(1) Number of pages 16

(2) Date of repair 4-7-1984

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

REVENUE DEPARTMENT

G.O. No. 1569 Press.
~~B.P. No.~~ ~~Mis.~~

Dated 25-9-1878 ~~197~~ .

Not to be folded or roughly handled

Archives I—S,806—24-2-78.

1569
1

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

25th September 1878, No. 1,569.

Read the following paper :—

No. 309. From A. O. HUME, Esq., C.B., Secretary to the Government of India, Department of Revenue, Agriculture and Commerce, (Salt), to the Secretary to the Government of Madras, dated Simla, 11th September 1878, No. 289.

With reference to your letter, No. 1,338, of the 19th ultimo, I am directed to forward copy of the papers noted in the margin showing the results of the experiments which have been tried with the object of denaturalizing salt intended for use by cattle; and to state that the Secretary of State has been asked to furnish the Government of India with details of the process employed in the German Empire.

Letter to the Officiating Commissioner of Inland Customs, No. 197, of the 5th October 1877, and enclosure.
Letter to the Officiating Commissioner of Inland Customs, No. 42-C, of the 7th March 1878, and enclosure.

Enclosure No. 1.

From the Under-Secretary to the Government of India, to the Officiating Commissioner of Inland Customs, dated Simla, 5th October 1877, No. 197.

In forwarding copy of a note by Dr. H. Warth, regarding salt used for cattle and for manufacturing purposes in the German Empire, I am directed to request that that officer may be asked to experimentalise on some of the waste or refuse salt of the Punjab mines (broken salt which traders do not care to purchase), with a view to determine whether he can render it unfit for human consumption while leaving it still good for use by cattle. It must be made absolutely certain that the salt could not be used for human consumption.

2. I am to request that a full report of the result of the experiments may be submitted for the information of the Government of India.

Note by the Collector of Customs, Punjab Mines Division, on the Salt Tax in the German Empire, dated Simla 25th September 1877.

There are a great number of salt works in the various States which constitute the present German Empire. The salt tax is collected by the orders of the Imperial Government, and redistributed to the separate States according to their respective population. A tax of 6 marks* per 50 kilogrammes is levied at the salt works for alimentary salt (salt consumed by man), in addition to the cost price of the salt, which amounts also to something like 1 mark for 50 kilogrammes. The *alimentary* salt is, as a rule, obtained by the artificial evaporation of brine, and only in few instances rock salt is obtained of such purity as to pass for alimentary salt. The salt used for cattle called "cattle salt" is not subject to the above taxation, but may be sold at the salt works for whatever price the proprietor may put on. For any salt to pass as "cattle salt" it requires to be prepared under the supervision of the Imperial Customs Department as follows :—The salt is chosen in a granular state, either as boiled salt or as ground rock salt, and mixed with ½ per cent. of red oxyde of iron, ½ per cent. of charcoal dust, and ½ per cent. of dry powder of "Wermuth" (*Artemisia absinthium*). I am not quite certain about the exact proportion, but these figures cannot be far from the real ones. The first two substances, the oxyde of iron

* One mark is very little less than one shilling.
One kilogramme=1·07 seers.

and the coal-dust, give the salt a sufficiently unsightly appearance to prevent its passing for alimentary salt, even where the unmixed salt is pure boiled salt or a good looking rock salt. The third substance is intended to prevent the lixiviation of "cattle salt" for alimentary purposes. It dissolves with the salt, and would impart a bitter taste to food prepared with the cattle salt for human consumption. Whilst the Wermuth is disagreeable to the taste for human consumption, the cattle like the substance, and its consumption is beneficial to the cattle. This method has now been in use for upwards of ten years and has answered well.

For manure, impure qualities of salt and all kinds of refuse are used. They are not mixed with the substances prescribed for cattle salt. For the manure salt, 1 per cent. of coal-tar is used and 4 per cent. of a substance called animal oil (*Thieöl*) which consists mostly of carbonate of ammonia, and is obtained by dry distillation of the flesh and other parts of dead animals. I am again not absolutely sure as regards the exact proportion of the ingredients, but the above figures will not be far from the mark. The quantities of the tar and the animal oil are so chosen that they impart to the manure salt a smell which prevents man and beast effectually from consuming it.

