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MADRAS RECORD OFFICE.

Government of Madras.

Police DEPARTMENT.

G.O. No.	210	Press
		~~Mis.~~
Dated	19-2-1870	

Not to be folded or roughly handled



*Proceedings of the Madras Government, Public Department,
19th February 1870.*

No. 88. Read the following letter from the Secretary to the Government of India, Military Department, to the Officiating Secretary to Government, Military Department, Fort Saint George, dated Fort William, 4th January 1870, No. 115.

I am directed to acknowledge letter, No. 1030, dated 22nd July 1869, from the Chief Secretary, Madras, to the Government of India in the Home Department, transferred to the Government in the Military Department for disposal, forwarding a reference from the Sanitary Commissioner to the Government, Fort Saint George, regarding the system to be pursued in conducting the water analysis in stations and cantonments.

2. In reply, I am to forward the accompanying copy of correspondence on the subject from the Inspector-General of Hospitals, Bengal, and the Officiating Chemical Examiner to the Government of India, in whose views the Right Honourable the Governor-General in Council generally concurs.

3. The object with which the rules for determining the presence of organic matter in water were laid down was, as the Inspector-General of Hospitals explains, to serve as a simple guide for persons but slightly acquainted with chemical manipulation, and it was not the intention of the Government of India to impose these rules as a hard and fast line within which only investigation should be pursued.

4. The system of Wanklyn and Chapman appears to His Excellency in Council to be generally approved as the process for ordinary analysis, and its general adoption seems, therefore, to be desirable, but not to the exclusion of any other and higher methods which the more advanced reading and knowledge of individual examiners may induce them to employ.

5. It is, however, the Governor-General in Council thinks, essential that analysts in their reports shall so fully give their modes of analysis as well as its results that other competent chemists can judge of the accuracy or the reverse of the process employed.

6. And, I am to add, His Excellency in Council attaches very considerable importance to the establishment of the freest direct inter-communication between the Chemical Examiners of the three Presidencies on this and cognate subjects.

From the Inspector-General of Hospitals of the Indian Medical Department, to the Officiating Secretary to the Government of India, Military Department, dated Fort William, 29th September 1869, No. 645.

In returning the enclosures of your No. 804, of the 31st August last, I have the honour to forward a letter* from the Officiating Chemical Examiner, explaining that the rules submitted with my letter, No. 86, dated 4th May 1869, were drawn up simply for the purpose of "determining the presence of organic matter in potable waters" as requested in your letter as per margin, for the guidance of persons not acquainted with chemical manipulation; and could not have been intended by Dr. Macnamara, at present absent on furlough to Europe, to supersede the elaborate plan laid down by the Sanitary Commissioner of Madras for the guidance of trained analysts.

(2)

Proceedings of the Madras Government, Public Department,
19th February 1870.

2. Wanklyn and Chapman's process is both simple and accurate, and, in my opinion, might, with advantage, be added to the rules framed by Dr. Macnamara. I quite agree with Dr. Palmer in his remark, that it is almost hopeless to include all the latest improvements in any uniform system which may be introduced into India. Any attempt to decide upon such uniformity by inter-communication of the several Chemical Examiners of the three Presidencies could only result in the adoption of a system already out of date, owing to the constant improvements which are being made in the methods of analysis, and the time required to import the necessary apparatus.

The return of the enclosure is solicited.

From the Officiating Chemical Examiner to Government, to the Officiating Secretary to the Inspector-General of Hospitals, Indian Medical Department, dated Calcutta Medical College, 24th September 1869, No. 82.

I have the honour to acknowledge the receipt of the correspondence marginally noted, together with your Memorandum, No. 560-D., of the 1st instant, requesting me to "report on the subject."

2. The question at issue appears to be whether the rules for the estimation of the kind and quantity of organic matter present in potable waters, drawn up by the Sanitary Commissioner of Madras, should be "retained," or whether those drawn up by Dr. Macnamara with the addition of Messrs. Wanklyn and Chapman's process are to be substituted.

3. The discussion has, however, become complicated in several ways, but chiefly from what appears to be a confusion of two things totally different, viz., of Dr. Macnamara's strictures on a proposed plan for the scientific estimation of organic matter in potable waters in the Madras Presidency, and of his "rules for the use of persons not acquainted with chemical manipulations" to enable them to detect organic matter in water.

