultivation will certainly be more punctual and efficacious. The canal karnams maintained for important canal villages should also be similarly relieved of all other duties. At present they are, in many cases, being made to do other work also.

18. The third remedy I have to propose is that, in order to act as an additional check on surreptitious irrigation, it should be made a rule, at least as far as this canal is concerned, that water-rate should invariably be charged at least at one and one-fourth the prescribed rate in all cases where water is taken by ryots without application. Of course paragraph 10 of Standing Order No. 4 which seems to apply to irrigation under this canal as well, gives the Collector power to impose prohibitory rates whenever water is taken without permission; but, being only permissive, that rule has practically been a dead letter hitherto, so that ryots do not, in fact, know that the Revenue authorities have power to fine surreptitious irrigation. I have no doubt whatever that, in addition to laxity in supervision and other causes on the part of Karnams and Revenue Inspectors, the absence of distinction between cases of application and cases of non-application has also been a cause, to some extent, of the large amount of surreptitious irrigation that exists under this canal. During the company's time cases of surreptitious irrigation used to be invariably visited with some fine or other, so that there does not appear to have been so much of surreptitious irrigation then; but now the ryot who knows that there is no line of distinction between irrigation on application and irrigation without application, very often prefers taking water without darkhast, leaving discovery to chance, as, in that case, he knows he may possibly escape charge of water-rate altogether if the case is not detected, whereas, if detected, he will have to pay the same rate as if he had originally applied for water. The Board may, perhaps, fear that it would interfere with extension of irrigation under the canal, if the proposed rule is sanctioned, but I am sure it will not, and I have taken care to make the penal charge as low as possible. I do not think it good policy to encourage surreptitious irrigation in the expectation of future extension of irrigation; and my humble opinion is that, when put into the scale, the former will be found to be more prejudicial to the interests of the canal than the latter can be favorable.

When a rule like the one proposed is passed, of course it will be necessary to take the requisite precautions to prevent abuse of power by the village officers, and for this, I think, it will be enough if, in addition to the close supervision that the separation of the Revenue Inspector's duties and the appointment of special revenue officer must result in, village heads are ordered to issue duly dated permits to applicants from printed books to be supplied to them with counterfoils and with pages consecutively numbered. The permit book must always be in the village in charge of the village head, and, during his absence from the village, in charge of the second reddy, if any, or of the karnam, failing both.

19. The fourth remedy to be proposed is grant of remuneration to canal village officers, not on the entire water-rate revenue of the village, but on any increase that may hereafter result over and above the average water-rate demand of the village, say, for the last five normal years. During the company's time they used to grant remuneration to karnams at one anna in the rupee on the entire canal revenue; but that was abolished by paragraph 6 of Government Order, No. 448 I., dated 6th June 1882 (Public Works). I now make the proposal again, but on a far reduced scale, because I am sanguine that the hope of getting some additional remuneration would, in the majority of cases, stimulate karnams into accurate registration of extents irrigated, and thus bring under charge of water-rate extents that may otherwise escape charge. It may also tend to awaken a kind of general interest in the village officers in canal matters. The remuneration hereafter to be granted may be at the rate of one anna in the rupee; but instead of being paid to the karnam, it should, I think, be distributed among the reddy and the karnam at the rate of 4 pies in the rupee to the former and 8 pies to the latter. I propose a share for the reddy because the permit duty is to be assigned to him and because he may, as a more influential man in the village and out of jealousy, otherwise try to undo whatever the karnam may do to bring about an increase in the canal revenue. I propose double the reddy's share to the karnam because the more difficult work of field inspection and measurement which must precede discovery of surreptitious irrigation and the maintenance of the dharkhast register devolve on the latter. The canal revenue will not certainly be affected in any way by the grant of this remuneration, inasmuch as it is only on the future increase that it is proposed to be calculated.

20. The fifth and the last remedy is to introduce a proper dharkhast register form. I think the form (enclosure No. 5) I propose, and to be found among the enclosures, will sufficiently answer the purpose. I have taken care to provide separate columns for extents applied for and those irrigated without application, so that karnams can no longer have an excuse to omit to register extents surreptitiously irrigated.

21. This is another important cause which, in my opinion, has been retarding extension of irrigation under the canal, and the good that can be done in this direction must necessarily depend upon the zeal and ability of the special officer.

It seems to me that there are several points on which useful instruction can be given to the ryots under the canal with the certainty of bringing about an extension of irrigation, and the following are some of the points that have suggested themselves to me.

Now with regard to the cultivation of paddy there are three different ways of raising it. The first and the best method is that of transplantation, the second is that of sowing the seed broadcast, and the third and the last is that of sowing the seed with the drill like a dry crop without bedding and leveling the fields; and it is a well-known fact that the outturn in the first case is nearly double that of the second, and that in the second case nearly double that of the third. In almost all the canal villages of the Kurnool district, however, the first-crop paddy is being raised after the third or the inferior method, and the reluctance of the Kurnool ryots to take to paddy cultivation more extensively seems to be due, at least to some extent, to the comparatively small profit they make now from an acre of paddy. I need hardly

point out in this connection that a field not bedded and bunded cannot derive any benefit from manure applied to it, inasmuch as the manure is washed away by the flooding the field receives.

A native gentleman of the Nizam's Dominions who obtained a block at Pagidela in the Nandikótkur taluk came there a few years ago and started cultivation of paddy in that quarter by the second method, and I find that the people of the surrounding canal villages of Pratakota and Ganapavaram have already begun to appreciate this new method and show themselves prepared to adopt it for the future. So that I think it would certainly be an advantage if, instead of ryots being left to think for themselves, an officer who would freely mingle with and talk to them frequently goes about the canal villages explaining to the ryots the different methods of paddy cultivation and the advantages attending each. Of course, lack of manure is commonly put forward by the Kurnool ryots as the main cause to which their inability to adopt the higher methods of cultivation of paddy is due, but it will be observed that, further on, I propose a proper and an easy remedy for that also. In the Cuddapah district the second method is generally in vogue, and the adoption of the first method may similarly be encouraged there.

22. Another point on which it seems desirable to give instruction to the canal ryots of both Kurnool and Cuddapah is that, by not taking water for their paddy crops till September or October, they are losers in that the water becomes clear by that time and does not bring down any alluvial deposit with it as it does in July and August. The ryots of Kurnool put down their paddy crop early enough, but the system generally in use being that of sowing with the drill as I have already stated above, they do not take water for the crop till October. In the Cuddapah district the sowing itself is late. They generally begin it in September. It would certainly be an advantage to teach the Cuddapah district ryots to begin their paddy crops earlier. They would then have the additional advantage of having more flooding for their second crops (generally indigo and gingelly) before the closure of the canal. I have asked some of the ryots of Chennúr and other places in the Cuddapah district why they do not put down their first paddy crop earlier, and they seem to be labouring under the impression that July and August are not favorable months for paddy sowing. But I have explained to them that it cannot be true, because paddy sown in July or August under the Nandayál tank and elsewhere under the canal on the same broadcast system they have in use, is generally coming off very successfully; and some ryots of Chennúr have told me that they would try a change in the ensuing first-crop season.

23. In the Kurnool district first-crop paddy is harvested generally in the month of December and except, perhaps, under a few tanks fed by the canal, and in a few other places where paddy and vegetables are generally raised as second crops, there is hardly any other kind of crop raised as a second crop under the canal; so that in the majority of cases, lands on which first crops have been raised lie waste from January to the closure of the canal which will not generally be till middle of April.

In the Cuddapah district, on the other hand, lots of acreage is generally placed under second crops which are generally indigo and gingelly, and this notwithstanding the fact that their first paddy crops are harvested late in February or even the early part of March sometimes. I am sanguine, therefore, that immense good both to the ryots and to the State would follow if only pains are taken to explain well to the ryots of Kurnool the advantages of raising similar crops as second crop on lands they now allow to lie idle. In fact, I have already suggested this to the ryots of Ganapavaram, Sirvel and a few other villages of the Kurnool district and they showed themselves immensely pleased at the idea. In this connection, I beg to suggest that it be made clear whether the compound rate of Rs. 6 for flow and Rs. 4-8-0 for lift shown as item 3 in the scale of water-rates given in the appendix to Board's Standing Order No. 4, applies only where both the crops are wet or whether a ryot applying for the concession is allowed the discretion to raise any two crops he likes. For my own part, I think it could not have been meant that it should be binding on the ryot to raise two wet crops and Government, moreover, lose nothing by a ryot choosing to raise a garden or a dry crop in the place of wet crop. I venture to suggest the

issue of clear instructions on the point because many ryots under the canal seem to labour under an impression that both the crops must be wet, and this impression seems to be due to the fact that, in the scale, item 3 providing a compound rate follows immediately items 1 and 2, both of which speak of wet crops. Even if it was originally meant to apply to cases of two wet crops alone, I beg to recommend that the rate be now declared applicable to any two crops the ryot may choose as, if so declared, I feel sure the concession will be largely taken advantage of by ryots wishing to grow paddy as first crop and indigo or gingelly as second crop.

24. Another point on which ryots would generally be glad to get information (this must be timely) is the time as near as possible when the canal will be closed each year; and, as far as the interests of the canal are concerned, it is only necessary that such information should be given them; for a ryot having no knowledge on the subject generally prefers to raise no crop at all to running the risk of raising a crop in uncertainty.

25. Alluvial deposit is certainly a very rich manure, especially for wet and garden crops; and still I was surprised to see that the ryots of Gopalasingavaram and some other villages did not know this till I pointed it out to them. As there are many canal villages having either the Tumbadra or the Pennúr or the canal itself close by, I think it would be an advantage if the matter is well explained to ryots raising wet and garden crops under the canal; and it would be conferring a boon on the canal ryots if, whenever they wish to do so, they are allowed to take deposit silt from the bed of the canal free of charge when the canal is closed.

26. Remedial measure.—It may, perhaps, be thought that, to instruct ryots on points like the above, publication of circulars in the village sheet may suffice; but I beg to submit that, as far as my experience of it goes, instruction given to ryots through circulars published in the District Gazette is only formal and not real and practical, and that it can never stand comparison to instruction given personally on the spot by an officer interested. If a special officer is appointed on the canal, as suggested in paragraph 16 *supra*, want (b) will therefore be removed altogether.

27. This is really a potent cause that has been operating against extension of irrigation under this canal, and the excuses "no manure" and "manure is costly" are to be heard of almost everywhere under it.

(c) Lack of manure and its costliness.

It is a complaint which both the rich and the poor make equally, and it is mainly for want of manure that the Kurnool ryots seem to have taken to the sowing-with-the-drill system. In the Cuddapah district, however, the "tuvva" lands on which paddy is generally raised do not seem to require so much manure as other kinds of lands (regar and masab), and there is, moreover, the fact for consideration that the ryots of the Cuddapah district are generally more industrious and enterprising than their Kurnool brethren who are generally idle and indifferent. Of all the villages under the canal in the Kurnool district, the ryots under the Nandayál tank are the best and the most industrious, and many of them raise the first-crop paddy under the second or the broadcast system. I have noticed that many of these Nandayál ryots go for leaf manure even as far as Velgode in the Nandikótkur taluk, a distance of nearly 20 miles. A good deal of leaf manure is generally necessary for an acre of paddy crop under the second system, and ryots often spend as much as Rs. 20 or Rs. 25 an acre for leaf manure alone. It is true that, in the Kurnool district, the fact that ryots under the canal generally possess large extents of rich regar lands remunerative in their own way is an obstruction, to some extent, to the extension of wet cultivation; but I am confident that, if we can only manage to remove or at least to minimize the want of leaf manure, there will be some very good extension of irrigation under the canal gradually.

