BULLETIN 287 MAY, 1927

Connecticut Agricultural Experiment Station
New Haven, Connecticut

THE THIRTY-FIRST REPORT ON
FOOD PRODUCTS
AND THE NINETEENTH REPORT ON
DRUG PRODUCTS

1926

PART II

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The Thirty-First Report on

FOOD PRODUCTS

and the Nineteenth Report on

DRUG PRODUCTS

1926

Part II

Food and Drug Inspection

By
E. M. BAILEY

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as of

May, 1927

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CONTENTS AND SUMMARY.

Material	Page	Sampled by, or Submitted to: The Station	Sampled by, or Submitted to: The Dairy and Food Commissioner	Total	Adulterated, below standard, or otherwise illegal
FOODS					
Baking Powder, etc.	363	1	7	8	3
Bread	364	4	0	4	0
Carbonated Beverages, etc.	365	0	184	184	29
Cocoa	366	2	0	2	0
Coffee	366	0	1	1	0
"Diabetic" and Special Foods	366	30	0	30	...
Eggs	366	1	40	41	25
Fats and Oils:					
Butter	366	0	5	5	0
Oleomargarine, etc.	366	0	4	4	2
Olive Oil	367	1	5	6	1
Flavoring Extracts:					
Almond	368	0	6	6	0
Vanilla	368	0	1	1	0
Gelatin	368	1	0	1	...
Ice Cream	368	3	385	288	3
Frozen Pudding, etc.	369	1	3	4	...
Ice Cream Cones	369	0	12	12	0
Meat Products:					
Beef Loaf	370	0	1	1	0
Frankfurts, Bologna, etc.	370	0	21	21	15
Hamburg Steak	371	1	3	4	1
Milk and Milk Products:					
Market Milk	371	232	556	788	199[1]
Evaporated Milk	373	1	0	1	...
Cream	373	12	0	12	...
Human Milk	373	2	0	2	...
Spices:					
Mace	373	0	13	13	5
Mustard, Prepared	375	0	12	12	...
Paprika	377	0	14	14	2
Syrup	377	1	0	1	...
Vinegar	378	11	8	19	...
Miscellaneous Foods, etc.	378	13	0	13	...
Total		317	1181	1498	285

[1] Includes 148 below standard only.

Material	Page	Sampled by, or Submitted to: The Station	Sampled by, or Submitted to: The Dairy and Food Commissioner	Total	Adulterated, below standard, or otherwise illegal
DRUGS, ETC.					
Arsenous and Mercuric Iodide, Solution of	381	0	2	2	2
Camphor, Spirit of	381	0	31	31	1
Camphor Liniment	383	0	28	28	6
Dichloramine, etc.	384	0	5	5	0
Formaldehyde, Solution of	385	0	8	8	1
Magnesium Citrate, Solution of	385	1	2	2	...
Potassium Iodide	386	2	0	2	1
Tablets, Hypodermic	386	0	2	2	1
Proprietary Remedies, etc.	386	6	0	6	...
Materials Examined for Poisons, etc.	388	33	0	33	...
Analyses of Factory Wastes, etc. (State Water Commission)	390	5	0	5	...
Total		47	78	124	12
Total for Foods and Drugs		364	1259	1622	297
Babcock Glassware	390	2435	0	2435	64
Index	i				

The Thirty-first Report on Food Products and the Nineteenth Report on Drug Products

PART II

Food and Drug Inspection and Analysis

By E. M. BAILEY

This part of the annual report on foods and drugs summarizes the work done in the calendar year of 1926, chiefly for purposes of inspection and control as required by the Dairy and Food Commissioner.

Some collaborative work upon methods of analysis has been done for the Association of Official Agricultural Chemists. A unit representing the progress of food control in this State was prepared as a part of the Station's exhibit at the New Haven Progress Exposition. An index[1] to the foods and drugs examined in the department for the ten-year period ending Dec. 31st, 1925, and now published, was also a part of the year's work. The chemist in charge has served as a member of the Executive Committee and of the Committee on Recommendations of Referees of the Association of Official Agricultural Chemists; as a member of the Joint Committee of Definitions and Standards; and as a consultant to the Council on Pharmacy and Chemistry of the American Medical Association.

For the analytical work herein reported credit is due to Messrs. Andrew,[2] Shepard, Fisher, Nolan and Mathis and to Miss Bacon for assistance in preparing reports.

I. FOODS.

Baking Powder, etc.

Seven samples of baking powder were examined for available carbon dioxide and metallic impurities. Baking powder should contain not less than 12 per cent of available carbon dioxide.

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[1] Conn. Exp. Station. Bull. 284, 1927.
[2] Resigned, March, 1926.

TABLE I. ANALYSES OF BAKING POWDER.

No.	Brand	Available carbon dioxide %
31779	Davis Co., R. B. *Davis*	13.4
31767	Great A. & P. Tea Co., *Red Front*	13.4
31780	Royal Baking Powder Co., *Royal*	12.8
31781	Rumford Chemical Works, *Rumford*	12.7
31759	Slade Co., D. & L.	9.1 (total)
34769	Slade Co., D. & L.	7.2
34651	Van Dyk Co., James, *Van Dyk's*	10.5

Samples **31759** and **34769** were purchased of M. J. Babaian, 397 Capitol Ave., Hartford. Both samples were considerably below standard. No. **34651** was purchased of James Van Dyk Co., Asylum St., Hartford, and was somewhat deficient in available carbon dioxide.

None of the brands contained arsenic in excess of 1 part per million.

A sample of Cream of Tartar Substitute, **4849**, declared to contain monobasic sodium phosphate and corn starch was found to contain 30.7 per cent of starch.

BREAD.

Four samples of bread were submitted. Two, **5560, 5561**, were from the New Haven County Jail and two, **3456, 3457**, were sent by Dr. C. E. McCauley of Aberdeen, S. D.

Samples **5560, 5561** and **3457** are wheat bread. Sample **3456** is Dr. Gordon's Health Bread made from whole wheat flour and honey said to be recommended as a natural regulator and effective in reducing diets, and manufactured by the Federal System of Bakeries.

The analyses are as follows:

TABLE II. ANALYSES OF BREAD.

Number	5560	5561	3456	3457
	%	%	%	%
Moisture	37.15	35.40	31.58	29.89
Ash	1.43	1.63	3.12	1.62
Protein	9.01	8.92	10.28	9.63
Fiber	0.26	0.17	1.35	0.24
Carbohydrate:				
Starch	51.30	51.63	24.84	42.93
Soluble, as dextrose			15.88	8.78
Undetermined			8.35	3.50
Fat	0.85	2.25	4.60	3.41
Calories per 100 gms.	249.0	262.0	279.0	290.0

From a comparison of energy values the reducing effect of sample **3456** is likely to be disappointing.

Carbonated Beverages.

One hundred and seventy-nine samples of carbonated beverages were examined.

The law requires a sugar content of not less than 5 per cent in these products; saccharin is prohibited and artificial colors and flavors must be declared if used. Benzoate of soda is the only chemical preservative recognized in the regulations and its presence requires label declaration.

Recently hydrogen peroxide has been used to some extent as a preservative in bottled chocolate beverages. It is claimed that, due to the fact that this substance readily decomposes into oxygen and water, the preservative, as such, will not be found in the beverages so treated. There is evidence, however, that the peroxide may persist for some time particularly in beverages which are bottled without subsequent heating.

