

MADRAS RECORD OFFICE.

Government of Madras.

Rudie DEPARTMENT.

G.O. No.

331

Press
~~Mis.~~

Dated

18-3-1870.

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Public Department,
18th March 1870.*

No. 86. Read the following letter from the Sanitary Commissioner for Madras, to the Chief Secretary to Government, Fort Saint George, dated Madras, 21st February 1870, No. 227.

I have the honour, with reference to paragraph 4 of the Order of Government, No. 658, of the 19th May 1869,* on the subject of the experiment of sewage irrigation now being carried out at the Sewage Farm, to submit, for the information of Government, copy of a letter I have addressed to the President of the Municipal Commission, regarding the necessity that exists on sanitary, and I may add economic, grounds of combining with irrigation an efficient system of under or subsoil drainage.

* "The Commissioners will keep the Government informed as to the success of the experiment which should be carefully watched by the Sanitary Commissioner."

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From the Sanitary Commissioner for Madras, to the President of the Municipal Commission, Madras, dated Madras, 21st February 1870, No. 226.

Adverting to the Order of Government, dated 19th May 1869, No. 658, directing me to watch the experiment now being made in the utilization of sewage at the "Sewage Farm," I think it advisable to trouble you with a few remarks which have suggested themselves, after perusal of an article in the Quarterly Journal of Science for January 1870 upon the "Principles and Method of Sewage Irrigation."

2. In the first place I would direct attention to the necessity of subsoil drainage, both on sanitary and economic grounds, to all sewage-irrigated land. The writer of the article referred to, quoting from a Minute of the General Board of Health, says, "It is established by wide experience that drained land does not deteriorate but increase in fertility, and maintains its increased fertility from year to year though washed through and through by all heavy falls of rain carried away by the drains." This is in accordance with well-ascertained facts in regard to agriculture generally. All land, especially a heavy retentive clay soil, like that of the "Sewage Farm" should be subsoil drained, so that the water, whether from rainfall or that holding fertilizing matter in solution or suspension, as in sewage irrigation, should freely percolate the soil and find its exit by subsoil drains.

3. The fertilizing materials, whether solid or gaseous, are retained in the soil and appropriated by the growing crops, water alone escaping by the drains. If this water does not find an outlet, the soil becomes water-logged, both to the detriment of the crops and of health. This is expressed in the article referred to in the following words :—

"The value of a good system of drainage in all agricultural land is sufficiently understood in the present day ; but if it be beneficial under ordinary circumstances, † *it is absolutely necessary when irrigation is adopted, especially in heavy soils,*" and again "in case of sewage applied by way of irrigation to the surface of under-drained clay land, or to water-logged free soil lacking natural drainage, *the earth will become sodden and liable to create a malaria* ; but with a perfect system of under-drainage (designed with relation to surface irrigation) in the first description of soil, and natural drainage in the second, sewage-irrigated land may be rendered perfectly harmless."

4. These quotations are most pertinent to the experiment now being carried out. The soil is a heavy clay without natural drainage, and unless means be taken to free the subsoil of the water percolating through the upper strata, and which water has yielded up its fertilizing materials to the soil, it is possible that malaria may be generated to the detriment of the public health, while the crops will, in course of time, suffer deterioration.

5. But the remarks apply still more forcibly, I think, to the ground recently taken up and which is being prepared by, in the first place, burying town rubbish and sweepings, covering the same with earth ; then top dressing with night soil, and finally irrigating with sewage.

Proceedings of the Madras Government, Public Department,
18th March 1870.

6. It will be in your recollection that in transmitting to Government Captain Tulloch's report upon the "Sewage Farm," I took exception on sanitary grounds to the utilization of poudrette and town filth in a solid form as well as the sewage; but that the Government in their order supported Captain Tulloch. This arose from the fact, I think, of my not having entered into the subject more fully.

What I feared was that soil thus made of buried rubbish and road sweepings covered with earth, richly manured and then irrigated with sewage would become a perfect hot-bed, that noxious exhalations would arise from it, and that the great heat generated would be prejudicial to vegetation.

Under-drainage of land thus prepared will undoubtedly tend to prevent those results.

7. I would, therefore, submit, for your consideration, the desirability, on sanitary and economic grounds, of subsoil draining the whole of the farm.

I leave to your Consulting Engineer the details of the scheme. I am aware that there may be difficulties in the way of draining the subsoil to a natural outfall, but an artificial outfall can always be found. It may be possible even to drain the land into one or more of the tanks that have been formed in excavating the land for soil for the beds.

The simplest and possibly most economical system of subsoil drainage is by a combination of flat and semi-cylindrical perforated tiles. But this and the depth to which the drains should be sunk with reference to the nature of the soil, their distance apart and other technical questions I leave to Mr. Lee.

8. Subsoil drainage should, I think, be at once applied to the land now under sewage irrigation; and in preparing ground for extension of the system either at the present farm or elsewhere, provision should be made for efficient under-drainage which is essential whether viewed in its sanitary or economic aspects.

No. 87. ORDER THEREON, 18th March 1870, No. 334.

To be recorded.

(True Extract.)

R. S. ELLIS,
Chief Secretary.

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No. 227

OFFICE OF SANITARY COMMISSIONER,
Madras, 21st February 1870.

From

Sanitary Commissioner for Madras,

To

The Chief Secretary to Government
Public Department
St. George.

I have the honor, with reference to para 4 of the
order of Govt. of the 10th May 1869 on the subject of the
experiment of sewerage
irrigation now being
carried out at the
"Sewage Farm", to sub-
mit for the information of Government copy of a letter
I have addressed to the President of the Municipal
Commission regarding the necessity that exists
in sanitary and I may add economic grounds
of combining with irrigation an efficient system
of under or subsoil drainage.

The Commissioners will keep the
Government informed as to the
success of the experiment which
should be carefully watched
by the Sanitary Commissioner.

I have the honor to be,
Sir,

Your most obedient servant
J. M. M. M.
Sanitary Commissioner
for Madras

Govt. of 1870: 311/1870.

PUBLIC.

Dated March, 1870.
Recd.

Ent.

G. O., 18th March 1870, No. 334.

MARCH.
Nos. 86-87.

Recording papers received from the Sanitary
Commissioner, Madras, on the subject of combin-
ing subsoil drainage with sewage irrigation at the
"Sewage Farm".

Dec 19 from 18 by Dec 14, 1853.
18 Nov 11-112

Dec: 1890 Page

Sanitary Commissioner

for Madras,

To

The Chief Secy to Govt.
Public Dept.
Fort St. George

Dated 21 }
Despatched .. } Feb 1870.
Received 23 }

No 277

No. 227.

Enclosure one

Forwarded copy of letter addressed to the President Municipal Commission on the subject of combining sub-urban drainage with sewage irrigation at the sewage farm. 1894. 18 March 1901.

Records

17 A. 184 N.

28/10/70

84 189

A. of 1869 Madras.

Public

March 18

G. O. 18 March. 1869 No. 334

Nos. 26. 87.

According papers received from
Sanitary Commr., Madras as
subject of combining Silt
canals with Sewage irriga-
tion at the "Sewage Farm".