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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue . DEPARTMENT

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Not to be folded or roughly handled

No. 320. Read the following endorsement of the Chief Engineer for Irrigation, dated Dowlaishweram, 5th November 1873, No. 47-B:—

From J. H. LATHAM, Esq., Chief Engineer and Manager of the Madras Irrigation and Canal Company, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Kurnool, 27th October 1873, No. 48.

I HAVE the honour to forward Conservancy Engineer's reports for the upper and lower sections, together with my report for the month of September 1873.

Chief Engineer's Report to accompany Divisional Reports for September 1873.

THE season is now so far advanced that a pretty close guess may be made at the extent of cultivation which will be irrigated by the canal for first crop. I will first recall the conditions under which the canal is now worked.

2. The object of the Company, so far as irrigation is concerned, I understand to be to carry out works of irrigation, within the limits assigned by the Act for their operations, to the full extent to which they can be carried with benefit to the people of the country; but the experiment now being worked out by the canal occupies a more limited field. The experiment to be tried by the canal, for the construction of which the Government guaranteed a million pounds sterling, is limited by the conditions that the canal be completed first, and that then the ryots cultivating land under it shall have perfectly free individual option as to whether they use the water at the rate at which the canal offers it, or not.

3. Unquestionably if commercial success attend this experiment, the question of irrigation in India will be much simplified. A host of complicated difficulties are avoided by canals worked on these terms, and there could be little difficulty in providing the money to make such canals, were they proved likely to be commercially successful. The famine problem might then be left to commercial enterprise to solve. It requires however to be borne in mind that something far short of this success may suffice to prove the canal successful as a national work, and in the full sense beneficial to the country. In England there would exist few roads and fewer systems of town drainage if they had been constructed only on such conditions. Even if we compare the irrigation in India with that of water-supply of towns at home, we are struck with the fact that only towns possessed of intelligence and opulence, unknown in the up-country parts of India, will pay for a voluntary supply at home.

4. I will next consider the progress of the particular experiment being carried out under the present canal.

5. In Ramalkota Taluq there are eleven villages under the canal partially. The applications for irrigation include 91,833 acres. Last year 1,246 acres were successfully irrigated, and the decrease of 333 acres is due to a strike against the 6-rupee rate by Kurnool and the villages within 10 miles of Kurnool. In two villages there is increase amounting to 11 acres. In nine there is decrease of 344 acres.

6. In Nundial Taluq there are 21 villages wholly or partially under the canal. The applications are for 2,003 acres against 2,003 irrigated last year for first crop. In 21 villages there is an increase of 666 acres in 13 villages there is a decrease of 294 acres, possibly chillies, of which there are 400 or 500 acres in these villages under the canal hitherto able to get on by rain without canal water, but hardly likely to get through the season unirrigated.

7. In Nundial Taluq there has been a determined strike in all the districts above Nundial, including the whole of that taluq under the 6th and 7th Sections. 20 villages north of Nundial 11 only have applied for a total of 89 acres against about 220 in those villages last year; while Nundial and the three villages south of it have applied for 186 against 80 last year. The whole of the taluq is very good, better than the previous taluq. The strike no doubt partly due to the reduction of water-rates under the large Government works in this taluq from 16 Rupees to under a fourth of that sum, thus showing its market value.

8. If the lands are let to a man for an acre a year. The Government can let the land to him for cultivation. This is a man can let the land to him for cultivation.

considerable portion of between 2,000 and 3,000 acres of fine old tank lands at a rent lower than that charged by the canal, and also fostering a strong notion that the canal-rate ought to be resisted, and will be reduced if resisted. This last notion has spread to all the best informed towns where the reduction is well known, such as Kurnool, Nundikotakur, etc. In general we find that villages possessing tanks are amongst the most ready to extend their irrigation by the help of the canal so far as the ground admits. The total applications this year are for 274 acres against 300 irrigated last year.

8. In Sirwol Taluq the limits of irrigable villages are rather indefinite. Thirty-three villages have applied for 1,055 acres against 771 acres irrigated in 26 villages last year.

9. In Koilkootla Taluq 10 villages have applied for 272 acres. Two hundred acres were irrigated last year in nine villages.

