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INDEXED.

[Despatch Abstract.]

CHEMICAL EXAMINER'S REPORT.

Reviewing the---for 1895. Copy to the Government of India.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
	2653		1896				

OFFICE OF SURGEON-GENERAL

WITH THE GOVERNMENT OF MADRAS,

Mdras, *18 April* 1896.

No. *289*

From

SURGEON-MAJOR-GENERAL C. SIBTHORPE, F.R.C.P.I.,

SURGEON-GENERAL WITH THE

GOVERNMENT OF MADRAS,

To

THE HON'BLE THE CHIEF SECRETARY TO GOVERNMENT,

Public

DEPARTMENT.

SIR,

I have the honour to forward you the Annual Report for 1895 of the Chemical Examiners to Government which has been carefully drawn up by Surgeon Major Stan. Geyzel and contains many points of professional and medico-legal interest.

2. With reference to his remarks in paragraph 17 regarding the stained portion of clasp being improperly packed and sent, I have called the attention of Medical Officer and Subordinates to rule 8 in G.O. No 102, Public, dated the 30th May 1883.

Appendix to 1895
14. 502

I have the honor to be,

Sir,

Your most obedient Servant,

C. Sibthorpe

Surgeon-Major-Genl.

Surgeon-General

with the Govt. of Madras.

289

(1896.) *Public* DEPARTMENT.

From

SURGN.-MAJOR-GENERAL C. SIBTHORPE, F.R.C.P.I.,

SURGEON-GENERAL WITH THE

GOVERNMENT OF MADRAS,

No. *289*

Dated *10th* } *April* 1896.
Received }

Subject.

*Forwarding with remarks
the Annual Report for 1895
of the Chemical Examiner
to Govt.*

S.A.

A. B.

For Mr. Major-General C. Sibthorpe

to be forwarded to the Government of Madras

The most salient feature in the report of the Chemical Examiner for the year 1895 is the marked increase * in the number of salt and other miscellaneous analyses undertaken for the Board of Revenue. The difficulties attending these examinations and those for the analyses of the Customs Department are referred to in paragraphs 19 and 20. In paragraph 21 Surgeon-Major VanGeyzel

	Salt.	Beer, spirits, &c.	Total
* 1895	517	78	595
1894	404	41	445
Increase	113	37	150

compares at some length the relative value of research as tests of potability in the examination, but out of place in an administrative report of work done. Excepting the increase in the department in the year under review in years.

2. The total number of cases of suspected human poisoning was six less than in 1894, while the percentage of detections fell by about ~~5~~ ^{five} per cent. Inorganic poison was found in forty-seven cases as against fifty-six in 1894. The number of detections in which organic poison was found was the same, viz., seventeen. The Chemical Examiner will be requested to furnish a separate report giving particulars of the case mentioned in paragraph (d).

	Percentage detections
+ 1894	66.36
1895	60.53
	4.83

3. In the 64 cases in which poison was detected 39 deaths occurred out of 125 persons affected. The corresponding figures for the previous year were 73, 45 and 175 respectively. *The number of blood was substituted*

4. Blood was detected in twenty-one out of forty-one cases of suspected blood stains involving the examination of 5 articles. In 1894 forty suspected cases showed blood in twenty, 200 articles being examined.

5. Nine cases of seminal stains were examined against eight in 1894. The number of detections was, as in the previous year, nil. This signal failure is ascribed by the Chemical Examiner to the manner in which the stained clothes being rolled up in the smallest possible bundle, thereby damaging the stains and diminishing the chances of identifying their true character. *partly. up in a very tight bundle*

6. There were seventy-two cases of Arsenious oxide continued to be the chief instrument of the cattle poisoning cases detected. The percentage of detections employed in fifty-two out of the fifty-five cases detected. *is No. 1*

1892	85.7
1893	84.04
1894	78.6
1895	76.4

This may be due to an increase in the number of cases, especially given to this matter. The attention of the Chemical Examiner should, however, be specially given to this matter.

7. The number of miscellaneous analyses was 1,017 against 910 in the previous year. More than half of this number was for the Board of Revenue. One hundred and sixty-nine samples of water were examined for Government departments and municipalities and 10 for private parties.

8. The attention of the Judicial Department will be invited to the remarks in paragraphs 11 and 17.

*There are two pages
- 12 in the report. The
numbering has been
corrected.*

*The S.G. will
be requested to submit a revised
rule of more satisfactory applica-
tion to the matter.*

*during the past
four years:-*

*Chemical Examiner's
Report*

Hon^r M^r. H. W. Bliss C.S.

Nos. 746, 747, PUBLIC, 15TH JULY 1896.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT.

READ—the following paper :—

From Surgeon-Major-General C. SIBTHORPE, F.R.C.P.I., Surgeon-General with the Government of Madras, to the Chief Secretary to Government, dated Madras, 10th April 1896, No. 289.

I have the honour to forward you the annual report for 1895 of the Chemical Examiner to Government which has been carefully drawn up by Surgeon-Major Van-Geyzel and contains many points of professional and medico-legal interest.

2. With reference to his remarks in paragraph 17 regarding the stained portion of clothing being improperly packed and sent, I have called the attention of medical officers and subordinates to rule 8 in G.O., No. 1062, Public, dated the 30th May 1883.

ENCLOSURE.

From Surgeon-Major J. L. VANGEYZEL, M.B., F.I.C., F.C.S., Chemical Examiner, to the Chief Secretary to Government (through the Surgeon-General with the Government of Madras), dated 8th April 1896, No. 351.

I have the honour to submit the annual report of this department for the year 1895.

2. Surgeon-Captain R. Robertson, M.B., acted for me during my absence on three months' privilege leave from 10th July to 9th October. M.R.Ry. M. C. Nanjunda Rao, B.A., M.B., joined this department as First Assistant Chemical Examiner on 10th July.

3. Owing to building extensions of the Medical College class rooms, situated below this laboratory, the outer wall of the room in which the main portion of the analytical work is performed was taken down. Consequently this room had to be temporarily abandoned, and the work had to be performed under great disadvantages elsewhere for about four months. During this period the laboratory was placed under a police guard at nights to ensure the safety of articles under examination in medico-legal cases.

4. The total number of cases examined during the year was 100 in excess of the previous year, though the number of analyses required was nearly the same. The number of medico-legal cases examined was only seven less than in the previous year, but the miscellaneous analytical work is still increasing. The extra assistance which became available during the latter half of the year has enabled the department to work more expeditiously.

5. A general survey of the work done is afforded by the following statement :—

TABLE I.

