

100-3-12.
Educational (1916) Department.

ORDINARY MS.

G.O., No. 832

DATED 31-7-1916.

[Despatch Abstract.]

Indian National Sugar Development
Company, Vizagapatam.

Stating that the Govt.
are unable to assist the

REVENUE DEPARTMENT.

CURRENT No.

1665-C

Received

30-6-1906,

Registered

30-6-1906.

Subject.

Regarding the establishment of
a sugar factory at Vijayapatnam

ENCLOSURES.

No.

No.

Spare copies

Station, Anakapalle, Dated the 21-6-1906

From (Name) S. B. Naikulu Patrudu
(Designation) Vijayapatnam Sugar De-
velopment Co.

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

Sir,



To the Ed. Dept. uo.
af
8-7-16

CN. 2520 Ed
10-7-16

Note. The application is one
for consideration in the Ed. Dept.
vide G.O. No. 892 Revd. 21.3.14

Rev. uo. 1665C/16

J.R.D.
5-7-16.
6-7-16

10-7-16
S.N.

REVENUE - C

1655

Dated 21 June 1916.

From

M.R.Ry S.B.Naikulu Patrudu Garu .

Liquidator of the Vizagapatam Sugar Development
Company, Limited .

Anakapalle, Vizagapatam District.

To

The Chief Secretary to the Madras Government ,
M a d r a s .



I have the honour to enclose a copy of my letter dated 28th January 1916 addressed to the Agricultural Adviser to the Government of India, along with a copy of his reply and now beg to submit on behalf of the Vizagapatam Sugar Development Company Limited (under Liquidation) and the proposed "Indian National Sugar Company Limited", for the kind consideration of your Government, a scheme for establishing a pioneer Sugar Factory, which if carried out, will not only develop the Sugar Industry and be of great benefit to the Agricultural population of the Vizagapatam district, but will also be an object lesson to the whole of India .

It is proposed to form a company to be called the Indian National Sugar Company Limited, for the purpose of taking over the assets and liabilities (such as site, buildings, tools and plant) of the Vizagapatam Sugar Development Company LTD, in order to establish a model sugar factory which the promoters of that company for many years have attempted to do, but without success, owing to the lack of Government support .

The Vizagapatam district of the Madras Presidency, is one of the largest sugar cane growing districts in India, and hitherto the cultivators have made jaggery from their cane crops for exportation while refined sugar is imported in considerable quantities. Since the commencement of the war, these

2601
exports of jaggery have ceased and the cane jaggery is now purchased by the one or two refineries which exist in the Madras Presidency.

In the paper on "The Sugar Industry" attached to the scheme, it is clearly shown that to the manufacture of the cane into jaggery and the refining of it by refiners into sugar and spirit is chiefly due to the backward state of the sugar industry, as owing to the losses which occur by this method of manufacture, the refinery is unable to pay the ryot, a price for his jaggery which will encourage him to grow sugar cane and it is explained that in order to develop the sugar industry, it is imperative that the sugar be manufactured from the canes by the direct process, as is done in Java and Mauritius, which owing to employing correct methods of manufacture are unable to flood the Indian Markets with sugar.

Since the beginning of the war, the price of sugar has risen considerably and as a further tax of 10 percent has now been levied on imported refined sugar the time has arrived when it becomes necessary that steps be taken for the development of the important industry in the country.

This however cannot be done without the assistance of the Government. I therefore respectfully pray, that the Government will graciously consider the supporting of the scheme now put forward by subsidising the company and allot-

The Govt are themselves carrying on soap experiments in the factory & cost of these experiments is Rs 75000.

ing a grant in aid similar to that of the soap factory viz, Rs 75000 to enable the company to order the sugar plant to the specification, which has been approved of by the Sugar Engineer to the Government of India.

In the event of the Government graciously allotting the grant, the Company is desirous of engaging the services of Mr A.E. Jordan A.M.I.M.E., the well known Sugar Engineer as manager and Engineer of the factory and pray that the Government will also graciously assist the company in this by contributing half that gentleman's salary for a period of five years, which would enable the company to render every assistance

3 4
required by the Government, in the developing of the Sugar
Industry .

For such act of benevolence, the company and the
country will be greatly indebted to the Government .

I have the honour to be

Sir,

Your most obedient servant

A. Mahuli

Liquidator.

(COPY)

Anakapalli, Vizagapatam District.

Dated 28th January 1916.

From

M.R.Ry S.B.Naikulu Patrudu Garu,

Liquidator of the Vizagapatam Sugar Development
Company, Limited, Anakapalli.

To

B. Coventry Esq., C.I.E.,

Agricultural Adviser to the Government of India,
Pusa, Behar.

Sir,

I have the honour to submit herewith, a copy of letter dated 24th instant addressed to the Director of Agriculture Madras, 3 site reports, a copy of the memorandum and articles of Association of the Reconstructed Company and a Draft Prospectus for your kind perusal.

In this matter, I beg to submit, that you are well aware of the increased imports of foreign sugars by leaps and bounds, though India is the largest producer of sugar cane in the World and formerly supplied half the sugar of the World. With all her natural resources such as soil, water, climate, and labour, the subsidized and bounty fed sugars of our enemies Germany and Austria, have nearly crushed our indigenous sugar Industry. The acreage under sugar cane cultivation greatly diminished to an extent of 345,000 acres between 1890-91 and 1911-12 and the imports of sugar increased from 2 crores of rupees to 15 crores of rupees during 1888-89 and 1913-14. Such is the deplorable condition of the Indian Sugar Industry.

When the Brussels Convention of 1903 came into force, the prosperity of Java sugar met with a death blow of extinction. In order to avert this crucial position, the tiny Dutch Government boldly stepped into its rescue, by giving due protection and subsidies in the way of cheap freights, so as to enable to secure any amount of Capital to improve scientific methods of cane cultivation and manufacture of sugar and to beat down

Indian competition. Such a sympathetic and states-man-like step of policy initiated by the Dutch Government at the nick of time, not only fostered the industry, but also achieved the greatest successes in national commerce and industry, that the world history can show. Java has now been flooding India, with nine crores of rupees of sugar annually.

Whereas our district Vizagapatam is the largest in India, and the premier one in the production of cane cultivation in the East Coast Line and a Model Sugar Factory in the heart of sugar cane cultivation will not only be a success but will also be an object lesson to the whole Presidency.

To avoid dependance on the cultivation for the supply of sugar cane to the factory, it is one of the objects of the New Company to have its own sugar cane estate following the methods of the Western Countries, as advocated by Mr. F. Noel-Paton. By this adoption, not only the expansion of land under sugar cane and the revenue of the Government will be increased, but also the troubles of advancing the cultivators for the supply of sugar cane, their choice of planting bad varieties of sugar cane, premature cutting, and the deterioration of cut canes by the delay in transportation to the factory, will cease. Secondly, the cultivators will have good opportunity in associating with the modern methods of cultivation.

In conclusion, my only legitimate prayer is, to request you, to kindly support our scheme in your next Board of Agricultural meeting and to recommend to the Government, to subsidize with a liberal grant on the similiar lines of Dutch Government, and thus revive the dying indigenous Sugar Industry.

Such act of your benevolence, will be greatly appreciated and indebted to, by the country and the Company.

I have the honour to be

Sir,

Your most obedient servant

(Sd) S.B.Naikulu.

(True copy)

Liquidator.

C O P Y.

No. 3920 of 1916.

Imperial Department of Agriculture in India.

From

Bernard Coventry Esquire C.I.E.

Agricultural Adviser to the Government of India.

To

M.R.Ry S.B. Naikulu Patrudu Garu

Liquidator of the Vizagapatam Sugar Development
Company, Limited.

Anakapalle (Vizagapatam)

Dated Pusa the 23rd February 1916.

Sir:

With reference to your letter dated the 28th January of 1916, I have the honour to state, that it is not within the scope of the Board of Agriculture in India, to consider schemes for establishment of Companies or to move Government for grants of subsidies to them. In Resolution 14 passed at their 7th meeting, the Board recommended generally, that Local Governments should be empowered to assist pioneer sugar factories by subsidy, by taking deferred shares, or by such other methods, as may be appropriate and I should therefore suggest your submitting the scheme for the establishment of a sugar factory in the district of Vizagapatam to the Government of Madras, for their consideration.

I have the honour to be,

Sir,

Your most obedient servant

Sd/- B. Coventry.

Agricultural Adviser to the Government of India

(True copy)

(TRUE COPY)

ON ADMIRALTY AND WAR OFFICE LISTS.

Telegraphic address
"BLAZON, GLASGOW"
ABC Code used
4th & 5th Edition.

Telephone Nos. 263, 264 Govan.

BLAIR, CAMPBELL & Mc. LEAN,

L i m i t e d.

WOODVILE STREET,

GOVAN,

GLASGOW,

DUPLICATE.

March 24th. 1916.

A.E. Jordan Esq.,
Napean Sea Road,
Cumballa Hill,
B o m b a y.

Dear Sir,

We are in receipt of your letters of 29th January and 5th February, and we note you have submitted our specification and estimates "A" & "B", dated 25th September, 1913, for 3-Ton Sugar Plants, to the Government of India on behalf of the Vizagapatam Sugar Development Co., Ltd, (in liquidation) and we note that, if the Government decide to render the necessary financial assistance, the Company will be reconstructed under the name of The Indian National Sugar Co., Ltd.

We now have pleasure in handing you estimates "A" & "B" as originally sent you, for the Vizagapatam Sugar Development Co., Ltd., on which you will notice that the prices have considerably increased. This is mostly due to the high price of material and labour, caused by the present European War. We cannot, at the present moment, name any definite date for delivery of either of these plants, as we would require to obtain the consent of the Ministry of Munitions of War, before proceeding with the work, but if the Government of India, decide to go on with either of these plants, we could arrange an approximate date for delivery.

We note that in event of the favourable decision of the Government, you will cable us the word "SUCCESS", and in event of us receiving this cable, we will at once communicate with the Ministry of Munitions of War, with a view to proceeding with the work at once.

Meantime, with kind regards.

We are, Dear Sir,

Yours faithfully,

P.S.

Subject to approval of the Ministry of Munitions, the plants could be put in hands on receipt of the order, and we would commence delivery in about 8 working weeks, and complete in about 16, but you will understand no guarantee, regarding these dates, can be given.

FNCS.

For BLAIR? CAMPBELL & McLEAN, LIMITED.

Sd/- . P.B. Blair.

Director.

(TRUE COPY).

ON ADMIRALTY AND WAR OFFICE LISTS.

Telegraphic Address.
"BLAZON, GLASGOW".
ABC Code used.
4th & 5th Edition.

Telephone Nos. 263, 264 Govan.

BLAIR, CAMPBELL & Mc. LEAN,
L i m i t e d.
WOODVILLE STREET,
G O V A N.
GLASGOW.

April 8th. 1916.

A.E. Jordan Esq.,
Napean Sea Road,
Cumballa Hill,
B o m b a y.

Dear Sir,

We beg to acknowledge receipt of yours of 18th & 20th March.

We beg to confirm having cabled you:-

" "A" £5280 - "B" £.6,050, "including
additions; your letter 19th March."

You will now have our estimates of 24th March, giving you the
present prices of estimates "A" & "B" originally sent on the 25th
September 1913, to the Vizagapatam Sugar Development Company.
for 3 Ton Sugar Plants.

You will notice that Estimate "B", on the estimate of 24th
March is £.5,750, but the additions you specify, viz:-

The Boiler to be same as Estimate "B", i.e.,
6'6" in dia., x 12'0" long;

The Centrifugals to be 30" instead of 24";

Two spare Duplex Pumps to be supplied;

One Wrot Iron Hot Water Boiler Feed Tank;

One Cold Water Tank;

Also six Wrot Iron Sugar Coolers, in one nest;

Cane Carrier, say 30'0" long for Mill, as specified in
your letter of 20th March;

increases our estimate from £.5,750 to £.6,050.

We note that the new Company is to be called The Indian
National Sugar Co., Ltd., and that the Government has to be approached,

with a view to getting a subsidy from them, and we hope that you will be successful in getting the Company floated and also in getting the Government to subsidise same.

We note that the scheme is being submitted to the Government entirely independent of Mr. Hulme. We also beg to acknowledge copy of the "Times of India", which we have read with interest, and we shall be pleased to receive any papers from you, that you think will be of interest to us, and we would also be pleased to send you out any Home papers which you desire from time to time, and we shall be glad if you will indicate what papers you would like.

