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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1454.	Press ~~Mis.~~
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Dated 14 5	1867.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
14th May 1867.*

No. 328. Read the following Circular from the Secretary to the Government of India, Public Works Department, (Military Works), to the Secretary to the Government of Madras, Public Works Department, dated Fort William, 16th March 1867, No. 28.—

1. I am directed to forward, for general information, in continuation of Public Works Department Circular No. 4, dated the 15th January 1866, an extract of a Report by Dr. Mouat on the Jails of the Lower Provinces of the Bengal Presidency for the year 1864-65, which relates to the introduction of the dry-earth sewage system of conservancy into several Jails in Bengal.

2. Copies of the plan of latrine and of the earth closet referred to in the extract accompany; as also a copy of a plan of a self-acting earth closet which has been adopted in the Madras Presidency.

Extract from a Report by Dr. MOUAT, on the Jails of the Lower Provinces of the Bengal Presidency for 1864-65.

Paragraph 77.—The papers printed in the Appendix show that the introduction of the dry-earth conservancy system of the Reverend Mr. Moule has been attended with success, that it has removed the greatest defect in the sanitary arrangements of Indian Prisons, that it has led to a remarkable change in the condition of such extremely unhealthy Jails as Monghyr and Gya; and that it is, without exception, the greatest public benefit conferred by a private individual in the matter so essential to public health that I am acquainted with. The brief notices on the subject were prepared by Dr. Fawcett from the Returns submitted, and are sufficient to show the great merits of the system. The Report of Dr. Bholanath Bose, the Civil Surgeon of Furruckpoor, who is himself a learned Hindoo, is extremely interesting in proving that it was early known to his co-religionists, and that it contains nothing contrary to Hindoo practice. It is not improbable that the practice originated with the Jews, by whose great Lawgiver it is enjoined in the book of Jewish Law.

The history of the conservancy of the Jails in Bengal is of sufficient interest to demand a notice in this Report.

When I took charge of my present office in November 1855, I found that, in nearly every prison under my control, the ordure of the latrines was swept through open drains, that the same drains were used as privies, that the floors of the privies and drains were saturated with filth; that the offensive matters, mixed with water, were swept to swamps for the most part in the immediate vicinity of the Jails, where it was allowed to saturate the soil, and to disseminate an abominable fætor.

At Dacca there was an accumulation of putrifying filth in the position now occupied by the Jail garden, four or five feet in depth. At Sylhet, a very large tank, from which the water-supply of the Jail was taken, was filled with ordure, and the tank had not been cleansed for forty years. The tanks adjoining the Dinagepore Jail were large open cess pits. The ground in the immediate vicinity of the Jails at Rajshaye, Meeta-poor, Moida-poor, Tirhoot, Shahabal, Bardwan, Chittagong, Tipperah, Mymensingh, and many other districts, was saturated with the night-soil of the Jail.

At Deegah, the intercommunication of the wells and the cess-pools was the chief cause of the frightful mortality that caused the Penitentiary to be abandoned.

My first act was peremptorily to prohibit this unwholesome and disgusting practice, and to cause all ordure to be collected in suitable vessels, and to be carefully removed to a distance from the jail, to be buried in the most unobjectionable spot that could be found. In two or three Jails the cess-pool system was in use, but this I likewise put a stop to, as I found it to be unhealthy.

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Every step taken in the matter was duly reported to the Government at the time, and this was the first introduction of the system of dry conservancy in Lower Bengal.

At the close of 1856, I visited the North-Western Provinces and the Punjab to examine the system of Central Jails in those Provinces, and to introduce into Bengal such improvements in the details of prison management as appeared to me to be fitted for adoption.

At Agra I found an excellent and simple system of privies in use; and I saw that the gumlaha employed as urinals were placed in the corner of the wards surrounded by sand, which was removed daily. I adopted and introduced both plans into those Jails under my charge in which I could get the Officers in charge to pay attention to the matter, which was not always the case, as will be seen by a reference to the Inspection Report of Moorshedabad during the past year.

The Punjab plan, which temporarily masked the bad smell of ordure, solid and fluid, was only fit for a dry climate, and not suited for the climate of the Lower Provinces, in which an abundance of moisture is always present in the soil and in the atmosphere. It had no claim whatever to be considered a system of dry-earth sewage. Sand, the material employed, (and clay) has no deodorizing effect by chemical change on ordure. It conceals bad smell for the time, and allows solid matters to desiccate, but it does not deodorize those matters, and I entertain little doubt that the burying of large quantities of dried ordure mixed with sand in the garden of the Central Jail at Lahore has been the chief cause of the great sickness that has since prevailed in that prison. In any case, the Punjab plan, as described in Dr Hathaway's Manual, was strictly confined to the Punjab until Dr Wiehe introduced it, a short time since, 1863, into some of the Jails in the Bombay Presidency. I have been informed that it has, since the publication of Mr. Moule's paper, been abandoned very properly and judiciously, in both the Punjab and the Bombay Presidency.

The merit of the general introduction of the dry-earth system, as now practised in every part of British India and in the Straits Settlements, is entirely and exclusively due to the Reverend Mr. Moule, whose paper in the Journal of the Society of Arts I presented to the Indian Jail Committee in March 1864, by whom it was circulated throughout India. Mr. Moule's views were published many years previously in England (in 1857), and most probably were known in India at that time, but I did not fall in with his work, and my first knowledge of the matter was gained from the paper in the Journal of the Society of Arts above referred to.