The cattle salt and the manure salt may serve for manufacturing purposes also. At factories which consume large quantities of salt, like soda factories, it will pay to appoint control officers, thus making the mixture of the salt with foreign ingredients unnecessary. I also remember an instance where the salt for a glass factory was mixed with oxyde of manganese, a substance which was required in the manufacture of the glass and which at the same time rendered the salt unseemly.

A special name has been invented for the preparation of salt to pass it without the tax; the word is denaturation (*Denaturirung*).

From the Officiating Commissioner of Inland Customs, to the Secretary to the Government of India, dated Agra, 7th March 1878, No. 42-C.

REFERRING to your letter No. 197, dated 5th October 1877, requesting that Dr. Warth, Collector of Customs, Punjab Mines, should be asked to experimentalise on some of the waste or refuse salt of the Punjab Mines, with a view to determine whether he could render it unfit for human consumption, while leaving it still good for use by cattle, I have the honor to forward copy of a report on the subject by Dr. Warth, No. 482, dated 17th November 1877, and to state that the cost of manufacturing the 100 maunds of denaturalized salt was Rs. 14-10-0 for material only; and looking to the fact that Dr. Warth states edible salt can be educed from the mixture, I do not think it advisable to sanction his proposal to manufacture 900 maunds more.

2. Dr. Warth does not seem to hold out any hope of succeeding in manufacturing the required substance in any other way, and therefore I conclude the project must be abandoned for the present. It might possibly be advisable to offer a premium by advertisement for a receipt to denaturalize salt. I see no other way of effecting our object.

From the Collector of Customs, Punjab Mines Division, to the Commissioner of Inland Customs, dated Mayo Mines *vid* Pind Dadun Khan, 17th November 1877, No. 482-C.

In obedience to your No. 889-B., dated 18th October 1877, I have the honor to submit the results of experiments about cattle salt.

2. More extensive measures of safety against the consumption of the cattle salt by the people are necessary in this country than in Germany.

3. I have tried to impart a bitter taste to the salt by mixing the pulverized salt with colocynth apples (*Citrullus colocynthis*), a material equal to chiretta (*Ophelia chirata*) in bitterness and plentiful in this neighborhood. The result was, however, unsatisfactory. In a mixture of salt containing as much as 9 per cent. of fresh colocynth apples, the bitter taste was only just appreciable. A process of lixiviation and re-crystallization resulted in a large proportion of almost entirely tasteless salt, and in only 12 per cent. of really bitter salt. When a similar mixture was made with sugar instead of salt, the whole mixture became thoroughly bitter, and so did also the filtered extract. This shows that the salt counteracts the bitter principle. I therefore gave up the idea of making the salt bitter as a means of preventing its consumption by the people.

4. I found further that charcoal removed the bitter substances most readily. A certain weight of charcoal powder was sufficient to remove all bitterness from the watery extract made by means of the same proportion of colocynth apples in the green state. I therefore resolved to replace the charcoal by lignite. This measure is no more necessary to protect the bitter substance from absorption (because above stated, the colocynth will not be used), it is still desirable, in order to retain the amount of smell, color, and taste of the other substances which I decided to use as adm[ixtures].

1569/2

5. These other substances are oil-cake and cotton seed. They are both very good for cattle and harmless to men, and yet the people object to them in the food. The oil cake from Tara Mira mustard has a disagreeable smell, and the cotton seeds are mixed with cotton fibres which will also somewhat act as a preventive.

The mixture is thus—

91	per cent.	of salt.
3	„	of lignite.
3	„	of oil-cake.
3	„	of cotton seed.
Total 100	per cent.	

The admixtures amount to 9 per cent., but the remaining 91 per cent. of salt will also contain some other salts, gypsum and clay, which we may suppose to aggregate 1 per cent. at least. Thus, the cattle salt in its ordinary state will contain 90 per cent. chloride of sodium.