		Number of cases investigated.		Number of articles examined.	
		1895.	1894.	1895.	1894.
A.—Medico-legal investigations.	I. Cases of suspected human poisoning ..	104	110	620	726
	II. Blood stains, &c. ..	41	40	155	200
	III. Seminal stains ..	9	8	26	39
	IV. Cases of suspected cattle poisoning ..	72	75	247	214
	Total ..	226	233	1,048	1,179
B.—Miscellaneous analyses.	For Government Departments and Municipalities.	963	839	963	839
	For private parties and firms ..	54	71	54	71
	Total ..	1,017	910	1,017	910
* Grand Total ..		1,243	1,143	2,065	2,089

A.—MEDICO-LEGAL INVESTIGATIONS.

I.—CASES OF SUSPECTED HUMAN POISONING.

6. The formalities prescribed by G.O., No. 685 of 24th August 1893, I am glad to report, are carefully observed now by forwarding officers, and it is very seldom that the examination of cases is delayed for want of compliance with these rules. During the past two years there has been very marked improvement in this respect. While six or seven years ago hardly a week passed without cases coming up for examination badly preserved and without regard to identification of the articles sent, such instances are now the exception. I specially note this matter since it was a subject on which I formerly had frequent occasion for troubling Government and the Surgeon-General. The repeated orders which have been issued have taken effect, and forwarding officers seem to better appreciate the necessity of strictly complying with all the required formalities.

7. The following two statements supply the usual information regarding cases of human poisoning which have been examined during the year :—

TABLE II.—Human Cases—Class A.
(Including cases in which viscera or evacuations were examined with or without suspected substances, food, &c.)

Districts received from.	Number of cases in which poison was detected.				Number of deaths.	Number of analyses.	Inorganic.								Organic.																
	2	3	4	5			6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
							Arseious oxide.	Arseious oxide and mercuric salt.	Arseious oxide and orpiment.	Arseious oxide and calomel.	Arseious oxide and cinabar.	Mercuric salt.	Mercuric salt, calomel and cinabar.	Arseious oxide, orpiment and Scheele's green.	Glass.	Mercuric salt and aconitine.	Arseious oxide and dhatura.	Arseious oxide and oleander.	Arseious oxide, orpiment and realgar.	Aconite.	Atropine.	Atropine and ganjah.	Dhatura.	Ganjah.	Lebeditoropsis orbicularis.	Opium.	Euphorbia tirucalli.	Strychnine.	Atropine and opium.	Plumbagin.	Atropine, ganjah and opium.
Anantapur ..	2	1	4	1	6	1																									
Arcoot, North ..	7	4	10	5	34	3																									
Arcoot, South ..	6	4	7	4	47	2																									
Bellary ..	4	2	23	3	70	1																									
Canara, South ..	4	2	1	1	19	2																									
Chingleput ..	2	2	1	1	6	1																									
Coimbatore ..	2	2	2	2	4	1																									
Cuddapah ..	5	4	6	4	49	2																									
Ganjam ..	2	2	2	1	11	2																									
Godavari ..	4	3	12	8	18	2																									
Kistna ..	2	2	2	2	58	1																									
Kurnool ..	2	3	12	7	113	1																									
Madras ..	6	3	34	1	42	2																									
Madura ..	1	1	1	1	2	1																									
Malabar ..	3	1	6	3	10	1																									
Nellore ..	5	2	8	3	12	1																									
Salem ..	4	2	4	3	18	1																									
Tanjore ..	2	2	2	1	9	1																									
Trichinopoly ..	5	2	7	4	20	1																									
Tinnevely ..	2	2	2	2	16	2																									
Vizagapatam ..	2	2	2	2	16	2																									
Total for the year 1895 ..	82	49	155	60	575	23	8	6	2	1	8	1	1	1	1	1	1	1	1	3	3	1	1	3	1	1	1	2	1	1	1
" " ..	88	58	175	64	615	26	6	2	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3	1	1	1	1	1	1	1

Districts received from.

TABLE III.—*Human Cases—Class B.*

(Including cases in which no viscera or evacuations were received for examination, but only suspected substances, food, &c.)

Districts received from.	Number of cases.	Number of cases in which poison was detected.	Number of analyses.	Poisons.															
				Inorganic.								Organic.							
				Arsenious oxide.	Arsenious oxide and dhatura.	Arsenious oxide, realgar, orpiment and mercuric salt.	Arsenious oxide and red oxide of mercury.	Alum.	Mercuric salt.	Opium.	Copper salt.	Atropine.	Atropine and Calotropis (Gigantea).	Ganjah.	Opium.	Aconite.	Plumbagin.	Strychnine.	Calotropis Gigantea.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arcot, North ..	3	3	5	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..
Coimbatore ..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuddapah ..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ganjān ..	2	2	4	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Kistna ..	4	2	7	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..
Madura ..	1	1	2	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Malabar ..	2	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore ..	1	1	1	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Salem ..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tanjore ..	3	3	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Tinnevely ..	1	..	2	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Vizagapatam ..	1	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total for the year 1895 ..	22	15	45	3	1	..	..	..	3	1	1	..	..	..	2	1	1	1	1
Total for the year 1894 ..	22	15	111	4	1	1	1	1	2	1	..	1	1	1	1	..	..	..	..

8. The percentage of detections to cases examined during the past two years is given below:—

TABLE III (a).

	A.			B.			Total.		
	Cases in which viscera or evacuations were examined.			Cases in which only suspected food, &c., was received for examination.					
	Total number of cases.	Number of cases in which poison was detected.	Percentage of detections.	Total number of cases.	Number of cases in which poison was detected.	Percentage of detections.	Total number of cases.	Number of cases in which poison was detected.	Percentage of detections.
1894 ..	88	58	65.90	22	15	68.18	110	73	66.36
1895 ..	82	49	59.75	22	15	68.18	104	64	61.53

9. There were forty cases in which poison was not detected, and these may, as usual, be reviewed under two headings:—

I. Seventeen cases unattended by fatal result, in which suspicious circumstances called for chemical investigation.

II. Twenty-three cases, in which suspicious circumstances occurred, accompanied by fatal result.

Group I.—Of the seventeen cases in this group thirteen were returned as false after magisterial enquiry. Some of these turned out to be concocted and others were dismissed on the ground of "mistaken facts." Of the remaining four, one was

subsequently proved to be a case of epileptic seizure, in another the result of enquiry has not been communicated, and the other two were cases in which persons accused of serious crimes had set up counter-charges—

(a) A young woman who was in intrigue with another man refused to live with her husband on the plea that she was invariably seized with vomiting, which regularly ceased as soon as she left him and returned to her own village. She was induced by the friends of both parties to return and "try a last chance", but the vomiting recurred. While her husband was asleep she wounded him grievously with a mamooty, in order to sicken him of her, and she then set up the plea that she was ill-treated and made to vomit by the forcible administration of nauseous substances. No poison was found in the vomited matter, and from the evidence the Judge concluded that she forced herself—mechanically or by drugs—to vomit, so as to make herself as unpleasant as possible and to arouse sympathy, and to have a decent pretext for returning to her lover. She was sentenced to five years' rigorous imprisonment.