28. Remedial measures.—With the view of supplying this long-felt want, I suggested to the Commissioner in December last the purchase of hemp seed (కపిశివ) at Guntúr, and its sale to the canal ryots here at cost price, hemp plant being a highly fertilizing leaf manure already in extensive use as such under the Godavari and Kistna canals; and the Commissioner having been pleased to send for

50 bags of this seed from Guntur, I have already sold as many as 45 bags duly explaining to the ryots how to make use of it both as manure and otherwise, the sale being one of fourfold use. Indigo refuse leaf is the best leaf manure hitherto known to ryots in these parts, but I am sure that they will soon find that the hemp plant is equally fertilizing, if not more. The ryots who purchased the seed intend trying it for the first-crop paddy of the coming fasli 1301 (season 1891-92), and if only they see from actual experiment that the plant answers the purpose, as necessarily it must, I dare say there will be any amount of demand for the seed in future years, and extension of paddy cultivation may become inevitable. Although indigo refuse leaf is a leaf manure already known to the ryots under the canal, it is not all that can be hoped to have it, because it is a costly stuff. A cart-load costs never less than Rs. 4, and for an acre four or five cart-loads is not too much. Enough of hemp plant manure, on the other hand, can be had for an acre of land for Rs. 2 or Rs. 2-8-0, including a water-rate charge of Re. 1 if it is found necessary to irrigate the hemp crop; and even this cost may be reduced still further if the ryot raises the requisite quantity of seed on his dry lands by mixing a small quantity of it with his cholam or other dry crops.

The simplest course to raise a crop of hemp for manure will be to sow with the drill like a dry crop not less than 12 or 15 Kurnool measures of hemp seed on an acre of land on which it is intended to raise the paddy crop, and to water and plough down and spoil this hemp crop when it begins to bud, which will generally be in about six weeks after the sowing of the seed, thus converting the land into a puddle for the following paddy crop. Of course any small quantity of dung manure that the ryot can afford to procure may, with advantage and as usual, be added to the puddle in addition to the hemp manure. By adopting the above course of growing hemp manure on the paddy land itself, the ryot necessarily saves the expenses of reaping and carting it which he would have to incur if the plant is to be raised on a separate piece of land. I have thus very great hopes of the hemp seed supplied, and only hope that Tahsildars will take some interest in the matter and see that the ryots duly carry out the promised experiments.

29. It would be an additional help and encouragement to the ryots under the canal if the Government can find its way to grant them free permits for all kinds of leaf manure whenever they wish to fetch it from forest lands. At present there are different rates of seigniorage fixed in the Cuddapah district for all kinds of leaf manure to be fetched from reserved lands and for many kinds to be fetched from unreserved lands, whereas in the Kurnool district the collection of leaf manure from reserved lands is prohibited altogether. The only stuff which ryots are now permitted to collect free of charge is "leaves of shrubs," such as "tangedu" in the Cuddapah district, and "shrubs from the unreserved lands" in the Kurnool district. But ryots are generally afraid to avail themselves of these concessions, because of the nice distinctions which they find it difficult to draw, and which they say occasionally launch people into either molestation or criminal prosecutions. Hence my suggestion that, if possible, free permits may be granted for all kinds of leaf manure.

30. As I have already stated above in paragraph 25, the grant of permission to ryots to take deposit silt from the bed of the canal free of charge would also be a help to them in the way of manure.

31. When an important canal, nearly 200 miles in length like this, is taken through tracts of different soils, it is, I think, absolutely necessary that, in giving fresh distributaries or in extending the existing ones, great care should be taken by the officers concerned to see mainly (a) whether the soils through which a new channel is proposed to be taken are suited for wet cultivation, (b) whether there is population enough, and (c) whether the people have a real desire for water or not. If these points are not considered at all, and if a channel is given simply because there is a good commandable extent, the channel provided will, in the majority of cases, be a failure, whereas the outlay incurred would go to

(d) The situation of some of the existing channels in unfavorable localities and the absence, on the other hand, of channels in favorable and promising localities.

which a new channel is proposed to be taken are suited for wet cultivation, (b) whether there is population enough, and (c) whether the people have a real desire for water or not. If these points are not considered at all, and if a channel is given simply because there is a good commandable extent, the channel provided will, in the majority of cases, be a failure, whereas the outlay incurred would go to

unnecessarily swell up the capital; and it seems to me that this was unfortunate in the case with some of the distributaries already given. The Tudicherla and the Yetur channels, for instance, cannot be said to have resulted in anything like success. The former was intended to command about 19,400 acres and the latter 7,800 acres. But the extents they actually irrigate dwindle into nothing compared to the extents originally estimated. Even in the case of the Suddapalli channel, for which an amount of Rs. 7,900 was recently sanctioned in G.O., No. 697 I., dated 27th November 1890 (Public Works), communicated with Board's Proceedings, Mis. No. 40, dated 6th January last, I found on personal inquiry in the three villages concerned that on the whole the people are not for the channel at all and that there were offers only for 13 acres, whereas it was originally estimated that upwards of 900 acres in aggregate would be watered. As soon as I saw a copy of the above Government Order, I began to entertain doubts on the subject, inasmuch as two of the three villages involved in the project have already some extents irrigable by other existing channels from the canal, and they have not shown themselves interested in wet cultivation under those channels. Of course I have duly communicated the result of my inquiry to the Executive Engineer and I believe he will get the sanction cancelled.

32. In the course of my investigation, I found, on the other hand, that people at certain quarters under the canal are really very anxious to have either new channels or extensions of existing ones made out for them, soils suiting. There were also instances where people promised to extend irrigation if repairs needed were executed to existing channels. In all such cases I laid the representations of the people before the Executive Engineer then and there, as can be seen from enclosure No. 4, referred to in paragraph 15 *supra*; and although I am required to confine my investigation mainly to area commanded by existing distributaries, I respectfully beg and venture to invite the particular attention of Board and Government to a project which I have discovered under the canal, and which seems to deserve special mention and consideration in consequence of its highly promising nature. The project, I mean, is about Chopad in the Proddatur taluk, where the people of more than half a dozen villages are extremely anxious to get a channel. The lands commanded are almost all of them of rich "tuvva" soil, and are thus the very best for wet cultivation. The ryots of seven villages have already presented statements offering to take water for about 4,000 acres the very first year a channel is given them, and, in proof of their earnestness for a channel from the canal, they state in writing that they would not avail themselves of the block and cowle rate concessions allowed by rules, and that they would, on the other hand, pay water-rate according to the prescribed scale from the very beginning. The extent the ryots offer to irrigate the first year is 4,000 acres, but there is every probability of its growing up to over 8,000 acres within the next four or five years. If only a channel can be given here, I dare say this quarter will, before very long, beat hollow Chevur and all other irrigation sections under the canal; and, in my humble estimation, an eventual maximum income of from Rs. 40,000 to Rs. 50,000 per annum will not be too much for Government to expect from it including both crops.

To bring a channel to this group of villages, the simplest and the cheapest course will be to take the channel across the Kundu river in iron troughs; and this the Lower Sub-Divisional officer, Mr. Dennehy, who has seen the place and got levels taken at my request, says would be possible. Until a regular estimate has been prepared by the Public Works Department, one cannot say what the precise cost of the project may come to; but, considering (a) the large extent (about 10,000 acres) of land available for irrigation, (b) the uncommonly favorable nature of the soil, (c) the anxiety of the people to get a channel, and (d) the annual income that may fairly be expected in consequence, I think that it is no exaggeration to say that the work would comparatively be a cheap one on the whole. As the people are really very anxious to have this channel, and as, if given, this one channel alone would be enough to make the canal more than self-supporting, I beg to recommend that the necessary steps be taken to have orders issued for the Public Works Department taking up this project in hand at once. The ryots are really eager to get the channel at least for the second-crop season of the coming fasli 1301 (1891-92) if possible. Of course the Public Works Department seems to have got the Maidkur and some other

being in hand already, but my humble opinion is that all other projects must be made to make way for this as one of highly promising nature. It is really a pity that this quarter was not hit upon and the channel given before this, or else the canal would not, I submit, have been a source of so much anxiety to Government.

To irrigate the group of villages in question, the Public Works Department may, perhaps, think of bringing a channel from the Rajoli anicut in the Sirvel taluk. But I believe that would be unnecessarily too long and expensive, as more than two thirds of the channel would have to be taken through pure regar soils where people, far from liking irrigation, seem to object to the excavation of the channel itself. The cost, moreover, may be much more than that of the cheap and simple course now suggested.

A second important work I came across and proposed to Mr. Johnston is the restoration of the big tank at Kotakandukur, in the Sirvel taluk, and its storage with canal water. At my instance, Mr. Johnston went and had a look at this tank and quite approved of the work proposed. This is a work which, if executed, would permanently increase the canal revenue by from Rs. 1,500 to Rs. 2,000 annually, including both crops, whereas the cost of restoration would be comparatively very small.

33. Remedial measure.—Cause (c) will be removed by the appointment of a Revenue officer on the canal, as suggested in paragraph 16 *supra*, provided the officer is one who works with industry, patience and real interest.

34. There is hardly any mundla (tailed or coarse) paddy in the Rámallakót, Koilkuntla, Jammalamadugu, Proddutur and Cuddapah taluks, and its growth is almost entirely confined to the remaining three canal taluks, viz., Sirvel, Nandyál

(c) The highness of water-rate for mundla (tailed or coarse) paddy.

and Nandikótur, where, as I have already stated above in paragraph 14, the ryots have fallen into the habit of taking canal water surreptitiously, causing what may fairly be termed artificial overflow. In the current fasli the Sirvel taluk has got nearly 2,800 acres of mundla paddy in 23 of its canal villages, while the Nandyál and Nandikótur taluks have 600 and 370 acres in 19 and 14 villages, respectively. Ryots raising mundla paddy with the aid of stolen water no doubt allege that it is a crop which can successfully be grown almost everywhere with the aid of falling rains alone; but their allegation is not true. To raise a crop of "mundla" paddy successfully with the aid of rain alone, the place must be either a low one, such, for instance, as a tank-bed retaining more than average moisture, or low lands at the bases of hills whereinto water from the adjoining hill sides occasionally oozes. It cannot certainly be grown on flat even plains like those of Zilber, Fallar and Kotapad without the aid of irrigation at all. Like good paddy it does not require standing water. It only requires some floodings, generally from its third month; and, as far as my inquiries go, it is the high rate of Rs. 4 per acre that is being hitherto charged on it that has mainly led ryots to steal water for it, pleading percolation afterwards. The ryots of some villages under the canal, not reputed for stealing water, have told me in the course of my investigation, and some of them have even presented memorials saying that there would be extension of registered irrigation, and consequently increase of revenue under the canal, if the rate for "mundla" paddy is reduced from Rs. 4 to Rs. 2 per acre, and I observe that the same reduction has been recommended by the Collector of Kurnool in his letter No. 967, dated 7th May 1891, read in Board's Proceedings, Mis. No. 1632, dated 8th April last. In his letter, Disposal No. 1460-Ver., dated 27th April 1891, read in Board's Proceedings, Mis. No. 2248, dated 6th May last, the Collector of Cuddapah has expressed an opinion that Rs. 1 per acre would be a proper rate for "mundla" paddy, but I am afraid that if it is reduced so low, the present good paddy extent will materially and inevitably suffer. A crop of "mundla" paddy, moreover, generally requires more water than a purely dry crop, such, for instance, as "arika," and it should not therefore be placed on the same level with purely dry crops. Again, the price of "mundla" paddy is generally half or a little over half that of good paddy and certainly higher than that of "arika." The value of "mundla" paddy is also enhanced by its susceptibility to be mixed up with different kinds of good paddy—a mercantile trick very often resorted to in the rural tracts.