6. Suppose the admixtures to be a sufficient deterrent against the direct use of the cattle salt by the people, it is always easy to extract pure salt out of the mixture. The extraction on a large scale might be prevented, but on a small scale the process could be carried on everywhere in the houses. The process would, of course, involve a loss of salt, and would cost labor, fuel, and apparatus.

7. Since it is necessary to prevent any possibility of loss of revenue, the price of the cattle salt must be kept so high that the purifying process would not pay. The price will have to be ascertained by practice. I expect it will be at least Re. 1 less per maund than the pure rock salt, but it might also be lower. I would consider it very satisfactory if it were found that the price could be half of the price of the unmixed salt.

8. Unless much more effective preventive substances are found, I am afraid the more desirable result will not be obtained of selling the cattle salt without loss of revenue at a price of 8 Annas per maund or less.

9. As a means of obtaining primary information regarding the selling price of the salt, I suggest auctioning. I have prepared 100 maunds of the above mixture as an experiment, and I have the honor to ask herewith permission to preparing 900 maunds more, and to auction off the total 1,000 maunds in portions of 100 maunds or thereabouts. The result of the auction will, I expect, give a fair idea as to the real market value of the salt, and will lead on to further suggestions regarding the selling price.

10. I have the honor to submit a sample taken from the 100 maunds now prepared.

11. The cost of the preparation, when done on a large scale with cattle or steam-power, should not exceed 2 Annas a maund during ordinary seasons, and 3 Annas a maund during time of scarcity, when the admixtures will be dear. When done on a small scale by hand, the breaking up of the small salt into powder is a tedious and costly procedure.

No. 310. ORDER THEREON, 25th September 1878, No. 1,569.

Separate Revenue, No. 35.
Salt.

COMMUNICATED to the Board of Revenue with reference to G.O., 19th August 1878, No. 1,337.

(True Extract.)

(Signed) L. A. CAMPBELL,
Under Secretary to Government.

To the Board of Revenue.

Exd. W. H. French.

1569
3

QUESTION OF RENDERING SALT UNFIT FOR HUMAN CONSUMPTION WHILST LEAVING IT STILL SUITABLE FOR USE BY CATTLE.

[Pros. Nos. 34 to 38.]

No. 197, dated Simla, 5th October 1877. [No. 34.

From—*The Under Secretary to the Government of India,*
To—*The Officiating Commissioner of Inland Customs.*

In forwarding copy of a note by Dr H. Warth, regarding salt used for cattle and for manufacturing purposes in the German Empire, I am directed to request that that officer may be asked to experimentalise on some of the waste or refuse salt of the Punjab mines (broken salt which traders do not care to purchase), with a view to determine whether he can render it unfit for human consumption while leaving it still good for use by cattle. It must be made absolutely certain that the salt could not be used for human consumption.

2. I am to request that a full report of the result of the experiments may be submitted for the information of the Government of India.

Note by the Collector of Customs, Punjab Mines Division, on the salt tax in the German Empire, dated Simla, 25th September 1877. [No. 35.