(b) A man murdered his child and stabbed his wife. When arrested he produced a powder, with which, he said, his wife was going to poison him. The powder was found to be harmless and the offender was transported for life.

Group II—Includes 23 cases in which 23 persons died out of 25 who were reported to have been affected by suspicious symptoms. From the results of the enquiries instituted, medical, chemical and magisterial, these cases fall into three classes:—

Class (a).—Cases in which the deaths were due to disease or causes other than poison—

Chronic intestinal disease	...	...	...	...	...	...	1
Phthisis	...	...	...	...	...	...	3
Asthma	...	...	...	...	...	...	2
Cardiac disease	...	...	...	...	...	...	1
Hanging	...	...	...	...	...	...	1
Elephantiasis	...	...	...	...	...	...	1
Drowning (suicidal)	...	...	...	...	...	...	1
Other causes (child-birth, &c.)	...	...	...	...	...	...	5
Total	...	...	...	...	...	...	15

Class (b).—Six cases in which there is insufficient evidence in favour either of poison or of disease as the cause of death—

- (1) Earth supposed to contain dejecta was examined and found to be free from poison, the body having been cremated.
- (2) Viscera from a body disinterred six days after burial contained a non-poisonous alkaloid. The man was reported to have had vomiting and purging.
- (3) Viscera from a body disinterred four days after burial. The man was reported to have been seized with vomiting and purging on awakening in the morning, and he was treated by a native vythian. The medicine and the decomposed viscera were examined with negative result.
- (4) Viscera from a body exhumed, upon anonymous information, one and a half months after burial. There was some evidence of ante-mortem violence.
- (5) Man found dead in his bed. No poison was found in the viscera sent, and the death has not yet been accounted for.

(6) Body exhumed in consequence of an anonymous letter. Decomposition was so far advanced that the internal organs could scarcely be identified. What was sent had to be examined by me without awaiting information as to the history of the case, the symptoms, or even the date of death. This case was received on 11th November from the Sub-Magistrate, Denkanikota (Salem), and the particulars have not been notified up to date.

Class (c)—Includes the remaining two cases of this group, in which the balance of evidence appears to be in favour of death having been due to poison.

In one of these a woman ate oleander root to obtain relief from painful menstruation; and in the other a man was seen grinding oleander root, and the same evening he was seized with vomiting and convulsions, which are symptoms of poisoning by this plant. There was also *post-mortem* evidence of intestinal irritation. There are no chemical tests for this poison, and in the absence of any portions of the plant in the viscera, its detection rests upon isolation of its glucosides, which may be identified by their physiological action. An attempt to do this gave negative results in both cases.

10. Poison was detected in 64 cases, involving in all 39 deaths out of 125 persons who were affected. Inorganic poisons accounted for 47 and organic for 17 cases.

Inorganic Poisons.

11. The number of cases in which this class of poisons was detected during the past five years is shown below:—

TABLE IV.

	1895.	1894.	1893.	1892.	1891.
Cases included in class A	38	45	55	51	31
Do. in class B	9	11	8	6	8
Number of individuals affected in A and B	91	136	137	102	105
Do. of deaths in A and B	31	36	51	45	26

12. The following are the notes of some of these cases:—

(a) A man, who was reaping his varagu crop, remonstrated with a crowd of about 40 persons, who came and attempted to remove it by force. He was then tied up to a post and beaten and left in an unconscious state. From the stomach were picked out coarse particles of white arsenic, some of them as large as a cherry stone, and weighing in all 98½ grains. Six more grains of it were extracted from the viscera sent, making a total of over 104 grains of white arsenic found within the body. I pointed out in my certificate that such large pieces of white arsenic could not have passed into the stomach during life, unknown to the deceased, and that he must have swallowed them with suicidal intentions or have been forcibly made to swallow them. The Magistrate found "no evidence of how the white arsenic got into the stomach of the deceased and that probably it was administered to him in order to get up a false case of murder." The accused were tried for rioting and were fined Rs. 10 each, but this decision was reversed on appeal.

(b) Pounded glass was detected in the evacuations of a child, who was attacked with intestinal irritation, after eating a plantain given by a neighbour.

(c) In order to get full possession of property which was in dispute, a woman poisoned her brother with mercuric salt and aconite.

(d) Several persons were seized with vomiting immediately after a meal, and in the Bengal gram which was sent for examination were found over half a grain of white arsenic and datura seeds. The Sub-Magistrate's report on the case appears to be a curious commentary on the result of the chemical examination: "The Station-house officer reports that he did not register this as a crime. The complainant attributed the cause of vomiting to the old and rotten boiled Bengal gram which had inside contained some worms germinated in grain seeds."

(e) A man who had been under the treatment of a native quack was affected with nausea, after taking one of his powders; and he began to feel weak, vomited only twice, became collapsed, speechless, and died. From his viscera was extracted mercury equivalent to over nine grains of corrosive sublimate. Three to five grains would be a fatal dose and the absence of the usual symptoms of irritant poisoning, which are generally very marked in both corrosive and non-corrosive cases, is a curious feature of this case.

(f) A family partook of coffee and from the grounds the ayah made a second brew for herself. The bag in which the coffee was prepared was then handed to the waterwoman who made a third brew which she and her children drank. Out of eight persons who were attacked with irritant symptoms in consequence of drinking this coffee, five died. This was a case of mixed arsenical and mercurial poisoning, and the number of different articles examined amounted to sixty-eight.

(g) A reputed death from snake-bite in the case of a young gosha woman excited some suspicion. No information of any sort issued from within the purdah as to the symptoms which preceded death. Although the *post-mortem* examination revealed nothing abnormal, the viscera were sent for chemical examination, and over fourteen grains of white arsenic were extracted from them.