35. Remedial measure.—If the rate is reduced to Rs. 2 per acre, which, in my humble opinion, is the fittest rate for "mundla" paddy, I feel sure that the present evil of ryots taking water for it surreptitiously will gradually disappear and some good extension of irrigation follow.

36. The present arrangement for the distribution of water does not seem to have been satisfactorily working, and numerous complaints have been made to me on the subject by ryots in the course of my tours and investigation. The Public Works Department seem to have a small staff of 26* lascars intended for the distribution of water under the whole length of the canal; but these lascars seem to have been practically of very little use; and, to speak the truth, people are not generally satisfied with their way of working. In the majority of cases distribution is practically left to take

(f) Want of proper and adequate arrangements for the distribution of water.

Section.	Number of lascars.	Pay.	For what period employed.
		RS.	MONTHS.
* 1st section ..	4	6	9
2nd do. ..	6	6	8
3rd do. ..	2	6	12
4th do. ..	3	5	12
5th do. ..	3	5	12
6th do. ..	8	5	12

care of itself, and the ryots do not generally like to go and complain to the Public Works Department officers against the lascars, as they (the ryots) are unfortunately under the impression that the Public Works Department is a foreign element altogether, and as they are, moreover, afraid that the lascars complained against may do more harm than before if no notice is finally taken of the complaint. The number of lascars, furthermore, seems quite inadequate. To make any system of distribution work smoothly and satisfactorily, it is, of course, absolutely necessary that the distributing agency should be placed under the orders and supervision of an individual really interested in the saving of crops and in the welfare of ryots; and who can generally be this individual in villages except the head of the village? The Public Works Department Irrigation Superintendents, under whose immediate supervision the lascars are supposed to be working, cannot certainly be said to have so much interest in the cause of ryots as the reddi of a village who is generally a ryot himself and a resident of the place. Indeed, there may be instances where there are factions in villages and where the reddi sides with one of the factions. But such cases are comparatively few and far between, and no real hardship can, even in such rare cases, be expected to be caused by the reddi to the members of the faction opposite to him, because he will generally have the fear that his conduct will at once be noticed either by the Revenue Inspector, the Tahsildar or the Divisional officer in their official tours.

There was recently an instance where a Public Works Department Irrigation Superintendent on this canal undertook to criminally prosecute certain ryots who seem to have raised a dam across a distributary with the view of raising water to their fields, and, what seems more surprising to me, is the Magistrate's fining one of the accused in the sum of Rs. 50 and another in the sum of Rs. 25. I have not seen a copy of the Magistrate's judgment in the case nor is it my province to criticize the doings of a Magistrate. But I beg to submit that my own humble opinion is that, as far as the interests of the canal in the way of future extension of irrigation are concerned, it would have been better if the Irrigation Superintendent had let off the ryots concerned with a warning, or if the Magistrate had let off the parties with nominal fines. I leave it to the Board to consider how irrigation under the canal can be expected to improve if the very agency distributing water chooses to treat ryots in the above manner instead of trying to advance the interests of the canal by securing the confidence of the ryots by kind treatment and conciliatory manners. As I have already stated above in paragraph 10, the Irrigation Superintendents on this canal may be done away with altogether, if the remedial measures proposed by me under cause (a) are approved of and sanctioned.

37. Remedial measures.—I think the best arrangement to be made will be to dispense with the services of the Public Works Department lascars and to appoint nirgantis or water-distributors in their stead on the revenue side on, say, Rs. 4

each per mensem. For the present, one nirganti may be appointed for every 200 acres of first crop irrigated under each main distributary of the canal, and nirgantis thus appointed should be placed under the immediate orders and supervision of reddy of villages. Beats for the nirgantis can easily be defined afterwards by the local authorities. The Public Works Department will, of course, continue to be responsible for the upkeep of all the main distributaries, both large and small; but I think it would be far better if the distribution of water is in all cases left in the hands of village reddy, even the keys of sluices being kept in their charge. The Canal Revenue Inspectors, Tahsildars and the Special officer moving about the canal villages will necessarily see that this arrangement does not result in any unnecessary wastage of water.

In fixing the average for each nirganti, I say "200 acres of first crop," because the second crop will generally be on the same or a portion of the same extent. As regards provision for the pay of the nirgantis, I beg to submit that I think it can easily be met from the Village Service Fund payable on canal water-rate. Nirgantis must be kept on all the year round, as it would be decidedly better to have permanent men instead of temporary men coming and going. During the one or two dry months when the canal is closed, they can be made to attend to the repairs of the distributaries not under the Public Works Department maintenance.

38. There is no doubt whatever that this is one of the causes contributing to the backwardness of irrigation under the canal, at least to some extent. Under the canal itself, there are here and there A and B class lands, some of which people

show themselves anxious to take up for wet cultivation. I noticed that irrigation in some villages of the Rāmālakōt taluk went somewhat low in fasli 1300 (1890-91) in consequence of prohibition by jamabandi officers of cultivation of lands of this kind. I have been given to understand that one reason why these lands are not allowed to be taken up by ryots for cultivation is that the Public Works Department contemplate to convert them into palmyra or other trees departmentally; but my humble opinion is that it would be more profitable to give them over to ryots for cultivation. Having received applications to the extent of over 500 acres of this kind of land, I have addressed the Collector of Kurnool on the subject, and I am sure the lands will be granted in due course. It is my opinion that whenever applied for, such lands may safely be granted on, at least, miscellaneous pattas, subject to the condition of ryots subsequently surrendering any portions actually required in connection with repairs to the canal without claiming compensation.

39. Again, in some cases lands applied for by ryots for wet cultivation seem to have been refused on the ground that they are reserved for fuel or grazing purposes. I have come across an important case of this nature at Alladapalli in the Proddutur taluk, where a block of about 150 acres applied for by a native gentleman of Bellary has been refused on the ground that the block contains babul trees and is required by the Forest Department for reservation for fuel. I have seen the block in question in the course of my first crop inspection. It is all excellent land for wet cultivation, and the block bears a dry assessment of nearly Rs. 230. If the block had been granted for cultivation, there would not only have been the chance of Government getting canal water-rate eventually on the whole extent, but the land assessment of Rs. 230 would have been secured from the very first year. The Forest Department does not appear to have been getting from this block any income worth the name, and still that department seems anxious to retain it. My own opinion is that, in all cases where the interests of two different departments clash like this, the criterion for disposal should generally be, which is decidedly the more profitable of the two courses as far as the interests of Government are concerned. This does not, however, seem to have been considered in the present case before refusing the application for cultivation. I may add that I have already referred to the case in question in my diary for the fortnight ending 15th February last.

40. Remedial measure.—If, as proposed in paragraph 16 *supra*, a special revenue officer is appointed to look after the interests of the canal, cause (g) will be removed

altogether; for the special officer, as one interested in the advancement of the canal, will naturally begin to dispute whenever he sees that the interest of the canal are likely to suffer, and there will then be the guarantee that questions connected with the canal or in which the interests of the canal are in any way involved will not be decided on one-sided representations.

41. There is, no doubt, a large amount of purely regar soil in the canal villages, especially of the Nandikōtkur, Koilkuntla and Jammalamadugu taluks; but it cannot be said to be altogether an insurmountable difficulty, for we see that, where there is the will, regar lands have in many cases been converted into successful paddy or garden crop lands and irrigated with canal water. There seem, however, to be two main reasons why ryots owning regar lands commanded by the canal generally prefer to raise dry crops on them. One is the fact that, provided there is good and seasonable rainfall, the ryots can, with comparatively very little trouble and cost, raise on such lands successful crops of cholum, cotton, indigo, Bengal gram, wheat, linseed, &c., whereas the cultivation of paddy is a source of great trouble both to themselves and to their cattle and is generally attended with a good deal of expenditure. There is, moreover, the fact for consideration that an acre of paddy generally costs the ryot as much trouble and time as 10 acres of dry crops. The case of "tuvva" (sandy) and masab (mixed) soils, however, is different. People resort to them more freely with wet and garden crops, because the valuable dry crops mentioned above cannot be grown on them as successfully as on regar lands and because they cannot retain moisture as long as regar lands, and consequently require more frequent moistening either by rainfall or by irrigation. The second reason why, in the case of regar lands, ryots generally prefer to raise dry crops is that a piece of pure regar land generally takes more time and costs more to be converted into a paddy land than a piece of "tuvva" (sandy) or masab (mixed) land. Saline efflorescence is more in the former than in the latter.

42. Remedial measures.—As long as there are natural advantages attending the cultivation of regar lands with dry crops, it seems useless to attempt to do much in the way of removing this cause; but still I think that something in the direction can be done if an officer taking special interest goes about teaching and encouraging the holders of regar lands in the Kurnool district to raise ragi and cumrain crops on them with the aid of irrigation as people in some villages of the Proddutur taluk have been doing with success. The application of hemp plant as manure, where people become convinced of its utility as such, will, it is hoped, also tend to bring more of regar land under irrigation inasmuch as the popular opinion is that leaf manure checks saline efflorescence with greater efficacy than anything else. I need hardly add that it is only in normal years that these regar lands do not go in so much for water and that in seasons of drought or famine they also take water extensively for dry crops.

43. Some instances of this kind have come to my notice in the course of my investigation, and whenever such objections are raised by the holders of fields higher up, the ryots wishing to get existing channels extended to their fields to bring them under irrigation generally give up the idea, preferring inaction to dispute with neighbouring ryots. On some occasions, persons wishing to extend channels to their fields no doubt come forward and represent their cases, but it does not appear that taluk authorities generally attend to them with promptitude in the absence of pressure from above, and of course the Public Works Department cannot extend channels as long as people higher up continue to object. Some cases of the kind have come to my notice in the Nandyal and Cuddapah taluks. It seems that it is at times years before such cases are disposed of.

44. Remedial measure.—If there should be a special officer on the canal as proposed in paragraph 16 above, there will be no need for inaction on the part of people wishing to have channels extended to their fields, nor will any unreasonable and

unavoidable delay be allowed to occur in the disposal of cases either on the part of the Public Works Department or the taluk revenue authorities.

