

Educational (1903) Department.

ORDINARY PRINTED.

G.O., No. 434

DATED 12. 9. 03.

INDEXED.

ORIGINAL

[Despatch Abstract.]

Manufacture of Chrome Leather.

Approving the proposals submitted by Mr Chatterton
for the experiments on chrome tanning of leather
+ asking the Director to submit the necessary
proposition & reappropriation statements.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Government {1903} of Madras. EDUCATIONAL.

Recd.

Enclosures

Regd.

} 1903.

Spare copies

ORIGINAL

G.O., No. 434, 12th September 1903.

N. P.

SEPTEMBER.

Manufacture of Chrome Leather.

Approving the proposals submitted by Mr. Chatterton for making experiments in chrome tanning of leather and asking the Director to submit the necessary proposition and reappropriation statements.

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—again the following paper:—

G.O., No. 300, Educational, dated 20th June 1903.

Read—the following paper:—

From the Hon'ble Mr. G. H. STUART, M.A., Director of Public Instruction, Madras, to the Secretary to Government, Educational department, dated 11th June 1903, Ref. on C. No. 4111.

Mr. Chatterton reports that in connection with well irrigation in this Presidency about ten lakhs of hides are annually used in making water-buckets, that the buckets so made decay and become unserviceable in a very short time owing to the inferior quality of the leather, that chrome tanned leather being peculiarly adapted to resist the action of water and air is an almost ideal substance for water-bags, and that, if it can be successfully manufactured in this country, it would be of great advantage to the ryots. He adds that no private agency will take the initiative in the matter, but that, if Government will take the initial steps, he has no doubt private enterprise will follow. He accordingly requests that he may be permitted to make preliminary experiments in the manufacture of chrome tanned leather and that a sum of Rs. 2,000 may be sanctioned for the purpose. He does not hope to be able to manufacture chrome tanned leather of the superior quality turned out in England and in America, but he thinks it is very probable that his experiments will lead to the manufacture of a leather which will be decidedly superior to and more durable than the country hides of which water-bags are now made. The proposal seems to be a good one, and I have therefore the honour to submit for the favourable consideration of Government a copy of his letter on the subject. If Government be pleased to approve of the general outlines of the scheme, I shall ask Mr. Chatterton to state in greater detail what he proposes to do with the Rs. 2,000 or such other sum as may be needed.

2. Mr. Chatterton considers that a valid patent could be obtained for water-bags made of chrome tanned leather. I am very doubtful about this. There is nothing to prevent the people who make water-bags from using chrome tanned leather for the purpose if they can get it here. At present, they cannot. The acquiring of patent rights is however not essential to the success of the enterprise.

ENCLOSURE.

From A. CHATTERTON, Esq., Officer in charge, School of Arts, Madras, to the Director of Public Instruction, dated 28th May 1903, No. A1/885.

I have the honour to report that, during the progress of my enquiries into the state of the leather industries in this Presidency, I have come across certain facts and from them have arrived at certain conclusions which I think it desirable to bring to your notice.

From a return furnished to me by the Board of Revenue for the year 1900-1901, I find that there are 471,157 wells irrigating 1,028,667 acres and 144,363 wells which afford a certain amount of supply to 142,679 acres, making a total number of 615,520 wells irrigating 1,171,346 acres. From many of these wells the water is lifted by some form of piccotah or other in which an iron bucket is used for holding the water. But in the vast majority of cases the water is drawn from the wells in leathern buckets. These buckets are usually made by

trimming two hides to the requisite shape and sewing them together. In constant use they seldom last more than six months and when only used occasionally their life varies from nine months to perhaps two years; at any rate, it will not be far wrong to assume that as many as 500,000 new buckets are manufactured every year, costing an average of Rs. 6 each, so that on this well irrigation a sum of Rs. 30 lakhs is annually expended in providing buckets for lifting water. These buckets are made of country tanned leather of a very inferior tannage and their short life is due to the carelessness with which they are handled. Constant immersion in water and subsequent exposure to a hot sun rapidly destroys the leather, and it is a well-known fact that water-buckets are a serious trouble to ryots. I have carefully studied all the information available on the subject of chrome tanning, and I have come to the conclusion that the manufacture of chrome tanned leather for water-buckets offers very considerable prospects of commercial success. In this case it will not be necessary to manufacture a leather to compete with the finest products of Europe and America but simply to turn out something superior to the very inferior, locally made article. It is probable that the chrome tanned leather would cost somewhat more than the native leather now used, but I think there is no doubt that even moderately well-tanned chrome leather will outlast native leather employed for water-buckets many times over; and, if the ryots once became convinced of this, there is not the least doubt that they would readily pay a considerably higher price for chrome tanned leather water-buckets. In this connection I may be permitted to quote from a recent book on the manufacture of leather the following paragraphs headed "Characteristics of Chrome Leather":

