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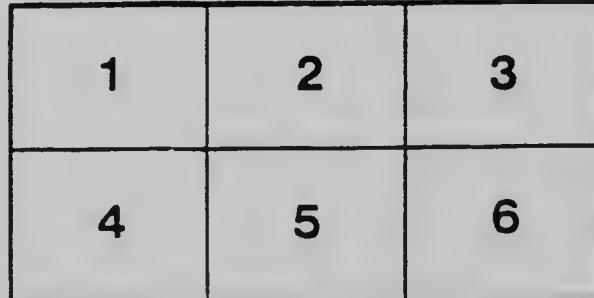
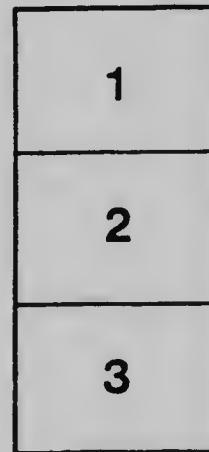
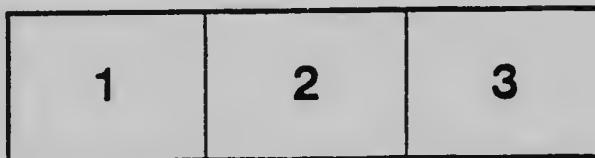
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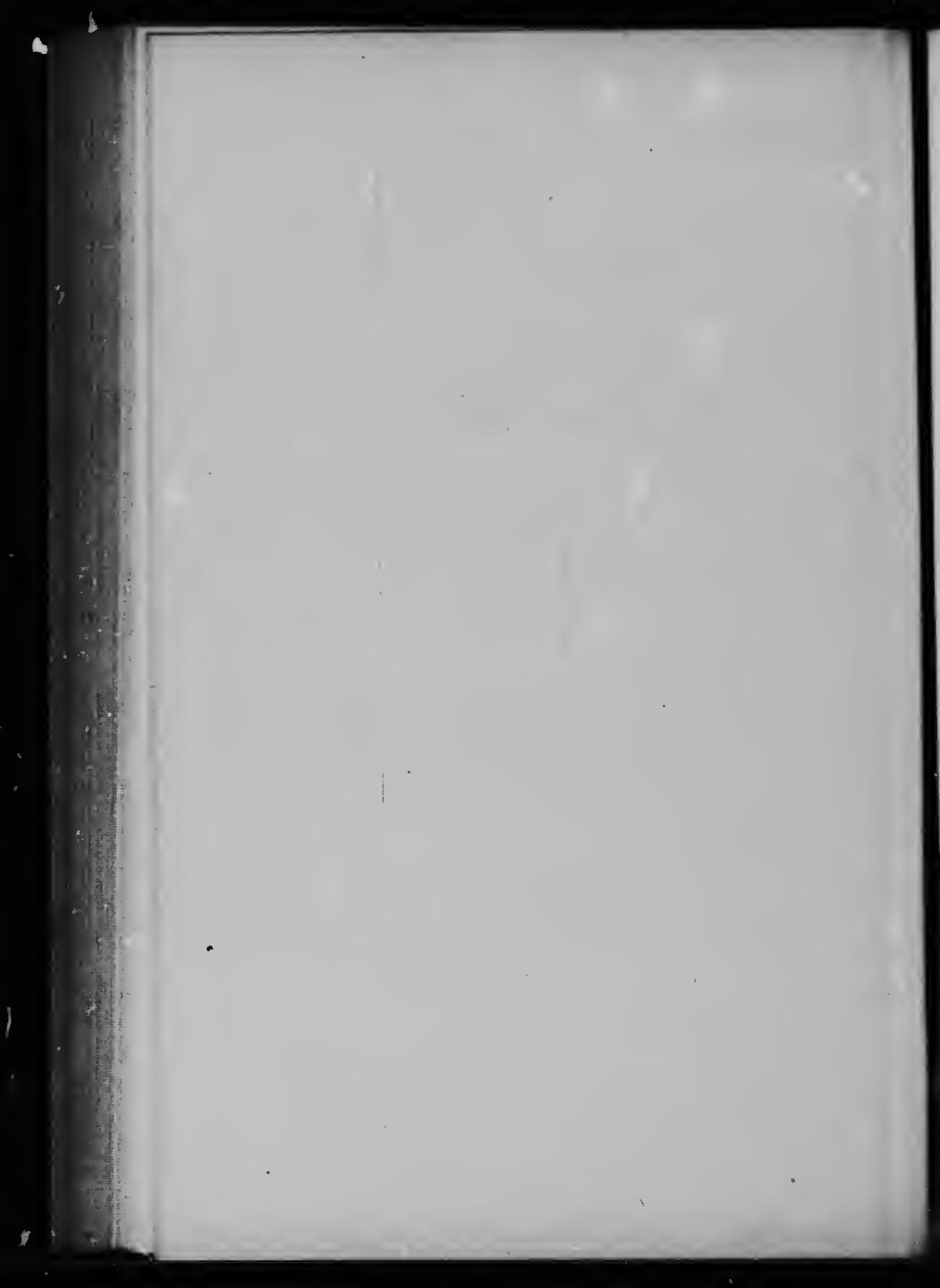
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illustrent la méthode.