45. In the Kurnool district there are four tanks and in the Cuddapah taluk about half a dozen "kuntas" (small tanks) which generally get additional supply from the canal, but it does not appear that the canal has been getting to its credit invariably in all cases a fair value in return for water supplied by it. In paragraph 8 of G.O., dated 6th June 1882, No. 448 I., Public Works, the Government approved of a proposal made by the committee appointed by G.O., dated 1st August 1881, No. 479 I., and decided that when canal water is supplied to Government tanks in consequence of deficiency in their natural supply, the value of water supplied should be credited to the canal and deducted from the revenue credited to the tanks; and from the appendix referred to in paragraph 6 of the committee's report, it is clear that the above value is to be arrived at by calculating at Re. 1 for every 1,440 cubic yards of water supplied. But this system, however, does not seem to be in force anywhere under the canal. In fact, no registers are now maintained by the Public Works Department to show the quantity of water run into different tanks or the exact dates on which it is run, and the discontinuance of the registers seems to be in consequence of a communication from the Collector of Kurnool to the Executive Engineer, Kurnool Division, dated 24th September 1888, No. 2979, wherein it was said that "the old rate of Re. 1 per 1,440 cubic yards is entirely superseded by G.O., dated 6th June 1882, No. 448 I., Public Works." The system once in force of the canal being credited with value of water supplied on bills presented by the Public Works Department having thus fallen out of use, the present practice is different in different places. In the Kurnool district, the amount of revenue derived only from the second crops under tanks is being generally credited to the canal notwithstanding that even the first crops often benefit by canal water run into tanks. Under the practice now in force the canal generally gets nothing from dry or "tirwajasti" lands irrigated under tanks during the first crop season whatever the extent of such lands may be. Under almost all the tanks fed by the canal, there is generally a good deal of dry or tirwajasti extent irrigated in addition to the wet ayacut, and it seems but fair that the canal should get something to its credit when such extension is due mainly to the aid it renders to the tank. In the current fasli, the tirwajasti cultivation under the three important canal-fed tanks of the Kurnool district is as per

Name of tank.	First crop cultivation extent.	
	Ayen wet.	Tirwajasti or dry irrigated.
Nandyal tank	Acres. 974.45	Acres. 264.61
Aiyavarikodur tank	125.29	228.23
Kanala tank	217.16	48.84

nearly double the wet ayacut extent itself. Of this total tirwajasti extent of acres 228.23, acres 50.58 are situated under the tank and acres 177.65 above it; and a curious statement that the karnam and ryots concerned make, and which the Taluk Tahsildar strongly supports, is that the acres 177.65 situated above the tank owe their irrigation not to canal water, but to the natural supply channel of the tank unassisted by the canal notwithstanding that the so-called natural supply channel was reported to have breached so long back as in 1884 or 1885 and has never been repaired since. I have also satisfied myself by a communication from the Public Works Department current fasli 1330 (1890-91). Of course, the karnam and ryots of Aiyavarikodur have an object in saying that canal water was not taken and that it was exclusively by the

natural supply channel of the tank that the tirwajasti lands have been irrigated, for they know that, if canal water is admitted to have been used, they would be charged water-rate at Rs. 4 an acre instead of Rs. 3 with which they have been fortunate enough to escape all along. I am afraid I may be taken as going into unnecessary details, but I refer to the above case of the Aiyavarikodur tank simply to illustrate how the canal generally loses in connection with tank storage, and to convince the Board of the necessity there is for the appointment of a special officer to guard against all such losses.

46. In the Cuddapah district, where wet lands under tanks bear a consolidated wet assessment, the canal is being credited with water-rate whenever canal water is admitted to have been taken into tanks, the water-rate in the case of wet lands being deducted and paid from their consolidated wet assessment; but even here the karnams and ryots seem to have been making false representations whenever possible. It has been noticed that the karnams of Rochinayapalli, Palampalli and Chinnamatsupalli have made some absurd and anomalous entries in their No. 20 accounts (village manual) for the current fasli with a view to show as if no canal water had been taken into their tanks for the first crops, and these karnams have been duly punished for it by the Collector (please see Cuddapah Collector's letter No. 690-Ver. of 20th May 1891 recorded in Board's Proceedings, Mis. No. 2572, dated 26th idem).

47. There is another point which seems to deserve consideration in regard to tanks having the canal to feed them. The canal is there ready to supply them with water for nearly ten months in the year, and still some of them continued to be called second-class tanks and second-class tirwajasti rates are being charged under them. This seems to be a source of unnecessary loss to Government, and I think that all tanks fed, or susceptible of being fed, by the canal may, for purposes of water-rate charge, be fairly ordered to be treated as first-class tanks.

48. Remedial measures.—Three different remedies suggest themselves to me to remove the above cause and to set the thing on a safe and more definite basis, and any one of the remedies may be selected by the Board at its pleasure. One remedy is to revive the old system of Public Works Department running water into tanks, not whenever they please, but when the Revenue Department formally apply for it specifying the quantity they want and then presenting a bill to the Collector at the close of the fasli year, calculating the value at Re. 1 for every 1,440 cubic yards of water supplied. In case this system is to be adopted, it will, of course, be necessary for the Public Works Department to well secure the feeding sluices and to make them quite independent, so that it may not be possible for people to open them any time they like. At present some of the sluices intended for feeding tanks directly irrigate other lands, and this, I submit, is a loophole. The sluices may be opened by people interested on the pretext of water being taken for direct irrigation, whereas, in reality, tanks are fed. In December last I actually saw a case like this in the Nandyal taluk.

49. The second remedial measure is, now that both the canal and the tanks are Government works, to make over the tanks concerned to the canal, treating them as part and parcel of the canal. In this case an amount equal to canal water-rate on all the lands irrigated (wet inams excepted) under the tanks may be credited to the canal, any surplus left including land assessment and quit-rent on wet inams going to the credit of "Ayen" (Revenue proper). Even the wet inams may, if irrigated, be made to pay water-rate at canal rates in years of drought or famine when the tanks do not get their natural supply properly. Of course, the canal will, in return, have to bear all charges of improvement or maintenance of the tanks wherever such charges are now being debited to land revenue proper. It may not be out of place to add here that in the case of the important tanks in the Nandyal and Sirvel taluks of the Kurnool district thus connected with the canal, the Government wet lands under the tanks bear no consolidated wet assessment and that it is only under the few small kuntas of the Cuddapah taluk that there is some acreage of Government wet lands bearing consolidated wet assessment.

50. The third and the last remedy that occurs to me under this head is to pour canal water freely into tanks whenever found necessary so as to always keep full supply

in the tanks and to credit the canal in normal years with all the tirwajasti or water-rate obtained on dry lands irrigated under them including both crops, as also fasaljasti derived on single crop wet lands, both Government and inam. In years of drought or famine, it would be fair to credit the canal with water-rate on the wet lands also, both Government and inam, calculated at the canal rates, carrying the difference left, if any, to the credit of "Ayu."

51. In the course of my inquiry, I have come across some instances where people owning lands fit for wet cultivation have expressed themselves as unable to begin wet cultivation for want of money to purchase buffaloes and to bed the lands, &c. Of course, there is already sufficient provision made to meet such cases in the Land Improvement and Agriculturists' Loans Acts and the rules framed thereunder, but special interest on the part of taluk officers seems to be somewhat wanting in the direction. I met some ryots who said they did not know of even the existence of rules authorizing such advances. The men who want such assistance would not certainly like to go and entangle themselves in the hands of the local money-lender, for they know well how ruinous it is to be so entangled.

52. Remedial measure.—If there is a special officer on the canal interested in the development of its revenue, I am sure the above cause will disappear altogether. He will then be able to make inquiries of people as he moves about, receive applications and forward them to the Tahsildars for disposal, and can also watch and see that Tahsildars do not allow any unnecessary delay to occur in their disposal.

53. I have heard ryots say that December, the first kist month according to the kistbandi now in force, is too early an instalment for canal water-rate, and that it would be a relief to ryots to move it up at least a month further as far as canal water-rate is concerned. In the Kurnool district the first paddy crop is not harvested very often till the latter part of December, and in the Cuddapah district it is harvested still later on. All the ryots that grow crops under the canal are not well-to-do. There are many that rely upon the crop on the land for payment of instalment, and if such people are asked to pay in their kist before the removal of the crop, it would tantamount to asking them to go to the local sower or money-lender—a step the costs and ruin resulting from which are too well known to call for description here.

54. Remedial measures.—I think the number of kists for canal water-rate and cesses due thereon may, at least tentatively for a couple of years, be reduced to three, commencing from January instead of December, to see how the change would work. If, after fair trial, the new arrangement is found to be really productive of good to ryots and a source of no loss or inconvenience to Government, it may then be sanctioned permanently, and the question whether any further reduction would be necessary may also be considered.

55. Cases of three crops grown on a piece of land and all irrigated in one and the same year are common in the Cuddapah and Proddatur taluks, where, however, the taluk and village officers seem to be labouring under an impression that it is irregular to charge water-rate on the third crop in the same year. In all cases where all the three crops grown on a piece of land during one and the same year happen to be irrigated, they have, therefore, been charging only the first two crops watered, reserving the third to be charged the next year; but, if there should be three crops again on the same piece of land in the succeeding year also, there is no other course left for them than to leave the preceding year's third crop uncharged. As far as my knowledge goes, there seems to be no authority on which the above practice can be said to be based. Paragraph 2

of Standing Order No. 17, no doubt, lays down that "no charge is leviable for a third crop," but this, I believe, must have been meant to apply to third crops raised on wet lands alone. Standing Order No. 4, which prescribes rules for the levy of water-rate on dry lands, makes no corresponding provision; and, considering that dry lands differ from wet lands in respect of charge for water, in that the former are free from all restrictions, whereas there is a kind of implied contract between the state and the holders in the case of the latter which bear a consolidated wet assessment, I think it but fair that Government should get the value of water in return, when it is given for third or subsequent crops on dry lands. In the case of dry lands where it is quite optional with the ryot to take water or not, water must, I think, be considered as a commodity brought into the market for sale; and, because a ryot has chosen to purchase water twice in the year, I see no reason whatever why it should be given him free of charge the third time. The practice of reserving the third crop for the next year for charge of water-rate seems also open to objection as being unsafe and unnecessarily detrimental to the interests of the canal revenue and should not, I submit, be allowed under any circumstances whatever.

56. Remedial measure.—The issue of uniform and distinct instructions on the subject to the effect suggested will remove the cause.

57. In the Proddatur and Cuddapah taluks of the Cuddapah district there is the practice of ryots mixing up indigo with ragi and sowing both together. They apply for water for the ragi crop and take the requisite number of floodings for it. The ragi crop thus raised is harvested generally in the month of January or February, and, when this crop is removed, the indigo plants left will, in consequence of the overgrowing ragi crop having kept them under shade all the while, be short, slender and stunted, so much so that the indigo plants are not affected at all in sickling the ragi crop. Although nominally sown along with ragi, the indigo crop thus sown practically begins its life and growth, proper, after the removal of the obstructive ragi crop, and it generally stands on the ground as an independent crop for over three months subsequently, during which time also canal water is used as far as available. Now the question for solution is whether the canal is entitled or not to separate water-rate for the indigo crop which stood on the ground independently and took water for a reasonably long time after the removal of the original ragi crop, or whether the water-rate that the preceding ragi crop had paid can be taken as water-rate for the indigo crop as well. I think it but fair that the canal should get separate water-rate for the indigo crop inasmuch as the interval between the harvest of the two crops is not small. Over three months is time enough to justify the treatment of a crop as independent, and there are some crops which stand on the ground only for 70 days—the cummin seed for instance. The object of the ryot in mixing up indigo with ragi is simply to gain a little time in the case of the indigo plant, but not to grow and reap them concurrently or almost concurrently as is done in the case of some dry crops. In this connection, it may not be out of place to add that, when more than one cutting are intended, which is very often the case, indigo crop thus raised stands on the ground for even five or six months after the removal of the ragi crop, ryots continuing to take water as long as it is available in the canal.

58. As to charge of separate water-rate on indigo in cases of the above kind, there is diversity of practice. Some officers have been charging, whereas others have been omitting, so that the matter has been one of discretion altogether and not of any fixed principle. In my humble opinion it is not only equitable but also necessary that separate water-rate should be charged in all cases like the above, inasmuch as, by deciding otherwise, people may, taking advantage of the admitted principle, devise several other ways of defrauding Government of its revenue.

59. Remedial measure.—Issue of instructions to the effect that separate water-rate should be charged in cases of the above kind will remove the cause.

60. I have come across a few instances where fields fit for wet cultivation were not cultivated by people who have a desire to bring them under wet cultivation because of inconvenience and difficulty felt in taking their cattle and implements to them in consequence of marshes or swamps in the way formed either by natural streams or by surplus water drainage coming from the canal. There do not, however, seem to be many cases of this kind and the cause may, therefore, be said to be one of minor importance.

61. *Remedial measures.*—If there is a special officer on the canal, cases like the above will certainly attract his attention, and he can try and remove the cause by addressing either the Local Fund Boards concerned or the Executive Engineer in charge of the canal.