"Chrome leather has special and peculiar qualities which distinguish it from all kinds of leather and these special features cause it to be a superior fabric for all the purposes for which the leather is used. It has been often stated that chrome leather is water-proof, but this is not a proper term to use in connection with it. It should more properly be called 'non-absorbent'. All kinds of leather produced with tannin absorb water readily, like a sponge, while chrome leather does not absorb the water but resists it or sheds it like the feathers of a duck. In fact it is a difficult matter to thoroughly wet chrome leather when once it is dry. Again, water and air are the agencies in Nature, which promote decomposition and decay, and as tanning and hide substance are both organic materials, and when combined, as in the case in bark tanned leather, and subjected to a process of wetting and drying, such leather will eventually, but surely, deteriorate and become rotten. Chrome leather, on the other hand, being a combination of inorganic material with a hide substance and subjected to the same process of wetting and drying, shows no effect whatever; in fact the oftener chrome leather is wet and dried, the softer and more flexible it becomes. Even subjecting to boiling water apparently has no effect upon it, while any other sort of leather produced with tanning and placed in boiling water is utterly destroyed.

Moreover, chrome leather is of much lighter weight than bark leather and this is a decided advantage for almost all purposes for which leather is used."

From this statement it will be seen that chrome leather is almost an ideal material for water-bags, and if it could be successfully made in this Presidency, it would be of great advantage to the ryots. It therefore appears to be desirable that we should undertake some experiments with a view to ascertaining the possibility of making chrome tanned leather for this purpose. I have not the least doubt that, if I could show that chrome leather could be manufactured successfully in this country and if the processes of manufacture could be patented, there would be little difficulty in placing the industry on a commercial footing. I am not quite sure, but I think a valid patent could be obtained for water-bags made of chrome tanned leather and, if so, it would be desirable to secure one, so that, in the event of the industry being started, the original promoters might be protected and reap a fair reward for their enterprise in this matter. I have discussed the matter with one of the largest exporters of hides and skins from Madras, and he is of opinion that it is not worth troubling about the improvement of any local industry unless the essential part of the process can be patented. In the interest of Indian industries two courses seem to be open: first, I might publish these facts and the conclusions I have derived from them; or secondly, I might pursue the matter further and make experiments to see if chrome tanning could be successfully carried out, and then, if a favourable result is obtained, enter into negotiations with private people to work the process. If the first alternative is adopted, I think it is probable that nothing will come of it, but if Government empower me to carry on investigations in this matter, I shall probably be able to carry the matter to a practical stage. The cost of the preliminary experiments would not be very great. I should require the services of an assistant with a knowledge of chemistry and a certain amount of chemical apparatus which might possibly be borrowed from one of the Government Laboratories, and I should require a few tools and machines for working the process, besides a fair number of hides for experimenting on. I do not think the experiments would cost more than Rs. 2,000; at any rate, when that sum has been expended, there will be something to show for the money and it will be possible to then consider whether it is worth while going on any further. I attribute great importance to the obtaining of patent rights if possible in the matter in view to subsequently inducing private enterprise to invest capital in the industry. If we succeeded in manufacturing chrome leather good enough for water-bags, there is no doubt that it would be employed for many other purposes as well, and though I am of opinion that there is very little chance of establishing a successful export trade in chrome leather, there is a very strong probability that chrome leather could be made of

sufficiently good quality to meet the internal demands of the country. Chrome tanning is a much more scientific process than bark tanning and requires the services of trained chemists so that the establishment of chrome tanneries will afford a not inconsiderable field of employment for the science graduates of our colleges. Unless Government move in the matter, I am of opinion that nothing is likely to be done, but if Government carry out the initial steps and produce chrome leather on an experimental scale, there is but little doubt that private enterprise will soon follow it up. I should therefore be glad if you would kindly place these remarks before Government and obtain their orders on this subject.

Order—No. 300, Educational, dated 20th June 1903.

Mr. Chatterton should be requested to formulate his proposals in further detail, showing more definitely what establishment would be required and what other expenditure is involved.

(True Extract.)

A. G. CARDEW,
Ag. Secretary to Government.

To the Director of Public Instruction.

READ—also the following paper:—

From the Hon'ble Mr. G. H. STUART, M.A., Director of Public Instruction, Madras, to the Secretary to Government, Educational department, dated 3rd August 1903, Ref. on C. No. 4111.

Referring to G.O., No. 300, Educational, dated 20th June 1903, I have the honour to submit a copy of letter No. AI/1841, dated 24th July 1903, from Mr. Chatterton in which he furnishes details for the expenditure of Rs. 2,000 proposed by him for carrying on preliminary experiments in the manufacture of chrome tanned leather.

ENCLOSURE.

