

MADRAS RECORD OFFICE.

Government of Madras.

Judicial DEPARTMENT.

G.O. No.	1102	Press
		Mis.
Dated	9-8-19	1865

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Not to be folded or roughly handled

Proceedings of the Madras Government, Judicial Department,
9th August 1865.

No. 67. Read the following letter from J. STRACHEY, Esq., President, Sanitary Commission for Bengal, to the Secretary to the Government of India, Home Department; dated Simla, the 8th May 1865, No. 203.

I have the honor to submit, for the information of the Right Honorable the Governor General in Council, a copy of a letter, No. 3972, dated 24th ultimo, and enclosures,* from the Inspector General of Jails, Lower Provinces, regarding a

*Circular letter, dated 8th April 1865, from the Inspector General of Jails, Lower Provinces.
Letter No. 138, dated 22nd March 1865, and three enclosures, from the Officiating Magistrate of Chittagong, to the Inspector General of Jails, Lower Provinces.

point connected with the system of dry earth conservancy, namely, the length of time necessary to arrest permanently the process of putrefactive fermentation in deodorized excreta.

2. The Commission, concurring with the Inspector General of Jails, Lower Provinces, in considering that the point is one of great importance in a sanitary point of view, and that it is very desirable to be determined by experiment in all parts of India, has recommended for the favorable consideration of the Local Governments† and Administrations,‡ the

† North Western Provinces, and Panjab.
‡ Oudh, Central Provinces, and British Burmah.

issue of such orders as will ensure complete trials of the experiment in the Jails

and other establishments in which the dry earth system of conservancy has been introduced, and solicited that, in the event of the experiment being ordered, the Commission may be favored with copies of the reports thereon.

3. We beg to recommend that the Governments of Fort Saint George and Bombay may be requested to have the experiment tried in the Madras and Bombay Presidencies.

From Dr. F. J. MOUAT, M. D., Inspector General of Jails, Lower Provinces, to Dr. J. P. WALKER, Secretary, Bengal Sanitary Commission,—(No. 3972, dated Alipore, the 24th April 1865).

I beg to transmit, for the information of the Sanitary Commission, the accompanying correspondence connected with the dry earth conservancy system in the Jails under my charge, as it appears to me that the whole course of the interesting and important experiment now being carried out, should be made known as widely as possible.

2. The question of the length of time necessary to arrest permanently the process of putrefactive fermentation in deodorized excreta, seems to me to be one of great importance in a sanitary point of view. The Sanitary Commission may, therefore, if they concur in this view, not be indisposed to take the action necessary to cause the point to be determined authoritatively in those parts of the Bengal Presidency over which I have no control.

From Dr. F. J. MOUAT, M. D., Inspector General of Jails, Lower Provinces, to the Magistrates of Hooghly, Patna, Cuttack, Balasore, Burdwan, Behar, Monghyr, Sarun; Superintendent, Presidency Jail, and Officiating Superintendent, Alipore Jail,—(Nos. 3937 to 3946, dated Camp Ranchi, the 8th April 1865).

In the Returns submitted to me of the introduction of the dry earth sewage system, a reference is made to certain practical difficulties connected with the full working of the system in the rains, which it is desirable to determine, and if possible provide against, as quickly as possible, by direct experiment.

2. The success of the system depends on the perfect deodorization of urine and feces while fresh, and before putrefactive fermentation begins. The presence of water, or its elements,

causes this fermentation to be developed rapidly, for reasons which are known to chemists, and which are not necessary to detail here, as they are beyond doubt or question.

3. To bury this matter (which Liebig calls pondrette) in garden trenches where moisture is present, or in the vicinity of tanks, wells, and human habitations, during the rains, while putrefaction can take place, and noxious gases are disengaged, will be of more than doubtful propriety as a sanitary measure. It is very important then to ascertain after what length of time the tendency to putrefactive fermentation is entirely prevented by the formation of fixed chemical compounds, in the pondrette or dry earth manure.

4. Direct experiment can alone determine this point. Be so kind then as to request the Civil Surgeon of (all the Jails mentioned); to determine by experiment at what period, after deodorization, pondrette ceases to disengage any such smell as indicates the occurrence of putrefaction on the addition of water to the mass. Twice a week will probably be sufficient for the performance of the experiment until a definite result is obtained. Great care must of necessity be taken that the excreta are perfectly deodorized in the first instance, or the results will be fallacious.