All the usual and necessary spares, jointing material etc., would be supplied with either of the above estimates. It would be an advantage also, to have a Megass Carrier with the plant complete, and this no doubt, you will be able to arrange, after you get the Arrangement Drawing made out, or we could arrange this for you here.

We have not estimated to you for any Electric Lighting Plant or Weighing Machine, and we note that you will require to include this in the amount which the Government will be asked for, and we think if you put in the sum of, say £3,350, that this would cover these two items.

We also beg to acknowledge receipt of letters addressed to you from different parties in India, who are interested in Sugar Industries which we have read, and return to you, and hope that you will keep in touch with these people with a view to securing their business. Meantime, with kind regards, and awaiting your further news,

We are, Dear Sir,

Yours faithfully,

For BLAIR, CAMPBELL & Mc. LEAN, LIMITED.

Sd/-P.B. Blair.

Director.

ENCL.

Telegraphic Address:
"BLAIR, CAMPBELL & Mc. LEAN"
AND Code used
4th & 5th Edition.

BLAIR, CAMPBELL & Mc. LEAN,

Limited.

WOODVILLE STREET,

GLASGOW.

GLASGOW.

April 28th 1913.

A.R. Jordan Esq.,
Napier Road,
Glasgow Hill,
Glasgow.

Dear Sir,

We beg to acknowledge receipt of yours of 18th & 20th March.

We beg to confirm having called you:-

"A" - 2,500 - 1st & 2nd "B" - 2,500 - 1st & 2nd

You will now have our estimates of 24th March, giving you the

present prices at estimates "A" & "B" originally sent on the 24th

September 1912, to the Viceroy's Sugar Development Company.

For 3 Ton Sugar Plants.

You will notice that Estimate "B", on the estimate of 24th

March is £3,750, but the additions you specify, viz:-

The Boiler to be added to Estimate "B", £1,000, 1st & 2nd

The Contribution to be added to Estimate "B", £1,000, 1st & 2nd

Two spare Boilers to be added;

One spare Boiler to be added;

One spare Boiler to be added;

One spare Boiler to be added;

One spare Boiler to be added;

Increases our estimate from £3,750 to £4,650.

We note that the new Company is to be called The Indian

National Sugar Co., Ltd., and that the Government has to be approached.

(COPY)

BALABHADRUNI CHANNAYYA BROS.,

Merchants.

Bimlipatam, 7th April 1916.

Telegraphic Address:-
"CHANNAYYA."

To

A. E. Jordan Esq.,

Bombay.

Dear Sir,

I beg to acknowledge your letter of the 25th ultimo,
with enclosure in order.

I am pleased to inform you that your scheme for a
Sugar Industry in our District will have my support and I will
be a Director in case the Government subsidise the Indian
National Sugar Company, Ltd.

Wish your scheme a success.

Yours faithfully,

(Sd) B. CHANNAYYA.

P.L.N.

PROPOSED SCHEME,

of the

"INDIAN NATIONAL SUGAR COMPANY LTD."

Authorized capital Rs. 3,00,000/: (with power to increase)
Divided into 60,000 shares of Rs.5/: each, of which it is now
proposed to issue 19,600 ordinary shares 5000 preference shares
at 7 per cent cumulative and 400 founders shares.

DIRECTORS

1. *To be appointed on Government*
2. *Granting subsidy.*
3. Mr. B. Chennayya Chetty, Land Holder, Merchant and Municipal
Councillor, Bimilipatam.
4. A.E. Jordan Esquire., A.M.I.M.E., Manager & Engineer
(Ex-officio).
5. Mr. S.B. Naikulu Patrudu, Secretary, (Ex-officio).

PROMOTERS.

1. A.E. Jordan Esquire., A.M.I.M.E., Expert Sugar Engineer,
2. Mr. S. B. Naikula Patrudu.

BANKERS.

The Bank of Madras.

Solicitors.

Messrs. Grant and Greatorex, Madras.

Local Legal Advisor.

D.V. Krishnam Raju Esquire., B.A., B.L., Vizagapatam.

AUDITOR.

M.K. Dandeker Esquire., B.A., Incorporated Accountant and
Professor of Government Commercial Institute, C A L C U T T A.

Registered Office.

Anakapalle, Vizagapatam District, Madras Presidency.

PROPOSED SCHEME.

of

Indian National Sugar Company Limited.

This Company will be formed chiefly for the purpose of establishing a Sugar Factory or Factories for the manufacture of and its bye-products and for developing the sugar industry or other objects mentioned in the Memorandum of Association of the Company.

2. The Vizagapatam District of the Madras Presidency being one of the largest sugar cane growing districts in India producing large quantities of cane jaggery, while the country is being flooded with refined sugar from Java, Mauritius and Japan, it is considered to be a suitable place in which to erect a properly designed factory and of the proper capacity to pioneer the sugar industry.

3. The site for the first factory which will be an object lesson to the whole of India will be acquired from the Vizagapatam Sugar Development Company Ltd., (in liquidation) and is situated at Anakapalli on the main line of the Madras and Southern Maharatta Railway close to the Bengal Nagpur Railway and within 20 miles of the harbour of Vizagapatam. The site is therefore connected by sea and rail to both Calcutta and Madras and the Vizianagaram-Raipur Railway under construction will connect it with the Central Provinces.

4. The site to be acquired is about 5 acres in extent and contains buildings which have hitherto been used for storing the large quantities of cane jaggery made at Anakapalli and in the surrounding villages for exportation purposes. These buildings will be utilized for the sugar factory plant. Labour in and around Anakapalli is cheap and plentiful, there is an ample supply of good water and the factory will adjoin the Madras Government Cane Experimental Farm which will be a valuable adjunct

PROPOSED SCHEME

of the

"INDIAN NATIONAL SUGAR COMPANY LTD."

Authorized capital Rs. 5,00,000/- (with power to increase)
Divided into 50,000 shares of Rs. 5/- each of which it is now
proposed to issue 10,000 ordinary shares 2000 preference shares
at 100 per cent cumulative and 400 founders shares.

DIRECTORS

1. Mr. B. Chennayya Chetty, Land Holder, Merchant and Municipal Councillor, Bimilipatam.
2. A.E. Jordan Esquire., A.M.I.M.E., Manager & Engineer (Ex-officio).
3. Mr. S.B. Nairn Esquire., Secretary, (Ex-officio).

PROMOTERS

1. A.E. Jordan Esquire., A.M.I.M.E., Export Sugar Business.
2. Mr. S.B. Nairn Esquire.

BANKERS

The Bank of Madras.

SOLICITORS

Messrs. Grant and Gresham, Madras.

LOCAL LOCAL ADVISOR

D.V. Krishnam Raja Esquire., B.A., B.L., Vizagapatam.

AUDITOR

M.K. Pandey Esquire., B.A., Incorporated Accountant and
Professor of Government Commercial Institute, C.A.I.C.U.T.A.

REGISTERED OFFICE

Anakapalli, Vizagapatam District, Madras Presidency.

for developing the sugar cane cultivation in the district.

5. The factory to be at first erected will be capable of turning out 3 tons of sugar per day this capacity having been determined to begin with in order to facilitate its establishment by avoiding the difficulties that would be attached to a large factory in obtaining the necessary large capital and a large constant supply of sugar cane.

The plant has been designed, and with a view to doubling the capacity of the factory at an early date, on the most up-to-date and scientific lines, commensurate with its capacity, known to the sugar industry and will manufacture a high class white sugar and a light yellow coloured sugar for consumption by all classes without employing any material obnoxious to any section of the people.

6. During the cane season, the canes will be crushed by a powerful steam driven mill three times in succession, the juice expressed will be converted into sugar straight away, and the refuse crushed cane will be utilized in the boiler furnace of special design for generating the steam required to run the factory.

The small percentage of molasses resulting from the direct process will find ready sale for tobacco manufacture or to a local distillery for the manufacture of spirit.

7. During the off season, it is intended to refine with the same plant the jaggery made from the juice of the palmyrah and date trees which grow extensively in the district and which can be purchased at a cheap rate.

From this jaggery, a high class light yellow coloured sugar suitable for the manufacture of sweet meats will be made. "No animal bone char will be used in the Factory for refining".

8. An important feature of the Factory will be that students of the Agricultural Colleges and others will have opportunities of learning sugar manufacture and sugar engineering in order to qualify for employment in other sugar factories instead of going

4. to Europe where no sugar cane is grown and where no cane sugar factories exist.

The Company will render assistance to others desirous of establishing similar sugar factories in other districts.

9. Surrounding the factory and in the adjacent villages excellent sugar making canes are grown which can be purchased from the cultivators at a price that will give them a good profit from their crops as well as enabling the factory to earn a good profit.

Since the outbreak of the War, the price of sugar has risen considerably and with the increased tax levied on imported refined sugar the present is an opportune time for the development of the sugar industry, considering also the imports of bounty fed sugar from Austria and Germany will never again be allowed to take place.

10. The Java Sugar Industry has been successfully developed to what it now is by working on the Centralised Sugar Estate System, similarly to other sugar producing countries such as Mauritius, the West Indies, Hawaii, &c., but unfortunately India is at present debarred from commencing sugar manufacture on a large scale owing to the system of land tenure which allows the ryot freedom to grow whatever crop he pleases.

The Company therefore propose to take on lease some plots of land aggregating at first 100 acres, either from the Government or the Zemindars in order to begin the Centralization System on a small scale.

100 acres of land will yield from 30 to 50 tons of cane per acre which is sufficient to supply a 3 ton Sugar Factory with cane for the season of 4 months.

The Present average cost of cultivating 1 acre to the Ryot is Rs.200/- and as the land may be obtained from a tenant for Rs.50/- per acres, as sub tenant, a sum of Rs.30,000 should be

sufficient to make a start with.

The advantages to the Company in having its own cane cultivation for supplying the factory will be great and the Ryots will also have many advantages by associating in modern method of cultivation which will increase the yield of cane and consequently their profit from their crops.

By owning such an estate not only will the difficulties in getting a constant and sufficient supply of canes to the factory be removed, but the anxieties occasioned to the Ryots through receiving advances from money lenders against their output of Jaggery, the losses caused by premature cutting of the canes, the comparatively low yield of cane, and its deterioration through being kept too long in the fields after cutting will be avoided.

11. A 3 ton sugar Factory at Anakapalli would require 3,600 tons of cane per season of 4 months or 120 days. The yield of sugar and molasses would be 10 per cent of the weight of the cane or 300 tons of product.

On working up in the factory this should produce 60 per cent of first quality sugar, 20 per cent of 2nd quality sugar and 20 per cent of Molasses.

Taking the price of sugar as fixed by the Bombay Food Price Committee the receipts from the factory should work out as follows:-

216 tons (60%)	1st sugar @ Rs.350/-	per ton==	Rs. 75,600.
72 tons (20%)	2nd sugar @ Rs.340/-	per ton==	Rs. 24,480.
72 tons (20%)	Molasses @ Rs. 50/-	per ton==	Rs. 3,600
			<u>1,03,680.</u>

Taking the canes @ Rs.13/- per ton which at 20 tons per acre, the present average at Anakapalli, would give the Ryot Rs.260/- per acre from his crop: this is equivalent to what he at present receives per acre by making jaggery.

Taking the cost of manufacturing sugar at Rs.40/- per ton of sugar, which includes all salaries, stores and auxilliary wood

6. The skilled staff with Manager & Secretary only, would be retained all the year round to keep the factory in proper repair and supervise the cultivation, while the unskilled labour would find employment in the cultivation in and around Anakapalli during the period the factory was idle, and taking the depreciation on machinery and buildings at $7\frac{1}{2}$ per cent the expenses of working the factory should work out as follows:-

3600 tons of cane @ Rs.13/: per ton delivered at the factory.	--	Ra. 46,800.
Cost of manufacture @ Rs.40/: per ton of sugar-- (280 x 40).	--	Ra. 11,200.
Depreciation on machinery and buildings @ $7\frac{1}{2}$ % of Rupees 11,7550.	--	Ra. 8,816.
		<u>66,816.</u>

The above figures show a profit of Rs.36,864 equivalent to 16 per cent of a capital of $2\frac{1}{4}$ lakhs and in the event of the Government being graciously pleased to assist the company to be incorporated by giving a grant in aid of one lakh this profit would enable the company to pay a dividend of 7 per cent to the preference shareholders, 10 per cent to the ordinary share holders and to carry a sum to the Reserve fund to meet contingencies, employees, Provident Fund and for extension of the business.