The apparently harmless nature of hydrogen peroxide[1] when used as a remedial agent or, according to older literature, as a preservative for certain foods, is not necessarily an argument in favor of its unrestricted use in foods, and control officials have generally adopted a conservative attitude with respect to its use for food preservation. One obvious objection to it, and to any other substance used for similar purposes, is the tendency it will have to create a disregard for those sanitary safeguards in manufacturing operations which food officials have emphasized and which manufacturers have so largely adopted. Again, commercial preparations of hydrogen peroxide are themselves preserved with mineral acids and other chemicals, and these "stabilizers," although in small amounts, are necessarily introduced into peroxide-treated beverages.

For the present no objection is raised in this State to chocolate beverages so treated provided the treatment is not in lieu of proper sanitary measures in the plant; and provided that the peroxide, as such, is not present in the finished product; and further provided that evidence of objectionable stabilizers is not found.[2]

All of the samples examined contained the required amount of sugar. Saccharin was found in seven samples but they were all the product of one manufacturer, the Washington Club Bottling Works of Norwich. Five samples of chocolate soda were tested for hydrogen peroxide; four showed no trace of the preservative and one showed the merest trace. Considerable laxity was noted in the matter of declaring artificial flavors and colors, twenty-two samples being deficient in this respect.

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[1] Rideal. Disinfection and Preservation of Food, 1903; Thresh and Porter. Preservatives in Food and Food Examination, 1900; Sollmann. Manual of Pharmacology, 1917; U. S. Dispensatory, twentieth edition.

[2] The revised rules and regulations will probably include hydrogen peroxide with those preservatives which are prohibited.

Five samples of preservative solutions (hydrogen peroxide) were examined; four were dilute (approximately 3 per cent) solutions and one was a strong solution (about 30 per cent).

Cocoa.

Two samples of cocoa being served in public schools were examined for Mrs. Weldon of Glastonbury. The chief difference between them was in the item of fat, one containing 21.8 per cent and the other 13.5 per cent.

Coffee.

One sample of coffee, **34420**, submitted by the Dairy and Food Commissioner was examined and no evidence of chicory or of other foreign substances was found.

So-called Diabetic and Special Foods.

Thirty samples of products of this class were examined but the analyses are given in Part I of this report[1] and no discussion of them is required here.

Eggs.

Forty samples of market eggs were submitted by the Dairy and Food Commissioner. By candling and determining ammoniacal nitrogen 15 samples were passed as fresh and 25 did not have the characteristics of fresh eggs.

One sample of "dipped" eggs (eggs dipped in oil) was also examined. A small quantity of oil with a refraction of about 72 at 25° C. was extracted from the shell. A sample suspected of being dipped yielded no oil when the shell was extracted. The dipped eggs showed a relatively high ammoniacal nitrogen content (2.7 mgms. per 100 gms. of egg), and the yolks were settled in the shell. Air spaces were, however, generally less than 1 inch in diameter. The eggs were wholesome and edible but did not have the characteristics of fresh eggs excepting the fairly small air spaces.

Fats and Oils.

BUTTER.

One sample of butter and four of sweet butter have been examined and all found to be genuine and to contain no excess of water (less than 15.99 per cent).

OLEOMARGARINE.

Two samples of oleomargarine were examined and no evidence of added artificial coloring matter was found.

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[1] Conn. Exp. Station, Bull. 286, 1927.

Two samples of so-called cooking fats known as Danish Nut Product (Danish Packing Co., Providence, R. I.), and Nut Product, Verco Brand (Vermont Products Co., Providence, R. I.), were examined. Analyses are given in Table III.

These products are artificially colored and sold as cooking fats and not as oleomargarine. A Federal court decision has exempted one of them (Danish Nut Product), from classification as oleomargarine.[1]

Section 2449, General Statutes, defines imitation butter or oleomargarine as any article resembling butter and not made wholly from milk or any product of milk, salt and coloring excepted.

These two "cooking fats" admittedly contain no milk or milk product and analysis shows no evidence of such constituents. The compounds do resemble butter, however, by reason of their chemical composition, their appearance and taste and their other physical properties which determine their use as edible fats or for cooking purposes.

From the standpoint of composition these products bear substantially the same resemblance to butter as do certain other articles generally recognized as oleomargarines, viz., vegetable oil margarines. To classify them as cooking fats is to place them with products which they least resemble.

In appearance they resemble butter and their taste also suggests or resembles that of butter.

Cooking fats are practically 100 per cent fat; they contain no water or but traces thereof, and they contain no salt. They are particularly suited for deep frying to which purpose butter and oleomargarine are entirely unsuited because of their considerable water content. Danish Nut Product and Verco Nut Product are "cooking fats" only insofar as butter and oleomargarine may be so called.

Moreover, it is clear from recipes in which one of these products is recommended for use that it can be used only where butter and oleomargarine can be used and in no case where they cannot be employed. In other words, these so-called "cooking fats" are substitutes for butter and not for lard.

OLIVE OIL.

Six samples of olive oil were examined, five of them for the Dairy and Food Commissioner. One sample, Italia brand, No. **33866,** sold by the Italian Coöperative Store, Hartford, was adulterated with sesame oil.

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[1] Treasury Decision 4006, approved April 1st, 1927, holds that these so-called cooking compounds sufficiently resemble butter to warrant their classification as oleomargarine.

TABLE III. ANALYSES OF COOKING FATS, BUTTER, ETC.

	Water	Ash (Salt)	Nitrogen (calculated as casein)	Fat
	%	%	%	%
Cooking fats (7 analyses). (Wesson oil, Mazola, Cottolene, Crisco, etc.).				
Maximum	0.31	0.08	0.38	100.00
Minimum	0.00	0.00	0.00	99.53
Average	0.07	0.03	0.20	99.68
Butter (12 analyses). (Connecticut Creamery).				
Maximum	15.88	4.05	2.21	88.59
Minimum	8.52	0.21	1.21	80.93
Average	12.24	1.59	1.51	84.62
Animal Oil, Oleomargarine (5 analyses).				
Maximum	9.20	3.08	1.25	97.36
Minimum	1.67	0.41	0.56	86.72
Average	5.37	1.43	0.80	92.40
Vegetable Oil Oleomargarine (8 analyses).				
Maximum	12.64	6.06	2.71	91.20
Minimum	6.53	1.14	0.69	81.75
Average	10.99	2.85	1.39	84.77
Danish Nut Product, etc.				
1923—Nut-z-all	10.73	1.37	0.26	87.58
1925—Higgin's Nut Product	9.80	2.30	0.00	87.90
1926—Danish Nut Product	12.54	2.79	0.17	84.50
1926—Verco Nut Product	10.87	5.50	0.29	83.34

FLAVORING EXTRACTS.

Six samples almond extract and one of vanilla extract were examined and all were passed. Almond extract should be free from hydrocyanic acid and no evidence of this substance was found in any of the samples examined.

GELATIN.

One sample of gelatin was examined for a physician to determine the amount of salt present. The equivalent of 0.36 per cent of sodium chloride was estimated from the chlorine in the ash.

ICE CREAM.

Two hundred and eighty-five official samples of ice cream were examined and three were tested for individuals.

Only three samples contained less than the legal fat standard of 8 per cent for plain ice cream and 6 per cent for fruit and nut ice cream.