5. Arrangements will have to be made to store the pondrette during the rains in some dry place, until it can be buried with safety in trenches that will be percolated by water.

6. The first point to be determined is when the period of safety is reached. I trust, therefore, that the experiment will be conducted with the care and attention necessary to establish a rule for general guidance.

7. Be so kind as to submit the Civil Surgeon's report to me, the moment he is in a position to determine the question.

From C. A. KELLY, Esq., Officiating Magistrate of Chittagong, to the Inspector General of Jails, Lower Provinces, Fort William,—(No. 138, dated Chittagong, the 22nd March 1865).

With reference to your letter, No. 3886, of the 9th instant, I have the honor to state that the Civil Surgeon's report on dry earth conservancy, as practised up to the 15th March in Chittagong Jail, has been forwarded to you yesterday.

2. I have further to state that a new difficulty has arisen with reference to the depositing of earth impregnated with sewage in the Jail garden, as the Municipal Commissioners consider it a public nuisance. I enclose copies of correspondence on the subject, marginally noted.

3. A copy of your letter of 9th March has been forwarded to the Civil Surgeon for his information.

From C. A. KELLY, Esq., Ex-Officio Chairman of Chittagong, to the Magistrate of Chittagong,—(No. 18, dated the 4th March 1865).

I have the honor to inform you that the present system of burying the night soil of the Jail in pits in the Jail garden, appears to the Municipal Commissioners to be a public nuisance, and to request that you will be good enough to take steps towards discontinuing the practice.

From C. A. KELLY, Esq., Officiating Magistrate of Chittagong, to the Ex-Officio Chairman of Chittagong,—(No. 83, dated the 7th March 1865).

I have the honor to acknowledge your communication, No. 18, of the 4th March, and have to state that I hope in a few weeks to be enabled to carry out the dry earth system in its integrity. I should be glad, therefore, to know whether the Municipal Commissioners would consider the deposit of dry earth impregnated with sewage in trenches in the Jail garden to be a nuisance or not.

2. I should further like to know whether your letter refers to the practice of allowing the deposit of excreta in the day time by prisoners proceeding to the place in question, or simply to burying the filth of the whole night in a mass.

From C. A. KELLY, Esq., Ex-Officio Chairman of Chittagong, to the Magistrate of Chittagong,—(No. 23, dated the 18th March 1865.)

I am directed by the Municipal Commissioners to acknowledge the receipt of your letter, No. 83, of 7th instant, and to inform you that, considering the proximity of the Jail garden to habitations and tanks, the immense number of prisoners that would daily use the garden as a privy, and the heavy rain-fall of the place, extending over many months, are, in the opinion of the Commissioners, objections to both the plans therein referred to.

2. The enclosed is a copy of the Conservancy Committee's Report, which will show the grounds on which the above objections are based.

Report of the Conservancy Sub-Committee held on the 16th February, and laid before the Municipal Committee on the 1st March 1865.

RESOLVED that the present system of burying the night soil of the Jail in the Jail garden is a nuisance, and that the Magistrate be requested to take steps towards discontinuing the practice.

This decision was come to for the two following reasons, both of which are contained in Minute, No. 318, of the Sanitary Commission of Bengal, dated the 29th December 1864:—

1st.—That the place selected for burying the excreta is in the midst of habitations—some being as near as 30 yards from the pits.

2nd.—That tanks used for drinking purposes exist within 70 yards of the pits, and there is every reason for inferring that those tanks will become impure by percolation.

Since the above Meeting, the accompanying pamphlet regarding the adoption of earth sewage in Madras has been forwarded to us, and from it we obtain a third objection to the present system. This one was urged at the Meeting, by Mr. Fuller, but no one could confirm his statement.

At page 2, Section 7, of this pamphlet, and at page 8, Sections 7 and 8, it is stated that water or rain destroys the deodorizing properties of earth; this proves satisfactorily that the organic products are merely in a state of "dry decay," and only require the addition of water to originate putrefaction. No one will dispute that these products, while in this state of putrefaction, must give forth emanations deleterious to health.

It also appears from page 20 "that if too much earth is mixed with the excreta, the effects are equally injurious,—oxidation and exhalation of noxious vapours, productive of disease," being the consequence.