12. The proposed Capital of the company is Rs.3,00000 out of which Rs. 2,25,000 is required for the 3 ton factory and 100 acre estate. The balance of Rs.75,000 to be issued when it is deemed expedient to increase the capacity of the factory.

The following figures show how it is proposed to distribute the capital of $2\frac{1}{4}$ lakhs.

Cost of complete 3 ton sugar plant as per Blair Campbell Cable-gram dated the 7th April 1916.....	Ra. 90, 750.
Freight from Glasgow to Anakapalli including erection of plant.....	Ra. 10, 000.
Cost of Electric lightening plant.....	Ra. 2, 000
	<u>Ra.102, 750</u>

Carried forward.

Brought forward.	Rs. 102, 750
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Cost of Land & Buildings to be taken over
from the Vizagapatam Sugar Development
Company Limited..... Rs. 14, 820

Cost of 100 acres of land including cultivation
manuring &c. for 2nd years working.....Rs. 30, 000

Cost of 3,600 tons of sugar cane @ Rs.13/
per ton for 1st years working.....Rs. 46, 800

Cost of alterations to the existing buildings.	5, 630
--	--------

Cost of wells and Irrigating Pumps.....Ra.	5,000
--	-------

Cost of tools, Stores, incidental expenses and auxiliry wood fuel.....Rs.	20, 000
--	---------

Rs. 225,000

The refining ~~Palmyra~~ or Date Tree Jaggery into light yellow coloured sugar suitable for the manufacture of sweet-meats has not been taken into account in the above figures. This jaggery might be obtained at a cheap rate in the Vizagapatam District and the factory could refine it at a profit at the termination of the sugar cane season.

13. The assets and liabilities of the Vizagapatam sugar Development Company Limited (in liquidation) will be taken over at a value of Rs. 14,820 of which 2624 shares amounting to Rs. 131,20 be issued to the members of the old Company in lieu of cash as per conditions laid down in the terms of the reconstruction scheme. After deducting the anticipated Government subsidy of one lakh of Rupees the balance capital required of 1½ lakh will be offered to the public desirous of assisting in the pioneering and developing the Indigenous Sugar Industry.

On deciding to double the capacity of the factory, which it is intended to do, as early as possible, the remaining three quarter lakh of the authorised capital will be issued for subscription and existing members of the Company will be given the preference of taking these shares.

14. The order for the 3 ton plant will be placed with a leading firm of Sugar Engineers in Glasgow, to a specification made up by Mr. A. E. Jordan and which has been approved of by the Sugar Engineer to the Government of India. The building will be got ready under the supervision of the Company's Manager and Engineer Mr. A. E. Jordan, A.M.I.M.E., who has had an extensive experience in Cane Sugar Factories and Jaggery Refineries in India, Egypt, and Mauritius, and who will be engaged by the Company in the 1st instance for a period of 9 years. The manager will be assisted in conducting the business by the company's secretary Mr. S.B. Naikulu Patrudu, who has had a wide experience in office work and in the business of Industrial concerns and who will be engaged by the Company also in the first instance for a period of 9 years. The remaining Directors will be leading Indian gentlemen of sound business capacity.

AMAKAPALLE.

1st May 1916.

(sd) S.B. Naikulu.

Promoters.

ANAKAPALLE,
May 22, 1908.

SITE REPORT

To

Messrs. The Vizagapatam Sugar Development Company, Limited,
Anakapalle.

DEAR SIRs,

I have to-day visited and inspected, in Company with your Secretary, the existing buildings, site and surroundings of your proposed "Model Factory." These I find to be admirably suited for the erection of this model plant without any additional buildings, except a small shed over the boiler.

On the land in front of the existing building there is plenty of room to erect a Central Factory up to a Capacity of 10 tons sugar per day (which I understand you intend doing in the near future).

The existing building being then used as godowns.

There is a good water supply close at hand in the compound which appears to be sufficient for the model plant and the water is of a very good quality.

I consider you have been very fortunate in having secured this site.

As your Secretary, has been working in connection with this scheme from the beginning, I have now obtained from him definitely, full information required for supplying the machinery to make from 2½ to 3 tons sugar per day of 24 hours and to work on Jaggery in the off season. This is what has now been definitely decided on and I have much pleasure in handing my estimate herewith.

In connection with this estimate I beg to point out that we have had vast experience in plants of this size as well as large factories in all parts of the cane sugar world, we are therefore in a position to give you the best and most up-to-date machinery in the market and it is needless to say that your order would receive our prompt and best attention.

As the factory will be situated next the railway in the main line and right in the heart of an important cane, track, there is no reason whatever why this Model Factory should not be a large success and be the forerunner of larger factories.

Your Secretary, Mr. Patrudu, thoroughly understands what is required and deserves great credit in getting the Company on a sound working basis.

Wishing the Company all success in their venture, which they will richly deserve.

I am,
DEAR SIRs,
Yours faithfully
(Sd.) WM. C. HUTSON.

Representative The Mirrlees Watson Company, Limited,
45 Scotland Street,
GLASGOW.

SITE REPORT

Report on Sugar Factory Site

By the Sugar Expert of Messrs MARTIN & Co., Calcutta.

To,

The Directors of

THE VIZAGAPATAM SUGAR DEVELOPMENT CO., LTD.

GENTLEMEN,

According to instructions received I proceeded to Anakapalle on the 12th April last, and spent several days with the Company's Secretary Mr. S. B. Naikulu Patrudu, in searching for a suitable site for the Sugar Factory, and I now beg to report as follows on the site which we have chosen.

Railway Communication.—

The site chosen adjoins the Anakapalle Station on the Madras Railway, is on the north side of the line directly opposite the Station itself, and within 50 yards of the siding which runs alongside.

The Station and Siding being thus at the very doors of the Factory, a better position could not possibly be obtained, as it will be in a direct line of communication with Madras & Calcutta, with His Highness The Nizam's State, and with Central India when the Vizianagram—Raipur Railway which is now under construction is completed.

Proximity to Harbour.—

The Factory on this site will be 21 miles, by direct railway communication with the harbour of Vizagapatam from which the products of the factory may be despatched by steamer either to Calcutta or Madras, and it will be in a position to successfully compete in these cities with either imported or country made sugar.

The freight per 168 lbs. bag of sugar from Vizagapatam to Calcutta is 7 annas, and from Vizagapatam to Madras 8 annas.

Water Supply.—

Within a few feet of the factory gate, just on the other side of the road which runs along the west side of the site is a channel which conveys the water from the river, about a mile distant, to the cane fields.

Through the channel, which is one of several in the vicinity utilised for irrigation purposes, the water flows all the year round, and close by are several large wells which contain a plentiful supply of good water, the level of which does not exceed 12 ft. from the ground level even in the hottest weather.

On the site itself is a well about 8 ft. in diameter the water in which, although the well had not been cleaned out for some considerable time, is most clear and sweet, and is used for drinking purposes.

Between the ground chosen and the railway line are several enormous pits which were dug during the construction of the railway. These could no doubt be used as cooling reservoirs for the hot condensing water which is discharged from the factory, if at any time it was found necessary to economise in water consumption. It

is not anticipated however that there will ever be any necessity to do this.

The factory will therefore have an abundant supply of cold water for condensing purposes as well as a clean sweet water for use in the Boilers, and in the manufacture of the sugar for which purpose it will have an especial value.

Sugar Cane Supply.—

The site is in the very centre of an extensive cultivation of sugar cane, which is of a good variety for sugar manufacture.

The canes vary in thickness from one to two inches, the cultivation averages 22 tons per acre, and yields even with the use of the country cattle power mills ten putties (5000 lbs.) of Jaggery per acre.

This is a contrast to the cultivation in Behar which averages only 10 tons per acre.

Jaggery Supply.—

At present the whole of the canes grown in the district are dealt with by the ordinary country methods of making Jaggery which is exported, to the extent of several lakhs of putties annually, from the Anakapalle Station to the United Kingdom, notwithstanding the fact that enormous quantities of sugar are annually imported into Calcutta from other countries. A Distillery at Vizagapatam also uses large quantities for manufacturing spirit, although sugar in its proper form is much more valuable than when converted into a material suitable for the fermenting house. The Factory will not only turn out sugar for which there is such an enormous demand in the country and thereby have the effect of developing the cane cultivation and to some extent oust the imported sugar, but its refuse molasses will be available for the manufacture of spirit, instead of the raw cane sugar being exclusively used, and is now done in the Vizagapatam Distillery.

For these reasons, the Factory should receive the warmest sympathies of both the Agricultural and Revenue Departments of the Madras Government, as the Revenue will be maintained without retarding the development of sugar manufacture for which purpose the Agricultural Department labour so much to increase the cane cultivation.

Suitability of Ground.—

The site is an entirely level piece of solid ground well suited for building on, and is at present used by the Anakapalle merchants for dealing with the Jaggery which they export.

Godowns, capable of storing 80,000 bags of Jaggery already exist on the 5 acres or so of land on which the factory is to be erected, and which is already surrounded by a high wall with gates and gate houses, while an adjoining piece of ground is available on which the Manager's Bungalow might be built.

In consideration of the foregoing, it can only be said that the site is an excellent one in every way for the erection of a Sugar Factory, and the Company have been most fortunate in obtaining it through their Secretary's efforts.

I have the honour to be,
Gentlemen,

Your most obedient Servant,

(Sd.) A. E. JORDAN.

Calcutta,

17th May 1907.

THE INDIAN COMPANIES ACT VII OF 1913.

ARTICLES OF ASSOCIATION

OF

INDIAN NATIONAL SUGAR COMPANY, LIMITED

Preliminary.

1. That the Regulations of the first Schedule, Table A of the Indian Companies Act VII of 1913 shall apply with the exception of Regulation Nos. 31 to 40, 77f, 83, 112, 113, and the following shall be the regulations of the Company.

Business.

2. 9 Ordinary Shares shall be the minimum subscription upon which the Directors may proceed to allotment.

3. The Company shall have its Registered Office in Anakapalle or any other place chosen by the majority of the Board of Directors assembled at a Board. The business of the Company shall be carried on at Anakapalle, Bimlipatam and Palakonda and such other place or places, as the Directors may, from time to time determine in India.

4. The business of the Company shall include the several objects or any of them expressed in the Memorandum of Association.

5. No shareholder or other person shall be at liberty to enter into the manufacturing premises or other property of the Company without the permission of the Secretary, Managing Director or the Directors of the Company for the time being.

Shares.

6. The Holders of the Preference Shares, shall be entitled to receive out of the Profits of the Company, if any, as a first charge thereon an accumulative preferential dividend of seven per cent. per annum and also be entitled to preferential repayment of capital out of surplus assets in the event of liquidation.

7. The Holders of the Founders Shares, shall have the right to 10 per cent. out of the surplus profits of the Company for each year, which remain after paying a cumulative dividend at the rate of 7 per cent. on the paid up Capital to the Preferential Shareholders.

8. Subject to paras 6 and 7 Supra and 98 of Table A, First Schedule, of the Indian Companies Act 1913, the surplus profits, shall belong to the holders of the Ordinary Shares.

Directors.

9. The number of Directors shall not be more than five nor less than three. The first Director shall be Mr. S. B. Nankulu Patrudu.

10. The minimum remuneration for each Director for each Meeting shall be Rs. 5 and Rs. 7 to the Chairman until otherwise determined by the Company in a General Meeting.

Managing Agents.

11. The Directors, in place of the Managing Director or Manager, may from time to time appoint a person or a firm as Managing Agents, on such terms and conditions as they think fit and they may delegate all or any of the powers vested to the office of the Managing Director or Manager and may revoke such appointment.

Powers of Managing Director or Manager.

12. The Managing Director or Manager shall, subject to the control and supervision of the Board of Directors, conduct the business of the Company. He shall have the general management of its business, transactions, books, papers, effects, property, affairs and concerns, with full power to engage, and dismiss, Engineers, Planters, Sugar Experts, Chemists, Work Managers, and Officers and Workmen; and for the purposes of the Company to purchase and obtain all necessary machinery, Sugar Plant, Refiners, Centrifugals, Stores, Goods and Material of any kind whatever for the purposes of the Company, and to repair or sell any such Sugar Plants Refiners, Centrifugals, Goods, Machinery, Stores, materials and or any of the articles acquired by the Company.

In furtherance, and not in limitation of and without prejudice to the general powers conferred by the last preceding para, it is hereby expressly declared that the Managing Director or Manager, shall, subject as aforesaid, have the following powers:—

(a) He may receive all monies and securities of the Company, pay the costs, charges and expenses, preliminary and incidental to the formation, establishment and registration of the Company, and all other necessary and ordinary expenses of the business and property of the Company.