(h) It is uncommon for Europeans to become victims of the poisoner in this country. Two cases, however, occurred during the year, both on the West Coast, but fortunately unattended by fatal consequences. One of them is alluded to in paragraph 12 of this report, and the following is the other—an officer was seized with violent vomiting immediately after dinner and was dangerously ill all night. The portions of vomited matter examined contained over three grains of white arsenic. A dismissed clerk, it was alleged, had contrived to get the poison put into some portion of the dinner.

Organic Poisons.

13. The following statement shows the number of cases in which this class of poison was detected in the past five years:—

TABLE V.

	1895.	1894.	1893.	1892.	1891.
Cases included in class A	11	13	14	16	15
Do. in class B	6	4	2	7	7
Number of individuals affected in A and B	34	39	22	33	42
Do. of deaths in A and B	8	9	10	13	13

Strychnine.—An officer and his wife suffered from twitchings of the muscles after drinking milk which they remarked had a bitter taste. The milk was found to contain strychnine. This poison was also found in the viscera of two suicidal cases: one, a woman who was restored to her husband after elopement with a paramour, and the other a son who in a fit of hot words with his father ate the leaves of nux vomica.

Atropine.—Was detected in three cases in which whole families were affected, the poison having been put into their food. In one case this alkaloid was mixed with opium, and one of the affected persons is reported to have been suddenly struck dumb. He recovered, but this combination of poisons is curious since atropine is reputedly a physiological antidote in opium poisoning. These two poisons together with ganjah were employed in a case in which several women had been drugged in order to facilitate outrages. In another case a toddy contractor, who was greatly annoyed by thefts of his toddy from the trees at night, introduced this poison into the pots with a view to punish the offenders. Four thieves were discovered in an unconscious state, one of whom died.

Plumbagin.—The active constituent of the plumbago rosea (Lal-chitra), and used for the purpose of causing abortion, was detected in two fatal cases in which pills and powders containing it were so employed.

Aconitine—Was the means of death in two suicidal cases. Several persons were also poisoned by eating pieces of the root which a bazaarman had sold to them "to be eaten with betel-nut." In another instance the enchanter's art was called in to discover a thief, and forty persons were given something to eat with betel leaves; of these, three persons very nearly lost their lives from poisoning by this alkaloid. The magician's drug store was transferred to this office for examination, and was found to contain powders and other preparations in which croton, cannabis, aconite, dhatura, plumbago rosea, and other well-known poisons were found in close company with coriander seeds and a few other such harmless things.

Opium—Was found in the food, into which it was introduced by a "friendly neighbour" who obtained permission to warm herself by the kitchen fire. In another case a property dispute led to the employment of this agent for removing the unpleasant inheritor.

Calotropis gigantea—Was discovered in a case in which it had been used presumably as an abortifacient, the actual cause of death being reported to be rupture of the uterus and escape of the fœtus into the abdominal cavity.

14. The proportion of cases traced to these two classes of poisons is shown below:—

TABLE V-a.

Year.	Number of cases detected.	Inorganic poison.	Organic poison.	Percentage of column 3 to column 2.
1	2	3	4	5
1895	64	47	17	73.43
1894	73	56	17	76.71
1893	79	63	16	79.74
1892	80	67	23	71.25
1891	61	39	22	63.93

15. The results of the judicial enquiries into the suspected crimes involved in these 64 cases may be summarised under two headings:—

	Number of cases.	Number affected.	Number died.
(a) Without fatal result	31	77	..
(b) With fatal result	33	48	39
Total	64	125	39

In the non-fatal group of 31 cases, no results have as yet been communicated in eighteen, although reminders have been sent to the officers concerned; two are still pending enquiry, two have been returned as undetected, and one as suicidal, while in four no further action was considered necessary. Of the remainder, the accused were discharged in three cases, and in one he was sentenced to ten years' rigorous imprisonment. In the fatal group of 33 cases no communication regarding results have as yet reached me in five cases, no prosecution was instituted for lack of necessary evidence in three cases, two were returned as undetected, two as accidental, six as suicidal, and four are reported to be still pending. Of the remainder, eight ended in acquittals by Sessions Courts, one in short imprisonment and two in death sentences.

II.—BLOOD STAINS.

16. Of twenty-one cases in which the presence of blood was established, in seventeen the blood was proved to be mammalian. The identification of human hair and of bones formed part of the examination into some of these cases.

TABLE VI.

Districts received from	Number of cases.	Number of cases in which blood was detected.	Number of examinations.
Anantapur ..	1	1	3
Arcot, North ..	2	2	6
Bellary ..	3	1	5
Canara, South ..	1	1	1
Chingleput ..	1	..	1
Coimbatore ..	5	1	38
Cuddapah ..	5	4	27
Ganjām ..	1	1	4
Kistna ..	1	1	10
Kurnool ..	1	1	3
Madras ..	1	1	3
Madura ..	4	1	15
Nellore ..	1	..	3
Salem ..	8	5	26
Tanjore ..	3	1	5
Tinnevely ..	1	..	3
Vizagapatam ..	2	..	2
Total for the year { 1895 ..	41	21	155
{ 1894 ..	40	20	200

17. Out of the 41 cases, in which these examinations were made, no judgments have been received in seven; two have been returned as undetected, two as still pending, two were struck off the file the deaths having been satisfactorily accounted for, in five the accused were discharged after preliminary enquiry by a Magistrate, and one was sentenced to short imprisonment for hurt. The remaining 22 were committed to Sessions Courts, and of these in five the offenders were sentenced to long terms of rigorous imprisonment, ten ended in acquittal, four in death sentences, and three in transportation for life.

III.—SEMINAL STAINS.

TABLE VII.

Districts received from	Number of cases.	Number of cases in which semen was detected.	Number of examinations.
Cuddapah ..	2	..	3
Kistna ..	1	..	3
Kurnool ..	2	..	7
Madura ..	1	..	4
Salem ..	2	..	8
Tinnevely ..	1	..	1
Total for the year { 1895 ..	9	..	26
{ 1894 ..	8	..	39

18. Seven of the cases forwarded for examination in this section referred to the crime of rape, one to rape and murder, and one to unnatural offence with an animal; and I regret to have to report again that in not a single instance was I able to detect spermatozoa, although some of the cases must be presumed to be genuine since the guilt was brought home to the offenders. The examination in these cases has signally failed in the past two years though most careful microscopic search has always been made. Although the rules distinctly state that the stained portions should be cut out and packed in cotton wool, and this point has been twice adverted to in previous reports, forwarding officers still continue to forward the stained cloths rolled up into the smallest possible bundle, in this way damaging the stains and effectively diminishing the chances of identifying their true character. In many of these cases mammalian blood was detected.