These three deficient samples are as follows:

No.		Dealer	Manufacturer
31972	*New Haven*	S. Vitale	Own make (?)
34690	*New Britain*	Chas. Picalo	Own make
33883	*Norwich*	G. Gressell	Own make

The distribution of samples on the milk fat basis is as follows:

Per cent of fat	No. of samples 1926	Per cent of total 1926	Corresponding percentage 1925	1924	1919-23
8.0 to 9.9	15	5.2	17.0	17.4	26.1
10.0 to 11.9	78	27.4	34.6	24.8	26.1
12.0 and above	189	66.3	46.7	55.9	41.1
7.9 and below	3	1.1	1.7	1.9	9.6

In the five-year period 1919-23 about ¼ of the samples examined contained from 8 to 10 per cent fat; the percentage of samples of this grade has decreased since that time and the corresponding percentage for 1926 is about 5 per cent. There has been a gradual increase in the proportion of samples containing over 12 per cent of fat; during the past year (1926), about ⅔ of the samples examined were of that grade.

These data, for the past year at least, represent for the most part the products of smaller establishments, and without information as to the gross production of the several grades it is not possible to state the average percentage of fat in ice cream as produced in this state to-day.

A federal standard of 12 per cent milk fat for ice cream, proposed by the Joint Committee on Definition and Standards, is opposed by the ice cream industry. Manufacturers generally favor an 8 per cent standard; but many of these are making products which test nearer 12 per cent than 8.

FROZEN PUDDING.

Products resembling ice cream and sold under the name of "frozen pudding" and similar labels have been held in this state to be subject to the regulations governing the manufacture and sale of ice cream. If they contain less than 8 per cent of milk fat the percentage of fat must be declared by a suitable sign displayed at the time and place of sale.

ICE CREAM CONES.

Twelve samples of the pastry cones in which ice cream is dispensed were examined for saccharin but none was detected.

Meat Products.

BEEF LOAF.

One sample of beef loaf was examined for presence of cereal and found to contain 4.96 per cent of starch. No label declaration of cereal is required for beef loaf.

FRANKFURTS, ETC.

Twenty-one samples of frankfurt sausage, bologna, etc., were examined, fifteen of which were found to contain undeclared cereal, or undeclared color, or both. This proportion is not to be understood to indicate the extent of adulteration or misbranding of meat products because samples submitted to us were only such as were suspected by the inspectors.

Deficient samples found are as follows:

No.	Dealer	Manufacturer	Remarks
	Ansonia		
33227	Chas. Powanda..	F. J. McNamara & Sons	Cereal undeclared
	Bridgeport		
33085	Peter Hron, Inc.	Own make	Cereal undeclared
33080	The Mohican Co.	F. Flaxington	Cereal undeclared
33081	The Mohican Co.	F. J. McNamara & Sons	Cereal undeclared
	Bristol		
33093	Central Beef & Provision Co..	Own make	Cereal undeclared
	Meriden		
34782	H. Brown	F. J. McNamara & Sons	Cereal undeclared
	New Britain		
33201	A. Y. O. Provision Co.	.....	Cereal undeclared
33091	B. Berkowitz ...	New England Food Products Co.	Cereal undeclared
33088	M. Zaleski	Central Beef & Provision Co.	Cereal undeclared
	New Haven		
33210	Carl Rossler ...	.....	Cereal and color undeclared
	Norwich		
33202	Sachem Provision Co.	Hartford Center Bologna Co.	Cereal undeclared
	Putnam		
33203	E. W. Mullan ..	Geo. Bockper Co., Worcester, Mass.	Cereal undeclared
33204	Pomfret Market	.....	Cereal undeclared
	Windsor Locks		
33226	J. Borracci	.....	Color undeclared
33208	.....	.....	Cereal undeclared

"Cereal" has been regarded as present when starch in excess of that reasonably attributable to spice starch has been found. It is recognized that non-cereal starchy materials such as buckwheat flour and potato flour may have been used.

Manufacturers should note that the use of milk powder in sausage requires a label declaration.

HAMBURG STEAK.

Three samples of hamburg steak submitted by the Dairy and Food Commissioner were examined and no evidence of sulphites found.

Another sample submitted by the Fulton Markets, Waterbury, on advice of the Dairy and Food Commissioner was found to contain 574 milligrams of sulphite per kilo.

MILK AND MILK PRODUCTS.

MARKET MILK.

Five hundred and fifty-six samples of milk were examined for the Dairy and Food Commissioner, three hundred and seventy-seven of which were taken in official inspections.

Two hundred and thirty-two samples were examined for individuals, making a total of seven hundred and eighty-eight.

The distribution of official samples, based upon analysis, is as follows:

	No. of samples	Per cent
Not found adulterated	178	47.2
Adulterated by watering	51	13.5
Below standard:		
in solids and solids-not-fat	78	20 7
in solids and fat	5	1.3
in solids, fat and solids-not-fat	65	17 3
Totals	377	100.0

Deficient samples are listed in Table IV.

TABLE IV. ADULTERATED MILK.

No.	Dealer	Solids	Fat
	Containing Added Water.		
	Bethel.		
31660	John Takacs	8.40	2.5
31661	John Takacs	8.57	2.6
31662	John Takacs	9.19	3.1
31663	John Takacs	8.96	2.8
	Bridgeport.		
33177	Sylvester Cocivi ...	10.27	3.1
33178	Sylvester Cocivi ...	10.40	3.1
33179	Sylvester Cocivi ...	10.26	3.3
33169	Geo. Gregory	10.06	2.8
33170	Geo. Gregory	10.13	3.0
33171	Geo. Gregory	9.98	2.9
33183	Christian Peterson..	10.43	3.4
33184	Christian Peterson..	11.30	3.7
	Brookfield.		
33512	Steve Piskura	10.29	3.2
33513	Steve Piskura	10.23	3.0
	Brookfield Center.		
33523	A. Sobriewitz	10.67	3.1
	Durham.		
33166	W. S. Cornell	10.55	3.1
33167	John Sigilini	10.67	3.5
33168	John Sigilini	10.77	3.6
	East Windsor.		
33418	J. S. Allen	10.67	3.1
33419	J. S. Allen	10.70	3.0
	Hawleyville.		
33520	W. S. Hawley	9.05	2.5
33521	W. S. Hawley	9.90	3.1
33522	W. S. Hawley	9.67	3.1
32131	Ralph Talarico	11.05	3.5
32132	Ralph Talarico	9.84	2.6
	Containing Added Water—Concluded.		
	New Britain.		
33118	J. E. Callahan	9.92	3.1
33119	J. E. Callahan	10.97	3.6
33120	J. E. Callahan	11.34	3.5
33121	J. E. Callahan	10.43	2.9
33122	J. E. Callahan	10.40	3.0
	Northford.		
34324	John Sigalini	11.19	3.8
	Ridgefield.		
33145	Geo. Cable	10.82	3.6
33146	Geo. Cable	12.39	5.0
33147	Geo. Cable	11.47	3.8
	Shelton.		
35196	Stanley Fritz	10.30	3.0
35197	Stanley Fritz	10.47	3.1
35200	J. Suren	10.74	3.2
35201	J. Suren	10.12	3.1
35202	J. Suren	10.59	3.2
35203	J. Suren	10.63	2.9
	Waterbury.		
34828	E. L. Bronson	10.26	2.9
34825	John Coscia	10.40	3.0
	Westport.		
33132	John Fike	12.11	4.6
33133	John Fike	11.24	3.5
33134	John Fike	11.70	4.5
	Willimantic.		
31449	Louis A. King	11.23	3.6
33600	Louis A. King	11.76	4.0
	Wilton.		
33131	Vincent Fito	10.54	3.2
33136	Arthur Little	11.30	3.6
33129	Edward Mills	10.43	3.3
33130	Edward Mills	10.39	3.3

EVAPORATED MILK.

One sample of evaporated milk, brand not given and not in the original container, was examined for the Board of Health of Norwalk. The sample was low in fat but no off-taste was noted.