10. In the Cuddapah District we have no means of knowing the extent of cultivation. The Revenue Survey Department have not yet issued the village maps and registers of the fields, so that the Company's Officers cannot find the boundaries of the fields nor their numbers, and cannot take the ryots' applications, and the Curnums will not.

11. In Prodatoor applications have been received from 30 villages for 647 acres, but it is estimated (I believe decidedly under-estimated) that nearly 800 are under irrigation. Last year 571 acres were irrigated in 19 villages.

12. In Cuddapah Taluq applications have been received from 27 villages for 1,082 acres. It is estimated that 1,000 more acres are under irrigation. Last year 1,585 acres were irrigated in 15 villages. It seems clear, then, that in these two taluqs about 1,500 acres are being irrigated under all the liabilities attaching to irrigation without application, viz., being debarred from remission and exposed to danger of a double rate being exacted. That is not giving the canal fair play; but I do not see how it can be avoided until the maps are complete and the Company's officers thereby enabled to take applications, unless the Government should decide to give Curnums a little extra pay for the extra work of accounting for the water used.

13. The following are the conclusions I draw from experience hitherto, after very careful consideration and feeling the responsibility of attempting an estimate of results in so important a matter:—

(1.) The objections to the voluntary system, as I have heard them stated by men of experience in this country, may be thus summarized: that the revenue of a canal and the beneficial effect to the whole nation is by the voluntary system made to depend upon the mere whim of the natives; that Railway Companies begin with the patronage of Government and of European firms and passengers, and necessarily draw in native firms and passengers to patronize them also; while the canal lies in the hands of uneducated and ignorant semi-savages, whose highest education and religion—their Hinduism but ancient and highly-prized civilization—is to be content with little, never to provoke the eye of envy by attempting to step beyond custom, and to follow the steps of their fathers without deviating a hair's breadth. Not only does the reverence to old custom in the ryots against the conversion of their farms into gardens but apart from this, the reluctance to extended cultivation; it seems to be a general custom for Hindoo landholders, including zamindars and talukdars, to leave part of the country to cultivate only so much of the land as will support their families and labourers and pay the assessment. I myself have seen that as an answer to inquiries why more land is not cultivated. One of the talukdars who has really zealous irrigation, viz., he of Chellamulla, in which village the cultivation has risen from 100 acres last year to 130 this year, cultivates between four and five acres of rice, and on my asking why he did not take more, he held up two fingers and said quietly, but without a suspicion of irony, "I have two in my house (the mother and the father), and they are small boys." The rest of the village is left to outsiders who are generally very high, and where not prohibited the exporture of villagers is very small, and chief of the village, which they import, and perhaps a piece for, and in fear of the simple at in feeding and all the without requiring from the station pretty nearly all the revenue.

cost of their farming bullocks, and, of course, the local consumption of home-made clothing and food depends on the number of the population. It may, I fear, be said that the ryots will not cultivate more grain than sufficient to meet these demands. In practice this explanation provides a considerable floating stock of grain in the hands of the Soucars, which they sell to villages whose harvest has been bad, and in return buy cotton and indigo for exportation from the country. When a dearth occurs and exhausts the Soucar's stock a famine is the consequence. From this it follows that the villagers under the canal are secured from famine, and get their fair proportion of the value of guaranteed interest; but it is clear that a great revolution is required before those villagers will grow grain for exportation beyond their limits in any quantity. The population is small, and, as I have observed, rigidly adverse to admitting outsiders; so that I have heard of Madras contractors and Kurnool Mahomedans searching all the villages in vain for a little land at a fair rent. In Ragidi Gudur are reported to be 300 or 400 acres of good land waste, which I know many have been wanting to cultivate for some years. This difficulty has been brought to my notice since I arrived here last year, and has induced me to run out channels to outlying villages beyond the limits of the sanctioned irrigation, and dozens of such villages have been supplied with water in the 7th, 8th, and 9th Sections.