Again at pages 23 and 25, Dr. Blacklock enlightens us on another point,—"that if too little earth is used, the product might be harmless; but we cannot be sure that they would not, at certain times, under some atmospheric disturbance, become very virulent;" and that if the re-employment of earth containing animal matter in a state of dry decay be adopted, it would be attended with so much risk to life as to be tantamount to its prohibition.

If the re-employment of earth of the above nature is deleterious when dry, what results are likely to follow its exposure to sun and rain on re-digging the soil? To my mind it is clear that malaria or some disease would ensue.

At page 21, it would be seen that dipteria has been traced on good grounds to the new earth sewage plan.

In no part of this pamphlet can it be discovered that the night soil has been buried in close proximity to houses, tanks, or wells. At page 11, Section 21, page 15, Section 23, pages 21 and 22, &c., carts are mentioned as necessary adjuncts to earth sewage. The only paragraph which mentions what is finally done with the excreta is at page 2. It is stated in it that the night soil is removed to the People's Park; but it is added that odours are generated whenever the soils become wet. The People's Park may, or may not be, in the centre of habitations; but, at any rate, we have no data to show that in that situation it will be harmless.

On the whole, this pamphlet appears to confirm in every respect the objections of the Conservancy Sub-Committee.

While dry, every one agrees that earth is a complete deodorizer of fæces, and that the earth sewage system is a great improvement on any other plan. The only point on which there is any misgiving is how far it is a disinfectant. The Sanitary Commissioners of Bengal and Madras agree that, unless under certain very exceptional circumstances, earth does not destroy the putrefactive tendency of night soil, and if it does not, the present arrangement is most objectionable.

To render night soil innocuous, the following precautions appear necessary:—

1st.—It must, while fresh, be mixed with a sufficiency of earth.

2nd.—It must be carted away to a distance from habitations, wells, and tanks.

3rd.—Neither rain nor water must be allowed to filter into the mass. It is still uncertain for how long after burial this precaution must be observed.

Annexed is the explanation of this from Baron Liebig's Agricultural Chemistry.

(Signed) J. WISE, M. D.,

Chairman, Conservancy Sub-Committee.

This report is approved and adopted by the Conservancy Committee.

(Signed) W. G. YOUNG,

H. J. BAMBER.

OBHOY CHUNDER DOSS.

LALL CHUND CHOWDRY.

GEORGE G. BALFOUR.

PRAN HURRY LALLA.

D. FULLER.

(True Copy).

(Signed) RUTTY MONY SEN,

Head Clerk.

Liebig's Agricultural Chemistry, page 296.

"All other azotised substances acquire the same power of decomposition when the elements of water are brought into play; and, indeed, the greater part of them are not capable of transformation while this necessary condition to the transposition of their atoms is absent; even the compounds of nitrogen, most liable to change, such as those found in animal bodies, do not enter into a state of putrefaction when dry."

Page 297. "There is in the nature and constitution of the compounds of nitrogen a kind of tension of their component parts, and a strong disposition to yield to transformation of their atoms from the instant that water or its elements are brought in contact with them."

(True Copy).

(Signed) C. A. KELLY,

Officiating Magistrate.

From Dr. F. J. MOUAT, M. D., Inspector General of Jails, Lower Provinces, to the Magistrate of Chittagong,—(No. 3936, dated Camp Ranchi, the 8th April 1865).

I have perused with care and attention the correspondence appended to your letter, No. 138, dated the 22nd ultimo, and I fail to perceive that the Municipal Commissioners have made out a fair case for interfering with the arrangements of the Jail, in the matter of the dry earth conservancy now in practice.

2. The Civil Surgeon of Chittagong, who is very properly the official adviser of the municipality in such matters, admits that the powers of dry earth, as a deodorizer, are perfect, and the presence of water is necessary to cause the putrefactive fermentation that would render the proceeding a nuisance, and consequently a source of injury to the public health.

3. The objection of the Committee then to the process of burying the deodorized excreta of the Jail in the garden in trenches (not in pits, as stated in the Chairman's letter), can only apply to the proceeding during the rains, or during the occasional presence of rain at other seasons, as, so long as there is no offensive exhalation of any kind, there can be no nuisance.

4. The person who had the largest experience of the practical working of the dry earth sewage system in England, the Revd. Mr. Moule, states that the deodorized matter may be dried and used again no less than five times before it loses its power of preventing putrefactive fermentation; and that, during the whole of this time, it is so completely inoffensive that sensitive people have been unable to distinguish it from common garden mould, and have even carried away specimens of it in their pockets, to show to the municipal bodies to which they belonged, and by whom they had been deputed to examine it.