CREAM.

Eight samples of cream were examined in a series of tests to detect added water cryoscopically. This work was done by Mr. Mathis in collaboration with the Referee on Dairy Products of the Association of Official Agricultural Chemists, and is reported elsewhere.[1]

Four other samples were examined for fat or for preservatives. No preservatives were found.

HUMAN MILK.

Two samples of human milk were examined for physicians.

SPICES.

MACE.

Thirteen samples of mace were submitted by the Dairy and Food Commissioner. Six were passed and seven were below standard.

Standard mace contains not less than 20 per cent nor more than 30 per cent of non-volatile ether extract, not more than 10 per cent of crude fiber, not more than 3 per cent of total ash, and not more than 0.5 per cent of ash insoluble in hydrochloric acid.

Analyses are given in Table V.

The deficiencies are chiefly excessive total ash usually accompanied by excesses of insoluble ash. Non-volatile ether extract are somewhat low in three samples. Crude fiber is within the limits set by the standard but two samples are conspicuously higher than the others. Compared with authentic samples of mace no evidence of adulteration was detected microscopically.

[1] Proceedings of the Assoc. of Off. Agr. Chemists, 1926.

TABLE V. ANALYSES OF MACE.

No.	Dealer	Manufacturer and brand	Non-volatile ether extract	Crude fiber	Total ash	Ash insol. in HCl
	Bristol.		%	%	%	%
33336	North Side Market	Wm. Boardman & Sons, Putnam	21.59	3.82	1.81	0.04
33335	W. B. Woodruff	R. C. Williams & Co., Royal Scarlet	18.36	4.48	2.87	0.52
34770	W. B. Woodruff	R. C. Williams & Co., Royal Scarlet	22.86	3.20	2.85	0.55
	Hartford.					
33344	Epstein Bros.	Austin Nichols Co., Sunbeam	17.65	4.65	3.95	1.20
34767	Epstein Bros.	Austin Nichols Co., Sunbeam	19.02	3.47	3.81	1.29
31756	A. H. Phillips, Inc.	A. Colburne Co.	22.25	3.62	1.98	0.03
	New Britain.					
33341	J. A. Spinetta	Stickney & Poor Spice Co.	22.07	4.95	2.52	0.15
33340	J. A. Spinetta	Williams & Carleton Co.	21.96	4.95	3.65	0.94
33771	J. A. Spinetta	Williams & Carleton Co.	25.67	3.92	3.69	1.00
	Stamford.					
31788	Atlantic & Pacific Tea Co.	Atlantic & Pacific Tea Co.	20.39	3.70	2.43	0.35
33348	Modern Grocery Co.	E. R. Durkee & Co.	21.39	4.45	2.49	0.25
31789	P. W. Shea	B. Fischer & Co., Inc.	20.88	8.65	4.64	0.43
34779	P. W. Shea	B. Fischer & Co., Inc.	22.64	8.33	4.79	0.51

PREPARED MUSTARD.

Twelve samples of prepared mustard were examined and analyses are given in Table VI.

According to the revised definition and standard for prepared mustard[1] the fat-, salt-, and sugar-free solids should contain not more than 24 per cent of carbohydrates (calculated as starch), not more than 12 per cent of crude fiber, and not less than 5.6 per cent of nitrogen. Sugar may or may not be used in the manufacture of this product.

In the analyses nitrogenous material is calculated as protein, 5.6 per cent of nitrogen being equivalent to 35 per cent of protein. Sugar was not determined and results have therefore been calculated to the fat- and salt-free solids. On this basis all of the samples conform substantially to the specifications noted above for nitrogen, fiber and "starch" excepting **33337** which is somewhat low in nitrogen and high in the other two items. If this sample contained sugar, the percentage of all of these constituents would be somewhat increased in the fat-, salt-, and sugar-free solids.

[1] Food Inspection Decision 192, June, 1923.

TABLE VI. ANALYSES OF PREPARED MUSTARD.

No.	Manufacturer	Water	Acidity (as acetic acid)	Total solids	Total ash	Salt	Other ash	Protein	Crude fiber	"Starch"	N-free extract	Fat
		%	%	%	%	%	%	%	%	%	%	%
31787	The Atlantic & Pacific Co., New York	77.83	2.56	19.61	4.68	3.43	1.25	4.47	0.99	2.44	4.85	4.62
33333	J. W. Beardsley's Sons, Newark, N. J.	79.48	2.87	17.65	4.02	3.06	0.96	3.75	1.21	2.27	3.95	4.72
31777	Beechnut Packing Co., Rochester, N. Y.	72.54	4.06	23.40	2.99	1.69	1.30	5.33	1.17	3.62	6.90	7.01
31755	James Butler, Inc., N. Y.	75.49	3.22	21.29	3.42	1.98	1.44	4.77	1.44	2.95	6.02	5.64
33346	Cruickshank Bros. Co., Pittsburgh, Pa.	73.04	4.08	22.88	4.78	3.20	1.58	5.29	1.21	2.96	5.35	6.25
31757	The R. T. French Co., Rochester, N. Y.	80.34	3.63	16.03	3.27	2.66	0.61	3.75	0.89	1.91	4.39	3.73
33334	Charles Gulden, Inc., N. Y.	77.03	3.60	19.37	2.90	1.58	1.32	4.61	0.98	2.55	5.29	5.59
33342	H. J. Heinz, Pittsburgh, Pa.	72.31	3.99	23.70	4.09	2.89	1.20	5.74	1.07	2.80	5.33	7.47
31773	Libby, McNeill & Libby, Chicago, Ill.	76.07	3.52	20.41	3.28	2.17	1.11	4.40	1.20	2.63	6.73	4.80
31776	Mustard Products, Inc., Brooklyn, N. Y.	76.23	3.44	20.33	3.62	2.35	1.27	4.91	0.91	2.31	5.72	5.17
33345	D. & L. Slade Co., Boston, Mass.	77.85	3.12	19.03	4.10	2.95	1.15	4.52	1.29	2.55	4.58	4.54
33337	Stickney & Poor Spice Co., Boston, Mass.	79.31	3.20	17.49	3.48	2.62	0.86	3.37	1.73	2.88	5.11	3.80

TABLE VI. ANALYSES OF PREPARED MUSTARD—*Continued.*
(In the Fat- and Salt-Free Solids.)

No.	Ash	Protein	Crude fiber	"Starch"	N-free extract
31787.....	10.81	38.67	8.56	21.11	41.96
33333.....	9.73	37.99	12.26	23.00	40.02
31777.....	7.93	32.52	7.14	22.09	52.41
31755.....	10.54	34.89	10.54	21.58	44.03
33346.....	11.77	39.39	9.01	22.04	39.83
31757.....	6.33	38.90	9.23	19.81	45.54
33334.....	10.82	37.78	8.03	20.90	43.37
33342.....	9.00	43.02	8.02	20.99	39.96
31773.....	8.26	32.75	8.93	19.57	50.06
31776.....	9.92	38.34	7.10	18.04	44.64
33345.....	9.97	39.16	11.18	22.10	39.69
33337.....	7.77	30.44	15.63	26.02	46.16

PAPRIKA.

Paprika is the dried fruit of the large-fruited red pepper, *Capsicum annum*. Hungarian paprika is paprika having the characteristic pungency and flavor of that grown in Hungary; while piementon or pimiento, sometimes called Spanish paprika, is paprika having the peculiar characters of that produced in Spain.