62. There is no doubt whatever that, compared to other districts and tracts having similar important irrigation works, the population of the taluks commanded by this canal is sparse. But this need not, however, be looked upon as a cause capable of making a total failure of the canal; for, as I have already shown in the foregoing paragraphs and as can be observed from the forecast given further on, it is, in my humble opinion, quite possible to make the canal more than self-supporting even with the existing population. Subjoined is a table showing the population per square mile in the tracts commanded by the canal and those commanded by similar works in the Godavari, Kistna, Trichinopoly and Tanjore districts:—

District.	Taluk.	Population per square mile.		District.	Taluk.	Population per square mile.	
		Total.	Agricultural.			Total.	Agricultural.
Kurnool ..	Koilkuntla ..	134	43	Kistna ..	Papatla ..	723	65
	Nandikotkur ..	65	22		Bandur ..	10	61
	Nandyal ..	88	31		Gudivada ..	10	63
	Ramalakot ..	113	34		Kopalle ..	286	93
Cuddapah ..	Sirvel ..	92	33	Trichinopoly ..	Kulitabi ..	230	110
	Cuddapah ..	194	76		Musiri ..	345	147
	Jammalamadugu ..	149	71		Trichinopoly ..	690	189
	Proddutur ..	189	80		Kumbakonam ..	1,181	313
Godavari ..	Amalapuram ..	449	136	Tanjore ..	Mannargudi ..	640	210
	Bhimavaram ..	338	134		Mayavaram ..	720	207
	Ellore ..	205	60		Nagapattinam ..	907	217
	Narasapur ..	458	144		Rannilam ..	789	259
	Ramachandrapuram ..	652	133		Shiyali ..	717	224
	Tanuka ..	..	..		Tanjore ..	658	162

63. *Remedial measures.*—This is a natural disadvantage, and, as such, must be left mainly to nature for gradual removal. The special concessional rates sanctioned in the case of blocks of 50 acres (now reduced to 10) and upwards of unoccupied waste lands might no doubt have been intended to remove it to some extent at least. But almost all the good lands having already been under occupation of the local ryots, and nearly all the few outsiders who applied for and took up blocks having suffered losses partly through unsuitability of soils for wet cultivation and mainly through the indifference or faithlessness of agents or middlemen employed by them to look after the cultivation and management of their blocks, the concessional rates have not, as yet, done any appreciable good in the direction of removing the cause.

Now that the minimum limit of a block has been reduced to 10 acres, they may, however, be expected to do some good hereafter, provided lists of cultivable blocks are made out and care taken to give them proper publicity in other districts having sufficient population and wet cultivation already. Speaking of blocks generally, Mr. Johnston, the Executive Engineer, says in his letter, No. 146, dated 22nd May last: "I understand some laboring classes of the Kistna and Godavari districts who cannot afford to purchase lands there will be willing to emigrate with their families and settle themselves here, if the agricultural prospects and pursuits are of sufficient encouragement." We cannot expect as much good to result if outsiders taking up

blocks employed local labour, as if the laborers themselves take up blocks and come and work here. Even past experience goes to confirm this view, inasmuch as, although outsiders of higher position and greater wealth who took up blocks under the canal gave them up and had to return to their native places, two "Palla" class laborers who came from a southern district still hold the blocks taken up by them at Allagadda in the Sirvel taluk. These "Palla" laborers built huts in their blocks and thus live actually in their farms, and it is this kind of people that we must try to get in. I think, if there is special revenue officer on the canal, he can do a great deal in the direction, proceeding to the districts concerned if necessary.

64. To sum up, the remedial measures I propose to remove the various causes, which, in my opinion, have been retarding extension of irrigation and keeping down revenue under this canal, are:—

- (1) The appointment of a special revenue officer on the canal.
- (2) Separation of Revenue Inspector's duties and the assignment of canal work alone to one Revenue Inspector in each of the six important canal taluks.
- (3) Charge of a light penal rate on irrigation without application.
- (4) Grant of remuneration to Canal village officers on future increase.
- (5) Introduction of a proper dharkhast register form.
- (6) Issue of clear instructions to the effect that the compound rate (item No. 3) given in the scale of water-rates applies not only to two wet crops, but to any two crops at the option of the applicant.
- (7) Grant of permission to ryots to take for use as manure deposit silt from the bed of the canal free of charge and without any restriction.
- (8) Grant, if possible, of free permits for the collection of all kinds of leaf manure both from reserved and unreserved lands.
- (9) Reduction of water-rate on "mundla" (tailed or coarse) paddy from Rs. 4 to Rs. 2 per acre.
- (10) Abolition of Public Works Department lascars and the appointment in their stead of nirgantis on the revenue side for the distribution of water.
- (11) Adoption of one of the three remedies proposed in connection with tank-storage question.
- (12) Slight alteration of the existing kistbandi as far as the collection of canal water-rate and the cesses due thereon is concerned.
- (13) Issue of definite instructions in the case of charge of water-rate on third crops on dry lands irrigated.
- (14) Issue of definite instructions to the effect that separate water-rate should be charged on indigo sown mixed with ragi, but irrigated and harvested sufficiently long after the removal of the ragi crop.

65. The water-rate for turmeric was Rs. 6 per acre for some years after the transfer of the canal to Government, and during the Company's time it was even Rs. 12 per acre. But in Board's Proceedings, No. 718, dated 24th March 1886, this crop was ordered to be treated as a single wet crop and the rate for it reduced to Rs. 4 per acre. This reduction, however, is quite unnecessary in my humble opinion; and, in fact, the ryots themselves are surprised that the rate has been reduced so low. Turmeric is a crop which stands on the ground for about eight months, and it is very often dug up in the ninth month. The average number of floodings it takes is never less than 25, and, considering that the charge on an acre of garden ragi, taking, perhaps, about a dozen floodings, is Rs. 3, Rs. 4 per acre on turmeric seems unnecessarily too low. Compared to other crops, moreover, turmeric is certainly more remunerative, and I have come across an instance where a crop on about 80 cents went for as much as nearly Rs. 300 this year. It may, perhaps, be argued that, although standing on the ground for a longer time than paddy, turmeric takes on the whole less quantity of water than paddy and that Rs. 4 is therefore an appropriate rate for it. But if this argument is to be admitted in the case of turmeric, it will have to be admitted in the case of all other crops; and there being in fact no other wet crop taking so much water as paddy, the 6-rupee rate may have to be done away with

altogether. I beg that, in these circumstances, the question of raising the rate for turmeric back to Rs. 6 may kindly be considered.

66. In addition to the other proposals made by me in the foregoing paragraphs, I think it would be well if Tahsildars of canal taluks are distinctly made to understand that their claims for promotion will be taken into particular consideration if they exert themselves and bring about an extension of irrigation and increase of canal revenue in their taluks, and that, if they show themselves indifferent in canal matters and thus allow irrigation to fall, they will incur the severest displeasure of the superior authorities and lose all chances of promotion.

67. In his letter, No. 1000, dated 19th February 1891, embodied in Board's Proceedings, Mis. No. 1070, dated 6th March last, Mr. Johnston, the Executive Engineer, suggests that, in the case of garden crops (class 2 of Madras Irrigation and Canal Company's rules) ryots may be allowed to pay one rupee for a flooding and Rs. 3 as a maximum for any number of floodings, and this suggestion has been supported by the Collector of Kurnool. It will, however, be observed by reference to the old Company's rules, that, in drawing a general line of distinction between the second and third class crops, second-class crops are defined as those requiring frequent floodings and third-class ones as requiring occasional floodings; and in drawing up the new scale of water-rates sanctioned in paragraph 1 of G.O., No. 448 I., dated 6th June 1882 (Public Works), the third-class crops seem to have been included in dry crops, for which the rate is already given as Re. 1 for flow and As. 12-0 for lift. I think that, in the above circumstances, crops taking only one flooding cannot justly be brought under the category of "garden crops" and, if this view is correct, Mr. Johnston's suggestion must be superfluous. In fact, such a distinction is already being observed in some places under the canal,—take for instance the case of ragi crop in Yetur in the Cuddapah taluk in fasli 1299 which was charged at Re. 1 per acre. No doubt, to find out exactly how many floodings a ryot has taken for his crop is always a difficult task, and we cannot always rely upon a karnam for correct information on the point; but, with the additional supervision proposed, I am confident that cases of "frequent floodings" can easily be distinguished in future from cases of occasional floodings.

68. If a special revenue officer is appointed on the canal and if the other proposals made in paragraphs 63, 64 and 65 are also sanctioned as far as may be found reasonable and unobjectionable, I think we may safely calculate upon the canal becoming more than self-supporting and upon the forecast given below being realized, say, in the course of five years.

	RS.
Average annual revenue for the last 11 years down to fasli 1298 (1888-89)	72,000
Lowest increase that may result from reduction of water-rate for "Mundla" (tailed or coarse) paddy to Rs. 2 per acre	5,000
Increase that may result from proper and punctual supervision consequent on the appointment of a special revenue officer and the assignment of separate revenue inspectors for canal work	15,000
Lowest increase that may result from instruction and encouragement to ryots and attention to ryots' wants by the special officer and from removal of the other causes enumerated	10,000
Minimum income from the Chopad project, if the channel applied for, which is comparatively a cheap one, can be given	38,000
Total increase that may safely be expected by the end of the fifth year	68,000
Grand total, including existing average annual income	1,40,000

It may not be out of place to add that, in preparing the above forecast, I have taken care to be as moderate as possible, so that the real figures by the end of five years after the appointment of a special officer may even be more than the estimate. The canal which is hitherto being worked at a loss may thus be expected to become more

than self-supporting in the course of a few years, Mr. Johnston's intention being to keep annual expenditure on the canal below Rs. 1,00,000 in future. The estimated outlay for 1891-92 seems to be something like Rs. 93,000.

I see that in paragraph 3 of its Proceedings, No. 216, dated 24th April 1890, the Board in the Land Revenue Department remarked that "the experiment of a special officer has been already tried and that it was not very successful," but I beg to submit that, as far as my knowledge and inquiries go, the special officers that sat on this canal before hardly did anything in the way of inspection and check of fields, instruction and encouragement to ryots, grant of extensions of existing channels wherever really required and investigation as to whether there are any neglected localities under the canal really promising extension of irrigation if channels are given. Having seen the villages involved in the new Chopad project, I am really surprised how this quarter escaped the attention of the former special officers if they had really extension of irrigation under this canal in their aim. It is also matter worth consideration that, although there were special officers on the canal before its transfer to Government, there have been none appointed since its transfer and since additional facilities have been afforded to ryots by reduction of rates and by the grant of other concessions. The special officers that were on the canal before seem to have done more in-door work and very little of out-door work, confining their main attention to figures placed before them by Revenue Inspectors and company's amins and to their check arithmetically. The special officer, I propose, however, will be expected to do lots of other work as detailed in the foregoing paragraphs.

69. As desired in the latter part of paragraph 4 of Board's Resolution, No. 325, dated 24th October last (Revenue Settlement, Land Records and Agriculture), I beg to submit, herewith, a statement (enclosure No. 6) in which I have attempted to show village war as much information as I could collect from the village and taluk officers and from general investigation in regard to (1) the total area, (2) area under occupation in fasli 1299 (1889-90), (3) total irrigable area, (4) areas irrigated in fasli 1299 and in the preceding years, (5) areas dealt with under the block and cowle rules, (6) cause of non-extension of irrigation hitherto, and (7) prospects of future extension; and although it is very much to be regretted that the information furnished by the Tahsildars of Nandyal and Sirvel is meagre and imperfect, I hope the statement will be found at least of some use. Columns are left blank wherever information could not be got from Village Officers or Tahsildars.