(b) He may exercise all the powers of the Company for acquiring, developing or selling any property, rights or privileges.

(c) He may, subject to the provisions hereinafter contained, exercise all the borrowing powers of the Company and affix the Company's Seal to all deeds and assurances which may be required in that behalf.

(d) He may appoint any person or persons to accept and hold in trust for the Company any property belonging to the Company or in which it is interested and may execute and do all such deeds and things as may be requisite to vest the same in such person or persons.

(e) He may institute, conduct, defend, compound or abandon any legal proceedings by or against the Company or its officers or otherwise concerning the affairs of the Company, and also may compound and allow time for payment or satisfaction of any debts and of any claims and demands by or against the Company.

(f) He may refer any claims or demands by or against the Company to arbitration, and observe and perform the awards.

(g) He may make, draw, endorse, sign, negotiate and give all cheques, bills of lading, drafts, orders, hundies and promissory notes of Government of India and other negotiable instruments required in the business of the Company, and may also sign and give all receipts, releases, and other discharges for money payable to the Company and the claims and demands of the Company.

(h) He may act on behalf of the Company in all matters relating to Bankrupts and Insolvents.

(i) He may, from time to time, provide for the management of the affairs of the Company abroad in such manner as he think fit, and in particular may appoint any persons to be the attorneys or Agents of the Company, with such powers and upon such terms as he may think fit.

(j) He may, subject to these articles, invest any of the monies of the Company not immediately required for the purposes thereof upon such securities and in such manner as the Directors think fit, and he may, from time to time, vary or realise such investment.

(k) He may give to any employee, officer, solicitor, or other person employed in the business of the Company, such salary, remuneration or fees as he may think right, and also (if advisable, or in his opinion, necessary, either in addition to or in lieu of salary), a commission on the profits of any particular business or transaction, and such commission shall be treated as part of the working expenses of the Company.

(l) He may, from time to time, make, vary and repeal bye-laws for the regulation of the business of the Company, and the duties of its officers and servants.

(m) He may enter into all such negotiations and contracts, and rescind and vary all such contracts and sign, seal, execute, and do all such deeds, acts, matters and things in the name and on behalf of the Company as they may consider expedient for or in relation to any of the matters aforesaid, or otherwise for the purpose of the Company.

(n) He may appoint any person or persons to be the attorney of the Company for all or any purposes which he may think proper and may give him or them any power of attorney to act accordingly.

(o) He shall provide for the safe custody of the common seal of the Company and shall affix the same to all documents which require to be sealed, subjects to para 76 of Table A, first Schedule of the Indian Companies Act 1913.

Borrowing Powers.

(p) He may from time to time, with approval of the Board of Directors, borrow from the members or other persons or themselves and any sum or sums of money for the purposes of the Company.

(q) He may, with, such approval as aforesaid, raise or secure the repayment of such monies in such manner and upon such terms and conditions in all respects as they think fit, and in particular by the issue of debentures or bonds of the Company or by the creation of debenture stock, or by making, drawing, accepting or endorsing on behalf of the Company any promissory notes or bills of exchange, or giving or issuing any other Security of the Company or by mortgage or charge of all or any part of the property of the Company including its uncalled capital for the time being.

(r) Any Debentures or other Securities may be issued at a Discount, premium or otherwise, and with any special privileges as to redemption, surrender, drawings and otherwise.

Commissions and Discounts.

(s) He may pay a Commission at a rate, not exceeding 10 per cent on any share to any person in consideration of his subscribing or agreeing to subscribe, whether absolutely or conditionally, for any shares in the Company, or procuring or agreeing to procure subscriptions whether absolute or conditional for any shares in the Company.

Provident Fund.

13. The Directors may establish a Provident Fund for the benefit of the Company's employees who shall subscribe thereto upon the basis of a joint contribution by the employees and the Company respectively of $6\frac{1}{4}$ per cent., on the fixed salaries, the employees contribution $6\frac{1}{4}$ per cent., to be paid monthly, and the Company's contribution of $6\frac{1}{4}$ per cent., to be credited to the Fund half yearly, the Company in addition to contribute half yearly, interest at the rate of $3\frac{1}{2}$ per cent., per annum upon the capital amount from time to time standing to the credit of each employee subscribing to the said Fund.

14. No contribution shall be made to the Fund by the Company for the year it makes no profit.

15. The Directors may, from time to time, make and alter rules and regulations concerning the time and manner of payment of the contributions of the employees and of the Company respectively to such Provident Fund, and the accrual, enjoyment, suspension, and forfeiture of the benefits of the said Provident Fund, and the application and disposal of the fund accordingly and otherwise in relation to the working and management of the said Provident Fund, as the Directors shall from time to time think fit.

Solicitors and Vakils.

16. Messrs. Grant and Greator, Madras, and Mr. D. V. Kristnamaraz, B.A., B.L., High Court Vakil, Vizagapatam, shall be the Solicitors and Vakil respectively to the Company.

Notices.

17. The holders of the Preferential and Founders shares are not entitled to be served with notices of any General Meetings of the Company.

18. (a) A notice may be given by the Company to any member either personally or by advertisement in a Newspaper circulating in the Madras Presidency or by sending it by post to his registered address, or (if he has no registered address in British India) to the address, if any, within British India supplied by him to the Company for the giving of notices to him.

(b) Where a notice is sent by a post, service of the notice, shall be deemed to be effected by properly addressing and posting a letter containing the notice and unless the contrary is proved, to have been effected at the time at which the letter would be delivered in the ordinary course of post.

(c) Where a notice is given by an advertisement, shall be deemed to be duly given to him on the day on which the advertisement appears.

Names, addresses and description of subscribers,	Witness to the signature of subscribers.

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THE INDIAN COMPANIES ACT VII OF 1913.
MEMORANDUM OF ASSOCIATION
OF

"INDIAN NATIONAL SUGAR COMPANY, LTD."

1. The name of the Company shall be "Indian National Sugar Company, Limited."
2. The Registered Office of the Company will be situated in the Madras Presidency.
3. The objects for which the Company is established are:—
 - (a) To establish and carry at such place or places in India, as the Directors think fit, the business of Manufacturers, Importers, Purchasers, Refiners, and Dealers in Sugar, Jaggery, Molasses and Spirit of all kinds and descriptions and to purchase, sell, import, dispose of, deal in and act as Merchants, Factors, or Agents for doing of all or any of such things, in connection with all or any such produce.
 - (b) To erect, maintain, construct, alter, build, pull down, re-build, extend and fit up or to purchase, take on lease, contract or otherwise acquire or possess Lands, any Factories, Distilleries, Ware Houses, Dwelling Houses, Offices, Shops or other Buildings, Refineries, Railways, Tramways, Other ways and vessels, Plant, Foundries, Machinery, Works, Conveyances Shares, Grants, Concessions, Patents, Licenses, Liberties, Rights and Privileges suitable for all of any purpose of the Company.
 - (c) To sell or dispose off, the undertaking of the Company, or any part thereof for such consideration or value as the Company may think fit, and to sell, improve, manage, develop, exchange, lease, mortgage, dispose of, turn to account or otherwise deal with all or any part of the property's rights, liberties or privileges of the Company.
 - (d) To purchase, equip and set up all the necessary Plants, Engines, Tools, Electric Light apparatus, articles and things that may be required for the purpose of the Company.
 - (e) To plant, grow, and produce or to treat, cure, submit to any process or manufacture and prepare for market (whether on account of the Company or others), Sugar cane, Date, and Palm, India rubber, Guttapercha, balata and other gums, coffee, tea, groundnuts, cocoanuts, cottons, jute, hemp, aloe, sisal, Indigo, kapoc and other plants, trees, crops and natural products of any kind or otherwise cultivate any land of the Company.
 - (f) To work mines or quarries, and to find, win, get, work, crush, melt, manufacture, or otherwise deal with ores, metals, minerals, oils, precious and other stones or deposits or products, and, generally, to carry on the business of mining it all its branches.
 - (g) To manufacture and sell or act as Merchants or Agents, in Rice, Flours, Oils, Laces, Gunnies, Bags, Ropes, Carpets, Twists, Yarns, Wool, Hosieries, Cloths Silk and Cotton, Umbrellas, Lucifier matches, Barks, Lac, Hides, Timber, Bone Meal, Manure, Groceries, Stationery, Furniture, Hardware, Implements, Tools and Plant, Aerated waters, Stores, Cycles, Glasses, Candles, Soaps, Dye, Acids, Perfumery, Motors and Carriages.
 - (h) To establish, promote, work, raise or deal in Agriculture, Horticulture, Sericulture Cattle farming, Dairy farming, Poultry raising, Fisheries and Technical Institutions, in all its branches and varieties.
 - (i) To establish, promote or form Co-operative Societies for the development of Agricultural Industries and Credit Banks.
 - (j) To purchase the whole or part of the Assets and Liabilities of The Vizagapatam Sugar Development Company Ltd., Anakapalle, on such terms and conditions, as the Directors of the Company think fit.
 - (k) To export manufactured goods into other markets if necessary.
 - (l) To carry on any other business which may seem to the Company capable of being conveniently carried on in connection with the above, or calculated directly or indirectly to enhance the value of or render profitable any of the Company's Property or Rights and to carry on the business of merchants in all its branches and of carriers by land or water and also of Ware Housemen and Under-Writers or Insurers of goods, merchandise or other property and lives and re-insurers or agents of labourers and contractors of Tolls and Public, Railway, Local and Private Works.
 - (m) To acquire and undertake the whole or any part of the business, Property and Liabilities of any person or Company carrying on any business which this Company is authorized to carry on or possessed of property suitable for the purposes of this Company.
 - (n) To enter into partnership or into any arrangement for sharing profits, union of interests, co-operation, joint adventure, reciprocal concession or otherwise with any person or Company carrying on, or engaged in or about to carry on or engage in any business or transaction capable of being carried on or conducted so as directly or indirectly to benefit this Company and to lend money to or guarantee the contracts of or otherwise assist any such person or Company, acquire shares and securities of such Company and to sell, hold, re-issue, with or without guarantee or otherwise deal with the same.

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month as horse allowance to enable the Manager and Engineer to keep a horse for supervising the Company's Sugar cane plantation.

6. The Company will bear and pay the travelling expenses (first class railway fare) of the Manager and Engineer incurred in or about any journey undertaken by him on the business of the Company.

7. The Company will allow the Manager and Engineer as an annual bonus ten per cent of the nett profits remaining after a dividend of 7 per cent has been paid to the preference share holders in terms of the Articles of Association of the Company.

8. The Company will allow the Manager and Engineer the usual leave according to the rules of the Indian Civil Service.

9. The second party during the said term of nine years if he shall so long live, well, diligently and faithfully to the utmost of his power and skill serve the Company, and also will at all times during the said term follow and perform the advice, direction and orders of the Board of Directors of the Company.

10. If the Manager and Engineer shall at any time wilfully neglect or refuse or from any avoidable cause except illness become or be unable to perform any of his duties devolving upon him under this engagement or shall at any time give way to insobriety it shall be lawful for the Company to suspend the salary of the Manager and Engineer during such neglect, refusal, inability or insobriety as aforesaid, and further it shall be lawful for the Company in the event of such refusal or neglect of the Manager and Engineer or in case of his insobriety immediately to terminate the engagement without giving any notice or making any payment in respect of any future salary.

11. If the engagement shall not be previously determined as hereinbefore mentioned the Manager and Engineer shall not less than six months prior to the expiration of the said term of nine years give or send to the Company notice in writing

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whether or not he desires to continue his services with the Company after the expiration of the said term and within one Calendar month of the receipt of such notice the Company shall give notice in writing to the Manager and Engineer as to whether or not it is the intention of the Company to renew the engagement of the Manager and Engineer.

The notice herein referred to shall be given or sent to the Company at their Head Office and the notice of the Company shall be given or sent to the Manager and Engineer at the Company's Factory or to his best known private address

IN WITNESS whereof the Company have hereunto affixed their common seal and their assigns have set their hands and the Manager and Engineer has hereunto set his hand the day and year first above written.

The Common Seal of
The Indian National Sugar Co. Ltd.,
fixed in the presence of the
Company's assigns

The Signature of The Manager and
Engineer signed in the presence of

The Sugar Industry.