Paprika should not have over 8.5 per cent of total ash nor more than 1 per cent of insoluble ash. The iodine number of the extracted oil should not be less than 125 nor more than 136.[1]

Fourteen samples were examined. Two of these were infested with beetles and were evidently old stock. Analyses of the other samples are given in Table VII.

All of the samples conformed to the limits for ash and insoluble ash as fixed by the standard. Iodine numbers were determined and found to be somewhat lower than recorded by Doolittle and Ogden[2] for authentic samples of Hungarian and Spanish paprika, and lower also than the minimum standard. The values obtained ranged from 105 to 122 and averaged 113. An old but authentic sample of Hungarian paprika ground in the laboratory, including seeds but no stems, yielded 15.32 per cent of ether extract having an iodine number of 122.

SYRUP.

One sample of maple syrup, **3719**, was examined and passed.

Analysis: Solids 64.2 per cent; sucrose by polarization 59.6 per cent; ash 0.6 per cent; lead number 1.14.

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[1] Circ. 136. Office of Secretary, U. S. Dept. Agr.
[2] Jour. Am. Chem. Soc., 30, 1481, 1908.

TABLE VII. ANALYSES OF PAPRIKA.

No.	Dealer	Manufacturer	Ash	Ash insol. in HCl	Ether extract
	Bristol.		%	%	%
33332	Public Market	R. T. French Co...	7.31	0.30	12.73
31764	Atlantic & Pacific Tea Co.	Atlantic & Pacific Tea Co.	8.01	0.46	11.92
	Hartford.				
31758	M. J. Babian	D. & L. Slade Co...	7.46	0.40	12.47
31760	Cooley-Larsen Co.	Williams & Carlton Co.	7.71	0.40	12.85
31768	Dubin Butter Co..	D. & L. Slade Co...	8.32	0.49	10.11
31763	Griffen's Delicatessen	Wm. Boardman & Sons	7.20	0.21	12.16
	New Britain.				
33339	J. A. Spinetta	Austin Nichols & Co.	8.00	0.33	13.76
	Plainville.				
33338	Eastwood & Foran	R. C. Williams & Co.	7.81	0.30	13.23
	Stamford.				
31753	James Butler, Inc.	James Butler, Inc.	7.80	0.39	13.13
33347	Modern Grocery Co.	E. R. Durkee & Co.	7.66	0.35	11.41
31751	The Samuel Price Co.	Mutual Spice Co...	8.17	0.49	17.15
33349	J. Sternbach	F. H. Leggett & Co.	7.97	0.67	12.66

VINEGAR.

Eight samples of vinegar were examined for the Dairy and Food Commissioner and all were passed.

Eleven samples submitted by individuals were also examined.

MISCELLANEOUS FOODS, ETC.

6224. *Penolia* Peanut Butter, made by the Bradley-Smith Co., New Haven.

Analysis: Water 1.50 per cent; ash 2.64 per cent; protein 30.88 per cent; fiber 2.07 per cent; carbohydrate (by difference), 13.56 per cent; fat 49.35 per cent.

3431. *Nu-Salt.* Eli Lilly & Co., Indianapolis. This is declared to be an iodized salt containing 97 per cent sodium chloride; 0.05 per cent sodium iodide; 0.95 per cent potassium chloride; 1.00 per cent calcium sulphate; and 1 per cent sodium bicarbonate.

Analysis: Moisture 0.59 per cent; iron and aluminum oxides none; calcium oxide 0.62 per cent; magnesium oxide 0.02 per cent; potassium oxide 1.00 per cent; sulphur trioxide 0.43 per cent; phosphorus pentoxide 0.35 per cent; iodine 0.04 per cent; insoluble matter 1.15 per cent; carbon dioxide 0.42 per cent.

Calculated composition: Calcium phosphate 0.76 per cent; calcium sulphate 0.49 per cent; magnesium sulphate 0.06 per cent; sodium

sulphate 0.18 per cent; potassium chloride 1.58 per cent; sodium iodide 0.05 per cent; sodium bicarbonate 0.80 per cent; sodium chloride 95.49 per cent; moisture 0.59 per cent.

The composition of the salt is substantially as claimed.

32813. *Ovaltine.* The Wander Co., Chicago, Ill.

Analysis: Moisture 1.65 per cent; ash 3.80 per cent; protein (N x 6.25), 13.44 per cent; fiber 0.18 per cent; starch none; sugars (as dextrose), 39.53 per cent; undetermined carbohydrate (largely dextrin), 35.32 per cent; fat 6.08 per cent.

A product of the same name was analyzed in this laboratory in 1917[1] in which an active amylase was present and a small amount of lecithin phosphoric acid was found. We have not examined the newer product for amylase or for lecithin phosphoric acid, but otherwise the composition is substantially the same as previously found. The label declaration implies a high vitamin content but we have made no biological tests for vitamin. The original sample examined was an English product claimed to be made from malt, milk and eggs.

34421. *Cereal Meal.* Cereal Meal Corporation, St. Louis, Mo. No analysis was made but microscopic examination indicated that the product is essentially a mixture of agar agar, bran, flaxseed and germ.

34418. *Grape Fruit,* canned, submitted by a purchaser. The sample contained about 3 per cent of sugar and 9 per cent of invert sugar in the liquid portion which was 44 per cent of the contents. The fruit was evidently canned without added sugar.

ACORNS.[2]

The analyses in Table VIII are of shelled acorns of various species as harvested in the fall and at the time of germination in the following spring after storage in earth during the winter.

Starch was determined by the diastase method. Soluble carbohydrates means such as are soluble in 10 per cent alcohol and reduce Fehling's solution after hydrolysis. It was found that the maximum reducing power of these soluble carbohydrates was reached after 30 minutes hydrolysis; thereafter reducing power diminished due probably to the destruction of levulose. Direct reducing sugars were also determined.

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[1] Conn. Exp. Sta., Bull. 200, p. 154.

[2] These analyses by Mr. Shepard were made in collaboration with Dr. C. F. Korstian in his study of changes taking place during the germination of acorns. The results are discussed in a paper by Dr. Korstian for publication elsewhere.

TABLE VIII. ANALYSES OF SHELLED ACORNS.

	White Oak		Red Oak		Chestnut Oak		Scarlet Oak	
	Fall Nov. 1925-Apr. 1926 %	Spring Nov. 1925-Apr. 1926 %	Fall Nov. 1925-Apr. 1926 %	Spring Nov. 1925-Apr. 1926 %	Fall Nov. 1925-Apr. 1926 %	Spring Nov. 1925-Apr. 1926 %	Fall Nov. 1925-Apr. 1926 %	Spring Nov. 1925-Apr. 1926 %
In the Fresh Material.								
Water	39.68	36.66	32.90	26.57	47.23	40.70	23.83	31.67
Ash	1.55	1.54	1.76	2.11	1.19	1.75	1.57	1.70
Protein (N x 6.25)	4.48	4.93	4.80	5.06	4.49	5.27	5.90	5.10
Fiber	1.06	1.59	1.59	2.06	1.31	1.84	1.73	1.70
Carbohydrates:								
Starch	28.91	32.49	16.02	23.45	16.99	21.43	18.48	18.24
Soluble, as dextrose after hydrolysis 30 mins.	6.31 (4.83)[1]	5.95 (5.58)[1]	7.09 (4.30)[1]	4.60 (4.02)[1]	7.83 (7.07)[1]	7.71 (7.28)[1]	7.16 (4.05)[1]	4.48 (3.80)[1]
Undetermined	13.90	15.17	20.75	21.39	18.55	20.19	17.85	21.35
Fat	4.11	1.67	15.09	14.76	2.41	1.11	23.48	15.76
In the Water-free Material.								
Ash	2.56	2.43	2.62	2.87	2.26	2.96	2.06	2.48
Protein	7.42	7.79	7.16	6.90	8.50	8.88	7.75	7.46
Fiber	1.77	2.51	2.37	2.81	2.48	3.11	2.28	2.49
Carbohydrates:								
Starch	47.93	51.27	23.89	31.94	32.20	36.14	24.26	26.69
Soluble, as dextrose after hydrolysis 30 mins.	10.47 (8.01)[1]	9.39 (8.80)[1]	10.58 (6.41)[1]	6.26 (5.47)[1]	14.83 (13.40)[1]	13.00 (12.27)[1]	9.41 (5.32)[1]	6.56 (5.56)[1]
Undetermined	23.04	23.07	30.88	29.12	35.16	34.04	23.41	31.27
Fat	6.81	2.64	22.50	20.10	4.57	1.87	30.83	23.05

[1] Direct Reduction.