The essential condition of success in Mr. Moule's system is, that all ordure shall be thoroughly deodorized before it is buried, when it can no longer undergo putrefactive fermentation, or disengage any of those noxious gases which are perceptible to the senses, and injurious to the health of those exposed to their influence. This deodorization appears to be only completely effected by garden soil containing a certain quantity of organic matter, and is not produced by sand, clay, or any ordinary earth, as shown in some very interesting experiments recently performed by Dr. Fawcett. Carbonic acid and all other deodorizers fail in that they do not permanently deodorise ordure, and prevent the subsequent occurrence of putrefactive fermentation; so that, after burial or removal, they discharge noxious gases on the addition of moisture with the presence of heat. Hence to bury in Jail gardens, or in any land adjacent to human habitations, ordure that has not previously been chemically deodorized, is a dangerous proceeding, and one extremely liable to be injurious to health.

I am anxious to impress this matter emphatically on all Prison Officers in my circle of superintendence, as I entertain not the shadow of a doubt that the original Punjab plan was extremely mischievous, and the one employed in Bengal of removing the ordure to a distance the best of the two.

Both are infinitely inferior to the real dry-earth conservancy system, hence it is, in my humble judgment, impossible to over-estimate the benefits that will result from the labours of the Reverend Mr. Moule in this important branch of hygiene. It has already, in the infancy

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of its introduction in Bengal, worked wonders, and I have little doubt that its economic advantage will hereafter be as great as its immediate influence in promoting the comfort and improving the health of all Public Institutions in which it is properly used.

I am indebted to Major Baird at Hazareebaugh, and to Assistant Surgeon R. F. Thompson at Hoogly, for the excellent plans and models of self-acting earth closets, cheap in construction, simple in arrangement, adapted to the habits of Natives as well as of Europeans, and suited for use in India. It was my intention, had not sickness compelled me to leave my post for a time, to have caused them to be subjected to practical trial with a view to their general introduction, and I think this should still be done. The subject is deserving of the attentive consideration of all Sanitary Commissions. Dry-earth closets have already been constructed by the Messrs. White of Dorchester, and are in use in England. They appear to be perfectly efficient, but most of the Medical Officers to whom I circulated the papers doubted their applicability to Indian Jails. A plan of Major Baird's earth closets, with directions for its manufacture, is contained in the Appendix of Lithographic Plans attached to this Report.

An excellent, ingenious, and inexpensive plan of a dry-earth privy of a Jail of 500 prisoners, prepared by Mr. Chisholm, is also appended. It seems to me to be worthy of general adoption.

I have instituted a series of experiments to determine the length of time necessary completely to deodorize ordure in the damp climate of Bengal, so as to admit of its being stored or buried without risk of subsequent putrefactive fermentation from heat and moisture. The papers connected with it came in too late for incorporation in the present Report. The results of this important experiment should be published for general information, as they are of great public interest beyond the Jail Department.

No. 329. ORDER THEREON, 14th May 1867, No. 1,454.

MILITARY WORKS, No. 30.

Communicated to the Judicial Department and to the Superintending Engineers.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Judicial Department, }
,, Superintending Engineers, } With plans.
,, Captain Kennedy, }

Exd. S. T. Augustin.

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Enclosure to Public Works Circular No. 28 of 1867.

Extract from a Report by DR. MOUAT, on the Jails of the Lower Provinces of the Bengal Presidency for 1864-65.

PARA. 77.—The papers printed in the Appendix show that the introduction of the dry-earth conservancy system of the Reverend Mr Moule has been attended with success; that it has removed the greatest defect in the sanitary arrangements of Indian Prisons; that it has led to a remarkable change in the condition of such extremely unhealthy Jails as Monghyr and Gya, and that it is, without exception, the greatest public benefit conferred by a private individual in the matter so essential to public health that I am acquainted with. The brief notices on the subject were prepared by Dr. Fawcett from the Returns submitted, and are sufficient to show the great merits of the system. The Report of Dr. Bholanath Bose, the Civil Surgeon of Furreedpoor, who is himself a learned Hindoo, is extremely interesting in proving that it was early known to his co-religionists, and that it contains nothing contrary to Hindoo practice. It is not improbable that the practice originated with the Jews, by whose great Lawgiver it is enjoined in the book of Jewish Law.

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CIRCULAR No. 28 PUBLIC WORKS.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

MILITARY WORKS.

To *The Secretary to Govt. of Madras
Public Works Dept.*

FORT WILLIAM, MARCH 16, 1867.

SIR,

I am directed to forward for general information in continuation of Public Works Department Circular No. 4, dated the 15th January 1866, an extract of a Report by Dr. Mouat on the Jails of the Lower Provinces of the Bengal Presidency for the year 1864-65, which relates to the introduction of the dry-earth sewage system of conservancy into several Jails in Bengal.

2. Copies of the plan of latrine and of the earth closet referred to in the extract accompany; as also a copy of a plan of a self-acting earth closet which has been adopted in the Madras Presidency.

I have the honour to be,

SIR,

Your most obedient Servant,

(Signed) C. H. DICKENS, Colonel, R. A.,
Secy. to the Govt. of India.

C. H. Dickens Captain, R. E.,
Asst. Secy. to the Govt. of India.

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GOVERNMENT OF INDIA

PUBLIC WORKS DEPARTMENT.

MILITARY WORKS.

To

*The Secy. to Govt. of India
Public Works Department
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CIRCULAR NO. 28 PUBLIC WORKS.

Dated March 16, 1867.

Received 1867/67.

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Enclosed to the

Secy. to Govt. of India

Public Works Department

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