4. If the above be the correct view of the question, the answer is clear, viz., that "rules drawn up to enable persons unacquainted with chemical manipulation to detect the presence merely of organic matter in water could never have been intended to supersede the more elaborate plan laid down by the Sanitary Commissioner of Madras for the guidance of trained analysts in estimating on a uniform plan, not merely the presence, but also the kind and quantity of organic matter contained in the potable waters.

5. It appears, however, that Dr. Macnamara's letter without number, dated 1st May 1869, was written under a misapprehension of the existing requirements, and although I am unable to explain how such misapprehension arose, I would beg to point out that such irregularities are likely to recur so long as the Chemical Examiner's office is without a writer or record-keeper.

6. The next important question at issue in the correspondence is concerning a uniform system for the estimation of organic matter in potable waters. Dr. Ranking proposed that the Chemical Examiner of Bengal should, in communication with the Chemical Examiners of Madras and Bombay, draw up a uniform scheme to be adopted throughout India. Being unable to find that Government has expressed any decided view on this question, and being strongly of opinion myself that such uniformity, however desirable it may appear to persons unacquainted with the details of the subject, would, in the present rapidly advancing state of our knowledge, tend to paralyze all efforts for good, while, on the other hand, it would lend its powerful support to a cold and careless adherence to systems already discarded or improved upon in other parts of the world; I would rather suggest that the supervising officer in each Presidency should keep himself acquainted with the daily increasing modern literature on this subject, and introduce as many of the approved parts of recent systems as can be conveniently carried out in India, without excluding the older and simpler processes; for, each process tells its own tale concerning the state or condition of the organic matter in water, and also something of its history, and such knowledge is now

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19th February 1870.

admitted to be of much greater importance than the most accurate estimate of the mere quantity of organic matter.

7. In April 1868 Dr. Frankland, Government Analyst of metropolitan waters, stated in a lecture delivered at the Royal Institution of Great Britain, on his system of estimating organic matter in drinking water. "That during the past year the processes of water analysis have undergone a complete revolution;" and further, in August of the same year, Messrs. Wanklyn and Chapman published a full account of their method, which differed so far from that advocated by Dr. Frankland, that the discussion of the relative merits of the two systems at the meetings of the Chemical Society frequently gave rise to that warmth of feeling so often exhibited in revolutions of all kinds. At the present time (1869) Dr. Angus Smith is publishing in the Chemical-news a still more elaborate system of estimating organic matter, which includes the approved parts of all former systems. Much attention is also being given to water analysis in France and Germany, but since the introduction of the permanganate test by Forchhammer, almost all further improvements have been made by English chemists. From the above facts I would make the following deductions, that we cannot hope to include all the latest improvements in any uniform system which may be introduced into India, and that any attempt to decide upon such uniformity by inter-communication of the several Chemical Examiners of the three Presidencies could only result in the adoption of a system already out of date, owing to the constant improvements which are being made in the methods of analysis on the one hand, and the time required to import the necessary apparatus on the other.

8. The three systems above alluded to are all decided improvements upon any hitherto practised in India, but as that of Dr. Frankland requires, in addition to an unusual amount of manipulative skill, a well-appointed laboratory, it is not adapted to a country where apparatus has to be frequently moved about, and where any attainable room in a roadside bungalow must serve as a laboratory. The method of Messrs. Wanklyn and Chapman on the other hand is both simple and accurate, and does not require such an unusual amount of skill in manipulation; it does, however, require apparatus which is not to be obtained in Calcutta, and could not, therefore, at once be generally introduced.

9. During the past year I devoted much time while in London to the study of the different systems of water analysis then advocated, and finding a difficulty in deciding which would be most suitable for India, I sought the advice and assistance of my former chemical teacher Dr. Miller, Vice-President of the Royal Society; after explaining to him the peculiar requirements of the country, I found it to be his opinion that, under the circumstances, Wanklyn's system was admirably suited to meet those requirements, being far more accurate, and scarcely more difficult than the method of incineration now in use, and which he himself formerly advocated. Before leaving England I had the advantage of receiving personal instruction from Professor Wanklyn, and should that method be generally adopted, I am of opinion that we should have as perfect a system as could be found applicable to so large a country as this. It does not, however, appear desirable to limit ourselves to any one system; the older methods might be pursued together with this one, and not only so, but the further improvements now being made, and which will certainly be made during the next few years, may be also adopted in addition. In the latest writings on the subject, viz., those of Dr. Angus Smith, whose whole life is devoted to the application of chemical science to the practical wants of the day, he states that "Wanklyn's process has been gaining favour in my laboratory, as the results obtained have been very constant." He does not, however, discontinue to use the process of incineration, nor that by permanganate of potash, or indeed any other which is found to contribute to that knowledge of the sanitary condition of water in which we are yet so deficient.