II. DRUGS.

Solution of Arsenous and Mercuric Iodide.

This preparation should contain in each 100 cc. not less than 0.95 gm. nor more than 1.05 gms. of arsenous iodide and not less than 0.95 gm. nor more than 1.05 gms. of mercuric iodide.[1]

Table IX. Analyses of Arsenous-Mercuric Iodide.

No.	Dealer	Arsenous iodide (AsI_3) gm/100 cc.	Total arsenic as arsenous iodide (AsI_3) gm/100 cc.	Mercuric iodide (HgI_2) gm/100 cc.
34490	Lee & Osgood, Norwich (own make)	0.48	0.96	0.69
34681	Wilson Drug Co., Willimantic (Lehn & Fink, N. Y.)	0.03	1.00	0.78

In both of these samples the arsenous iodide has largely oxidized to the pentiodide form. The rapid transformation of arsenic through oxidation in the case of this product has been pointed out.[2] Total arsenic calculated as triiodide is within the limits of the standard. Mercuric iodide was below the standard, however.

Spirit of Camphor.

Spirit of camphor contains not less than 9.5 gms. and not more than 10.5 gms. of camphor per 100 cc.[3]

Thirty-one samples were examined for the Dairy and Food Commissioner. Of this number only one varied from the standard by more than 10 per cent. This was sold by Barron's Drug Store, New Haven, and contained only 5 per cent of camphor, approximately ½ strength.

Analyses are given in Table X.

Table X. Analyses of Spirit of Camphor.

No.	Dealer	Manufacturer	Camphor. gms/100 cc.
	Branford		
34685	The Spaulding Co.	Own make	10.4
	Bristol		
34654	Bristol Pharmacy	Own make	9.2
34652	Holley Pharmacy	Own make	9.4
34655	Rickman's Drug Store..	Mass. Wholesale Drug Co., Springfield, Mass.	11.0
34653	Leroy P. Tucker	Eastern Drug Co., Boston, Mass.	9.7
	Cromwell		
34666	Hitchcock's Pharmacy..	Own make	9.6

[1] U. S. P. X, p. 208.
[2] Jour. Am. Pharm. Assoc., 15, 464, 1926.
[3] U. S. P. X, p. 351.

TABLE X. ANALYSES OF SPIRIT OF CAMPHOR. *Concluded.*

No.	Dealer	Manufacturer	Camphor, gms/100 cc.
	East Portchester		
34766	D. H. McHugh	Own make	8.7
	Forestville		
34659	Kent's Pharmacy	Brewer & Co., Springfield. Mass.	10.0
	Hartford		
34499	Jefferson Pharmacy	Own make	8.5
34496	Thomas A. Lynch	Sisson Drug Co., Hartford	10.4
	Manchester		
34693	Edward J. Murphy	Own make	9.1
	Meriden		
34673	N. P. Forcier	Own make	9.8
34668	The Graeber Pharmacy..		10.0
34670	Lynch Drug Co., Inc....	Own make	10.4
	Middletown		
34663	Geo. R. Cassidy	Own make	9.8
34665	John J. Cronin	Own make	10.6
34664	Lincoln Drug Store	United Drug Co., Boston, Mass.	9.9
	New Haven		
34763	Barron's Drug Store	Own make	5.0
	Plainville		
34661	Geo. R. Byington	Own make	8.8
34660	Thrall's Drug Store	Own make	11.2
	Portland		
34662	Conklin's Pharmacy	Own make	10.6
	So. Manchester		
34692	Miner's Pharmacy		9.7
	Terryville		
34656	Pelchar's Pharmacy	Own make	10.0
34658	Pelchar's Pharmacy		10.3
	Waterbury		
34760	Carroll Co.	Wolf-Thornen, Inc., N. Y...	10.4
	West Haven		
34764	John K. Stevenson	Hance Bros. & White, Philadelphia, Pa.	10.4
	Wethersfield		
34675	Wethersfield Pharmacy..	Own make	10.4
	Willimantic		
34680	Bay State Drug Co.	Own make	10.2
34679	Wilson's Windham Pharmacy	Own make	10.5
	Winsted.		
34677	Bannon's Drug Store	Eastern Drug Co., Boston, Mass.	9.8
34678	Frank S. Bunnell		9.6

Camphor Liniment.

This preparation should contain not less than 19 per cent nor more than 21 per cent of camphor.[1]

Twenty-eight samples were examined. Five were found deficient in camphor, and one was misbranded. Sample **34672** was not camphor liniment but double strength spirit of camphor.

Analyses are given in Table XI.

Table XI. Analyses of Camphor Liniment.

No.	Dealer	Manufacturer	Camphor, per cent
	Ansonia		
34479	McArog's Pharmacy ...	Upjohn Co., Kalamazoo, Mich.	19.2
	Branford		
34684	Branford Pharmacy	C. S. Leete, New Haven ...	16.9
	Canaan		
34474	Farnum's Drug Store ..	Lehn & Fink, N. Y.	18.7
	East Portchester		
34765	D. H. McHugh	Filborn Pharmical Co., Brooklyn, N. Y.	20.9
	Falls Village		
34477	G. E. Frink	Brewer & Co., Worcester, Mass.	19.4
	Hartford		
34650	Jefferson Pharmacy	The Bronx Drug Co., N. Y.	19.6
34497	Thos. A. Lynch	J. Russell White, Staten Island, N. Y.	7.6
	Meriden		
34671	W. W. Mosher	The DePree Co., Holland, Mich.	19.1
34674	Palace Pharmacy	Own make	21.7
34672	Charles H. Pinks	Own make	19.5
	New Britain		
34487	Connor's Drug Store ...	Girard & Co., Inc., Mt. Vernon, N. Y.	18.9
	New Haven		
34686	Baker & Meade, Inc. ...	Own make	19.2
34687	Taft Pharmacy	Own make	20.9
	North Haven		
34469	North Haven Pharmacy	C. W. Whittlesey, New Haven	18.4
	Norfolk		
34471	Geo. T. Johnson Drug Co.	United Drug Co., Boston, Mass.	22.1
	Norwich		
34489	Dunn's Pharmacy	Eastern Drug Co., Boston, Mass.	19.6
34492	The Lee & Osgood Co.	Own make	21.0
34491	C. C. Treat	Hance Bros. & White, Philadelphia, Pa.	19.4
	Putnam		
34758	Joseph H. P. Gague	Own make	20.5

[1] U. S. P. X, p. 204.