(2.) The absence of any means of transit available for the development of trade is a positive evil; and as it would not be fair to the district to make irrigation compulsory while the means of transit are so bad as to prevent the sale of produce, so it seems hardly fair to the country to make it pay £50,000 a year for the canal, while the means of transit are so bad as to render its full use for irrigation commercially impossible. It could not pay. The roads in the neighbourhood of the canal are still wretched, except a road of 30 miles length from Kurnool eastward to Jupad, which is passable by carts in all weathers. I noticed in a recent speech of His Excellency the Governor a remark that the English had at all events given India roads; this, I trust, was not alluding to the so-called roads in the neighbourhood of the canal, such as that between Kurnool and Cuddapah, which is no better than the worst lanes in the Cambridgeshire fens in wet weather, except for a detached mile or two here and there where the ground is naturally stronger. I remember a Doctor of Wichech grumbling because his carriage and pair stuck in an attempt to reach a patient near King's Lynn. That he should have made the attempt shows how superior the lanes in the fens must be to the roads here. I have two stout Australians in a light two-wheeled dog cart, and yet I have been obliged (a fortnight ago) to have my despatch boxes and horse-clothing carried the whole stage on men's heads to lighten the cart; and after rain the horsekeepers are needed to walk one on each rut a-head of the horses to warn me of a hardest ground. With all these precautions I had to leave four days at Dhoor with sores under the collars, produced solely by the plunging along the road, which was then stiff, except in the hollows.

In October last I took a careful memorandum of the state of this "road," chain by chain, not only as to where one could trot on horseback, and so on. I hoped to find this better, and no improvement. If it be a single road between Kurnool and Dhoor better than I have ever seen it. On the road from Nundial to Kurnool the trade is done almost entirely at this season, by pack-bullocks and donkeys. I only met four carts, and these were carrying kokka (areca-nut) to Nundial. Prices of grain were high at Nundial, and I met three or four packs of pack-bullocks and donkeys carrying cholam grain from Kurnool to Nundial. That cart may be called trade; it is mere higgling. Though a native cart consists of a basket on a few timbers, and is scarcely heavier than a costermonger's cart, and has two bullocks to draw it, seems as if it did not pay to use it on this "road;" yet there is a toll gate at each end of it, and all to pay on every cart equal to two-thirds the daily wages of a professional cartman. So the struggling industry in this country is not except to tax it, while the farming seems to be noticed only to give it a which have never been felt to be burdensome. It happens that the neglect of taxation has been the result to get a revenue.

*Proceedings of the Madras Government, Public Works Department,
13th March 1871.*

Were the canal open for boats, not only would transit be possible on it, but merchants would operate upon it. English products would be brought to every village by it, and a healthy state of social and national existence extended to the whole neighbourhood. With the exports cultivation would extend at a rate incomparably quicker than if it be left, as now, to be limited by the number of the population.

(3.) That the water-rate charged under the canal is not too high for rice is very certain. Hitherto, indeed, it has virtually been higher than that, owing to the ryots being often compelled, and generally induced, to cultivate (if they did cultivate) without having their names recorded by the Carnum. The fear lest he should be charged double has often been alleged by a ryot as a bar to his irrigating. Whole villages have threatened to refuse the water on this account. Yet the registering of applications in the 175 villages immediately irrigated from the channels has been almost confined to what can be done by the Canal Overseers, and probably, on the whole, 2,000 acres are now under irrigation without application; and unquestionably many ryots have had considerable delay and trouble before they could get their applications taken, often wandering six or ten miles from their village in search of an Overseer. Without laying too much stress on this, it must have affected the extension of cultivation. (The cases I quote are what I have personally met with.)

(4.) Notwithstanding all these difficulties, I should think it a misfortune not to carry this experiment out. It must be borne in mind that the moral effect of even such success as the canal has had is very considerable. Some enterprising villages, as Kurnool, Joharapuram, Muchmurri, and especially Kambalapilly, Yerragoodoor (near Metakondal), and the villages near Cuddapah, have irrigated almost every acre of arable land they have under the canal, the exceptional fields of dry crop being sown from whim, not as being most profitable; so that it may be already said that a compulsory rate would be no hardship. No one can have any doubt that forced irrigation would be a boon to all the villages if they could get rid of their produce. Still the voluntary experiment has been begun, and is now half completed, and has not had a third of the success it will have if really carried out. The effect at present must be to give to men at a distance far too low an idea of the value of the water unless the experiment on which so much has been spent be carried out by the completion of good roads or of navigation.