There are a great number of salt works in the various states which constitute the present German Empire. The salt tax is collected by the orders of the Imperial Government, and redistributed to the separate states according to their respective population. A tax of 6 marks* per 50 kilogrammes is levied at the salt works for alimentary salt (salt consumed by man), in addition to the cost price of the salt, which amounts also to something like 1 mark for 50 kilogrammes. The *alimentary* salt is, as a rule, obtained by the artificial evaporation of brine, and only in few instances rock salt is obtained of such purity as to pass for alimentary salt. The salt used for cattle called "cattle salt" is not subject to the above taxation, but may be sold at the salt works for whatever price the proprietor may put on. For any salt to pass as "cattle salt" it requires to be prepared under the supervision of the Imperial Customs Department as follows:—The salt is chosen in a granular state, either as boiled salt or as ground rock salt, and mixed with $\frac{1}{2}$ per cent. of red oxyde of iron, $\frac{1}{2}$ per cent. of charcoal-dust, and $\frac{1}{4}$ per cent. of dry powder of "Wermuth" (*Artemisia absinthium*). I am not quite certain about the exact proportion, but these figures cannot be far from the real ones. The first two substances, the oxyde of iron and the coal-dust, give the salt a sufficiently unsightly appearance to prevent its passing for alimentary salt, even where the unmixed salt is pure boiled salt or a good looking rock salt. The third substance is intended to prevent the lixiviation of "cattle salt" for alimentary purposes. It dissolves with the salt, and would impart a bitter taste to food prepared with the cattle salt for human consumption. Whilst the Wermuth is disagreeable to the taste for human consumption, the cattle like the substance, and its consumption is beneficial to the cattle. This method has now been in use for upwards of ten years and has answered well.

For manure, impure qualities of salt and all kinds of refuse are used. They are not mixed with the substances prescribed for cattle salt. For the manure salt, 1 per cent. of coal-tar is used and $\frac{1}{2}$ per cent. of a substance called animal oil (*Thieröl*) which consists mostly of carbonate of ammonia, and is obtained by dry distillation of the flesh and other parts of dead animals. I am again not absolutely sure as regards the exact proportion of the ingredients, but the above figures will not be far from the mark. The quantities of the tar and the animal oil are so chosen that they impart to the manure salt a smell which prevents man and beast effectually from consuming it.

The cattle salt and the manure salt may serve for manufacturing purposes also. At factories which consume large quantities of salt, I.e soda factories, it will pay to appoint control officers, thus making the mixture of the salt with foreign ingredients unnecessary. I also remember an instance where the salt for a glass factory was mixed with oxyde of manganese, a substance which was required in the manufacture of the glass and which at the same time rendered the salt unseemly.

A special name has been invented for the preparation of salt to pass it without the tax; the word is denaturation (*Denaturirung*).

* One mark is very little less than one shilling.
One kilogramme=1·07 seers.

Pros. No. 36.] Question of rendering salt unfit for human consumption.

No. 36.]

No. 42C., dated Agra, 7th March 1878.

From—*The Officiating Commissioner of Inland Customs,*

To—*The Secretary to the Government of India.*

Referring to your letter No. 197, dated 5th October 1877, requesting that Dr. Warth, Collector of Customs, Punjab Mines, should be asked to experimentalise on some of the waste or refuse salt of the Punjab Mines, with a view to determine whether he could render it unfit for human consumption, while leaving it still good for use by cattle, I have the honour to forward copy of a report on the subject by Dr. Warth, No. 482, dated 17th November 1877, and to state that the cost of manufacturing the 100 maunds of denaturalized salt was Rs. 14-10 for material only; and looking to the fact that Dr. Warth states edible salt can be educed from the mixture, I do not think it advisable to sanction his proposal to manufacture 900 maunds more.

2. Dr. Warth does not seem to hold out any hope of succeeding in manufacturing the required substance in any other way, and therefore I conclude the project must be abandoned for the present. It might possibly be advisable to offer a premium by advertisement for a receipt to denaturalize salt. I see no other way of effecting our object.

No. 482C., dated Mayo Mines *vid* Pind Dadun Khan, 17th November 1877.

From—*The Collector of Customs, Punjab Mines Division,*

To—*The Commissioner of Inland Customs.*

In obedience to your No. 889B., dated 18th October 1877, I have the honour to submit the results of experiments about cattle salt.

2. More extensive measures of safety against the consumption of the cattle salt by the people are necessary in this country than in Germany.

3. I have tried to impart a bitter taste to the salt by mixing the pulverized salt with colocynth apples (*Citrullus colocynthis*), a material equal to chiretta (*Ophelia chirata*) in bitterness and plentiful in this neighbourhood. The result was, however, unsatisfactory. In a mixture of salt containing as much as 9 per cent. of fresh colocynth apples, the bitter taste was only just appreciable. A process of lixiviation and re-crystallization resulted in a large proportion of almost entirely tasteless salt, and in only 12 per cent. of really bitter salt. When a similar mixture was made with sugar instead of salt, the whole mixture became thoroughly bitter, and so did also the filtered extract. This shows that the salt counteracts the bitter principle. I therefore gave up the idea of making the salt bitter as a means of preventing its consumption by the people.