O. H. M. S.

*B. J. Gerald*  
Deputy Minister.

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LABORATORY  
OF THE  
INLAND REVENUE DEPARTMENT  
OTTAWA, CANADA.

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BULLETIN No. 168

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TINCTURE OF OPIUM.

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BULLETIN No. 168

TINCTURE OF OPIUM.

OTTAWA, December 16, 1908.

W. J. GERALD, Esq.,  
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report upon 31 samples of Tincture of Opium, (commonly known as Laudanum). This is a very important preparation of Opium, and its activity is due to its content in morphine. *Opium* may contain anywhere from 6 to 15 per cent. of Morphine (Allen. Commercial Organic Analysis; Vol. III, part 2, page 333). This great variability of the crude drug makes it necessary that its alcoholic extract should be carefully standardized before being employed in preparing the Tincture. Minute directions are given in the British Pharmacopœia for the valuation of the Extract, and for the manufacture of the Tincture. The finished Tincture should contain 0·75 grammes of morphine (anhydrous), in each 100 cubic centimetres. Since it is practically impossible to keep an alcoholic tincture at absolutely constant strength, under ordinary conditions of pharmacy, the B. P. fixes definite limits (maximum and minimum) for this tincture, requiring that it shall not exceed a morphine strength of 0·80 nor fall below a morphine strength of 0·70 grammes per 100 cubic centimetres.

The Tincture of Opium of the United States Pharmacopœia is standardized with equal care; but is a much stronger tincture than that of the B. P. It contains 1·20 to 1·25 grammes of crystallizable morphine per 100 cubic centimetres, being therefore stronger than the B. P. Tincture in the ratio of 5 to 3. The average dose of the U. S. P. Tincture is fixed at 8 drops; while that of the B. P. Tincture is stated to be 5 to 15 drops for repeated administration, or 20 to 30 drops for a single administration.

It is obvious that in all the samples now reported, the intention of the manufacturer has been to meet the B. P. standard.

There is every evidence to show that this very important preparation is of good quality in Canada. Of the 31 samples now reported, 10 are strictly within the limits of B. P. strength, while 6 others are practically within the limits. This interpretation of the results of analysis is made necessary from consideration of the fact that duplicate analyses, made with the greatest care, may differ about 0·020 in terms of morphine

percentage so that (unless one could take the mean of a number of independent analyses of the same sample, a condition obviously impossible in this class of work) we must accept a possible error of 0·020, and consider percentages found between 0·680 and 0·820 as complying with the B. P. standard. Even the extremest variations found maximum = 0·940 morphine, minimum = 0·636 morphine, cannot be considered as indicating any dangerous deviation from the B. P. standard. These cases may be due to some carelessness in manufacture, to evaporation of the solvent through too long keeping in imperfectly closed bottles, or to additions of alcohol or water, with a view to making up loss due to evaporation. A strict interpretation of pharmacopeial directions would classify the samples herein reported as follows:—

	Samples.
Within standard limits.....	16
Above     "     " .....	5
Below     "     " .....	10
Total .....	<hr/> 31

For reasons already given I consider that it would be going too far to describe the 15 samples included under the last two categories as adulterated, although a strict interpretation of the results of analysis might warrant this.