BY

A. E. Jordan, Esqr., A.M.I.M.E., M.S.A.

Since my return to this country from Mauritius ten years ago, I have taken a keen interest in the Sugar Industry and have, whenever an opportunity occurred, always endeavoured to further its development by getting others also to interest themselves in the Industry but it has proved a difficult task, that I set myself, and I had come to the conclusion that it were better to leave the Indian Sugar Industry alone.

A leading article, however, which appeared in the "Times of India" of the 3rd instant under the heading of "Our greatest Industry" which has no doubt been read by many of you with interest, and the knowledge that this Industrial Conference was soon to be held aroused my dormant interest, and I deemed it expedient, especially at the present time, that some thing further should be said on behalf of an Industry that should undoubtedly be the greatest Agricultural Industry of the country.

That is the reason why I am here to-day reading this short paper which makes the third I have read at the Provincial Industrial Conferences on the same subject.

From time to time articles on the subject of Sugar making have appeared in the leading Indian papers. To the Industrialists, Agriculturists, Capitalists, Provincial Governments and even to the Government of India the need for the development of the sugar industry and how it could be best brought

about have been pointed out. But owing to a lack of knowledge of the industry, failures of concerns that should never have existed, and the difficulty, no small one I can assure you, of competing with the foreign beet, root sugar imported from the continent, little or nothing has been done in Bombay towards the development of this important industry.

There is no question but that the Government through its Agricultural Department takes a keen interest in the sugar Industry but Government looks to Capitalists to provide the capital necessary for its development. There is no doubt the Capitalists also take an interest in the industry but Capitalists in their turn look to Government to take the initiative in developing an Industry of this kind in which they have no experience and there the matter rests while other more progressive countries such as Japan, are allowed to come in and capture markets which have hitherto been held by our enemies, Germany and Austria.

In the United Provinces, during the tenure of Sir John Hewett's Lieutenant-Governorship some attempts were made to develop the indigenous sugar industry by establishing small sugar making plants to suit the small cultivator. This crude method of making sugar was known as the "Hadi" process but as it was found to be too wasteful and did not fulfil the purpose for which it was intended, it was dropped by the Government after a good deal of money was uselessly expended on it.

The United provinces Government then decided to bring out, a small model sugar making plant from home in order to demonstrate the correct method of sugar manufacture. This plant was erected at the United Provinces Exhibition held in Allahabad in 1910-11 at which the reader of this paper was the Mechanical Engineer, but owing to the difficulties of obtaining cane which had to be brought a considerable distance by rail

and which was frequently of a very bad quality, there were unfortunately no figures available to show what profits could be earned by such a small factory. However it turned out a good quality of marketable white sugar direct from the canes and this was the chief object for which its working was demonstrated.

Owing to the public feeling regarding the sugar industry in the United Provinces, the Government decided to appoint a Sugar Engineer and at the close of the Exhibition, the Engineer who came out with the small plant took up his duties in that capacity and was attached to the U. P. Agricultural Department. An existing sugar factory at Philibit was subsidised and the Government carried out the alterations and additions which were required to bring the factory more in line with modern cane sugar factories existing in other countries, on conditions that students would be allowed to learn sugar manufactured and Sugar Engineering.

This factory in the extreme North of India does not serve as an object lesson to either Bombay or Madras.

Now the Bombay and Madras Agricultural Departments are just as keen as the United Provinces Agricultural Department in their desire to develop the sugar industry of these provinces and do all in their power to develop the industry in the direction of extending the cane cultivation but the cultivators find themselves up against the difficulty of not being able to grow a larger area of sugarcane than what they are able to deal with by crushing in their small country made cattle power mills, and as they are only able to make *gul* they do not find the crop a very profitable one when the price of *gul* is low. If however a sugar factory were to be put down adjoining their cultivation, the conditions would be very different.

The cultivators would be able to send their canes to the factory where the losses involved by crushing the cane in inefficient country mills and the boiling of the juice to *gul* would be avoided. They would be freed from the cares and anxieties incidental to the manufacture and sale of the *gul*. The factory would pay them advances against their crops and they would receive full payment against delivery of their canes.

The profits earned by the factory would enable it to pay them to grow sugar cane in preference to other crops.

They would have their cane tops for cattle food and the factory refuse for manure and the factory might be of assistance to them in supplying the water for irrigating their crops.

They would have more time to spend for improving their cultivation. Intensive and extensive cultivations would be the result and the difficulties attached to the work of the Agricultural Department would be removed.

In the Bombay Presidency, where there are over 50,000 acres under cane cultivation, and where the canes are dealt with in the crude manner mentioned, there are many places where sugar factories might be established with advantage for although the manufacture of *gul* by such methods for eating purposes appears to be a profitable business yet the losses of sugar are very great and can only be realised by those who have visited other sugar cane growing countries such as Java or Mauritius, where the canes are crushed by powerful mills and the juice is converted straight away into white marketable sugar in large Central Factories of the most economic and scientific design known to the Sugar Industry.

It would be a mistake, however, for large Central Factories, such as exist in other countries, to be erected all at once in the

Bombay or Madras Presidencies, because the conditions in respect to the cultivation are different, the land for the most part being divided up into small holdings on which are grown various kinds of crops and if a large factory were to be put down it would experience the difficulty of obtaining a sufficient supply of cane to keep it constantly at work throughout the season.

It is therefore obvious that the thing to do at first would be to establish a factory of a convenient size and of a capacity that would ensure its receiving sufficient cane from the surrounding fields. The difficulty in obtaining a large capital, which is a very great difficulty, would also be removed.

That even a small cane sugar Factory can be a commercial success has already been demonstrated in the Poona District, not far from the Government Manjri experimental cane farm where some enterprising Brahmin gentlemen, after seeing the small working model factory at the United Provinces Exhibition, procured some new and some second-hand machinery, dumped it down in the midst of their cane cultivation, and started the little factory by which they make good profits turning out a good quality of white sugar. For lack of Capital these enterprising gentlemen were unable to erect a properly designed factory and this, is the only cane sugar factory which exists in the Bombay Presidency.

There are no doubt many present here to-day who have never seen a cane sugar factory at work in fact I venture to-day that the percentage, of any is very small, and many of you are no doubt under the impression that in order to make white sugar, it is first necessary to make *gul* and then refine it, but that is just what has not to be done, and it is of paramount importance that you should know that for the manufacture of sugar to be a successful business, it is imperative that the

sugar be made from the canes by the direct process as is done in Java and Mauritius which dump their sugar into India. Refineries have been erected in various parts of the country in order to refine *gul* and make sugar. They have been failures, the last one erected was situated at Naini near Allahabad in the United Provinces, where no sugarcane is grown. Among directors were several members of the United Provinces Legislative Council and the Lieutenant-Governor, Sir John Hewett, laid the foundation stone.

The following comparisons between the working of a *gul* refinery and a cane factory will enable you to understand why that concern like others of its kind proved a failure.

In manufacturing sugar by refining *gul*,

(1) If the price of *gul* is high, which it frequently is owing to the demand for eating purposes in that state, the purchase of it for refining into sugar is prohibitive,

(2) Owing to the method employed by the cultivators in boiling the juice, the cane sugar, or sucrose, i.e. crystallisable converted to a very large extent into what is known as grape sugar or glucose, i.e. uncrystallisable sugar and frequently only 40 per cent and less of the *gul* is recovered as marketable sugar, the remaining 60 per cent coming out as molasses which has a considerably reduced value and can only be used for the manufacture of spirit or tobacco.

(3). To keep a *gul* refinery running, it is necessary that the *gul* be stored in large quantities and during storage considerable deterioration takes place i.e. it gets converted into molasses, especially during the Monsoon weather.

(4). In order to generate the steam required for the refinery, coal or wood fuel has to be purchased as the cane refuse i.e., the crushed cane is not available for fuel at the refinery, having already been used by the cultivator for boiling the juice to *gul* on the fields.

THE USE OF ANIMAL CHARCOAL IS REQUIRED TO MAKE WHITE SUGAR BY THE PROCESS.

In manufacturing sugar direct from the canes.

1. The maximum expression of Juice is obtained by crushing the canes in powerful steam driven mills.

2. The Juice is at once clarified and by evaporating at a low pressure under a vacuum, the maximum quantity of crystallised sugar and the minimum of molasses is produced.

3. The cane refuse or crushed cane is available as fuel for generating the steam required to run the factory.

4. The use of animal char is *not* required to make white sugar by this process.

It will be seen, that there is nothing in favour of the *gul* refinery, but that everything is in favour of the cane sugar factory and that former can only become a profitable business when there is a distillery attached to it for making spirit from the large quantity of molasses produced, while the latter is a profitable sugar making business and does not depend on the molasses which some cane sugar factories can afford to throw away.

For the success of a cane sugar factory working by the direct process, along with correct design, economical working and good management, it is essential that the canes be good sugar making canes containing 14 per cent and upwards of

sucrose. In many of the cane growing districts throughout the Bombay and Madras Presidencies the canes grown have been found on analysis to contain 15 per cent and over of sucrose and to be second to none in the world as good sugar making canes. An analysis of the Pundia canes grown in the Poona District show them to contain over 15 per cent of sucrose.

In order to avoid losses of sugar, it is also necessary that the canes be crushed in the mill within 24 to 48 hours of cutting in the field but this can easily be arranged with a little organization.

I have stated that it would be a mistake to at first erect large central factories and that a factory of a convenient size to ensure of its getting a continual supply of cane should be fixed on as well as being of a capacity that would ensure of its earning a profit.

Now an acre of cultivation in the Poona district yields on an average 30 tons of cane per acre, so if we take a small factory to deal with an acre of cane per day of 24 hours or 120 acres per season of 4 months, we will, I think, have fixed on the proper capacity of factory which would be an object lesson to demonstrate the correct methods of sugar manufacture, how the manufacturing business can be made a profitable one, and how the development of the Sugar Industry can be best carried out.

This size of factory would deal with 3,600 tons of cane per season and as the canes contain 15 per cent of cane sugar it will be safe to take the yield of sugar and molasses at 12 per cent i. e. 432 tons of product.

On working up in the factory, this in its turn produces 65 per cent of first quality sugar, 20 per cent of second quality and 15 per cent of molasses.

The canes can be purchased in the Poona district at from Rs. 16 to Rs. 20 per ton delivered at the factory which allows the cultivator a good profit, and the cost of working the factory economically should not exceed Rs. 30 per ton of sugar turned out. This includes all salaries, stores etc.

The employment by the factory of high paid European experts should not be necessary as the Government could arrange for a competent Sugar Engineer to render the necessary assistance for erecting and running the factory.

In a Government Notification No. 8525 W dated Bombay Castle the 1st December 1915 the wholesale selling prices of sugar as settled by the Bombay Food Price Committee are published and are as follows :--

Mauritius Sugar.....Rs. 17-8 to Rs. 18-0 per cwt.

Java Soft Sugar.....Rs. 17-0 to Rs. 17-8 per cwt.

Japan Crystals.....Rs. 16-12.

Let us now summarise the above figures, to see what profits may be expected from a factory dealing with 30 tons of cane, per day and turning out 3 tons of sugar.

The receipts will be as follows:—

To 281 tons (65%) 1st sugar @ Rs. 17-8 per cwt	
or Rs. 350 per ton=Rs.	98,350
To 86 tons (20%) 2nd sugar @ Rs. 17 per cwt	
or Rs. 340 per ton=Rs.	29,240
To 65 tons (15%) Molasses @ Rs. 50 per ton=Rs.	3,250
432 tons Making total a of	<u>Rs. 1,30,840</u>

The expenses will be as follows :—

To 3600 tons of cane @ Rs. 20 per ton at factory=Rs.	72,000
To cost of manufacture @ Rs. 30 per ton of sugar=Rs.	11,010
(367 × 30)	

Interest on a Borrowed Capital of $1\frac{1}{2}$ lakhs @ 9% = Rs. 11,250
 Depreciation of Machinery and Buildings.

@ $7\frac{1}{2}$ % of Rs. 80,000.....= Rs. 6,000

Making a total of Rs. 1,00,260

This shows a profit of Rs. 30,580 equivalent to 24 per cent on a capital of $1\frac{1}{2}$ lakhs which would be distributed as follows :—

CAPITAL.

Cost of complete plant on Site = Rs. 70,000

Erection of Buildings and Machinery = Rs. 15,000

Working Capital including cane advances = Rs. 40,000

Total Rs. 1,25,000

You will notice that I have taken the cane at the maximum price of Rs. 20 per ton and have allowed a sum of Rs. 11,250 as interest on a borrowed capital, moreover, I have not taken into account any additional profits the factory might make by refining *gul* if it could be purchased at a cheap rate, for the factory could work both processes of manufacture.