70. I will be wanting in my duty if I close this report without expressing my entire satisfaction at the care and attention with which the Revenue Settlement classifier P. Venkatrayudu and clerks R. Yegnarama Iyer and after him Anantakrishna Iyer, B.A., have done their work under me. Having had to be almost always on the move with me during the cold and hot seasons, in both of which extremes generally prevail in the tracts commanded by this canal, they have really had a hard time of it, but they all bore it patiently and well, and I hope their hard work will not be left unrewarded. I feel particularly sorry that a graduate of Anantakrishna Aiyar's intelligence and attainments is so low in the ladder of public service.

71. I regret the lengthiness of the report, but I have the consolation of having stated all that I thought important and relevant and touching the question referred to me.

Read—also the following letter from C. KOUGH, Esq., Collector of Kurnool, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 9th July 1891, No. 3074:—

I have the honour to forward the report * of the Deputy Collector on special duty, Kurnool-Cuddapah canal.

* No. 174, dated 30th June 1891, with six enclosures.

2. In doing so, I do not make any attempt to discuss it in detail for this reason. The perusal of the report

convinces me more decidedly than ever that the appointment of a special officer for some period to superintend agricultural operations under the canal is essential as originally recommended by me.

3. When I made this proposition, it was considered that an investigation like that concluded by this report was appropriate to determine whether or not the proposition should be adopted. If the Board agrees with me, upon reading the report, that a sufficient case has been established, it will doubtless recommend the appointment.

4. The several measures recommended as remedies, administration and distribution of staff, &c., are all details dependant more or less upon the creation of the special appointment, and I have therefore not thought it of any use to attempt to discuss them apart from it.

5. I entirely concur with the Deputy Collector in believing that past experience shows it is hopeless to expect results such as he prognosticates from the ordinary taluk supervision; quite true it is that theoretically this is responsible that all should go properly, but in practice it is not to be attained from officers whose hands are so full of multifarious duties. Especially is this the case in two important particulars. No Tahsildar can be expected to exhibit a sufficient amount of zeal for development of this one special work of the many he has to deal with, nor can he be supposed to have the knowledge or time to impart it, as to matters of agricultural education, a very essential feature of development.

6. I do not mean to say that when affairs under the canal have once been established upon a widely improved system of administration it will be unreasonable to insist that this be afterwards maintained by the ordinary administration. But I do think that the special agency is necessary and now and that by this practical test it can alone be shown whether or not all the theory started and figures assumed will arrive at a solid outturn. I believe myself the experiment would be eminently satisfactory and remunerative and worth all the writing and statistics that could be ever collected upon the subject. Moreover, if effect is given to the Deputy Collector's proposals for reduction of present establishment, there will be savings apart from the expected increase of revenue to set against the cost of temporary establishment.

Read—also the following endorsement by F. D'A. O. WOLFE-MURRAY, Esq., Collector of Cuddapah, dated Ventimitta, 15th July 1891, Disposal No. 2790-Ver.:—

Forwarded. I have no special knowledge of the canal in this district yet as I have been here so short a time, and that not in the canal season. I purpose a trip thereon when other engagements allow of it. The remarks of the Special Deputy as to the abolition of the canal superintendents seem just. But I would give each taluk in this district a special canal Revenue Inspector, and he should do none but canal work. Even so one man would have 27 and the other 22 villages to look after, which is a proper size of firka.

I do not recommend the Deputy Collector's suggestions regarding the karnams.

I would impose at least one and a half rates or even double on all irrigation without application.

I would certainly give the village officers a percentage of profit on all future increase on irrigation at least for a fixed term of years. The idea of a special revenue officer in charge of the canal for at least five years is good. It is he that must impress the ryots with the necessity for cultivating in June and July, and for using the canal silt to fertilise their lands. In the hot weather he might take a selection of ryots from each village to the Kistna and Godavari canals and let the ryots learn with their own eyes and ears how things are done there, and that in Kistna at least all the paddy soil is regada soil.

As to the remarks in paragraph 39, about the refusal of the block of soil with trees, I have looked into it; they are the only trees in miles of country and must remain. The cure for saline efflorescence is in Kistna constant floodings given free of charge till the "reh" disappears. This should be done here. I prefer the second system advocated by the Deputy Collector regarding canal supply to tanks.

I think endeavours should be made by offers of land free for a period of years to induce some of the Kistna ryots inhabiting the overcrowded villages of the western delta to come and settle on the canal. There is an enterprising man at Vetapalem in Bapatla taluk. I cannot recollect his exact name. I think it is P. Seshachellum Naidu. He is a Public Works Department contractor and member of the Taluk Board; he is well known to all the chief officials in the district.

He might be offered 500 or 1,000 acres on favorable rates and select his own ground. This canal is at Nandyal now in close touch with the head of the Kistna western delta, and an enterprising and energetic man could manage his property under the canal from the latter, seeing that he has the railway at his gates.

Read—also letter from the Collector of Kurnool, dated 25th July 1891, No. 3516, reporting, with reference to Board's Proceedings, Mis. No. 407, dated 27th January 1891, that there are no grounds for punishing certain karnams of canal villages for alleged omission to charge water-rate, and that a Standing Order directing that all cases of wet cultivation under the canal should, in the first instance, be charged has been issued.

Read—also letter from the Deputy Collector of Adoni Division, dated 31st July 1891, No. 467, submitting a statement showing the area of lands irrigated by the Kurnool-Cuddapah canal and the water-rate derived thereon in the five faslis from 1296 to 1300.

Read—also letter from the Collector of Cuddapah, dated 27th August 1891, Dis. No. 3687-Ver., reporting the area grown with Mundla paddy in the taluk of Jammalamadugu.

Read—also letter from the Collector of Cuddapah, dated 13th September 1891, No. 3951-Ver., reporting that an extent of 13 acres has been grown with Mundla paddy in the village of Kanagudur, Proddutur taluk, in fasli 1300.

Read—also letter from the Collector of Cuddapah, dated 8th September 1891, Dis. No. 3853-Ver., submitting two statements, one showing the area irrigated under Kurnool canal and the amount charged for fasli 1300, and the other showing how much of the area brought to notice by the Special Deputy Collector has been charged, with reasons for not charging the rest.

Read—also letter from the Collector of Kurnool, dated 12th September 1891, No. 4467, requesting early orders on his letter No. 967, dated 7th March 1891, recommending reduction of water-rate on Mundla paddy grown under the Kurnool-Cuddapah canal.

Read—also statement from the Collector of Kurnool, dated 3rd October 1891, No. 4776, showing the area irrigated and the amount charged for fasli 1300 in each village under the Kurnool-Cuddapah canal.

Read—also letter from the Collector of Kurnool, dated 16th January 1892, No. 417, stating the further extent and amount of water-rate charged in Nandyal and Byapukodur villages, Nandyal taluk, in continuation of his office statement No. 4776, dated 3rd October 1891.

Resolution—dated 25th May 1893, No. 204.

Government having decided * that an inquiry should be made by a Special Deputy Collector into the causes of the increase of irrigation under the Kurnool-Cuddapah canal and into the possibilities for its further extension, † appointed to the duty M.R.Ry. K. Subbarayadu, whose comprehensive report is read above. The Collector of Kurnool, through which district the canal passes from north to south, forwards the Deputy Collector's report with the unsatisfactory remark that he does not attempt to discuss it in detail, because the Deputy Collector agrees with him in recommending the appointment of a special officer to superintend agricultural operations under the canal. Considering that the Deputy Collector's report, which Mr. Kough allows to pass unchallenged, reveals a condition of things which the Board is constrained to characterise as discreditable to all the revenue officers concerned, it is a matter for surprise that it should have elicited no rejoinder from the Collector, who, as the head of the district, is responsible for the proper administration of the affairs of the canal. While as to the proposal to appoint a special officer to take charge of the canal, the Board may say at once that no necessity for such an appointment is made out.

2. The Collector of Cuddapah also approves the proposal to appoint a special officer and makes certain other suggestions with a view to encourage the extension of irrigation under the canal.

3. The increase of irrigation under the canal in 1888-89 was due, as explained in Board's Proceedings, dated 24th October 1890, No. 325, to improved demand for water owing to deficient rainfall and to temporary reduction of the charge for water sanctioned in G.O., dated 14th September 1888, No. 658, which led to a large increase in the area of dry crops irrigated.

4. The Special Deputy Collector entered on his duties on the 18th October 1890.

† Years.	After opening.	Areas irrigated.
First period—		Ac.
1863-64		18
1864-65		192
1865-66		816
1866-67		1,396
1867-68		1,136
1868-69		1,078
1869-70		1,164
1870-71		1,616

Second period—	After completion.	
1871-72		7,536
1872-73		9,405
1873-74		13,355
1874-75		13,494
1875-76		14,763

Third period—	After the famine.	
1878-79		18,361
1879-80		18,655
1880-81		18,061

Fourth period—	After transfer to Government.	
1882-83		17,834
1883-84		19,675
1885-86		21,572
1886-87		20,956
1887-88		21,856
1889-90		21,851

Year of special Deputy Collector's investigation.	
1890-91	 24,848

He marched over the whole length of the canal, visiting 133 out of the 168 villages commanded by it, and inspected the land and crops in all important villages, collecting much valuable information by personal observation and by local inquiry. He has carried out his duties in a thorough and satisfactory manner.

5. As the Government is aware, the canal was opened for irrigation in 1863-64, but was not completed till the year 1871-72. It was under the management of the Irrigation and Canal Company up to 1882-83, when it was taken over by Government. For easy reference, the total areas irrigated from year to year are noted in the margin, † under the four well-marked periods of development which the figures indicate. The famine year—1876-77—and the following year have been omitted, as the areas irrigated in those years—90,000 acres and 51,000 acres, respectively, were exceptionally high, as also the years 1881-82, 1884-85 and 1888-89, which were years of partial failure of the rains. The total area commanded by the canal

Fasli.	First crop.	Second crop.	Total.
1299	ACS. 18,722	ACS. 3,129	ACS. 21,851
1300	20,583	4,260	24,843
Difference ..	1,866	1,131	2,997

is 321,515 acres, of which distributaries have been provided for 160,000 acres. Compared with the previous year, the area irrigated in fasli 1300 (1890-91) shows an increase of nearly 3,000 acres as shown in the margin. This increase was due chiefly to the exertions of the Deputy Collector in bringing to light surreptitious

irrigation and partly also to the unfavorable character of the season in Cuddapah, in consequence of which the ryots made use of canal water more freely than the year before.

6. The Deputy Collector discusses in detail what he regards as the main causes which stand in the way of the extensive use of canal water. For the most part these causes have been discussed before, but besides those assigned by the Deputy Collector, the Board is disposed to think that the unwillingness of the ryots to extend the cultivation of paddy may be due to the fact that the sub-soil is of a character which renders drainage imperfect. In this respect the geological formation of much of the country commanded by the canal differs from that of the Kistna delta.

7. But after making all reasonable allowance for physical defects and other causes which operate to retard the development of canal irrigation, it is evident, from what the Deputy Collector has brought to light, that the two potent causes of stagnation are the indifference of revenue officers generally and the corruption of the subordinate officials. Owing to the former, large areas which might be irrigated are still left waste or cultivated with dry crop, and, by reason of the latter, large quantities of water are used and not paid for at all. This is illustrated by the sketches, which form Enclosures II and III of the report.