For this year the prospects of the canal depend (1) on the cultivation now going on, which I estimate as—

Upper Sections ...	...	3,500 to 4,000 Acres.
Lower do. ...	...	4,500 to 5,000 do.
(2) on the irrigation of such chilly crop as has not yet been obliged to ask for water, which may extend to 500 acres in each portion of the canal and (3) on the floodings which may reach 2,000 or 3,000 acres, and, lastly, on the 2nd crop, which may be a third of the first crop. This makes a total of about—		
1st crop ...	9,000 Acres	54,000
Floodings, say ...	3,000 Acres	2,500
Other sources revenue ...		5,000
		Total 79,500

sufficient to cover all the expenses of the working staff. This will, I hope, prove under the mark. The great improvement which have been made in the channels since June will have a very favourable effect on this year's irrigation. Rice is being tried on a small scale it is true, in the villages lately reached by new channels, and these will irrigate more freely next year. Lastly, the rules will have been altered before next year it is hoped, as to suit the cultivation. Hence, I have no doubt that, with ordinary care, the crop will double its receipts and its works expenses next year. It cannot be too distinctly borne in mind that irrigation in India is not a more local duty than in England. The villages irrigated by the canal are not a more local duty than the villages irrigated by the river.

*Proceedings of the Madras Government, Public Works Department,
13th March 1871.*

the lowest view, its interest, that famines should, if possible, be prevented. It would be a great boon to have the aspect of Bellary District sketched by a Revenue Officer of experience and skill, in its bearing upon any proposed schemes of irrigation works sufficient to supply the district with food and fodder in a famine year. The land revenue is £250,000 a year, indicating a total value of crops of perhaps £3,000,000, of which £2,500,000 perhaps is for the local consumption of the population (of 1,300,000) and their cattle. Supposing that a scarcity occur every 15 years, enough to treble the price of food, it may be presumed that consumers would lose £2,500,000 at least merely in money, beyond the loss of their crops, and not to reckon sickness and deaths; and it seems to me that it would be just in the State to ensure a supply of food in famine years at the usual bazaar prices by the payment of a fifteenth of this sum annually from their taxation. This would be sufficient to pay 3 per cent. on 5½ millions, a sum which would be amply sufficient for such works, and which could be raised at once by a Company granted, besides the unconditional guarantee of 3 per cent., a portion of a moderate compulsory water-rate on the crops irrigated; a measure which, I think, the present experience of this canal proves would be no hardship to the irrigated villages. I only give this sketch (the figures in which must be considered merely illustrative) in order to show what a little way a canal supported solely by a voluntary water-rate goes towards meeting all the crying requirements of the country at large.

KURNOOL,
16th October 1873.

(Signed) J. H. LATHAM,
Chief Engineer and Manager.

Report for the Upper Division of Conservancy for September 1873.

Up to the 17th September the month was remarkably dry. The early sown cholam on the high ground (above the canal) about Nundikotakur, Gardimuddigu, etc., was half spoilt by scarcity, and the latter sown needed rain. Below the canal no damage to crop had occurred; but if the change of moon on the 21st had passed without rain, thousands of acres would have been irrigated, perhaps 100,000 acres. However, showers did come and supplied the crops.

2. The month has been the driest September since 1865, and was just half the average. The rainfall was 2.91, and about two more inches have fallen this month here.

3. The Toombudra has been well supplied, and, indeed, during October, has been fuller than last year.

4. The irrigation exceeds 1,000 in each of the three ranges, viz., Sections 1, 3, 4, and 5, but in the 6th Section it is not so large. The total registered is 3,461.58 acres.

KURNOOL,
16th October 1873.

(Signed) J. H. LATHAM,
for Conservancy.

Report for the month of September 1873.

THE Main Canal received a plentiful supply of water throughout the month, and no interruption to the constant supply to the irrigation tanks has occurred except on the 22nd instant, when three slight breaches occurred owing to heavy rain, two in the 9th section and one in the 10th, but they were quickly repaired, and no injury was done to the crops.

Irrigation under the Canal.