The only previous examination of Tincture of Opium made under the Adulteration Act, is reported in Bulletin No. 60, (January 1899). On that occasion 15 samples were reported, and found to be as follows:—

	Samples.
Morphine content correct.....	8
"     "     high.....	2
"     "     low .....	5
Total .....	<hr/> 15

I beg to recommend the publication of this report as Bulletin No. 168.

I have the honour to be, Sir,  
Your obedient servant,

A. MCGILL,  
*Chief Analyst.*

BULLETIN No. 168—TINCTURE OF OPIUM.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.	Results of Analysis.	Remarks and Opinions of the Chief Analyst.
				Quantity.	\$ cts.				

DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.

1908.									
Oct. 13	Tincture of Opium.	33756	F. J. Harrison, Sydney, N.S.	6 oz..	65	Vendor .....	.....	0.909	Slightly above official strength, R.P., and not up to U.S.P. strength. Standard strength.
" 13 "	"	33757	C. J. Sparrow, Sydney, N.S.	6 " ..	60	" .....	.....	0.860	Practically of R.P. strength.

DISTRICT OF PRINCE EDWARD ISLAND—T. MOORE, INSPECTOR.

Oct. 29	Tincture of Opium.	31416	A. W. P. Gourlie, Summer side.	6 oz..	90	Burroughs, Wellcome & Co., London, Eng.	t .....	0.709	Standard strength.
" 29 "	"	31417	W. B. Dyer, Alberta .....	6 "	72	Park Davis & Co., Walker ville, Ont.	.....	0.812	Practically of R.P. strength.

DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.

Oct. 21	Tincture of Opium.	29849	E. Clinton Brown, St. John, N.B.	6 oz..	90	Vendor .....	.....	0.906	Practically of R.P. strength.
Nov. 6	"	29850	Fairweather Bros., Moncton.	6 " ..	60	Lyman, Sons & Co., Mont real.	Sample from original like labelled Tincture of Opium, prepared according to British Pharmacopoeia.	0.636	Slightly below R.P. strength.

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

Oct. 21	Tincture of Opium.	34477 F. E. Gilbert, Rivière du Loup.	Rivière du 6 oz..	60	Lyman & Son, Montreal.		0.679	Slightly below R.P. strength.
" 21	"	34480 E. O. Cloutier, Rivière du Loup.	Rivière du 6 "	60	W. Brunette & Cie, Quebec.		0.738	Standard strength.
" 21	"	34482 Thos. Kane, Rivière du Loup.	Rivière du 6 "	50	Lyman & Son, Montreal.		0.818	Practically of standard strength.

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

Oct. 29	Tincture of Opium.	886 J. E. St. Onge, Valleyfield	6 oz..	100	Lyman, Sons & Co., Montreal.		0.710	Standard strength.
" 30	"	887 H. Campeau, Montreal	6 "	60	Lyman, Knott & Co., Montreal.		0.688	Practically of standard strength.

DISTRICT OF MONTREAL—J. J. COSTIGAN—INSPECTOR.

Oct. 6	Tincture of Opium.	32781 Dr. Guy, St. John's, P.Q.	6 oz.	60	Not known.....		0.664	Slightly below R.P. strength.
" 10	"	32782 J. C. Sutherland, Richmondymond, P.Q.	6 "	75	Lyman, Sons & Co.		0.680	" " "

DISTRICT OF OTTAWA—J. A. RICKY, INSPECTOR.

Oct. 13	Tincture of Opium.	22706 Clarence H. Lewis, druggist, 6 oz.	Ottawa.	60	Burroughs, Wellcome & Co., London, Eng.	A Sample made from Tr. Opia by diluting with alcohol to R.P. strength. Sold as Tr. Opia B.P.	0.681	Practically of standard strength.
" 15	"	22707 A. R. Farley, druggist, 6 "	Hull, P.Q.	60	Vendor .....	Sold as Tr. Opia B.P.	0.902	Slightly above R.P. strength and not up to U. & P. standard.

DISTRICT OF KINGSTON—JAS. HOGAN, INSPECTOR.