4. I found further that charcoal removed the bitter substances most readily. A certain weight of charcoal powder was sufficient to remove all bitterness from the watery extract made by means of the same proportion of colocynth apples in the green state. I therefore resolved to replace the charcoal by lignite. Though this measure is no more necessary to protect the bitter substances from absorption (because, as above stated, the colocynth will not be used), it is still desirable, in order to retain the small amount of smell, colour, and taste of the other substances which I decided to use as admixtures.

5. These other substances are oil-cake and cotton seed. They are both very good for cattle and harmless to men, and yet the people object to them in the food. The oil cake from Tara Mira mustard has a disagreeable smell, and the cotton seeds are mixed with cotton fibres which will also somewhat act as a preventive.

The mixture is thus—

91	per cent.	of salt.
3	"	of lignite.
3	"	of oil-cake.
3	"	of cotton seed.
Total 100	per cent.	

The admixtures amount to 9 per cent., but the remaining 91 per cent. of salt will also contain some other salts, gypsum and [illegible]y, which we may suppose to aggregate 1 per cent. at least. Thus, the cattle salt in its [illegible]inary state will contain 90 per cent. chloride of sodium.

6. Suppose the admixtures to be a sufficient deterrent against the direct use of the cattle salt by the people, it is always easy to extract pure salt out of the mixture. The extraction on a large scale might be prevented, but on a small scale the process could be carried on everywhere in the houses. The process would, of course, involve a loss of salt, and would cost labour, fuel, and apparatus.

1569
H

Question of rendering salt unfit for human consumption. [Pros. No. 38.

7. Since it is necessary to prevent any possibility of loss of revenue, the price of the cattle salt must be kept so high that the purifying process would not pay. The price will have to be ascertained by practice. I expect it will be at least Re. 1 less per maund than the pure rock salt, but it might also be lower. I would consider it very satisfactory if it were found that the price could be half of the price of the unmixed salt.

8. Unless much more effective preventive substances are found, I am afraid the more desirable result will not be obtained of selling the cattle salt without loss of revenue at a price of 8 annas per maund or less.

9. As a means of obtaining primary information regarding the selling price of the salt, I suggest auctioning. I have prepared 100 maunds of the above mixture as an experiment, and I have the honour to ask herewith permission for preparing 900 maunds more, and to auction off the total 1,000 maunds in portions of 100 maunds or thereabouts. The result of the auction will, I expect, give a fair idea as to the real market value of the salt, and will lead on to further suggestions regarding the selling price.

10. I have the honour to submit a sample taken from the 100 maunds now prepared.

11. The cost of the preparation, when done on a large scale with cattle or steam-power, should not exceed 2 annas a maund during ordinary seasons, and 3 annas a maund during time of scarcity, when the admixtures will be dearer. When done on a small scale by hand, the breaking up of the small salt into powder is a tedious and costly procedure.

REFERENCE TO FORMER CASES.

Salt Pros., July 1877, Nos. 1 to 9.

REFERENCE TO LATER CASES.

1878.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE AND COMMERCE.

SALT.

June 1878.

Proceedings—Nos. 34 to 38.

Question of rendering salt unfit for human consumption whilst leaving it still suitable for use by cattle.

See GI 25 September 1878 n° 869.

KEEP-WITHS PRINTED.

Note by Mr. Patton, dated 27th September 1877.
Remarks by the Honourable Member, dated 29th September 1877.
Memo. by Mr. Hume, dated 2nd October 1877.
Demi-official letter from the Viceroy to Mr. Hume (without date).
Remarks by Mr. Patton, dated 20th March 1878.
Note by Mr. Patton, dated 24th April 1878.
Mr. Hume, dated 24th April 1878.
Remarks by the Honourable Member, dated 28th April 1878.