TABLE XI. ANALYSES OF CAMPHOR LINIMENT. *Concluded.*

No.	Dealer	Manufacturer	Camphor, per cent
	Sharon		
34476	C. H. Egglestone	Gibson Snow Co., Albany, N. Y.	18.7
	South Manchester		
34691	Magnell Drug Co.	Own make	19.1
	Terryville		
34657	Pelchar's Pharmacy	Own make	18.9
	Waterbury		
34761	Carroll Co.	Standard Drug Co., Newark, N. J.	18.2
34759	The Leavenworth & Dikeman Co.	Own make	15.3
34762	Waterbury Drug Co. ...	Own make	20.5
	Willimantic		
34683	Curran & Flynn	Geo. L. Claflen Co., Providence, R. I.	5.6
34682	J. J. Hickey Drug Co. ..	Own make	19.2
	Winsted		
34676	Opera House Pharmacy	Own make	6.6

DICHLORAMINE, ETC.

Dichloramine should yield not less than 28 per cent nor more than 30 per cent of active chlorine.[1]

Two samples were examined and found to be of standard strength. One, **34466**, was made by the Abbott Laboratories, Chicago, and contained 29.82 per cent active chlorine; the other, **34468**, made by E. R. Squibb & Sons, New York, contained 29.85 per cent.

Chloramine is a similar product containing less active chlorine. It should contain not less than 11.5 per cent and not more than 13 per cent of active chlorine.[2]

Two products made by the Abbott Laboratories were analyzed. One, **34467**, called Chlorazene, contained 11.72 per cent of active chlorine. The other, **34473**, was in tablet form, each tablet declared to contain 4.6 grains of chloramine, and 4.4 grains were found.

A sample of solution of chlorinated soda (Labarraque's Solution), **34488**, was found to contain the required amount of active chlorine, i. e., not less than 2.5 per cent.[3] It was made by Powers-Weightman & Rosengarten.

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[1] U. S. P. X, p. 125.
[2] U. S. P. X, p. 105.
[3] U. S. P. X, p. 224.

Solution of Formaldehyde.

Solution of formaldehyde should contain not less than 37 per cent of formaldehyde.[1] Eight samples were examined and only one was found to be less than 90 per cent of the standard.

Analyses are given in Table XII.

Table XII. Analyses of Solution of Formaldehyde.

No.	Dealer	Manufacturer	Formaldehyde, per cent
	Hartford		
34498	Thos. A. Lynch	Mallinckrodt Chem. Co., N. Y.	36.6
	New Britain		
34486	Novecko Drug Store ...	Powers-Weightman & Rosengarten, Phila., Pa.	36.7
	North Haven		
34470	North Haven Pharmacy	Merck's, N. Y.	36.8
	Norfolk		
34472	Geo. T. Johnson Drug Co.	Sisson Drug Co., Hartford	32.9
	Norwich		
34493	The Lee & Osgood Co..	Hayden Chemical Co., Garfield, N. J.	36.5
	Sharon		
34475	C. H. Egglestone	.....	36.7
	South Norwalk		
34495	Plaisted Drug Store	Dolge Chemical Co., Westport	35.8
	Waterbury		
34478	West Side Pharmacy ...	Apothecaries Hall Co., Waterbury	36.8

Solution of Magnesium Citrate.

The standard for this article requires that it contain not less than 1.5 gm. of magnesium oxide per 100 cc.[2]

Three samples were examined. One, **34494**, purchased of E. F. Cornell, West Haven, was found to conform to this standard. It contained, however, somewhat less citric acid than the U. S. P. formula calls for.

Another sample, **33860**, made by the Atlantic Druggist Specialty Co., New Haven, contained less magnesium than the official preparation contains; and the magnesium was present partly as sulphate and the remainder as citrate. It was sold under a declaration that it was "not U. S. P." and is not, therefore, illegal.

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[1] U. S. P. X, p. 215.
[2] U. S. P. X, p. 218.

Analysis: Magnesium oxide, gm./100 cc., 0.94; sulphur trioxide 0.94; total citric acid 2.00. Calculated as magnesium sulphate, 1.4; magnesium citrate 1.9.

A sample, **4848**, submitted by a purchaser contained 1.42 per cent of magnesium oxide.

Solution of Potassium Iodide.

To check the accuracy of a determination of potassium iodide made on a sample of this drug taken in our 1925 inspection, the third part of our sample **32605**, which was left with the dealer at the time of sampling, was assayed eight months later. It was found to contain 35.6 gms. of potassium iodide per 100 cc. as compared with checked results of 34.9 gms. at the time of preparation and sampling. The third part of this sample had concentrated somewhat due to loss of water during the eight months interval. This preparation should have contained, according to the prescription presented, not less than 45.5 gms. of potassium iodide per 100 cc.

Sample **4693**, McQuade's Drug Store, Ansonia, made and submitted by the dealer, contained 45.1 gms. potassium iodide per 100 cc. According to the formula used the preparation should contain 45.5 gms. assuming 99 per cent purity for the salt.

Tablets (Hypodermic).

34667. *Atropine sulphate tablets.* 1/150 grain. Sold by the Sisson Drug Co., Hartford, manufactured by the Eli Lilly Co. Should contain 0.0067 grains per tablet; found 0.006. The variation is a little wider from the claim than is tentatively accepted (9.0 per cent) for hypodermic tablets of this type and dosage, but the tablets were passed.

34669. *Strychnine sulphate tablets,* (1/30 grain). Sold by Lynch Drug Co., Inc., Meriden, manufactured by Sharp and Dohme. Should contain 0.033 grains per tablet; found 0.019. Tablets were low in strychnine sulphate.

Proprietary Remedies, etc.

Six preparations of this type were examined.

3350. *Ocean-O.* Oceano Products Co., Newark, N. J. This is a liquid preparation made from sea water by removing the common salt and concentrating the other mineral constituents. According to accompanying literature the product is "a scientific, concentrated extract consisting of the natural and vital elements from pure deep sea water."

Analysis, gms/100 cc.: Solids 21.6; ash 13.3; chlorine 9.4; sulphur trioxide 1.9; iodine trace (.0005); carbon dioxide, free 0.049; bicar-

bonate (as HCO_3), 0.018; silica (SiO_2), 0.001; iron and aluminum (as metal), 0.001; calcium (Ca), 0.04; strontium (Sr), none found; magnesium (Mg), 1.78; sodium (Na), 3.13; potassium (K), 0.53; lithium ?.

There was no evidence of organic material and the difference between the solids and ash is probably due chiefly to water of crystallization and partly to decomposition of magnesium salts. The above analysis agrees substantially with one given in advertising literature.

3836. *Histolo Therapy Inorganic Food Celloids.* Kali Mur. Made by Luyties Pharmacal Co., St. Louis. Three tablets were examined for the State Commissioner of Health.

The average weight of tablets was 4.1 grains each. They consisted of about 98 per cent milk sugar, a small amount (0.13 per cent) of mineral substance (ash), and the balance was largely or entirely moisture. The ash consisted chiefly of chlorides, potassium chloride being found in the amount of 3/100 of one per cent. The name "Kali Mur" means, or suggests, potassium muriate which is potassium chloride. A considerable part of the ash no doubt was derived from the lactose used as an excipient.

3508. *McCoy's Rinolin Emulsion.* Made by McCoy's Rinolin Co., Inc., 62 West 14th St., New York. The label indicates that this preparation is a mixture of mineral oil, agar-agar, phenolphthalein and cascarin.

The preparation contained about 40 per cent of water, 45 per cent of mineral oil and one per cent of phenolphthalein. No evidence of oxymethyl-anthraquinone derivatives was obtained. Agar or some other emulsifying agent is present. "Cascarin" is a name suggested for a hypothetical active principle of cascara which it has been shown[1] is not a definite chemical substance but a mixture of constituents of cascara.