Nov. 3	Tincture of Opium.	36001 Q. G. Johns, Cobourg	6 oz..	50	Vendor .....		0.611	Slightly below R.P. strength.
" 3	"	36002 A. J. Gould, Cobourg	6 "	50	" .....		0.787	Standard strength.

BULLETIN No. 168—TINCTURE OF OPIUM.

Nature of Sample. No. of Sample.	Name and Address of Vendor.	Cost. \$ etc.	Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.	RESULTS or ANALYSIS.		Remarks and Opinion of the Chief Analyst.
					Quantity.	Morphine. P.C.	
Oct. 23	Tincture of Opium.	35199 W. A. Howell, Hamilton.	6 oz..	90 Vendor .....	Labelled Laudanum.	0.340	Slightly above R.P. strength.
" 27	"	35200 W. H. Andrew, Toronto ..	6 " ..	60 Lyman Bros. & Co., Ltd., Toronto.	"	0.641	and not up to U.S.P. Slightly below R.P. strength.

DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR.

Oct.	Tincture of Opium.	No. of Sample.	Name and Address of Vendor.	Cost.	Inspector's Report.	Results or Analysis.	Date of Collection.
Oct. 5	Tincture of Opium.	36089 H. C. Dunlop, Goderich.	6 oz.	1.00 Nat. Drug Co., Hamilton,	.....	0.703	Standard strength.
Nov. 15	"	36088 John D. McKeen, Guelph.	6 " ..	1.20 Vendor .....	Sample made from crac. Tr. Opium jar- chased from Bar- roughs, Wellman & Co.	0.656	Slightly below R.P. strength.

DISTRICT OF LONDON—T. KIDD, INSPECTOR, AND J. TALBOT, ACTING INSPECTOR.

Oct.	Tincture of Opium.	No. of Sample.	Name and Address of Vendor.	Cost.	Inspector's Report.	Results or Analysis.	Date of Collection.
Oct. 16	Tincture of Opium.	34656 W. A. Pond, Windsor, Ont.	6 oz..	75 Dom. Drug Co., Hamilton,	.....	0.728	Standard strength.
" 19	"	34659 Dr. W. L. Smith, London, East.	6 " ..	65 Nat. Drug Co., London ..	.....	0.717	"

DISTRICT OF WINDSOR—J. TALBOT, INSPECTOR.

DISTRICT OF MANITOBA—A. C. LARIVIÈRE, INSPECTOR.

Oct. 28	Tincture of Opium.	35707	F. Whaley, Winnipeg.....	6 oz..	60 Lyman, Sons & Co., Mont- real.....	Labeled Person.....	Tr. Opn.	0.670	Slightly below R.P. strength.
" 28	"	35708	D. W. Bradshaw, Winni- pegs.....	60 " "	60 Vendor.....	"	"	0.784	Standard strength.

DISTRICT OF CALGARY—R. W. FLETCHER, INSPECTOR.

Nov. 24	Tincture of Opium.	35481	E. M. Cawker, Hat.	Medicine 6 oz..	90 Lyman, Sons & Co., Mont- real.....	Labeled Person.....	Tr. Opn.	0.654	Slightly below R.P. strength.
" 24	"	35482	C. T. Pringle, Hat.	Medicine 6 oz..	90 " "	"	"	0.664	"

DISTRICT OF VANCOUVER—J. F. POWER, INSPECTOR:

Oct. 8	Tincture of Opium.	34358	Post Office Drug Vancouver.	Store, 6 oz..	1.50 Nat. Drug Co., Vancouver.....	Labeled Person.....	Tr. Opn.	0.700	Standard strength.
" 8	"	34359	Henderson's Drug Vancouver.	Store, 6 oz..	1.00 Henderson Bros., Van- couver.	"	"	0.894	Practically of standard strength.

DISTRICT OF VICTORIA—D. OSULLIVAN, INSPECTOR:

Nov. 30	Tincture of Opium.	36257	Dean J. J.cockle.....	6 oz..	1.00 Henderson Bros., Victoria.....	Labeled Person.....	Tr. Opn.	0.880	Slightly below R.P. strength;
" 30	"	36258	Hall & Co. ....	6 " ..	75 Vendor.....	"	"	0.888	not up to U.S.P.