IV.—CASES OF SUSPECTED CATTLE-POISONING.

19. Arsenious oxide continues to be the chief instrument of the cattle poisoner, the death from strychnine reported below having occurred in a dog.

TABLE VIII.

TABLE VIII.

Districts received from	Class A.								Class B.										
	Number of cases.	Number of deaths.	Number of cases in which poison was detected.	Number of analyses.	Nature of poisons.				Number of cases.	Number of cases in which poison was detected.	Number of analyses.	Nature of poisons.							
					Arsenious oxide.	Arsenious oxide and orpiment.	Euphorbia tirucalli.	Strychnine.				Arsenious oxide.	Arsenious oxide and orpiment.	Arsenious oxide and calotropis gigantea.	Arsenious oxide, re-algar, orpiment and powdered bangle glass.	Mercuric salt.			
Anantapur ..	7	7	5	16	5	..	..	..	..	..	..	..	..	..	..	..			
Arcot, North ..	2	3	2	10	1	..	..	..	1	1	2	1	..	..	..	..			
Arcot, South ..	1	2	1	7	..	1	..	..	..	..	..	..	..	..	..	..			
Bellary ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Coimbatore ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Cuddapah ..	6	11	3	24	3	..	..	..	..	3	1	..	..	..	..	..			
Ganjām ..	4	6	2	16	2	..	..	..	2	1	4	1	..	..	..	..			
Godavari ..	1	1	1	6	1	..	..	..	..	..	..	..	..	..	..	..			
Kistna ..	4	5	3	20	3	..	..	..	..	..	..	..	..	..	..	1			
Kurnool ..	11	14	10	49	10	..	..	..	2	1	2	1	..	..	..	..			
Madras ..	3	4	2	15	2	..	..	..	1	1	2	1	..	..	..	..			
Madura ..	1	1	..	1	..	..	..	..	..	1	1	1	..	..	..	..			
Malabar ..	3	3	3	17	2	..	..	..	..	..	..	..	..	..	..	..			
Nellore ..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..			
Salem ..	2	2	2	11	2	..	..	..	1	1	1	1	..	..	..	..			
Trichinopoly ..	1	1	1	3	1	..	..	..	..	1	2	..	..	..	..	..			
Tinnevely ..	2	2	2	6	2	..	..	..	..	1	2	1	..	..	..	..			
Vizagapatam ..	4	4	4	16	4	..	..	..	3	2	3	2	..	..	..	..			
..	3	3	3	8	3	..	..	..	1	1	2	1	..	..	..	..			
Total for the { 1895 ..	55	69	44	225	42	1	..	1	17	11	22	10	..	..	..	..			
.. { 1894 ..	50	57	36	178	34	1	..	1	25	23	36	19	1	1	1	1			

B.—MISCELLANEOUS ANALYSES.

EXAMINATIONS made for Government Departments, &c.

Received from	Nature of substance.	Number of examinations.	Total number of examinations for the year.
Assistant Engineer, Military Works, Bellary Sub-Division.	Water	1	1
Assistant Superintendent of Police, North Arcot ..	Counterfeit Coins	3	3
Additional Medical Officer, General Hospital, Madras.	Urine	1	1
	Salt	517	517
	Toddy	1	1
	Beer	33	33
	Sonti Soru	1	1
	Kambu Syrup	1	1
	Kambu Rice	1	1
	Soda Earth	1	1
	Arrack	1	1
	Arrack from Jack fruit	11	11
	Cashew Spirit	1	1
	Raisin Wine	2	2
	Margosa Sap	4	4
	Lakhium	1	1
	Adulterated Opium	1	1
	Suspected Intoxicant	2	2
	Adulterated Whisky	1	1
	Suspected Plant	1	1
	Opium	1	1
	Porter	5	5
	Earth	1	1
	Rum	9	9
	Sugar	5	5
	Jey's Disinfecting Powder	5	5
	Carbolic Powder	1	1
	Carbolic Acid	1	1
Board of Revenue, Madras			595
Commissariat Department, Madras			13

Examinations made for Government Departments, &c.—cont.

Received from	Nature of substance.	Number of examinations.	Total number of examinations for the year.
	Blasting Gelatine	10	10
	Gelignite	1	1
	Dynamite	8	8
	Kerosine Oil	34	34
	Mineral Oil	3	3
	Lubricating Oil	1	1
	Drill Oil	1	1
	Shale Oil	1	1
	Methylated Spirit	8	8
	Kopp's Ale	2	2
	Suspected Dutiable Liquid	1	1
	Alcool de menthe	1	1
	Lemon Juice	1	1
	Perfumed Water	1	1
	Rum Shrub	1	1
	Dutch Butter	1	1
	Gold Thread	1	1
Collector of Sea Customs, Madras	Fernet Vedona de liqui Branca	1	1
	Tonic Wine	1	1
	Caoutchoucine	1	1
	Rose of Latakia	1	1
	Imperial Fragrant Rose Sprayer	1	1
	Cavona	1	1
	Halur Wine	1	1
	Essence of Lemon	1	1
	Bassara	1	1
	Beer Heading Solution	1	1
	Salted Selected Butter	1	1
	Quinine Tonic	1	1
	Stearine Candles	1	1
	Solution of Essence of Phomosa	1	1
	Tincture of Cantharides made in Germany	1	1
	Caoutchoucine	15	15
Collector of North Arcot	Caoutchoucine	1	1
Do. of South Arcot	Methylated Spirit	15	15
	Earth oil	1	1
	Vermifuge Ala Santonine	1	1
Chemical Laboratory	Whisky	1	1
Chemical Examiner, Mysore	Opium	1	1
District Medical Officer, Bellary	Opium	1	1
Do. Ganjām	Opium	1	1
Do. Salem	Opium	1	1
Executive Engineer, Military Works, Madras	Water	6	6
Do. do. Bangalore	Water	2	2
Do. do. Division	Water	1	1
Fort Surgeon, Madras	Rock	3	3
Jail Department—	Clinical Thermometers	3	3
Medical Officer, Her Majesty's Penitentiary, Madras	Water	8	8
Do. District Jail, Madras	Water	9	9
Do. do. Bellary	Water	2	2
Do. do. Nellore	Water	1	1
Do. do. Cuddalore	Corrosive Sublimate Lotion	2	2
Do. Central Jail, Trichinopoly	Water	1	1
Do. do. Rajahmundry	Water	6	6
Do. Hill Jail, Russellkonda	Water	1	1
Do.	Soils	3	3
Superintendent, Hill Jail, Párvatipuram	Water	6	6
Do. Central Jail, Vellore	Water	3	3
Executive Engineer, Coimbatore Division	Water	1	1
Medical Officer, 4th Burmah Battalion, Burmah	Wheat	1	1
Do. 21st Madras Pioneers, Bangalore	Beer	2	2
Do.	Water	1	1
Do.	Butter	1	1
Do. Station Hospital, Madras	Lime Juice	1	1
Do. do. Mount	Unfermented Marsala	1	1
Do. do. Pallavaram	Unfermented Wine	15	15
Do. do. Poonamallee	Water	8	8
Do. do. Ramandrug	Water	4	4
Do. Regimental Hospital, Vizagapatam	Water	3	3
Do. do. Trichore	Water	1	1
Do. Military Female Orphan Asylum, Madras	Water	2	2
Do. 11th Regiment, Madras Infantry, Vizianagram	Water	8	8
Do. 28th Regiment, Madras Infantry, Quilon	Water	3	3
Do. Cocanada	Thermometers	5	5
Medical Storekeeper to Government, Madras Command.	Rectified Spirit	4	4
	Carbolic Powder	7	7