8. The special inducements held out by the Canal Water-rate rules with a view to attract capital have not met with much success, the areas taken up under the block and cowle systems amounting to only 7,533-22 acres, of which 2,818-52 acres have already been relinquished as shown below:—

Taluk.	Block system.			Cowle system.			Total.		
	Taken up.	Relinquished.	Retained.	Taken up.	Relinquished.	Retained.	Taken up.	Relinquished.	Retained.
1. Ramalakot ..	2,253-63	1,526-89	726-74	27-83	101-48	101-48	2,353-11	1,626-89	826-22
2. Nandikotkur ..	172-81	2-0	170-81	172-81	170-81	2-0	170-81	170-81	0-0
3. Nandyal ..	1,283-70	884-95	1,478-65	173-67	173-67	0-0	2,342-32	884-95	1,457-37
4. Sirvel ..	147-86	37-35	110-51	37-35	1-0	36-35	185-21	1-0	184-21
5. Jammalamadugu ..	246-28	226-09	20-19	246-28	226-09	20-19	701-69	403-68	298-08
6. Proddatur ..	455-41	383-49	71-92	1,608-45	1,608-45	0-0	2,507-67	0-0	2,507-67
7. Cuddapah ..	139-80	..	139-80	..	..	..	..	..	..
Total ..	5,165-35	2,795-33	2,370-02	2,867-67	23-19	2,344-68	7,533-22	2,818-52	4,714-70

The size of the blocks to be taken up for cultivation has, however, lately been reduced (Board's Proceedings, dated 4th September 1890, Mis. No. 3631) and with the facilities now afforded by the Bellary-Kistna Railway, which passes through the centre of the district, it may be hoped that a larger area will be taken up in the future. With a view to attract the capitalists of Kistna, Mr. Wolfe-Murray, Collector of Cuddapah, has issued a notice inviting them to take up land under the cowle system and the Collector of Kurnool also has been asked to issue a similar notice.

9. There are 163 Government and 5 shrotriem villages under the canal, Patha Cuddapah shown in the statement received with the Collector's letter, No. 3883-Ver., dated 8th September 1891, not being included in the Deputy Collector's list. Of these villages there is no room for improvement in 57, as they have no suitable land, and in the remaining villages the Deputy Collector considers improvement possible, in most cases, if better supervision be provided, and the ryots be instructed in the manner alluded to below. The total extent under cultivation in these villages is 259,042 acres and the total number of plough-cattle 18,000, which gives an average of

nearly 29 acres for each pair, an area which is undoubtedly high even for dry cultivation, and wet cultivation would require a much larger number of cattle. In the same villages there is a total extent of 65,500 acres of unoccupied waste, a portion of which could be brought under irrigation of the canal, but what this area would be the Deputy Collector has not estimated. He merely says that "some extension" is possible in 64 villages, while in 45 more "extension" and in 2 others "good extension" is said to be possible.

10. The Deputy Collector points out that there is some doubt amongst the ryots as to the conditions governing the compounded double-crop charges for water. This matter should be explained by the local officers to the ryots, as the Government neither desires nor attempts to control the manner in which the ryot crops his land, but merely charges the double-crop rate in cases where water is taken for two crops.

11. The suggestion that timely warning should be given to the ryots every year as to the date on which the canal will be closed, will be brought to the notice of the Public Works Department.

12. In paragraph 31 of his report, the Deputy Collector adverts to what has no doubt much to do with the general failure of the canal, viz., that some of the existing distributaries have been cut simply because they promised to command large areas, but without reference to the suitability of the soils, the ability of the people to carry on wet cultivation, or to the adequacy of the means of the ryots, or their inclinations in this respect. In several cases channels have been provided where the people do not want them; in others they are not provided where they are wanted. In Enclosure IV of the Deputy Collector's letter, he gives cases where the ryots have expressed themselves willing to use the canal water, amounting in all to a total area of 5,869 acres, but of this no less than 4,000 acres relate, to what the Deputy Collector describes as the Chepad project, which he strongly recommends. Under the proposed channel, the ryots promise to irrigate 4,000 acres at the beginning and to double that area in the course of five years. It appears from the Cuddapah Collector's letter, No. 3325, dated 8th August 1891, that the Executive Engineer has ordered the preliminary levels to be taken and that the project will be taken up after the execution of two others already on hand, viz., the Maidkur and Patha-Cuddapah projects, expected to irrigate, respectively, 4,000 and 2,500 acres.

13. Another cause which the Deputy alludes to, in paragraphs 36 and 37 of his report, as interfering with the success of the canal, is the present system of water-distribution by means of the Superintendent and lascars of the Public Works Department in the case of channels irrigating more than one village. This plan, he says, does not work satisfactorily and he proposes to transfer the work to murganties under the orders of the village munsifs. The proposal does not appear to the Board well-considered, as it appears essential, in the case of channels irrigating more than one village, that distribution, as between villages, must be entrusted to a disinterested party, which the munsif of neither village concerned would be.

14. In paragraphs 35 and 39 of his letter, the Deputy Collector makes certain proposals for the disposal of cultivable lands included in the Public Works Department classes A and B, or in forest reserves. The Collector is competent to grant such of the A and B class lands as may not be wanted for canal purposes, for cultivation, subject only to the condition that they should be given up when required. The Deputy Collector's statement No. VI specifies, however, only four villages as containing A class lands likely to be irrigated under the canal, all situated in the Ramallakot taluk, in which most of the land commanded by the canal is under irrigation, and there is little room for extension generally. With regard to cultivable land included in forest reserves, the Collector must decide whether it is desirable to accept any applications, which may come before him, and in the event of his accepting any such applications, he will of course take such further action as may be necessary.

15. Paragraph 43 and 54 of the Deputy Collector's report deals with the present kistbandi in its relation to the canal water-rate and cesses thereon. There are now four kists or instalments commencing from December, though the paddy crop is not harvested till the latter part of that month in Kurnool, while in Cuddapah the harvest

takes place even later. The proposal to reduce the kistbandi to three instalments—beginning with January—for wet crops under the canal has the Board's approval.

16. In his letter recorded in Board's Proceedings, No. 1070, dated 6th March 1891, Mr. Johnston, Executive Engineer for the canal, recommends that the water-rate for garden crops—class 8 of the canal scale—should be reduced from Rs. 3 per acre for any crop to Rs. 1 for a single flooding with Rs. 3 as a maximum charge. Although it is perfectly true that these garden crops require far less water than paddy, yet the practical difficulties in the way of registering whether a crop is frequently or occasionally flooded are great. The Board is not disposed therefore to make any reduction in the present rate. As the rules now stand, garden crops under the canal are more favorably charged than under other irrigation sources where they pay the same rate as a paddy crop.

17. In paragraph 65 of his report the Deputy Collector objects to what he considers the inadequacy of the charge for water for turmeric, viz., Rs. 4 per acre, on the ground that the crop is a very valuable one and that it takes far more water than does a garden crop of ragi. The question was fully discussed in the papers printed in Board's Proceedings, dated 24th March 1886, No. 718, and the Board sees no reason to re-open it. It is impossible to differentiate the charge for crops with reference to the quantity of water supposed to be used in each case, but considering that the charge for sugar-cane, which requires more water and for a longer time than turmeric, is Rs. 6 per acre, the present charge of Rs. 4 for turmeric seems a fair one.

18. In the taluks of Sirvel, Nandyal and Nandikotkur, *mundlavari*, a coarse kind of paddy, is largely cultivated. This crop evidently does not require as much water as an ordinary crop of paddy, as it may even be raised with the aid of the falling rain alone, but it is said generally to require some floodings after the third month of its growth. The Deputy Collector contends that, though the ryots often allege that the crop matures by percolation or merely by rainfall, this cannot happen unless the land concerned is either on a low level or at the foot of hills; but the Collector of Cuddapah in his letter No. 1460 Ver., dated 27th April 1891, states that the crop does generally grow by the aid of falling rain and percolation from an irrigation source, and Mr. Clogstoun satisfied himself by personal enquiry (Board's Proceedings, dated 17th December 1890, No. 5055) that there is no doubt that the crop can be raised by the aid of the falling rain. The reports of the Collectors give the following areas of *mundlavari* in fasli 1299 :—

Taluka.	Under the canal.	Under rainfall.	Under Government or other sources.	Total.
<i>Kurnool district.</i>				
1. Nandikotkur	100-99	1,142-19	296-16	1,539-34
2. Nandyal	240-70	3,993-78	1-99	4,246-60
3. Sirvel			112-12	
<i>Cuddapah district.</i>				
4. Jammalamadugu		200-42		200-42
5. Proddatur		13-0		13-0
Total	341-69	5,349-39	410-27	6,101-35

19. The Deputy Collector recommends that the charge for *mundlavari*, when irrigated, should be reduced from the present rate of Rs. 4 per acre to Rs. 2 per acre. This rate is also acquiesced in by the Collector of Kurnool, but the Collector of Cuddapah thinks that a charge of one rupee will be fair. Seeing that the crop, according to the Deputy Collector's showing, requires more water than an ordinary dry crop, the Board considers that Rs. 2 per acre will be a fair charge and the sanction of Government to this rate is requested accordingly.

20. Adverting to paragraphs 55 and 56 of the Deputy Collector's report, the Board considers that in regard to further charge no distinction should be made between lands classed as wet and those classed as dry but practically irrigated, and it is of opinion that no charge should be made for third crops in any case.

21. Referring to paragraphs 57 and 59 of the Deputy Collector's report, the Board is not prepared to recommend such a rule as that proposed. When two or more crops are sown mixed and irrigated together on the same land, the charge must be regulated according to the crop longest irrigated, and not by each crop though harvested at different times. In the case under reference the indigo is irrigated longer and the irrigation of the ragi is covered by it; and the only charge that should be made is the water-rate prescribed for one crop (garden).

22. From the Deputy Collector's statement No. I, it appears that he claims to have discovered 3,619.65 acres of surreptitious irrigation not brought to account in 78 villages. This area differs from the total 2,965.4 acres given in the statements received with the Collector's letters noted on the margin. The areas reported by the Deputy Collector, by the Collectors and those finally charged by the jamabandi officers appear as follows:—

Taluke.	As per Deputy Collector's statement.		As per Collector's statements.		As finally charged at jamabandi.	
	Number of villages.	Area.	Number of villages.	Area.	Number of villages.	Area charged.
1. Ramallakot	5	125.16	5	125.16	5	125.16
2. Nandikotkur	11	294.04	4	158.95	4	158.95
3. Nandyal	7	384.20	7	157.08	6	60.88
4. Sirvel	12	549.89	12	491.00	8	168.78
5. Koilkuntla	2	6.02	..	..	..	..
6. Jamnalamaadugu	2	45.00	2	44.18	..	..
7. Proddatur	21	618.08	19	587.03	19	577.99
8. Cuddapah	18	1,629.30	19	1,408.04	17	1,115.93
Total	78	3,619.65	68	2,965.40	59	2,197.69

The inclusion of the shrotriem village of Krishnapuram in the Collector's statement has raised the number of villages in the Cuddapah taluk by one, but the other differences are unexplained. Of the area reported by the Deputy Collector, only 2,197.69 were charged by the jamabandi officers for fasli 1300, and the rest was not charged for reasons given in the Collector's statements above referred to. The area charged in 41 out of the 59 villages ranged from 2.73 to 50 acres, in 15 others it was between 50 and 100 acres, and in two of the remaining three cases it was between 100 and 200 acres, and in the third case as much as 234.47 acres.

23. The Deputy Collector proposes the following innovations:—

(a) That an extra charge of $\frac{1}{4}$ th more than the ordinary water-rate should be imposed on irrigation surreptitiously carried on without previous application. A provision of this sort was contained in the old rules, but was omitted from the revised rules of 1882. The Board, in view of the facts now brought to light, would revive this penalty, making the penal rate $1\frac{1}{2}$ times the single charge. Nothing but demoralization of the ryots results from the existing rule.

(b) That munsifs and karnams should be encouraged to develop irrigation by fees of 4 pies and 8 pies respectively per acre of increase. The Board disapproves of this suggestion. There is no reason for paying officials twice over for doing work which it is their duty to do.