10. Surgeon-Major Ranking, quoting from the Army Medical Department, Sanitary Report for 1865, says, "Dr. Parkes still thinks the method of incineration the best;" but although this report was not published till 1867, it affords no evidence of Dr. Parkes' present opinion. Wanklyn

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19th February 1870.*

and Chapman's system was not published complete until 1868, since which time both Dr. W. A. Miller and Dr. Angus Smith have given their adhesion to it, without, however, discarding the older methods : each process reveals something of the *condition* of the organic matter, which the other does not, and, as before noted, it is the condition of this matter which is important to health, rather than the total quantity of it.

11. From personal acquaintance with Wanklyn's method, I am convinced that its difficulties would be soon overcome by any one trained to, and fond of, analysis generally. Dr. Ranking expresses his readiness to introduce it into Madras ; it is my intention to introduce it into Bengal as soon as a sufficient supply of the necessary apparatus is received ; it only, therefore, remains to recommend its adoption in Bombay to have a system for all the Presidencies, which may be pursued in addition not only to the one at present in use but also to those which may be approved in future ; for no single system can satisfy the requirements of science, now that the importance of distinguishing the different conditions in which organic matter exists in water is fully recognised.

Transferred to the Public Department.

FORT SAINT GEORGE,
25th January 1870.

(Signed) A. WILDE, Colonel,
Secy. to Govt., Mily. Dept.

No. 89. ORDER THEREON, 19th February 1870, No. 210.

Copies of the foregoing letter, and of its enclosure, will be furnished to the Sanitary Commissioner, with reference to his letter of the 3rd July 1869, No. 2524, and, also, to the Inspector-General of the Indian Medical Department, for communication to the Chemical Examiner.

(True Extract.)

Acting Chief Secretary.

To the Sanitary Commissioner.

„ Inspector-General of the Indian Medical Department.

Exd. J. Wright.

2 (4)

From J. MURRAY, Esq., M. D., Inspector General of Hospitals, Indian Medical Department, to the Officiating Secretary to the Government of India, Military Department,—(No. 645, dated Fort William, the 29th September 1869.)

In returning the enclosures of your No. 804 of the 31st August last, I have the honor to forward a letter* from the Officiating Chemical Examiner, explaining that the rules submitted with my letter No. 86, dated 4th May 1869, were drawn up simply for the purpose of "determining the presence of organic matter in potable waters" as requested in your letter as per margin,† for the guidance of persons not acquainted with chemical manipulation; and could not have been intended by Dr. Macnamara, at present absent on furlough to Europe, to supersede the elaborate plan laid down by the Sanitary Commissioner of Madras for the guidance of trained analysts.

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The return of the enclosure is solicited.

From W. J. PALMER, Esq., M. D., F. C. S., Officiating Chemical Examiner to Government, to the Officiating Secretary to the Inspector General of Hospitals, Indian Medical Department,—(No. 82, dated Calcutta Medical College, the 24th September 1869.)

I HAVE the honor to acknowledge the receipt of the correspondence marginally noted, together with your memorandum No. 560D of the 1st instant, requesting me to "report on the subject."

Docket No. 804, dated 31st August 1869, from the Military Department, with enclosure.