Owing to the rainfall this year having been much less than it was last year, the amount of land sown with paddy has much increased, and several of the Government tanks, including that of Nundial, have been partly or entirely filled from our canal, and rain does not fall to any great extent during the remainder of this season we shall secure a second crop under these tanks. In the following table of irrigation I show the amounts I expect to obtain for the second crops, but the actual result of the crops must depend on our having a constant supply of water from the Toombudra and other contingencies which cannot be foreseen.

*Proceedings of the Madras Government, Public Works Department,
13th March 1874.*

Table of Wet Crops and Floodings for the Season of 1873-74.

Taluk.	1ST CROP.			2ND CROP.		
	Acres of Paddy sown or applied for.	Floodings given or expected.	Paddy from leakage.	Paddy, etc., under Channels.	Paddy, etc., under Tanks.	Floodings expected.
Nundial ...	156.82	3.00	92.00	150.00	950.00	1,500.
Sirwell ...	752.47	47.00	200.00	200.00	600.00	
Koilkootla ..	580.39	156.00	45.00	150.00	50.00	
Jummulmudagoo ...	35.50	25.00	...	20.00	...	
Prodatoor ...	858.59	660.65	...	280.00	...	400.
Cuddapah ...	2,065.76	1,168.00	...	996.00	374.00	200.
Total...	4,449.53	2,059.65	337.00	1,796.00	1,974.00	2,150.

From the above table it will be seen that we may expect from both crops to realize of paddy and other 6-rupee rate crops, 6,245 acres, and of floodings, 4,210 acres, together with 1,974 acres of paddy or chillies grown under the tanks. During the months of March and April in this year we flooded in the Pennair District about 2,000 acres of indigo with two floodings per acre, which will raise the total amount of floodings to come into this year's accounts to 6,210 acres.

As the amount of second crops we may realize is so uncertain, I do not like to make any attempt at a detailed estimate of the value of the irrigation we shall have in these lower sections this season, but I fully expect it will amount to over 50,000 Rupees.

During this season we have built two new sluices in the Main Canal and cut nine miles of main channels with 25 miles of subsidiaries, and many miles of reticulations, and the bankers have been constantly at work either assisting in the above works or keeping the old channels in repair.

The state of the paddy crops is, I am happy to say, on the whole, very good. Some are thin and weak owing to the ryots not having properly manured them, or in some cases to bad soil, but by far the majority of the fields promise a full and successful harvest, which will go far to encourage the ryots to greatly increase the amount of their paddy next season. The dry crops which, during the drought, received floodings from the canal now look very well, and the corra crop is being harvested rapidly and is considered a good one.

The prospect for next season's irrigation (1874-75) are, I consider, very good. If four more sluices are put into the Main Canal early in May, and channels are cut to the outlying villages, which are now anxious to be supplied with canal water, we may secure an increase of between 9,000 acres of full cultivation, and from 9,000 floodings, but the latter are greatly dependent on the season being a wet or dry one.

The season repairs to the canal will not be done, as the rain-fall has been light, and I have heard of no injury done to any of the masonry works, but some pointing and plastering is sure to be necessary. The embankments have received very little injury from the rains, and only in a few places where they require to be raised.

The bridge approaches have been given over to Government, and their repair will not fall on the Company.

The main channels will require considerable repair. Many bridges are built with singulabs must be provided at the streams and are liable to be breached. A detailed estimate of all these repairs should be submitted to the Chief Engineer before the end of the year.

*Proceedings of the Madras Government, Public Works Department,
13th March 1874.*

The total rain-fall as registered at this station during September was 3.71 inches, and at Ayaloor 4.67 inches; during the corresponding month of 1872 the register at Dhoor gave a total of 16.23 inches, or one and a half times as much as the total fall of this year up to end of last month.

The health of the staff employed on these lower sections has, on the whole, been very good all through the hot and wet seasons.

Dhoor,
6th October 1873.

(Signed) A. J. DODSON,
Conservancy Engineer.

SUBMITTED for the information of Government.

The Chief Engineer's report contains much matter of interest. The relinquishment of irrigation in villages near Kurnool, with a view it is supposed of obtaining a reduction of the water-rate, will, if due to this cause, be temporary only.