(c) That a new register * for lands irrigated by canal water be maintained by the karnams. Upon this the Board observes that the village accounts contain sufficient forms for the record of irrigation and that what is wanted is not a new form but scrutiny of village accounts by the Inspectors and other superior Revenue officers. If the cultivation account No. 1 and the tirvajasti (water-rate) account No. 6 be regularly maintained, nothing more is needed, but in the latter account separate pages might be set apart to show all canal irrigation.

* Enclosure V to report.

24. Apart from the new projects * in contemplation, the Deputy Collector thinks that, with proper supervision, the revenue under the canal might within five years be raised by Rs. 25,000 and that by lowering the water-rate on *Mundlavari*, a further increase Rs. 5,000 might be secured.

25. The Board has indicated above those of the Deputy Collector's suggestions which it would be disposed to adopt and has deprecated the foremost of them, namely, the appointment of a special officer to take charge of the canal revenue. The Collectorate of Kurnool is notoriously one of the lightest charges in the Presidency and the supervision of the canal lands and the collection of the revenue accruing therefrom form an integral part of the duty of the Revenue officers of the district. That this part of their duty has not been efficiently performed in the past is evident from the report now under consideration, but the Board cannot admit for a moment that this circumstance affords grounds for relieving these officers of their responsibility for the future. One Tahsildar—of Nandyal—of a canal taluk has lately been relieved of magisterial work, and if those of other taluks have still to discharge magisterial duties it is because, their charges are not unduly heavy. It may be admitted that there is no immediate prospect of making the Kurnool-Cuddapah canal a financial success, but if the Collectors of the two districts will determine to interest themselves in its development and will insist upon the exhibition, on the part of their Divisional officers and Tahsildars, of a certain amount of energy in encouraging the ryots to use the water available and in the repression of fraud on the part of the lower subordinates, the Board sees no reason to doubt that a great improvement may be effected and the revenue increased at least up to the estimate framed by the Deputy Collector.

26. In conclusion, the Board desires to express to M.R.Ry. K. Subbaraydu Garu its appreciation of his report and of the satisfactory manner in which he has performed the work entrusted to him.

(A true Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department,
with six enclosures in original sent by packet post.

Collector of Kurnool.
of Cuddapah.
To M.R.Ry. K. Subbaraydu Garu.
To the Deputy Director, Land Records.
Chief Engineer for Irrigation.
Secretary to the Commissioners of Land Revenue.

ORDER—dated 7th November 1893, No. 964, Revenue.

Irrigation No. 19.

With the Proceedings read, above, the Board of Revenue submits the report of the Special Deputy Collector appointed to inquire into the causes of the temporary increase of irrigation under the Kurnool-Cuddapah canal and into the possibilities of securing further extension of irrigation. The Deputy Collector's report on this important matter is more than two years' old and has lain for the greater part of this period in the Board's office. This delay in treating the subject is much to be regretted. The report also reveals a condition of affairs which is discreditable to all the Revenue officers concerned and which could not have occurred if the permanent Collectors of Kurnool and Cuddapah had devoted more attention to canal matters.

2. The increase of irrigation under the canal in 1888-89 is explained to be due to improved demand for canal water owing to deficient rainfall and to temporary reduction of the water-rate, both of which causes led to a large increase in the area of dry crops irrigated by canal water. Except, however, in exceptional years (like the

great famine of 1876-77 and the lesser one of 1891-92), the extent of irrigation under the canal has been far from commensurate with its length and capacity and the greatest extent irrigated except in the two years mentioned above is 25,000 acres, whereas the canal and its distributaries are estimated to be capable of irrigating 160,000 acres. The Deputy Collector deals fully with the various causes which have retarded the extension of irrigation under the canal and kept down the revenue from this source. Of the remedial measures suggested by him which are summarized in paragraph 64 of his report, the Board has not noticed a few to which attention is drawn below.

3. The inspections made by the Deputy Collector resulted in the discovery of surreptitious irrigation to a very great extent, which proves that even the revenue which ought to have been obtained from actual irrigation, has not been realized in full owing to want of proper supervision and enforcement of responsibility. The Deputy Collector proposes therefore the temporary appointment of a Special Revenue officer who will devote his undivided attention to canal work. The Collectors of Kurnool and Cuddapah are in favour of this proposal, but the Board observes that the necessity for the appointment of a special officer has not been made out. His Excellency the Governor in Council, however, is of opinion that in the present state of things special supervision is absolutely necessary for a time. For this special work an officer of Deputy Collector's standing will be deputed for two years with the establishments proposed in paragraph 16 of the report. The special officer will be required to submit a report at the end of every six months, and it will be decided later on whether the appointment should be continued beyond two years or whether the work should be entrusted thereafter to the ordinary district establishment.

4. The Government will now pass orders *seriatim* on the remaining proposals of the Deputy Collector enumerated in paragraph 64 of the report:—

(1) *Assignment of canal work to one of the existing Revenue Inspectors in each of the six important canal taluks.*—The Government attaches much importance to this suggestion although the Board has not noticed it. Revenue Inspectors who have other duties to perform are very apt to neglect the canal villages, the more so if the duty of checking the irrigation accounts is supposed by them to devolve on Canal officers. The Government considers that the Deputy Collector's proposal should be given effect to at once, as it will not be difficult to re-arrange the Revenue Inspectors' firkas as proposed by the Deputy Collector in paragraph 17 of his report.

(2) *Charge of a light penal rate on irrigation without application.*—The Board has accepted this proposal, but has fixed the penal rate at $1\frac{1}{2}$ times the ordinary charge, instead of at $1\frac{1}{4}$ times as proposed by the Deputy Collector. The rate suggested by the Board is approved.

(3) *Grant of remuneration to Canal Village officers on future increase.*—The Government is not prepared to sanction this proposal. It agrees with the Board in considering that there is no reason for paying officials twice over for doing their legitimate work.

(4) *Introduction of a proper dharkhast register form.*—This suggestion has not met with the approval of the Board, but the Government considers that to enforce the penal rate on surreptitious irrigation, it will be necessary to maintain a register of applications for water. The form appended to this order appears to be a suitable one and should be adopted. Copies of the form should be printed in duplicate and supplied to the karnams of canal villages, being first serially numbered and bound into books. The karnams should keep the originals and give the ryots the duplicates. A register of applications should be maintained in the same form and shown by the karnam to the Revenue Inspector who will then be able to detect surreptitious irrigation at a glance and its extent by measurement. The period at which applications for water should be submitted by the ryots will be decided by the Collectors of Kurnool and Cuddapah in consultation with the Executive Engineer.

(5) *Grant of permission to ryots to take silt from the bed of the canal, free of charge, for use as manure.*—The Government accepts this suggestion, but care should be taken that the ryots do not alter the level of the canal bed.

(6) *Grant of free permits for the collection of all kinds of leaf manure both from reserved and unreserved lands.*—The Collectors of Kurnool and Cuddapah should consider the feasibility of granting free passes for leaf manure and submit a report in due course.

(7) *Reduction of water-rate on "mundla" (tailed or coarse) paddy from Rs. 4 to Rs. 2 per acre.*—The Government sanctions this proposal, the reasons for which are given in paragraphs 34 and 35 of the report and which is supported by the Board.

(8) *Abolition of Public Works Department Lascars and the appointment in their stead of Nigantils for the distribution of water under the immediate orders and supervision of Reddis of villages.*—The Board disapproves of this proposal for the reasons stated in paragraph 13 of its Proceedings, in which the Government concurs.

(9) *Adoption of remedies in connection with tank storage question.*—The Deputy Collector points out that the canal loses to a considerable extent from its not being credited with the full share of the revenue derived from tanks that owe their supply either wholly or in part to the canal. He suggests three different remedies, leaving the Board to select any one of them, but the Board has not adverted to the point.

The existing rule on the subject is that laid down in G.O., dated 6th June 1882, No. 448 I. (Public Works Department), viz., that the value of water supplied to Government tanks, of which the natural supply may be deficient, should be credited to the canal at the rate of Re. 1 for every 1,440 cubic yards. This rule implies that the Public Works Department should keep an account of the water supplied from the canal to every tank. No such account is, as pointed out by the Deputy Collector, maintained at present; but the Government considers that it is very important in the interests of the canal to register the total quantity of water discharged from it for purposes of irrigation. Incidentally this register will furnish the best data for apportioning, in an equitable manner, the revenue derived from tanks that owe their supply to the canal; but it will also serve as a direct check on surreptitious irrigation. Accordingly orders will issue in the Public Works Department for the maintenance of a register showing the quantity of water supplied by the canal to each tank and village.

The Deputy Collector's suggestion that all tanks fed or susceptible of being fed by the canal should, for purposes of water-rate, be treated as first-class tanks, is also approved. All these tanks should be made over to the Public Works Department, if they are not already in its charge.

(10) *Slight alteration of the existing kistbandi as far as the collection of canal water-rate and the cesses due thereon is concerned.*—The Deputy Collector points out that the first or December kist is too early for the ryots under the canal, who do not reap their paddy until the latter part of that month. The Board accordingly proposes that there should be three kists beginning with January for wet crops under the canal. This proposal is approved and sanctioned.

(11) *Levy of water-rate on third crops on dry lands irrigated by the canal.*—The Deputy Collector proposes that water-rate should be charged on the third crop raised on dry land when all the three crops are grown in one and the same year and irrigated by canal water, but the Board is not in favour of this proposal. The Government, however, is inclined to accept the view taken by the Deputy Collector. Where three dry crops are raised in a year, water-rate should in future be charged on the third crop also.

(12) *Levy of separate water-rate on indigo sown with ragi, but irrigated and harvested sufficiently long after the removal of the ragi crop.*—This proposal does not commend itself to Government. As observed by the Board, water-rate should be charged only for the crop which takes the longer time to mature.

The Deputy Collector adverts to the inadequacy of the water-rate for turmeric, which was reduced in 1886 from Rs. 6 to Rs. 4 per acre. The Government agrees with the Board in considering that the existing rate is a fair one.

5. At paragraph 32 of his report, the Deputy Collector draws attention to what is by him called the Chopad project. He recommends that the project be taken in hand at once, and is of opinion that this single project will suffice, if carried out, to make the canal more than self-supporting. The project will be brought to the notice of the Public Works Department in view to its being carried out on the completion of the Maidkur and Patha Cuddapah projects now on hand.

6. The Deputy Collector adverts at paragraph 62 of the report to the sparseness of the population in the parts of the districts irrigated by the canal. The Government observes that Mr. Wolfe-Murray, when Collector of Cuddapah, issued a circular to

capitalists in Kistna, drawing their attention to the advantages afforded by the canal and that the Collector of Kurnool has been requested to do the same. This information should be diffused as widely as possible, and the Board of Revenue will be requested to report the result after a reasonable lapse of time. If it does not prove successful, the Board should consider the advisability of recommending some other plan.

7. His Excellency the Governor in Council desires to place on record his appreciation of the care and thoroughness with which M.Ry. K. Subbarayudu Garu has conducted his special inquiry as well as of the excellent report submitted by him.

(True Extract.)

(Signed) E. GIBSON,
Ag. Secretary to Government.

To the Commissioner of Revenue Settlement, Land Records
and Agriculture, with six enclosures.
,, the Commissioners of Land Revenue.
,, the Public Works Department (Irrigation).
Copy to the Accountant-General.

APPENDIX.

Date.	Village.	Ryot's name.	Area for which water is wanted.	How long wanted.	What crop to be grown.
1	2	3	4	5	6

Exd. C. M. Brisson.

100 Copies.

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Recd.
Encl.
G.O., 7th November 1893, No. 964.

NOVEMBER.

Kurpool-Cuddapah Canal.
Passing orders on Board's Proceedings submitting, with remarks, the report of the Special Deputy Collector appointed to inquire into the causes of the temporary increase of irrigation under the — and into the possibilities of securing further extension of irrigation.