Examinations made for Government Departments, &c.—*cont.*

Received from	Nature of substance.	Number of examination.	Total number of examinations for the year.
Municipalities and District Boards.	Madras Water	9	10
Trichinopoly	Incrustation in water-pipe	1	
Ootacamund	Water	1	
Bellary	Water	1	
Cochin	Water	9	
Salem	Water	4	
Gooty	Water	1	
Malabar	Water	2	
Walajapet	Water	1	
Chittoor	Water	2	
Bimlipatam	Water	2	55
Tirupati	Water	6	
Bangalore	Water	3	
Officer in charge of Telegraph Stores, Madras	Water	4	
Sanitary Commissioner, Madras	Zinc	10	
Senior Medical Officer, Section Hospital, Bangalore	Bichromate of Potash	1	
Do. General Hospital, Madras	Copper Sulphate	2	
Second-class Magistrate, Hosur	Water	1	
Stationary Sub-Magistrate, Pattukottai	Battery	2	
Surgeon, First District, Madras	Salt Earth	1	
Superintendent of Sea Customs, Tellicherry	Confection suspected to contain opium	3	11
Do. of Central Museum, Madras	Arrack	1	
Do. of Stationery, Madras	Kainit	1	
Do. of Government Press, Madras	Minerals	1	
Do. of Gun Carriage Factory, Madras	Inks	2	
Taluk Magistrate, Ongole	Type Metal	11	
Private Parties and Firms	Coal	1	
	Illicit Salt	1	
	Jar of Liquor	5	
	Water	1	6
	Kerosine Oil	10	
	Brandy	9	
	Dynamite	1	
	Stonite	6	
	Carbonite	2	
	Clay	1	
	Cement	9	
	Chalk	5	
	Chunam	1	54
	Concrete	1	
	Cotton Thread	2	
	Stained Articles	3	
	Nitrate of Soda	2	
	Mineral	1	
	Mineral	1	
	Total	1,017	1,017

20. *Analyses for the Board of Revenue*—were more numerous than in recent years, and included the examination of 50 samples of various country-made alcoholic liquors as to their wholesomeness, several samples of liquors brewed from cashew nut, jack fruit, kambu syrup, sap of the margosa, and a preparation known as sonti soru. In some of these instances the investigation being continuous is still proceeding. The number of salt analyses performed during the year was 517 and strained the energies of the staff to the utmost. In this section, the work has almost doubled in the past five years.

21. *Analyses for the Customs Department*—included the examination of articles under the Explosives, Petroleum, Tariff, and Merchandise Marks Acts. Several samples of vegetable oils recently examined have been found to be adulterated, some of them with petroleum, and in other instances imported articles have turned out to be anything but what they were declared to be. It is impossible to convey any adequate idea of the sophistications attempted by manufacturers or of the work involved in the examination for genuineness of these imported articles. The examination in such cases often requires a dozen different procedures occupying as many days before an opinion is arrived at. The work in this direction is increasing and the results of recent analyses show that these examinations will be needed even more frequently.

22. *Examination of Waters*.—The majority of these were examined with a view to ascertain their potability. Periodical analyses of waters used in jails were performed throughout the year. In several cases the filtered water was worse than the unfiltered, showing the inefficiency of the ordinary sand-filters. In one case the water after

filtration gave results indicating dangerous pollution, and on investigation it turned out that the filtering medium had been changed and contaminated sand had been employed to renew it.

The whole subject of water examination has recently been advanced in such a striking way by the application of bacteriological methods, that there is a tendency to overlook the value of the services which the chemist and the practical sanitarian can afford in this respect. To such an extent is this the case that there is a tendency, not only among the general public but even among more educated persons, to deny any value at all to a chemical examination of water as a test of potability and to trust solely in the results of bacteriological tests. As a matter of fact, the most ardent bacteriologists themselves do not go this length. It would seem advisable to review the position of affairs and to realise how we stand in this matter, for if we can with certainty do with one method of testing only, it would be a serious delusion and waste of time to rely upon the other.

Certain diseases are known to be caused or propagated by water, and the main object of water examination is to detect the presence, or to certify to the absence, of these disease causes. If the active agents in each case were known and if they could by any tests be identified, then water examination would be directed simply to ascertaining their presence, and a water containing any of them would be pronounced unsafe for drinking. Our knowledge of the causation of such diseases, however, is still far from complete, although in a few cases it has advanced to such a stage that there seems every reason to believe that the actual causes of infectious diseases are certain micro-organisms. All diseases are not caused by micro-organisms, all micro-organisms in water are not disease-causing (pathogenic), and all pathogenic micro-organisms are in actual practice not easily identified. If the search for these known specific micro-organisms in water fail, that would not be proof of their absence or of the safety of the water. In all these circumstances we must fall upon indirect methods of obtaining evidence of their probable presence or absence.

The case for *chemical analysis of water* stands thus :—

It is held without dispute that the presence of organic matter in water indicates that it has become contaminated; and that if this contamination be of animal origin it is of far more serious importance than if it were derived from a vegetable source. Animal organic matter is derived from the bodies and excreta of animals, and from these sources are also mostly derived those specific disease-causing particles which the bacteriologist seeks to demonstrate. For example, it is held that cholera or typhoid fever is in most cases spread by contamination of water with the stools of patients suffering from these diseases. If the microbe-causes of these diseases are found in water it is at once very properly condemned; but if any faecal matter at all is detected in water it is likewise deserving of condemnation, because if faecal matter can once gain access to water it may do so again at any time charged with great potentialities for harm. The chemist aims at discovering whether the water contains such organic matter, which for the reason just explained is designated "dangerous."