In the case of the factory proprietors having their cultivation, advances for cane would not be necessary and the capital required in that case would not exceed 1 lakh.

The design of the factory, is the next most important matter and my wide experience in designing sugar factories for all parts of the world and my experience of sugar manufacture in India and other countries has enabled me to draw up a specification of a plant embodying, commensurate with its capacity, the most scientific and economical design known to the Sugar Industry and in order that there should be no question as to the successful working of such a factory, the Sugar Engineer to the Government of India and a leading home firm of Sugar Engineers were consulted.

Now, what I have to propose is,—that two such factories be erected, one in the Poona District of the Bombay Presidency, adjoining the Government Farm at Manjri, and one in the Vizagapatam District of the Madras Presidency adjoining the Government Farm at Anakapalle in order that they may serve as the object lessons, where the correct methods of sugar manufacture and also Sugar Engineering may be learned, instead of the Government sending students to England for such a purpose where no sugar cane is grown and where no cane sugar factories exist.

These factories would receive the support of the Local Governments through the Agricultural Departments and there can be no doubt but that a rapid development of the Sugar Industry would be the result.

I have now pleaded the cause of the Sugar Industry as far as it is possible for me to do in the short time at my disposal and in conclusion, I beg to say that I feel hopeful that the committee sitting at this Industrial Conference will give their careful consideration to this paper with a view to their recommending my proposal to the Industrial Commission appointed by the Government of India, and during their deliberations, I would ask the committee to bear in mind that in the event of this opportunity which Government has now given them not being taken advantage of, it will simply mean that the place which India herself should hold in the country's sugar market, will soon be filled by Japan.

C O P Y.

No. 520 - 38.

Government of India

Department of Revenue and Agriculture,

(Agriculture)



From,

A.E. Gilliat, Esq., I.C.S.

Offg. Under-Secretary to the Government of India.

To,

A.E. Jordan, Esq., A.M.I.M.E.

Simla the 15th June 1916.

Sir:

I am directed to acknowledge the receipt of your letter of the 11th May 1916 to the address of the Hon'ble Mr. C.H.A. Hill, C.S.I., C.I.E. Member of His Excellency the Viceroy's Executive Council for the Department of Revenue and Agriculture, on the subject of the establishment of a pioneer sugar factory in the Madras Presidency.

It is noted that the Director of Industries, Madras, has been addressed in this connexion and the Government of India presume that an application on the subject has also been submitted to the Madras Government.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/- A.E. Gilliat.

Offg. Under-Secretary.

From,

A.E. Jordan. A.M.I.M.E.,
Expert Sugar Engineer,
Cumballa Hill,
B O M B A Y.

To

The Chief Secretary,
Madras Government,
Ootacamund.

Sir:

I have the honour to submit for the kind consideration of the Government of India a scheme for the establishing of a pioneer sugar factory to serve as an object lesson for the development of the Indian Sugar Industry.

Attached to the scheme is some correspondence that has recently taken place between the writer and the Directors of Agriculture and Industries Madras ^{which will serve to show the reasons} for the backward state of the Sugar Industry and for the failures of the efforts made by Local Governments towards its development.

The correspondence will show:-

- (1) That it is a mistake for the Agricultural Departments or the Industries Departments of Local Governments to endeavour to develop the sugar industry by encouraging the manufacture of jaggery from the cane for the purpose of refining it into sugar.
 - (2) That it is a mistake to endeavour to develop the sugar industry by erecting large factories at first such as exist in other countries.
 - (3) That the development of the Indian Sugar Industry can only be brought about by the establishing of a small factory at first with the necessary cane plantation in a good cane growing centre and preferably in the Madras Presidency where the climate is more suited to the cultivation of good sugar cane than the North of India.
2. In the event of the scheme which I have the pleasure of submitting receiving the kind and favourable consideration of the Government and the Government graciously giving the grant in aid



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Bombay. 26th June 1916

to en
ordered I beg to say
the Company to develop the sugar industry
up the appointment of Manager and Engineer to the Company
the attached agreement.

3. With regard to my personal experience as a Sugar Engineer I
was employed for many years by several of the leading Sugar En-
gineering Firms at home in designing sugar factories for sugar
growing countries.

From 1892 to 1897 I was Engineer to the Sugar Refineries of
Messrs. Parry & Co. in the Madras Presidency.

In 1898 I was selected to inspect and put in efficient work-
ing order a large central Sugar Factory in Upper Egypt.

From 1902 to 1905 I was attached to the Colonial Sugar En-
gineering Company in Mauritius engaged in visiting the various
sugar factories in the Island in connection with their working.

In 1905 I returned from Mauritius to India and until 1908
represented in this country a leading firm of sugar engineers of
Glasgow Messrs. A. & W. Smith & Co. Ltd. During this period I
travelled extensively throughout the country from Madras to Behar,
the United Provinces and the Bombay Presidency studying the sugar
industry and visiting most of the sugar concerns in the country.

In 1911 - 12 I was attached to the United Provinces Exhibition
where one of the special features was the small model sugar fact-
ory demonstrated working and with which I had a good deal to do
as Mechanical Engineer to the Exhibition.

I have had a wide experience in general engineering work
including constructional and building work.

In 1904 I was elected an Associate Member of the Institution
of Mechanical Engineers and in 1905 a Member of the Society for
the encouragement of Arts and Manufactures.

I am at present attached to the Bombay Municipality Mechan-
ical Department as 1st Engineer to the Love Grove Pumping and
Compressor Stations and shall be pleased to furnish any further
information required by the Government.

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4. To the Scheme is also attached copies of letter dated the 24th March and 8th April 1916 received from Messrs. Blair, Campbell & Mc Lean, Limited of Glasgow, the firm of Sugar Engineers that supplied the model sugar plant to the United Provinces Exhibition.

These letters will show:-

- (1) That subject to the approval of the Minister of Munitions the plant could be put in hands on receipt of the order,
- (2) That they could commence delivery in about eight working weeks and complete in about sixteen working weeks from order.
- (3) That on receiving a cable message they would at once communicate with the Minister of Munitions with a view to proceeding with the work at once.

It is of the utmost importance that the factory, notwithstanding the War, be ready for the cane season commencing in February 1917 to save another year's delay, and to enable this to be done the plant would require to begin arriving at Anakapalle by October 1916 in order to give ample time for its erection.

The order for the plant would therefore require to be placed in July, or as early as possible, so as to allow sixteen working weeks for its construction and about a month for transport.

The Promoters of the Scheme anxiously await the reply of Government which they trust will enable the Indian National Sugar Company Limited to be incorporated for the successful development of the Sugar Industry

I have the honour to be,

Sir,

Your most obedient servant,

A. Jordan

18th March 1916.

To

The Director of Industries,
&
The Director of Agriculture,

M A D R A S.

Sir,

I have the honour to inform you that on the suggestion of the agricultural adviser to the Government of India, a copy of whose letter is enclosed it is proposed to submit to the Madras Government through the Chief Secretary, a scheme for the establishing of a 3 ton sugar factory at Anakapally in the Vizagapatam District of the Madras Presidency.

(2) It is proposed to form a Company to be called "The Indian National Sugar Company Limited" for the purpose of taking over the property of "The Vizagapatam Sugar Development Company Limited (in Liquidation)". Directors of the Company to be the gentlemen of position with one or two in the Madras Legislative Council, the undersigned to be the manager and Engineer & the Liquidator of the Vizag. Sugar Development Company Limited to be Secretary of the New Company.

(3) The authorized capital to be 3 lakhs of which 2 lakhs only will at first be issued in 14,600 ordinary, 500-7% cumulative preference and 400 founder shares of Rs.10/- each. The remaining 1 lakh will be issued when it is decided to double the capacity of the factory after the 3 ton plant has been proved a success.

(4) It is proposed to approach the Madras Government with a view to the Government subsidising the factory by giving a grant in aid of Rs.75,000/- (as in the case of the Soap Factory) to enable the plant which has been designed to a specification approved of by the sugar Engineer to the Government of India, to be ordered, so that it may be ready for work in February 1917 at the beginning of the cane season.

(5) The price of sugar has been considerably enhanced since the commencement of the War and as a further tax of 10% has now been levied on imported refined sugar it is considered by the Promoters to be an opportune ^{time} for the establishing of a pioneer factory, considering also that the exports of cane jaggery from the Vizagapatam

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District, owing to the War, have ceased.

The factory will manufacture white sugar direct from the cane during the cane season and deal with palmyra jaggery during the ~~off~~ season and will render every possible aid to others desirous of erecting similar factories in *other* parts of the country.

(6) The Promoters of the New Company will be pleased to hear that the Scheme has your personal kind approval.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/- A.E. Jordan.

(TRUE COPY)

R.O.C. No. 1169-G1.

Office of the Director of Agriculture,

Enclosures.

Madras. 21st March 1916

From,

D.T. Chadwick, Esq., M.A., I.C.S.,

Director of Agriculture,

MADRAS.

To

A.E. Jordan, Esq., A.M.I.M.E.,

Cumballa Hill,

Bombay.

Sir,

In reply to your letter of the 18th instant I have to say that I am unable to support your scheme to start a sugar factory at Anakapalli.

2. The Nawabganj Factory has not yet worked at a profit. The case for the small sugar factory is not yet established by any means.

3. Anakapalli has a well-established and well-known jaggery market and I do not think that there is much hope for any sugar factory there.

I have the honour to be,

Sir,

Your most obedient Servant,

Sd/-.

for Director of Agriculture.

From

A. E. JORDAN, A. M. I.M.E.,

Nepean Sea Road, Cumballa Hill,

Bombay. 25th March 1916.

To

D. T. CHADWICK ESQ., M.A., I.C.S.,

Director of Agriculture, M a d r a s.

Sir,

I have to acknowledge the receipt of your letter No. 1169-91 dated the 21st March 1916 and regret that you are unable to support a scheme for the establishing of a Sugar Factory at Anakapalle which is in accordance with the expressed policy of the Government of India regarding Industrial development.

2. If the Nawabgunj factory has not worked at a profit it is because, as stated at the Agricultural Conference recently held at Pusa, that the factory does not receive the supplies of cane necessary to keep it constantly running. That proves that the factory is too large for the area of cane cultivation in its vicinity. It also shows bad management, and it is well known that the canes grown in the North of India are inferior sugar making canes.

In my opinion as an Expert Sugar Engineer the case for the small sugar factory has been fully established in my short paper on "The Sugar Industry".

3. The well established and well known jaggery market at Anakapalli is the cause of the backward state of the sugar industry and is the reason why the sugar industry cannot be developed.

The jaggery which was previously made at Anakapalle and in the adjacent villages for export purposes is now made for sending to existing refineries for manufacturing into sugar by the bone

char process of refining. This is a most wasteful method of sugar manufacture as fully explained in my paper on "the sugar Industry" and should be discouraged by the Government.

4. I still entertain hopes of the Madras Government as well as the Government of India giving favourable consideration to a scheme for the establishing of a pioneer sugar factory of the proper capacity, properly designed, and properly managed to manufacture sugar from the cane by the direct process and which will be an object lesson to the country for developing the sugar Industry.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/- A.E. Jordan.

No reply received from Mr. Chadwick to this letter.

(COPY)

From

A.E. JORDAN, A.M.I.M.E.,

Nepean Sea Road, Cumballa Hill,

Bombay, 1st April 1916.

To

D.T. Chadwick Esq., M.A., I.C.S.,

Director of Agriculture, Madras.

Sir,

With further reference to your letter No.1169-91 dated the 21st March 1916, I have the honour to attach for your information an advertisement of a large sugar Factory plant recently advertised for sale in "The Times of India".

2. The large sugar plant is the Bubuwlie sugar factory, the property of the U.P.S. Co., Ltd., in the North of India, and which received a loan of 7,00,000 rupees from the U.P. Government in order to erect this large factory.

The failure of this large sugar factory is by no means the only one and it should furnish conclusive proof that any attempt at sugar development in this Country must be started on a small scale to be successful as has been done in other sugar producing Countries.

3. The failure should be sufficient proof, that, as pointed out in my short paper on "The Sugar Industry", it is a mistake to at first erect large central sugar factories, such as now exist in other countries, on account of the difficulties of obtaining a large constant supply of good sugar making canes to keep the factory running throughout the season, and if this is so, it must be obvious that the thing to do is to at first establish a small factory to suit the adjoining cultivation and to increase the capacity of the factory as the cultivation extended.

(COPY)
A.E. JORDAN, A.M.I.E.E.,
Nepan Sea Road, Campbell Hill,
Bombay, 1st April 1918.

