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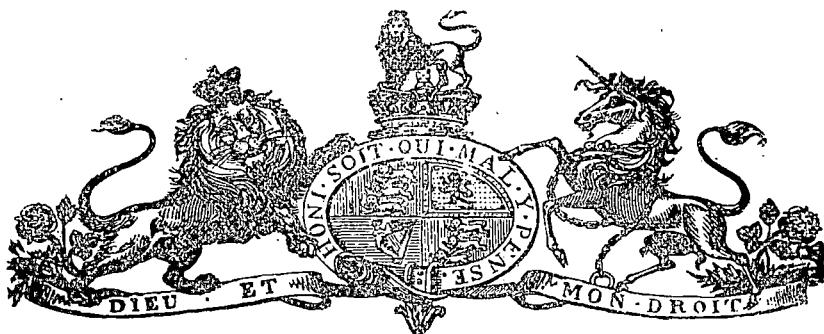
1889.

PARLIAMENT OF TASMANIA.

GOVERNMENT ANALYST:

REPORT FOR 1888.

Presented to both Houses of Parliament by His Excellency's Command.



REPORT of the Government Analyst for the Year 1888.

Government Laboratory, Hobart, 11th January, 1889.

SIR,

I HAVE the honor to enclose herewith Statement of examinations of various substances made in this Laboratory during the year 1888. The number (2000) is greatly in excess of that for any previous year; more than three-fourths were received during the second half of the year.

With this press of work, most of it admitting of but little delay, it was only possible to cope through the strenuous exertions and with the cordial co-operation of my two assistants, who devoted daily much time in addition to the recognised hours of attendance. I should be glad if some recognition of their services could be granted.

With more work more inconvenience has naturally been experienced from the imperfect character of the present laboratory; in connection with which also no facilities exist for practical instruction in various subjects connected with the mining industry, &c.: provision for this was first recommended in September, 1885.

I have the honor to be,
Sir,

Your obedient Servant,

W. F. WARD,

*Associate Royal School of Mines,
Government Analyst.*

The Hon. the Chief Secretary.

STATEMENT showing Number of Examinations made in the Government Laboratory during the Year 1888.

<i>Substance examined.</i>	<i>For the Government.</i>	<i>For Municipal Districts.</i>	<i>For Private Individuals.</i>	<i>TOTAL.</i>
Tea	1293	2	...	1295
Spirits	3	38	...	41
Hop Bitters.....	4	...	...	4
Ale and Beer .....	...	1	1	2
Milk.....	...	2	3	5
Water	16	2	3	21
Sediment from Water.....	1	...	1	2
Drugs	7	...	...	7
Sundry, for Poison	6	1	4	11
Clothing, for Criminal Cases.....	11	...	...	11
Silver and other Ore	19	...	508	527
Coal.....	...	...	5	5
Clay.....	...	...	5	5
Manure .....	...	...	2	2
Kerosene	30	...	...	30
Paint	10	...	...	10
Tobacco	6	...	...	6
Vaccine Lymph	2	...	...	2
Sundry.....	3	...	9	12
	1411	44	541	1998

[NOTE.—The figures in parentheses show the total number of samples examined in each case.]

TEA. (1293.)

Owing to complaints of inferior quality, the examination of all tea imported was, by order of the Hon. Treasurer, resumed in May last by this Department. Some friction ensued, caused in the first instance by unavoidable delay in examining two hundred and thirty samples first received, but on 1st July further assistance was provided, and an arrangement made by which, in nearly all cases, samples have been since then examined and released (when of fair quality) within a few hours, more than one thousand having been thus dealt with.

The two following extracts from leading writers on "Food Adulteration," and others from correspondence with the Hon. Treasurer, refer to the question of analysis and to my recommendations of a *minimum* standard (for judging as to the admissibility of tea) sufficiently high to counteract any tendency to import tea not readily saleable elsewhere, any standard for a product subject to such great natural variation as this being of necessity conventional:—

Each trade has its own besetting adulteration, and as in the milk trade the prevalent sophistications are watering and skimming, so in the Tea trade the besetting malpractice is the selling of partially exhausted tea, and the main efforts of the Tea Analyst should be directed to this form of adulteration. The mixing of foreign leaves with tea and the mineral adulterations are comparatively trivial, but nevertheless the public analyst is frequently called upon to deal with them.—(Wanklyn.)

The Chinese . . . have the candour to specify them as "lie teas," and if they are mixed with other teas the Chinese merchant gives a certificate stating the proportion of "lie tea" present with the genuine leaf.—(Hassall.)

Added "twigs," broken up small and artificially coloured, have also been found here in amounts ranging from two or three up to twenty-three (23) per cent. Tea with eight or nine per cent. of sand, and warehouse "sweepings" containing much filth, have been condemned also. Tea which can be shown to be actually deleterious is but seldom met with; but in examining all imports the point has always been kept in view that the object of most adulterations practised is to increase "weight and bulk," and that consequently a tea largely mixed with any of the substances specified above ceases to be of that "proper substance, nature, and quality" which it is one of the objects of the Public Health Act to ensure to the retail purchaser. I therefore submit that the case of partially exhausted tea is on all-fours with that of over-watered spirits or milk. In conclusion, I would point out that the adulteration with "lie tea" has greatly decreased of late years, and that the adoption of the above standard must have the same effect (as regards this colony) in the matter of exhausted leaves.