There are no tests by which small amounts of faecal matter diffused through great volumes of water can be directly identified, and therefore indirect methods must be had recourse to. Faecal matter rarely gains access to water unaccompanied by urine, and the latter contains much chlorides and by decomposition always produces large amounts of free and saline ammonia. If the chemical examination reveals the presence of large amounts of these constituents, and their presence cannot be satisfactorily accounted for, the presumption is that they were derived from urine, which is tantamount to evidence of faecal pollution. As to what constitutes a "large amount" is a matter for expert opinion, and water analysts have accepted certain standards; but it is clear to every one who has had much experience in the application of these standards that hard-and-fast rules are out of place, and that to pass a water because some one or other indication of pollution is in small amount would be as misleading as to condemn a water which has an excess of some others. Wide discretion must be employed, the whole analysis passed in review, and the probabilities arrived at from concurrence of indications rather than from the "amounts" of one or two of them. While chemical analysis may in this way afford warning of dangerous pollution existing or pre-existing and likely to recur, the verdict must to a great extent depend also upon the practical

sanitarian, who should in such cases investigate the surroundings and drainage area of the water-source. For, after all, if such area is obviously polluted, a chemical or any other kind of examination of the water becomes superfluous; and it must even be condemned notwithstanding the results of chemical examination to the contrary, although the probability of such a water passing the chemical tests is remote. If, on the other hand, there is no obvious pollution and a chemical analysis points to the probable occurrence of dangerous contamination, it directs the sanitarian to search for it and either to discover it or to prove its absence before disregarding the indications afforded by the chemical analysis. It does sometimes happen that chemical analysis fails to furnish evidence of pollutions which nevertheless do occur. For example, the amount of dangerous pollution may be so small as not to give results exceeding the limits of safety expressed in terms of "Ammonia," &c. Further, the water may be sampled during the intermission of pollution which has easy access at other times and so elude the chemical tests of impurity. Instances such as these are exceptional, and the value of water analysis lies in that it can, and does, afford evidence of present and future danger when there is no other evidence available to give the warning; but the absence of chemical evidence of dangerous impurity must not be too rigidly construed into proving that the water is absolutely safe.

The bacteriologist's case stands thus:—Since highly-polluted waters contain a great number of bacteria and the purest waters only a few, at first a method, by which the number of germs originally contained in a definite volume of water was counted, was made the basis for judging its quality. Koch prescribed 100 germs per cubic centimetre as the limit for a good drinking-water, and this test has in capable hands detected danger in certain cases before sufficient impurity had accumulated to declare itself in the results of chemical testing. Microbe-counting as a test of the efficiency of municipal sand filter-beds is cheaper, simpler and in the end more reliable than chemical methods of testing, for after all the main object of filtering water is the interception of microbes. Sand filter-beds do not, however, arrest them until after the formation of the slimy layer (schlamm), and when this layer becomes too thick to permit of sufficient water passing through it the slime has to be scraped off and permitted to re-form before the filter can act efficiently as a microbe-catcher. The *modus operandi* of sand filtration has only recently come to be rightly understood, and such information cannot be too widely published. The inefficiency of sand-filters for domestic use is now easily understood; and periodical microbe-counting constantly employed as a test of efficiency of a filter-bed is of the highest value. The employment of this test in the investigation of the classical Altona-Hamburg cholera epidemic in 1892 and 1893 clearly established its value in this respect. Hamburg is supplied with water drawn from the Elbe above the city; Altona with water which has previously received Hamburg sewage. In Hamburg, which had the purer water-supply, the incidence of cholera first carefully filtered through sand, while the Hamburg supply was unfiltered. The coincidence becomes more striking from the fact that on the Hamburg side of a street, which formed the boundary line of the two water-supplies, the cholera raged fiercely, while the inhabitants on the Altona side remained free. This was not all. Later on cholera attacked Altona while Hamburg remained free. This was not all. Later on applied to the Altona water showed a rise from 50 to over 1,000 per cubic centimetre, thus demonstrating that the filter-beds were not performing their functions accurately. An examination showed that the sand and slime of one of the filters had got frozen, and was unable to keep back microbes. So that the quantitative bacteriological test applied continuously to the same water may in this way afford early and valuable information as to the efficiency of sand filter-beds, while chemical examination might fail to do so. The applicability of microbe-counting beyond this limit, however, is surrounded with such difficulties that, as a test in the circumstances under which the examination of water for potability is generally called for, it is not employed. For example, there are so many circumstances which modify the multiplication of bacteria—the nature of the water, the period which has elapsed between sampling and sowing of the germs in the culture medium, the temperature at which the sample of water has been kept, the nature of the bacteria, &c.—that a numerical standard can be adopted only with limitations which are practically impossible. A comparison of the numerical results in different samples, unless those samples have been examined under exactly similar

conditions—which are impracticable—would lead to serious errors of judgment. The comparative enumeration of microbes in the same water taken at different times may enable the bacteriologist to say that a sample previously pure has acquired impurity, but the absence, or even the paucity, of bacteria cannot be relied on as proof of the absolute safety of the water, and, as in the case of chemical analysis, the results apply only to the water at the time of sampling, for traces of contamination by intermittent pollution may fail to give the indications of danger in a few cubic centimetres of the water employed for the bacteriological tests. Further, this method can no more tell us whether the germs are dangerous or innocent than chemical analysis can reveal the difference between dangerous animal, and comparatively harmless vegetable, organic matter. Of far greater significance, however, is the qualitative bacteriological test which aims at identifying the normally-occurring forms in water and of distinguishing the abnormal and possibly disease-causing ones. Each of these has numerous imitators, and while discussions are not dead as to whether such differentiated forms are varieties or merely stages in the evolution of the article, the practical worker has to apply the results of his observations as well as he can under the circumstances. The discovery of the bacillus of cholera in a sample of water would at once decide the question as to whether that water is dangerous or not. But even bacteriologically impure water may be drunk with impunity if the infective agent possesses at the time a low degree of virulence. Mr. Hankin quotes such an instance, in which many natives, who were habitually drinking the water of a well proved to be infested with cholera microbes, escaped; but, of course, that would be no argument against the bacteriological test any more than we can argue against the right of the chemist to condemn an organically-polluted water in which sewage may by good fortune remain for a long time free from the specific virus of disease.