To
D.T. Chadwick Esq., M.A., I.C.S.,
Director of Agriculture, Madras.

Sir,
With further reference to your letter No. 1163-91 dated 21st March 1918, I have the honour to attach for your information an advertisement of a large sugar factory plant recently advertised for sale in "The Times of India".

2. The large sugar plant is the Burrow's sugar factory, the property of the U.P.S. Co., Ltd., in the North of India, and which received a loan of 7,00,000 rupees from the U.P. Government in order to erect this large factory.

The failure of this large sugar factory is by no means the only one and it should furnish conclusive proof that any attempt at sugar development in this country must be started on a small scale to be successful as has been done in other sugar producing countries.

3. The failure should be sufficient proof, that, as pointed out in my short paper on "The Sugar Industry", it is a mistake to at first erect large central sugar factories, such as now exist in other countries, on account of the difficulties of obtaining a large constant supply of good sugar making cane to keep the factory running throughout the season and if this is so, it must be obvious that the thing to do is to at first establish small factories to suit the adjoining cultivation and to increase the capacity of the factory as the cultivation extended.

4. I also attach for your information a report of an interview with a Java Gentleman on "The Sugar Industry" from which you will see that the North of India is not the best place to start developing the Sugar Industry but that the Madras Presidency is, being situated in the tropical zone where much superior Sugar making canes are grown.

It must also be obvious that the place to establish a pioneer sugar factory is in the very centre of the sugar cane cultivation, exactly where the cane jaggery making centre is now established in order that the canes be sent to the factory for manufacturing sugar by the direct process instead of being converted into jaggery by the cultivators for refining into sugar as this is the wasteful method which has prevented any development of the sugar industry from taking place in India.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/- A.E. JORDAN.

No reply received from Mr. Chadwick to this letter.

af

(TRUE COPY)

Telegraphic Address:
"Chromium," Madras,
Post Box 454, Madras, N.C.

Office of the Director of Industries,
Madras, 22nd March, 1916.

No. K 116

2786--Dept.K.

From

K.T.B. Tressler, Esq.,

Director of Industries,
Madras.

To

A.E. Jordan, Esq., A.M.I.M.E.,

B o m b a y.

Dear Sir,

I have your letter of the 18th regarding the establishment of a sugar factory at Anakapalle. I am naturally interested in industrial enterprise but I regret that I cannot express my views on the scheme without a good deal more information. For one thing there is already a sugar factory at Anakapalle; for another, I should want to know what area of sugarcane was controlled by the concern.

Yours faithfully,

Director of Industries.

W3
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C O P Y.

From

A.E. Jordan Esquire, A.M.I.M.E.,

Cumballa Hill, Bombay. 7th April 1916.

To

K.T.B. Tressler Esquire,

Director of Industries, M a d r a s.

Sir,

I have the honour to acknowledge your letter No. K. 116 dated the 23rd March 1916, and in reply I beg to give you the following information which I trust will interest you.

2. You have been misinformed as to there being a sugar Factory at Anakapalle. In the year 1908, on the Agents of the Refinery at Samalkot hearing that there was a movement on foot to establish a Sugar Factory at Anakapalle they installed an old cane Crushing Mill there, and began crushing the canes which they purchased from the ryots in the season of 1909.

In 1911 and 1914, on hearing that the movement had not been crushed, they again crushed the cane but at a great loss owing to the juice having to be sent to the Refinery at Samalkot which is 73 miles from Anakapalle. On consideration being given to the fact that owing to the natural acidity in the juice it rapidly deteriorates and becomes useless for sugar making unless the processes of sugar manufacture are proceeded with immediately the juice leaves the cane crushing mill, it must be obvious that the reason for installing the crushing mill only, and not the complete sugar making plant, was not for manufacturing sugar but to deter others from establishing a sugar factory, which to their mind would be against the interests of the Samalkot refinery.

3. On hearing that the movement to establishment a sugar factory at Anakapalle included the leasing of land on which to grow the best kind of cane for the factory, the Agents of the Samalkot refinery took a lease of 35 acres of land at Anakapalle

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from the ryots at Rs.70/- per acre. 2 waggon loads of Barbadoes canes were obtained from the Assistant Director of Agriculture at the Government experimental cane Farm at Anakapalle and planted on the 35 acres of land. It appears that no proper attention was given to the cultivation of these canes as no wells were sunk and for want of water they withered and no canes can be had from that field for the next season.

On consideration being given to ^{the} fact that on the 35 acres of land sufficient canes could not be grown to keep a 1 ton sugar factory at work let alone a refinery at Samalkot 73 miles off and that the canes would probably be of little value for sugar making purposes by the time they reached the refinery it must also be obvious that the reason for leasing 35 acres of land and allowing the canes planted to wither on it was not for manufacturing sugar nor for making another experimental cane Farm at Anakapalli, but to deter others from taking up the cultivation of cane for a sugar factory.

I am informed on most reliable authority that the Agents of the Samalkot refinery intend to start crushing cane again with the old cane crushing Mill at Anakapalli and to make jaggery for sending to the refinery at Samalkot for refining into sugar by the animal char process which as I have already stated in my paper on "The Sugar Industry", is the wasteful method which prevents the sugar industry of the country from being developed.

Immediate steps should be taken by the Madras Government to discourage the above mentioned practices of Agents of existing refineries desirous of holding a monopoly of sugar manufacture and to render assistance to those desirous of establishing correctly designed sugar Factories in accordance with the expressed policy of the Government of India regarding industrial development.

4. The Indian National Sugar Company Limited which it is now proposed to form, in the event of receiving a subsidy from the Government, intend to purchase the canes for the first year 1917 from the cultivators.

Taking the present cultivation at 20 tons of cane per acre which is the average at Anakapalli from 180 to 200 acres of cane would be dealt with by the 3-ton sugar Factory cane season of 4 months.

There are 28,000 acres of cane cultivation in the Vizagapatam District of which the Taluks of Anakapalli and Command 14,000 acres. There is therefore an ample supply of

The cost of cultivating 1 acre of cane by ryots is Rs.194/- and the value of the outturn of jaggery from 1 acre Rs.260/-. So that if the Company were to pay the ryots Rs.1.10/- per acre for the cane at 20 tons per acre they would still receive Rs.260/- per acre from the crop and they would also be free from the expense and anxieties entailed in the manufacture and marketing of jaggery, and they would benefit still further by increasing the amount of cane grown per acre.

5. For the year 1918 the new Company propose to take lease, either from the Government or the Zamindars of some land on which to grow canes of the best sugar making varieties, supplied either by Dr. Barber the Madras Government cane expert or the Assistant Director of Agriculture, Anakapalle, in order that the factory be at least partly, if not entirely independent of the ryots for its cane supply. By taking lease at first of 100 acres of land with proper manuring and watering, even 50 tons of cane might be grown per acre as already demonstrated by Dr. Barber at the Samalkot Farm, vide Bulletin No.51 of Vol.111. In order to irrigate the crop the Company propose with the assistance of Government to sink the required wells and install oil engines and pumps similarly to what the Madras Government has been doing for many years throughout the Madras Presidency.

The area of cultivation could be extended later as the capacity of the factory increased as success was shown.

This scheme, in the Writer's opinion as an expert sugar Engineer is the only one by which the sugar industry should be the chief industry of the country, can ever be de-

and which if carried out will be the foundation of a Java in the Vizagapatam & Ganjam Districts of the Madras Presidency.

The only sugar refinery that exists between Anakapalle and Madras is the Samalkot Refinery which refines sugar from jaggery by the bone char process, and the only sugar factory that exists between Anakapalle and Calcutta is the old factory on the diffusion system at Aska, Ganjam District, and which notwithstanding its obsolete machinery made a fortune for its late owner through its manufacturing sugar direct from the canes.

6. With regard to the losses of sugar which is involved by the present methods of manufacture I beg to supplement what I have written in my paper on "The Sugar Industry" by the following

Through crushing the canes in inefficient country bullock power mills anything from 40 to 60 per cent of the juice contained in the canes is extracted according to the efficiency of the mill its make, and the attendant. The remainder of the juice i.e. from 20 to 40 per cent which might be extracted by powerful steam driven mills is left in the cane refuse which is used by the ryot as fuel for boiling the juice to jaggery.

This means that from 20 to 40 per cent of sugar is lost, through the ryots inefficient crushing alone. Cane juice contains a certain amount of acidity which if not immediately rendered alkali by the addition of lime, rapidly converts the sucrose (cane sugar) into glucose (uncrystallisable sugar, molasses) which latter is only useful for spirit manufacture.

The addition of lime is in many cases entirely neglected by the ryot even when the jaggery is specially made for the refin

The method of boiling juice in open pans over an open fire by the ryots on the fields, to a large extent caramelises the sugar contained, as well as to a large extent converting the sucrose into glucose and the following figures will show how losses occur.

Sucrose 75.10% Glucose 8.62% ash 2.52%

The presence of ash causes a loss of 5 times its weight so that the net rendement of sucrose or cane sugar out of the sample of jaggery is 75.10 - 21.22 - 3.88 per cent only.

7. Now this cane jaggery is purchased by the Refineries which have to convey it considerable distances by rail.

It has to be stored up in large quantities to keep the refinery at work all the year round, or for a greater portion of the year, and during this period of storage further deterioration takes place to such extent that the jaggery yields only about 35% of sugar and it is more valuable for making spirit than sugar and so it is that these Refineries have also to become distilleries in order to make the business pay.

8. The Refineries have to meet heavy expenses in railage and what is more important, the cost of coal and wood fuel which is avoided in the cane sugar factories in other Countries by utilising the crushed cane refuse as fuel to run the factories.

Taking the market prices of sugar as settled by the Bombay Food Price Committee and as given in my paper on "The Sugar Industry" and other data according to local conditions prevailing at Anakapalli the following figures will serve to show what profits might be expected from a 3 ton sugar factory at Anakapalli, purchasing the canes from the ryots at Rs.13/- per ton.

The receipts will be

216 tons (60%) 1st sugar @ Rs.350/-per ton	Rs. 75,600.
72 " (20%) 2nd " " 340/- " "	24,480.
72 " " Molasses " 150/- " "	3,600.
	<u>Rs.103, 680.</u>

The expenses will be

3600 tons of cane @ Rs.13/- per ton delivered at Factory.....	Rs. 46,800.
Cost of Manufacture @ Rs. 40/- per ton of sugar (288 x 40).....	" 11,520.
Description of machinery & Building @ 7½% of Rs.8,000.....	" 6,000.
	<u>Rs. 64,320.</u>

These figures show a profit of 39,360 Rupees equivalent to 19 per cent of 2 lakhs the capital required for the 3 ton factory and on

the Company growing its own cane the profits of course would be considerably enhanced.

9. In conclusion I would point out that when jaggery is made from the cane it should be for the jaggery eating market only for consumption in that state and not for refining into sugar.

It is a different matter with jaggery made from the juice of the palmyrah or Date trees as these grow wild and there is no cost for cultivation as in the case of cane, so that, it can be obtained at a cheap rate. When this jaggery is refined however it should be refined without employing animal char, the use of which is so obnoxious, on account of religious principles, to a large section of the people of India, and in this case, the sugar produced would be of a light yellow colour specially suitable for the manufacture of sweet-meats - a chief food of the people.

It has been necessary for me to write at some length in order to give you the information required which I trust will enable you to express favourable views on the scheme which is about to be submitted to Government.

I have the honour to be,

Sir,

Your most obedient servant,

(Sd) A.E. Jordan.

U. K 116

(COPY).

Office of the Director of Industries.

Madras. 14th April 1916.
17

From

K.T.B. Tressler, Esq.,
Director of Industries,
Madras.

To

A.E. Jordan Esq., A. M. I. M. E.,
Cumballa Hill, Bombay.

Dear Sir,

I have your letter of the 7th which I have read with interest. Your general line of argument appears to me sound but before offering an opinion on any specific proposition I shall want to know a good deal more about details. When your scheme is submitted to Government I have no doubt that these will be forthcoming.

Yours faithfully,

Director of Industries.

(COPY)

C O P Y.

From

A.E. Jordan. A.M.I.M.E.

Cumballa Hill,

B O M B A Y.

To

Dr. Barber.

Madras Government Botanist

Coimbatore.

Bombay 25th March 1916.

Dear Sir:

I enclose a copy of a short paper on "The Sugar Industry" contributed to the Xith Industrial Conference recently held in Bombay and trust it will have your kind perusal.