It is, therefore, plain that these samples were not of a similar quality, and the tea being described as a "blend," the presumption is that it was not well mixed before packing.

In the light of this and previous results of re-sampling from another package, it is manifest that any system (short of the impracticable one of opening many cases of each consignment) must give a more or less imperfect indication of the quality of the whole, and, also, that two portions of an incompletely "blended" tea may differ sufficiently to ensure the passing of one and condemnation of the other; but it should not be lost sight of that this can only occur where very inferior tea forms part of the "blend."

A sample of what is known as "post-and-rail tea" is enclosed, to illustrate the entire reasonableness of condemning teas containing an undue proportion of twigs.

A tea supplied to the Launceston Hospital was considered of too low a quality for general consumption, and, consequently, still less suitable for hospital use.

A packet tea, forwarded by the Superintendent of Police, Oatlands, was found to be damp (twelve per cent. of moisture), musty, and covered with a white fungoid growth. It was reported as unfit for consumption.

The lowest percentage of "extract" obtained was 26.5; five samples yielded less than 2.5 per cent. of "mineral matter soluble in water;" others gave 13.5 per cent. of "twigs" and 14.4 per cent. of mineral matter, including 9 per cent. of sand.

SPIRITS (41).

Three samples of "Sam-shoo," a rice spirit, were examined for the Collector of Customs, attempts having been made to pass this spirit as a medicine. A fourth sample was retailed in Hobart, also as "medicine," the average strength being about forty under proof, *i.e.*, containing 60 per cent. of proof spirit.

Of twenty-one Spirits received from Oatlands six were found to be unduly watered, ranging from 26.67 to nearly 40 per cent. under proof. A nominal fine of one shilling was imposed in each case, although the latter result shows the addition of about sixty-six parts of water to one hundred of proof spirit (the Act allowing only half that proportion of added water), the former result indicating thirty-six parts only to one hundred of spirit.

HOP BITTERS (4).

Examined for alcohol, and found to contain from seventeen to twenty-seven per cent. of proof spirit.

WATER. (21.)

Most of these samples were examined at the instance of the Central Board of Health, in connection with outbreaks of disease in various parts of the country, more or less contamination being discovered in nearly all cases. Two waters were examined for the Sanitary Officer, Launceston, and two others as to their suitability for purposes of irrigation.

DEPOSIT FROM WATER. (2.)

Mud dredged from the Derwent near the anchorage of the *Egeria* was found to yield no evidence of contamination with the sewage brought down by the Hobart Rivulet.

A deposit taken from a water-pipe was found to consist to a great extent of decaying vegetable matter.

DRUGS. (7.)

Two drugs examined for the Launceston Hospital were both found to be somewhat deficient in strength.

Various patent medicines forwarded by the Collector of Customs were tested for alcohol, the strength in one case being much above proof (27 per cent.) This preparation is said to be occasionally used as an intoxicant.

EXAMINATIONS FOR POISON. (11.)

The substances examined were bread, potato, sugar, tea, meat, and various medicines. The suspicions entertained as to attempted drugging, or poisoning domestic animals, were only in one case supported by the results of analysis.

CLOTHING IN CRIMINAL CASES. (11.)

The results in one case were purely negative. Evidence was given in connection with another at both the Police and Supreme Courts.

SILVER AND OTHER ORE. (527.)

Most of these ores were assayed for silver, or silver and lead, but many were also examined for gold, tin, copper, nickel, iron, carbon (graphite), and mercury. Samples of "tailings" were found to contain much gold, but it is probable that these represented rather the "blanket sand" than the bulk of the tailings.

In very few cases was gold in appreciable quantity found associated with the silver-lead ores, although it was always sought for.

The old idea, still prevalent, that fine-grained galena is richer in silver than that which is coarsely crystalline, was disproved again and again by the results of assay. Of two specimens specially examined which yielded equal percentages of lead, the fine-grained contained silver at the rate of 34 ounces, and the coarse-grained 105 ounces to the ton.

It would be well that special attention should be again drawn to the fact that although ore containing galena may be readily concentrated by washing, in some cases the sulphide of silver present is washed away at the same time to such an extent that the concentrated ore is poorer in silver than the raw ore.

This was found to be the case with the Mount Claude galena examined some years ago.

COAL. (5.)

The ash present in these Coals varied from 9·5 to 25 per cent.; the former comparatively low proportion was, however, associated with much Sulphur (2·7 per cent.)

CLAY. (5.)

Four of these clays were found to be suitable for brick-making, and the fifth for the manufacture of cement.

KEROSENE. (30.)

No attempt appears now to be made to import Kerosene "flashing" at a temperature below the limit fixed by "The Customs Amendment Act."

PAINT. (10.)

Sections of paint-work received from the Government Architect, and dry colours from the Colonial Storekeeper.

TOBACCO. (6.)

One sample contained 19 per cent. of water and 5·2 per cent. of sand.

VACCINE LYMPH. (2.)

Examined microscopically.

SUNDRY. (12.)

These included—

Liquorice, with 18 per cent. of added insoluble matter, which was also honeycombed by grubs.

Flour supplied to New Norfolk Asylum.

Conglomerate formed on the Mersey Bar by the deposition of the carbonate of lime brought down in solution by the river water.

Tinplate tested for lead before use for jam-tins; and other examinations for the Defence and Telegraph Departments.

W. F. WARD, *Associate Royal School of Mines,
Government Analyst.*