Bacteriological tests of water are as yet not sufficiently advanced to render chemical analysis unnecessary. They may afford positive evidence of the existence of certain disease-causing agents, though it must be very rarely that such agents would find their way into water without being accompanied by dangerous organic matter detectable by chemical analysis; while negative bacteriological results would not necessarily prove that the specific microbes are absent or that a water on which chemical analysis throws suspicion is really safe. Mr. Hankin, writing upon the superiority of "microbe-counting" over chemical analysis as a test of the effectiveness of municipal filter-beds, says: "I do not wish to deny that for other purposes the chemical test may be the more valuable of the two." Chemical examination remains as necessary a part of the enquiry into the quality of drinking water as it ever has been, and, as Dr. Stevenson observed at the Liverpool Sanitary congress (1894), in no case can its results be set aside as illusory.

The fact is that in order to come to a satisfactory conclusion in an enquiry as to the potability of a water, it is necessary to call in the chemist, the bacteriologist and the practical sanitarian. The following case so clearly brings this out that it forms a fitting moral with which to conclude these remarks.

The water-supply from a well was chemically examined by me in 1890, and I rejected it for drinking purposes pointing out that the results of the examination afforded grounds for strong suspicions that the water was dangerously polluted. Twelve months afterwards the same water was examined with results, which led to my remarking that the drainage area of the well should be examined. In the following year a third chemical examination resulted in the note that there was evidence which pointed to "some old contamination." Yearly examinations since then have shown that the organic matter which was active in 1890 was gradually becoming changed. The population using the water was all this time seriously affected with epidemic dysentery, despite the measures adopted locally to mitigate it. The Sanitary Commissioner to Government was deputed to investigate the cause and he made an exhaustive local enquiry into all the possible conditions which are known to be usually associated with the occurrence of this disease. Prompted by the results of the periodical chemical examinations of the water, he was led to search the drainage area of the drinking water-well, and within 85 yards of the well, he discovered an area which had for many years been used as a night-soil dépôt. On digging pits, considerable amounts of matter were exposed which could still (*i. e.*, six years afterwards) be recognised as faecal. The first chemical analysis was made in 1890, one month after

23. The service books of the establishment are up to date, and the inventory of valuable stock has been kept and duly checked in accordance with G.O., No. 920, Financial, of 18th September 1893.

24. A general statement of medico-legal work performed, embodying the main features of the previous tabular statements, is appended as usual.

24. A general statement of medico-legal work performed, embodying the main features of the previous tabular statements, is appended as usual.

IX.—TABULAR Statement for the year.

[illegible]

ORDER—No. 746, Public, dated 15th July 1896.

The most salient feature in the report of the Chemical Examiner for the year				
		Salt.	Beer, spirits, &c.	Total.
* 1895	..	517	78	595
1894	..	404	41	445
Increase	..	113	37	150

1895 is the marked increase * in the number of salt and other miscellaneous analyses undertaken for the Board of Revenue. The difficulties attending these examinations and those for the analyses of the Customs Department are referred to in paragraphs 19 and 20. In paragraph 21 Surgeon-Major Van Gevzel

The most salient feature in the report of the Chemical Examiner for the year 1895 is the marked increase * in the number of salt and other miscellaneous analyses undertaken for the Board of Revenue. The difficulties attending these examinations and those for the analyses of the Customs Department are referred to in paragraphs 19 and 20. In paragraph 21 Surgeon-Major VanGeyzel compares at some length the relative values of chemical analysis and bacteriological research as tests of potability in the examination of waters. His dissertation is interesting, but out of place in an administration report which should be confined to a record of work done. Excepting the increase referred to above, the work turned out by the department in the year under review was less than that in each of the two preceding years.

2. The total number of cases of suspected human poisoning was six less than in 1894, while the percentage of detections fell by about five † per cent. Inorganic poison was found in forty-seven cases as against fifty-six in 1894. The number of detections of organic poison was the same, viz., seventeen. The Chemical Examiner will be requested to furnish a separate report giving particulars of the case mentioned in paragraph 12 (d).

					Percentage of detections.
† 1894	∴	∴	∴	∴	66.36
1895	∴	∴	∴	∴	61.53
					4.83

3. In the 64 cases in which poison was detected, 39 deaths occurred out of 125 persons affected. The corresponding figures for the previous year were 73, 45 and 175 respectively.

4. The presence of blood was established in twenty-one out of forty-one cases of suspected blood stains involving the examination of 155 articles. In 1894, forty suspected cases showed blood in twenty, 200 articles being examined.

5. Nine cases of seminal stains were examined against eight in 1894. The number of detections was, as in the previous year, *nil*. This failure is partly ascribed by the Chemical Examiner to the stained cloths being rolled up in a very tight bundle, thereby damaging the stains and diminishing the chances of identifying their true character. The existing rule as to packing in cotton wool is No. 8 in G.O., No. 1062, Public, dated 20th May 1883, referred to by the Surgeon-General in paragraph 2 of his covering letter. It applies, however, to brittle materials only. The Surgeon-General will be requested to submit a revised rule of more extensive application.

6. There were seventy-two cases of cattle-poisoning as against seventy-five in 1894. Arsenious oxide continued to be the chief instrument of the cattle-poisoner. It was employed in fifty-two out of the fifty-five cases detected. The percentage of detections under this head has steadily declined during the past four years:—

1892	..	..	..	..	..	..	..	..	85.7
1893	..	..	..	..	..	..	..	..	84.04
1894	..	..	..	..	..	..	..	..	78.6
1895	..	..	..	..	..	..	..	..	76.4

7. The number of miscellaneous analyses was 1,017 against 910 in the previous year. More than half of this number was for the Board of Revenue. One hundred and sixty-nine samples of water were examined—159 for Government departments and municipalities and 10 for private parties.

8. The report has been carefully drawn up. It is observed that no mention is made of the case of culpable homicide amounting to murder, which was twice tried in the Madras High Court in August 1895 and ended in acquittal, although the Acting Chemical Examiner deposed to the discovery of white arsenic in a soluble form in the majority of the articles sent to him for examination.

9. The Government is pleased to note the remarks in paragraph 6.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Surgeon-General.
„ the Sanitary Commissioner.
„ the Revenue Department.
„ the Judicial Department.
„ the Local and Municipal Department.
„ the Inspector-General of Police.
„ the Secretary to the Government of
Hongkong, with C.L.

„ all District Magistrates.
„ all District Magistrates.
Editors' Table.

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