2. The Chief Engineer's observation as to the difficulty which ryots have, in the Cuddapah District, in getting their applications for water attended to, is abundantly confirmed by the fact, recently brought to the notice of Government on a review of the Revenue Statement, Form E, for the year 1872-73, that a very large proportion of the irrigation had actually been charged the penal rate of Rupees 12 an acre.

3. It may be thought worthwhile to make generally known what unoccupied lands commanded by the canal there are in the Kurnool District, and to make special arrangements for facilitating the acquisition of such lands by strangers. Mr. Latham's views as to the great difficulty which strangers experience in obtaining puttabs for such lands are by no means singular. The difficulty is indeed often altogether insuperable. Lands ought not to lie waste if cultivators for them can be found, much less if these find themselves.

4. The subject of the opening of the canal for navigation has been already brought before Government. It would be a great advantage were the Kurnool District well supplied with passable roads, but the road running parallel to the canal, which latter ought to carry most of the traffic in that direction, is manifestly not the one on which any undue proportion of the small amount available for road purposes in the Kurnool District should be spent. When the Company shall have opened the canal for traffic and provided at any rate a small flotilla, it will be proper enough to ask the Local Fund Board to render this means of communication the most useful by the construction of cross roads leading to the canal.

5. The places where tolls are taken are not specified by the Chief Engineer, but probably Kurnool and Cuddapah are referred to. If so, these tolls have no connection with the district roads, but only with those of the Municipality.

6. If the second crop referred to in these reports be supposed to be grown on the same lands as the first crop, the estimate of its extent is probably far too high. No when the second crop of that description covers any area of importance.

(Signed) J. MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

*Proceedings of the Madras Government, Public Works Department,
13th March 1874.*

No. 321.

ORDER THEREON, 13th March 1874, No. 686.

IRRIGATION, No. 31.

THE Revised Rules and regulations for the Madras Irrigation and Canal Company's Canal will, the Government

hope, be shortly submitted for approval, and when sanctioned their promulgation in all the villages commanded by the canal will do much to remove misapprehensions, and to enable the ryots to understand on what terms irrigation can be carried on. The resistance to the high water-rate will, it may be hoped, cease when the proposed new rules are brought into operation.

2. These Proceedings will be communicated, through the Revenue Department, to the Board of Revenue and to the Superintendent, Revenue Survey: to the former with reference to the conduct and the question of the remuneration of Curnums, and to the latter with reference to Mr. Latham's remarks on the want of Maps of the Cuddapah District. The reported remissness of the Curnums

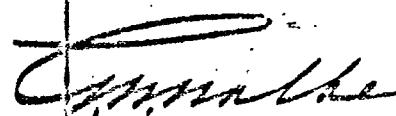
G. O., No. 3,029, 16th December 1873.

has already been noticed in the order as per margin.

3. It is unnecessary to notice the remarks of the Chief Engineer and Manager on the "voluntary system" beyond observing that the villagers have a preferential and prior right to waste lands within their village limits, and that Government are not prepared to sanction departure from the Darkhast Rules in order to intrude strangers. As a rule the ordinary course laid down in them must be followed, and is sufficient to all purposes, so far as is consistent with village rights.

4. The President of the Local Fund Board will be requested to report upon the condition of the roads near the canal, and to state what can be done to improve them.

(True Extract.)


Colonel, R.E.,
Secretary to Government.

To the Chief Engineer for Irrigation
" Chief Engineer and Manager of the Madras Irrigation and Canal Company.
" Revenue Department.

" *File by*

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Revenue Department

GOVT. OF MADRAS

PUBLIC WORKS.

No 892

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THE CHIEF ENGINEER, IRRIGATION.

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No 124

Communicated

to the Board of Revenue

whose special

attention is drawn

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in the Public Works Dept.

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19 March 1974

Chief Engineer and Canal Com-
missioner, Madras, in the Note by the
Chief Engineer for Irrigation, submitting
with observations, the report of the Chief
Engineer and Manager of the Madras
Irrigation and Canal Company for Sep-
tember 1973.

No 124 - 19 March 1974

12 to Mr. J. Rev. des no. 2-717