I have also to advise you that it is now proposed to approach Government with a scheme for the establishment of a 3 ton sugar factory at Anakapalle with a view to the Madras Government assisting the scheme by giving a grant in aid to enable the plant to be ordered.

The scheme is in accordance with the policy expressed by the Government of India towards Industrial development and needless to say, the plant, commensurate with its capacity will be of the most scientific design known to the sugar industry to a specification approved of by the Sugar Engineer to the Government of India and designed with a view to early extension.

It is proposed to incorporate a New Company called "The Indian National Sugar Co. Ltd.," for the purpose of taking over the Vizagapatam Sugar Development Co. Ltd., (in liquidation) which for many years endeavoured to establish such a factory at Anakapalle but without success for lack of Government support.

The Directors would be gentlemen of position comprising one or two members of the Legislative Council with the Writer as Manager and Engineer and the Liquidation of the V.S.D.Co. Ltd., as Secretary of the New Company.

56

The Promoters of the Scheme would be pleased to hear if such a scheme has your approval and to hear your views as to the suitability of Anakapalle, which is a large cane growing centre, for the establishment of such a factory.

Yours faithfully,

Sd/- A.E. Jordan.

(COPY)

D.O. 27.

Office of the Government Sugar Cane
Expert,

Lawley Foad, Coimbatore,

29th March 1916.

Dear Sir,

I am much obliged for your letter and pamphlet.

I shall watch the venture at Anakapalli with interest, but I am not in a position to express an opinion as to its probable success or otherwise.

It depends on the management, the aims and the local conditions of supply.

I shall however hope to be of such use as you are to make of me with regard to supplying you with any good varieties of cane that I can. Fortunately you have in Mr. Balakrishnamurty, the assistant Director of Agriculture, a man thoroughly conversant with sugar cane that is in your tract, and I advise you to consult him regarding the best kind of cane to grow. Wishing you every success.

I am,

Yours faithfully,

(Sd) B.A. BARBER.

(COPY)

Neapean Sea Road,
Cumballa Hill,
Bombay.
3rd April 1916.

To

Dr. Barber,

Madras Government Sugar Cane Expert,

C A L C U T T A.

Dear Sir,

I have to acknowledge with thanks your D.O.No. 27 dated the 29th Instant and to say that in the event of Government enabling the new Company to be incorporated by giving a grant in aid, the Company will be pleased to consult the Assistant Director of Agriculture regarding the best varieties of cane to grow and to avail themselves of your kind offer to supply any good varieties of cane.

The aim of the Company is to establish a pioneer sugar Factory at Anakapalli which will be the foundation of a Java on the East Coast of the Madras Presidency, and with a good board of Directors and careful and economical management there is no reason why the factory should not ~~be~~ a success, for as you are aware, Anakapalli is the centre of a large tract of good sugar cane cultivation where labour is cheap and plentiful.

The promoters have to thank you for the kind wishes expressed.

I am,

Yours faithfully,

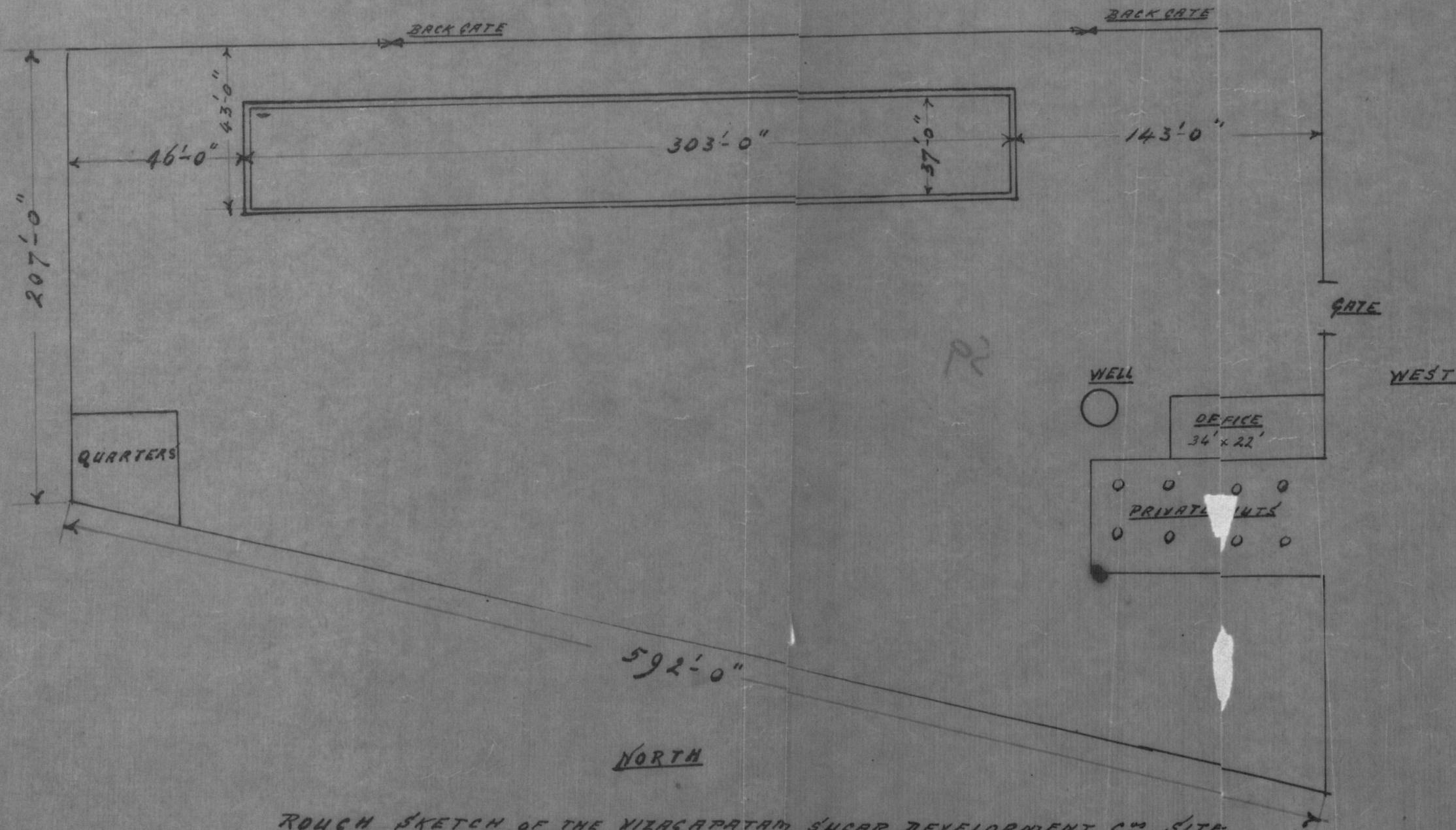
(Sd) A. E. JORDAN.

MAIN RAILWAY LINE MADRAS TO CALCUTTA.

SOUTH

EAST

THUMAPALLE ROAD FROM RAILWAY CROSSING



ROUGH SKETCH OF THE VIZAGAPATNAM SUGAR DEVELOPMENT CO. SITE
FOR SUGAR FACTORY

Alford Jan

Again G.O., No. , dated

191

Current No. 2520

From ~~the~~ M. R. S. B. Naikulu

, dated 21. 6. 1916

Patnam

SUBJECT.

Soliciting Govt assistance for the establishment of a sugar factory at Vizagapatam.

- (A) Please see for N^o 3547 Revenue, dated the 2nd December 1913, ~~and~~ N^o 21 Revenue dated the 6th January 1914. ^(+ N^o 219 Rev. of the 22nd Jan 14)
- (B) the Govt on the advice of Mr Bhaduri declined to entertain the application of the Vizagapatam Sugar Development Co. for a subsidy of Rs. 3000.
- (C) The company is now in liquidation but the promoters thereof have decided to form another company "The Indian National Sugar Company Ltd.", and they approach the Govt with the following requests:
- (1) that the Govt should make a grant to the company of Rs 75,000
 - (2) that they should meet half the pay of the engineer (Mr Jorda for a period of five years, the pay being

* Mr Jorda
+ Mr Naikulu Patnam

page 2 of 2.

para 3 of draft agreement
page 29 of cf.

pages 37+38 of cf.

page 39 of cf.

pages 44+51 of cf.

page 3, page 2 of
go. n. 622 (R)
5. 6. 16

being fixed at Rs 800 rising by annual increments of Rs 50.

2. From the papers forwarded with the application it is observed that the promoters applied to the Director of Agriculture & Industries ^{major} for support. The former ~~was~~ expressed that he ~~was~~ unable to support it, while the latter desired to have more details ~~Heated~~ than what he had before him. It is for orders whether the present application should be referred to them. If so, it may be sent to Mr. Konchman, ~~with the request~~ ^{doubtless} who will obtain the opinion of experts on the matter.

It may be noted here that the question whether it is necessary and desirable to afford, directly or indirectly, financial assistance to industrial enterprises is one to be considered by the Indian Industrial Commission. ^{8th} So far no such assistance has ^{16.7.16} till now been rendered. A request for help from the South Indian Match Factory was negatived

① by Court - go. no. 837. Ed. dated the 6th August 1915.

CA
17.7.16

Mr. C. C. Chuan for
himself. Co

10
17.7.16

2020-1
19.7.16

① In its order of 2. XII. 1913 &
② 6. I. 14 the government has
already twice declined to assist
this Company.

I have nothing to add to the
reasons given in the Chadwick's
letter of 4. XI. 1913, & his
report of 9.0. no. 205 of 2.15
Jan. 1915.

③ The reasons why this particular
scheme is unsatisfactory, & why
any scheme for manufacturing
refined sugar, without the help
of a Distillery, is unlikely to
succeed at present, are fully
set out by the Chadwick. The
fact is that at present without

a high tariff so Indian
factory could hold its own, &
therefore to encourage this
scheme would be simply encouraging
the promoters to throw their
money away.

M.L.
22. VII. 16.



Notes in CR
24. 7. 16

Est. Department

It is for orders whether the Govt
may refuse to grant any assistance
to the company. Subject to approval
a draft order is placed below.

SK
26. 7. 16. CR
25/7/16

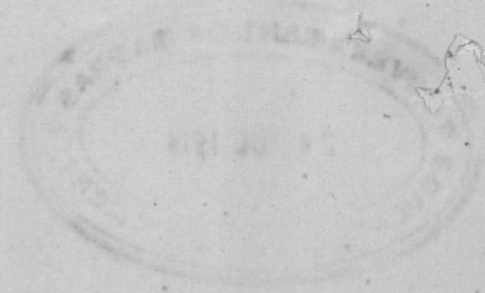
HE
I agree with the
Commissioner that to encourage
the scheme would be
encouraging the promoters to
throw away their money.
Draft for all.

P
28. 7. 16.

26/7/16

a light trip in this
 forest was told to me, I
 thought to encourage
 them were to trip
 the frontier to their
 money camp

[J. M. 832 Est., d. 31.7.16.]



32. Department
 It is often stated that the
 may refuse to grant any
 to the company. Subject to
 a draft over a place below
 84 1/2
 32 1/2

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 It is often stated that the
 may refuse to grant any
 to the company. Subject to
 a draft over a place below
 84 1/2
 32 1/2

[J. M. 832 Est., d. 31.7.16.]

I have
 29. 7.16

[J. M. 832 Est., d. 31.7.16.]

32. Department
 It is often stated that the
 may refuse to grant any
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 84 1/2
 32 1/2

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 to the company. Subject to
 a draft over a place below
 84 1/2
 32 1/2

” ” ” ” ” 191 .

C. No. 2520 From the S.B. Kaiken in Patna, No. -, dated 21. 6. 1916

" " " " " 191

" " " " , , " 191

No. 832 Edl mis 731-7.16, dated _____ 191__

Miss

The Govt regret that
that they are unable
to assist the proposed
"Indian National Sugar
Company" in the manner
requested by Mr. R. B.
S. B. Naikulu Patondu
garn in his letter read
above.

8A
24.7.16 9A
25.7.16

K.R.R.
S.B. Naikulu Patowdu.) (9th)

When given for copying
When copied
When examined
When signed

191

READ AGAIN G.O., No. 191, DATED

CURRENT No.

ENCLOSURES TO C. No.

ORDER OF GOVERNMENT.

LETTER OF GOVERNMENT.

STATEMENT WITH DETO.

PAPERS NOT FILLED UP, BRING NEXT FOR DESPATCH IN ORIGINAL.

A A A A A A A

V.B.—
A = Copy in full
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