KEEP-WITHS NOT PRINTED.

Reminder from Commissioner, Inland Customs, No. 44C., dated 9th March 1878.
Demi-official letter to Mr. Hume, dated 27th May, and his reply, dated June 1878.
One taki-slip.

Exd.—A. N. T.

LIST OF PAPERS.

No. 34. To the Officiating Commissioner of Inland Customs, No. 197, dated 5th October 1877. Forwards copy of a note by Dr. H. Warth regarding salt used for cattle and for manufacturing purposes in the German Empire, and requests that that officer may be asked to try the experiment of removing some of the waste or refuse salt of the Punjab mines unfit for human food while leaving it still good for use by cattle, the result being reported to the Government of India.

No. 35. Enclosure to the above.

No. 36. From the Officiating Commissioner of Inland Customs, No. 42C., dated 7th March 1878. Referring to this department's letter No. 197, dated 8th October 1877, forwards with remarks a report by Dr. Warth on his experiments of denaturalizing some of the Punjab mines salt, and states that as the mixed salt prepared by that officer can be naturalised again, and no hope of success in preparing the required substance is held out by him, the project may be abandoned.

No. 37. To the Secretary of State, No. 7, dated 17th June 1878. Forwards a copy of the above-noted correspondence, and requests to be furnished with the details of the process employed in the German Empire of rendering salt intended for agricultural and industrial uses unfit for human consumption.

No. 38. To the Officiating Commissioner of Inland Customs, No. 107, dated 17th June 1878. In reply to his letter No. 42C., dated 7th March 1878, states that Dr. Warth may be desired to make no further experiments of denaturalising salt intended for use by cattle, and that the Secretary of State has been asked to furnish particulars of the process employed in the German Empire.

REVENUE DEPARTMENT.

No. 4139

1569/5

From Government of India

Dated 11 Septr 1878

FOR ORDERS.

Before communicating to the Board these papers relative to the denaturization of salt I beg to circulate them together with a confidential d.o. from Mr Hume with notes on the subject which were recorded in circulation by the members of the Govt of India

Yrs

I would not communicate the confidential notes of Mr Hume's note — only the official papers

I.C. 29 Sept

Mr C 23/9

I would communicate to the Bd of Rev Bkss Spirit appreciate No 4 of the Viceroy's Address 21/9/78.

for confidentially opened but the Viceroy's objection suggestion stuff Burn before send Bd's note.

No. 4139

FOR ORDERS.

1569/7

No. 289.

FROM

A. O. HUME, ESQUIRE, C.B.,

Secretary to the Government of India,
Department of Revenue,
Agriculture and Commerce,

TO

The Secretary to the Government of Madras

Salt.

Simla dated 11th September 1878.

SIR,

With reference to your letter No. 1338 of the 19th ultimo, I am directed to forward copy of the papers noted in the margin showing the results of the experiments which have been tried with the object of denaturalising salt intended for use by cattle; and to state that the Secretary of State has been asked to furnish the Government of India with details of the

Letter to the Officiating Commissioner of Inland Customs No. 1111 of the 5th October 1877 and enclosure.
do do do
No. 42 C. of the 7th March 1878 and enclosure.

the process employed in the German Empire.—

I have the honour to be,
Sir,
Your most obedient Servant,

A A Kenne

Secretary to the Government of India.—

ABW

1569/8

Revenue 1870 Despatch

No 4139

From

The Govt of India

R.D.C

Dated 11th
Rec'd 18th } September 1870

No 289

Revenue Board's Cir. No 25 of 1870

Forwarding copy of correspondence showing the results of the experiments which have been tried with the object of denaturalizing salt intended for use by cattle and stating that the Secretary of State has been asked to furnish the Govt of India with details of the process employed in the German Empire

No. 1069

Communicated to the Board of Revenue with reference to G.O. 19th August 1870 No 1357

With Order 26 September 1870