3507. *Matamel.* The concentrated sap of the Mexican Maguey plant (also known as Agave, and American Aloe). Prepared by Philip Newton, M.D., Ometusco, Mexico. Advertising literature indicates that the preparation relieves bladder weaknesses.

Analysis: Solids at 60° C. (in vacuuo) 72.6 per cent; ash 2.0 per cent; invert sugar 19.4 per cent; sucrose 44.7 per cent; total nitrogen 0.27 per cent; gums, pectin, etc., (precipitated by alcohol), 0.36 per cent; acidity, as malic acid, 1.0 per cent.

Michand and Tristan[2] reported an inactive sugar in Agave Americana which they called "agavose." Stone and Lotz,[3] however, have claimed that this sugar is only sucrose. No references

[1] Welcome Research Laboratories, Report 47, 1904.
[2] Am. Chem. Jour., **14**, 548, 1892.
[3] Ibid., **17**, 368, 1895.

to the medicinal use of Maguey were found except that the fresh juice is said to be laxative, diuretic and amenagogue, and in doses of 2 fluid ozs., useful in scurvy.[1]

33987. A sample of *Asthma remedy* labeled as made by the Frontier Co., Buffalo, was submitted by a nurse. It was found to contain ammonia, iodides and caffeine; arsenic was not determined. A product made by a company of the same name was examined in the laboratory of the American Medical Association[2] and found to contain a mixture of ammonium sodium and potassium iodides, arsenic and caffeine.

3227. *Ibosan.* The Ibosan Agency, 3616 Lyndale Ave., So. Minneapolis, Minn. Accompanying literature says in part: It (Ibósan) is a tried and proven remedy for diabetes. It acts by breaking up the molecules of carbohydrates (sugar and sugar-making foods), and by creating what might be called sugar-tolerance in the organs which have to do with converting carbohydrates into food.

Partial analysis:

A powdered or granulated product which, on treating with hot water, has the odor of yeast.

Moisture 5.93 per cent; total nitrogen 6.75 per cent; ash 8.02 per cent; phosphoric acid (P_2O_5), 3.34 per cent; potassium oxide 3.19 per cent.

Enzymic action on starch slight or negligible.

Inverting action on sucrose marked.

Fermenting powder (zymase) not tested.

The chief effect of the powder, so far as carbohydrate metabolism is concerned, is to convert sucrose into simpler sugars, dextrose and levulose. The difficulty of the diabetic patient is not to convert sucrose, but to metabolize properly the simpler sugars, so that Ibosan offers no real aid to carbohydrate tolerance.

Miscellaneous Materials Examined for Poisons, etc.

Thirty-three samples have been examined chiefly for health officers or other public officials. This work is summarized as follows:

No.	Material	Remarks
33283	*Cooked Carrots.*	A green mold evidently led to the suspicion of Paris green. No poisonous metals were found.
4010	*Fish Lure.*	Sample too small for analysis. Chief noticeable characteristic was the odor which resembled that of anise. Fed to gold fish for two weeks and no unfavorable symptoms noted.

[1] U. S. Dispensatory, p. 1232.

[2] Am. Med. Assoc., Laboratory Report for 1916, p. 114.

No.	Material	Remarks
4201	*Linseed oil.*	Met the requirements of the U. S. P.
5221	*Liquid for cleaning bowling alleys.*	Alleged to have caused dizziness, headache, nausea and other symptoms in those working with it. Liquid found to consist of, or contain, varnish in a solution of carbon disulphide and carbon tetrachloride, the disulphide predominating. Both of these substances are toxic, causing symptoms as described above.
33877 33878 33879 33880 33881	*Materials for identification or to be tested for poison.*	33877 was identified as sodium bicarbonate. 33878 was cake. Fed to white rats for eight days and no unfavorable symptoms noted. 33879, baking powder, not in original container, found to contain 150 parts per million of arsenic. Baking powder does not ordinarily contain arsenic to the extent of more than 1 part per million. 33880 and 33881, sugar and salt. No poisons were found.
31799	*Meat.*	Alleged to have caused death of dogs. No evidence of arsenic, mercury or other metallic poisons, or of cyanide or alkaloids was found.
32844 32845 32846	*Medicines.*	32844. Digitalis capsules containing 1.5 grains of digitalis powder. These tablets are standardized in terms of so-called "cat-units" which involves a biological test. Capsules not assayed but they were made by a reliable firm. 32845. Prescription, theobromine and sodium salicylate. Contained 42.5% theobromine and the equivalent of 30.9% salicylic acid, which were substantially the amounts demanded. 32846. Hexamethylenetetramine tablets found to be of the strength called for by the prescription.
4767	*Medicine.*	No evidence of morphine or of other opium alkaloids found.
5358	*Medicine.*	Iron and ammonia sugar present. Solids had odor of vinegar. Probably iron and ammonium acetate.
4171	*Metal Polish.*	Flash point determined 66° F., open cup method.
4940	*Orange Soda.*	No evidence of poisons detected.
3363 3365 3368	*Stomach contents of dogs; also chopped meat.*	Strychnine identified by chemical and biological tests, both in stomach contents and in meat which had been fed to the animals.
3370	*Stomach of dog.*	No phosphorus (yellow), or other volatile poisons, no alkaloids, and no poisonous metals were detected.
4771	*Stomach, liver and kidney of dog.*	Bismuth and mercury were found but these substances were present in medicine administered to dog. No evidence of other poisonous substances was found.

No.	Material	Remarks
5794	*Stomach of fox.*	The material was preserved with formalin so that tests for cyanides could not be made. A substance was isolated which was probably strychnine but tests for identity were not conclusive.
4995	*Tablets.*	No morphine or other opium alkaloids detected.
3892	*Tablets used for gauging the strength of alkali.*	Tablets composed of potassium hydrogen sulphate, brown-phenol purple and a siliceous excipient. Each tablet contains about 0.34 gm. of potassium hydrogen sulphate which will neutralize 1/10 gm. of sodium hydroxide.
4892	*Unknown waxy material.*	Not positively identified.
5680	*Vaseline.*	No evidence of alkaloids found.
5361	*Water from spring.*	Contained particles of fat floating on surface. No evidence of strychnine, arsenic or cyanide found in the fat or in the water.
4927	*Water.*	No poisonous metals detected.
4895, 4896	*Water, well.*	No evidence of arsenic was found.
4998	*White powder.*	Identified as calcium carbonate. Arsenic test negative.
4772	*Worm capsules for dogs.*	Kamala, areca nut, santonin, chenopodium were tested for but not detected. Oil of savin was not identified but an oil having the odor of savin was present.

Examinations Made for the State Water Commission.

Coöperating with the State Water Commission, five samples of factory waste liquors, etc., have been examined and reported to Mr. Copeland, engineer to the Commission. This work is in accordance with the statute creating the commission which directs that this Station may be called upon for such analytical service as it can render. Analyses required in considerable detail were made by Mr. Fisher. Methods of the American Public Health Association were employed whenever applicable.

Glassware Used in the Babcock Test.

Under the statute requiring this Station to check the calibration of pipettes and test bottles used in operating the Babcock test, the following pieces of glassware have been tested.

	Broken (in transit)	Accurate	Inaccurate or not meeting requirements	Total
Pipettes 17.6 cc.	1	379	0	380
Milk test bottles	22	1745	47	1814
Cream test bottles ...	0	224	17	241
Totals	23	2348	64	2435

In addition 12 lactometers have been checked against our standard instrument.

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