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assistance of my former chemical teacher Dr. Miller, Vice President of the Royal Society; after explaining to him the peculiar requirements of the country, I found it to be his opinion that under the circumstances, Wanklyn's system was admirably suited to meet those requirements, being far more accurate, and scarcely more difficult than the method of incineration now in use, and which he himself formerly advocated. Before leaving England I had the advantage of receiving personal instruction from Professor Wanklyn, and should that method be generally adopted, I am of opinion that we should have as perfect a system as could be found applicable to so large a country as this. It does not however appear desirable to limit ourselves to any one system; the older methods might be pursued together with this one, and not only so, but the further improvements now being made, and which will certainly be made during the next few years, may be also adopted in addition. In the latest writings on the subject, viz., those of Dr. Angus Smith, whose whole life is devoted to the application of chemical science to the practical wants of the day, he states that "Wanklyn's process has been gaining favour in my laboratory, as the results obtained have been very constant." He does not however discontinue to use the process of incineration nor that by permanganate of potash, or indeed any other which is found to contribute to that knowledge of the sanitary condition of water in which we are yet so deficient.

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(True copy)

W. H. Wanklyn Major-Genl.,
Secy. to the Govt. of India.

Exd. S. C. Dutt.

To
THE OFFG. SECRETARY TO GOVERNMENT, FORT ST. GEORGE,
MILITARY DEPARTMENT.

Military Department.

Sir,

I AM directed to acknowledge letter No. 1030, dated 22nd July 1869, from the Chief Secretary, Madras, to the Government of India in the Home Department, transferred to the Government in the Military Department for disposal, forwarding a reference from the Sanitary Commissioner to the Government, Fort St. George, regarding the system to be pursued in conducting the water analysis in stations and cantonments.

2. In reply, I am to forward the accompanying copy of correspondence on the subject from the Inspector General of Hospitals, Bengal, and the Officiating Chemical Examiner to the Government of India, in whose views the Right Hon'ble the Governor General in Council generally concurs.

3. The object with which the rules for determining the presence of organic matter in water were laid down was, as the Inspector General of Hospitals explains, to serve as a simple guide for persons but slightly acquainted with chemical manipulation, and it was not the intention of the Government of India to impose the rules as a hard and fast line within which only investigation should be pursued.

4. The system of Wanklyn and Chapman appears to His Excellency in Council to be generally approved as the process for ordinary analysis, and its general adoption seems therefore to be desirable, but not to the exclusion of any other and higher methods which the more advanced reading and knowledge of individual examiners may induce them to employ.

5. It is however the Governor General in Council thinks essential that analysts in their reports shall so fully give their modes of analysis as well as its results that other competent chemists can judge of the accuracy or the reverse of the process employed.

6. And, I am to add, His Excellency in Council attaches very considerable importance to the establishment of the freest direct inter-communication between the Chemical Examiners of the three presidencies on this and cognate subjects.

I am,

Sir,

Your most obedient servant,

FORT WILLIAM;
The 4th January 1870.

Whelan Major-Genl.,
Secy. to the Govt. of India.

- No. 116. To the Secy. to Govt., Bombay, Military Department.
- No. 117. To the Inspr. Genl. of Hospitals, Indian Medical Service.
- No. 118. To the Home Department.
- No. 119. To the Sanitary Commissioner with the Government of India.

Public Department

PROCEEDINGS of the MADRAS GOVERNMENT.

Read the following

Letter from the
Sanitary Commissioner
dated 15 January 1870.

Order thereon 19 February 1870 N^o 210.

Copies of the foregoing
letter and of the resolution
with be furnished to the
Sanitary Commissioner
with reference to his
letter of the 3rd July
1869, N^o 2524, and also
to the Inspector General,
Indian Medical
Department, for com-
munication to the Chem-
ical Examiner.

To the Sanitary Commissioner
- Inspector General, Indian Medical Dept.
Secretary Dept.
with copy of letter N^o 1030.
22nd July 1870. Enclosure

Oct. 1869. 22nd July 1869. N^o 170-171.
Copy of the letter N^o 170-171.
Oct. 29, 1869. N^o 170-171.
11th March 1869. N^o 308 & 309.
14th May 1869. N^o 347-348.

Chief of Police
25th Jan 1870.

Sanitary Commissioner
to the Public Health
Office
25th Jan 1870.

Public Health
Sanitary Commissioner

Chief of Police

From

Chief of Police to Sanitary Commissioner
11th May 1869.

24th Jan 1870.

25th Jan 1870.

No 116.

N^o 246.

80

of forwarding correspondence
regarding the system to be
pursued in conducting
the water supply in
Madras & Concomitant
in the Madras Presidency.

Sp. 1870.