5. While I should be most sorry to sanction any practice that could rightly be considered a nuisance, or that would be likely to be prejudicial to the public health, I consider that I should fail in my duty to the Government, if I sanctioned a departure from the orders of the Government in the matter, without much stronger proof than that afforded by the correspondence under review.

6. I admit freely and fully that it would be objectionable during the rains, and that some other means must be found of disposing of the deodorized night soil at that season than its immediate deposit in trenches in the Jail garden.

7. If Mr. Moule and Baron Liebig's views of the matter be sound and correct, and I see no reason to doubt them, the deodorized night soil must, during the rainy season, be stored in a dry place. It is for you to consider and report how this end can be most fitly and economically attained in the Jail under your charge.

8. In the meantime, there is an ample interval between the present time and the setting in of the rains to determine one point of great practical interest and importance connected with this question, viz., how long after its deodorization, by means of dry earth, the pondrette ceases to undergo putrefactive fermentation on the addition of water to the mass.

9. This can only be determined by actual experiment, and I will have the subject investigated experimentally, immediately, by those Medical Officers who are careful observers, and whose reports can be relied upon.

10. The test will be very simple, and the Municipal Commissioners can satisfy themselves of its efficiency. If putrefactive fermentation occurs in deodorized fæces and urine on the addition of water, it is a proof that the chemical changes resulting from the use of dry earth are incomplete and imperfect; and that it would not be safe, as a sanitary measure, to bury this matter (which Liebig has termed pondrette) in garden trenches, near to tanks, wells, or human habitations. The presence of putrefactive fermentation will be at once ascertained by the ammoniacal or other odours that would be disengaged on the addition of water. Should no bad smell be perceptible to the senses after such addition, it may fairly be assumed that the pondrette can undergo no further chemical changes that will cause exhalations injurious to the public health. The length of time necessary to establish this fact is of much importance in Bengal, where the constant presence of moisture during several consecutive months renders it difficult to carry out the plan of dry earth conservancy with efficiency at all seasons of the year, without resorting to the practice of storing the pondrette in dry godowns. I shall, therefore, feel obliged by your causing the subject to be investigated experimentally in the Jail under your charge, and by your reporting the result to this office, as soon as any definite conclusion can be arrived at.

11. I need scarcely say that the pondrette to be experimented on must be thoroughly deodorized in the first instance, or the results will of necessity be fallacious.

12. As this is a matter in which the Municipal Commissioners of Chittagong are of necessity much interested, and as the experiment is one which needs no acquaintance with chemistry, either as an art or a science, it would be satisfactory if the experiment were performed once a week in the presence of the Commissioner.

13. The nose is the only instrument of observation necessary, and the presence or absence of stink, the only fact to be established. I use the homely expression, because I consider the term malaria to be altogether misapplied to noxious exhalations of the nature above referred to.

6 *Proceedings of the Madras Government, Judicial Department,*
9th August 1865.

No. 1352.

Copy forwarded to the Government of Fort Saint George, with the request that it will cause effect to be given to the wishes of the Bengal Sanitary Commission, should there be no objection.

SIMLA, HOME DEPARTMENT,
31st May 1865.

(By Order).

(Signed) A. P. HOWELL,
Under Secy. to the Govt. of India.

No. 68. ORDER THEREON, 9th August 1865, No. 1102.

Ordered to be communicated to the Inspector General of Jails, Municipal Commissioners, and President of the Sanitary Commission.
(True Extract).

Chief Secretary.

To the Inspector General of Jails.

- „ Municipal Commissioners for the Town of Madras.
- „ President of the Sanitary Commission.
- „ Military Department.

Exd. J. H. Burns.

Recd. 31 Aug 1865

Recd. 31 Aug 1865

Recd. 31 Aug 1865

Recd. 31 Aug 1865

Recd. 31 Aug 1865

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1865

Having correspondence

concerning certain

questions connected

with the Dry Earth

Conservancy system

With an order

9. August 1865 No. 1102
Ordered to be communicated to the
Inspector General of Jails, Municipal Commis-
sioners, and President of the Sanitary Commission.

To the Inspt Genl of Jails.
Municipal Commrs for the town of Madras.
President of the Sanitary Comm.
Military Department.

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