From A. CHATTERTON, Esq., Officer in charge, School of Arts, to the Director of Public Instruction, dated Madras, 24th July 1903, No. AI/1841.

In reply to your Ref. on C. No. 4111, dated 2nd July 1903, I have the honour to formulate my proposals in somewhat greater detail.

2. The grant of Rs. 2,000 will be spent in defraying the cost of a series of experiments on tanning hides with chromic oxide. The experiments will be on as small a scale as is consistent with obtaining satisfactory results. The services of a chemical assistant are required, as I have not time to attend to all the details of the experiments and I think I can manage with a native graduate in chemistry, to whom a remuneration of Rs. 100 per month would be offered. Roughly the expenditure would be as follows:—

	RS.
Services of Chemical Assistant for six months	600
Hides and skins for experiments	600
Chemicals	500
Apparatus	300
Total	2,000

If the experiments result in the manufacture of a chrome leather good enough for water bags the South Indian Export Company are willing to continue the experiments at their own expense and, if the venture proves successful, to reimburse Government any expenditure incurred. In the event of no satisfactory result being obtained for an expenditure of Rs. 2,000, it will then be necessary to consider whether it is worth while going any further. Personally I think it is unlikely that any serious difficulty will be met with as chrome leather is an article of commerce and I have lately received information from an Italian firm that chrome tanning can be successfully carried on in a hot climate.

ORDER—No. 434, Educational, dated 12th September 1903.

The proposals submitted by Mr. Chatterton are approved. The necessary proposition and reappropriation statements should be forwarded to the Government.

(True Extract.)

A. G. CARDEW,
Ag. Secretary to Government.

To the Director of Public Instruction.
" Accountant-General.
" Financial department.

READ—also the following paper:—

From the Hon'ble Mr. G. H. STUART, M.A., Director of Public Instruction, Madras, to the Secretary to Government, Educational department, dated 3rd August 1903, Ref. on C. No. 4111.

Referring to G.O., No. 300, Educational, dated 20th June 1903, I have the honour to submit a copy of letter No. AI/1841, dated 24th July 1903, from Mr. Chatterton in which he furnishes details for the expenditure of Rs. 2,000 proposed by him for carrying on preliminary experiments in the manufacture of chrome tanned leather.

ENCLOSURE.

From A. CHATTERTON, Esq., Officer in charge, School of Arts, to the Director of Public Instruction, dated Madras, 24th July 1903, No. AI/1841.

In reply to your Ref. on C. No. 4111, dated 2nd July 1903, I have the honour to formulate my proposals in somewhat greater detail.

2. The grant of Rs. 2,000 will be spent in defraying the cost of a series of experiments on tanning hides with chromic oxide. The experiments will be on as small a scale as is consistent with obtaining satisfactory results. The services of a chemical assistant are required, as I have not time to attend to all the details of the experiments and I think I can manage with a native graduate in chemistry, to whom a remuneration of Rs. 100 per month would be offered. Roughly the expenditure would be as follows:—

	RS.
Services of Chemical Assistant for six months	600
Hides and skins for experiments	600
Chemicals	500
Apparatus	300
Total	2,000

Educational (190³) Department.

CURRENT No. 1219

From

[Name] The Hon'ble Mr. G.H. Stuart, M.A.,

[Designation] Director of Public Instruction,

[Station] MADRAS.



Ref. on C.No. 4111 of 03.

Dated 3rd August 1903.

Enclosures one

Received 5-8-1903.

Registered 5-8-1903.

SUBJECT.

Submitting copy of a letter from Mr. Chatterton furnishing details for the expenditure of Rs 2000/- proposed by him for carrying on preliminary experiments in the manufacture of chrome tanned leather.

BACK PAPERS.

FURTHER PAPERS.

$$\left[\frac{E.}{3} \right]$$

1,000—5-12-02

READ AGAIN G.O., No. 300, dated 20th June 1903

READ ALSO:—

C. No. 1219, From the 509, No. 4111, dated 3rd August 1903.

ORDER

No. 434, dated 12-9-1903

The proposals submitted by Mr. Chatterton are approved. The necessary proposition & re. appropriation statements should ~~now~~ be forwarded to the Govt.

72813

12/8

Ref 13.85

12/9/13

done
12/9/10

76 26. 1900

.. âé

Finl Departt. Dec^r 28/9

First copy sent to Press.

Returned for signature.

Despatched in print.

READ AGAIN G.O., No.
190 .

, DATE

CURRENT No.

ENCLOSURES TO C. No.

ORDER OF GOVERNMENT.

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.

N.B.—

- A = Print in full.
- B = Not to be printed.
- P = Print abstract only.
- Q = Print heading only.

NUMBER OF COPIES
REQUIRED.

Order complete.
Letter only.
Order complete with Letter.

50
Print with notes
of slow print
7/12
14/12

Sent to 6/17/1907 with out
under 3/10/12