BULLETIN 307 MAY, 1929

Connecticut Agricultural Experiment Station
New Haven, Connecticut

THE THIRTY-THIRD REPORT ON
FOOD PRODUCTS
AND THE TWENTY-FIRST REPORT ON
DRUG PRODUCTS

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FOOD PRODUCTS
and the Twenty-First Report on
DRUG PRODUCTS

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Food and Drug Inspection
and Related Work

By
E. M. BAILEY

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Press of The Wilson H. Lee Co., New Haven, Conn.

Material	Page	Sampled by or Submitted to		Total	Adulterated, below standard, or otherwise illegal
		The Station	The Dairy and Food Commissioner		
DRUGS					
Aspirin tablets	832	0	12	12	1
Barbital, etc.:					
Tablets	833	0	5	5	0
Soluble barbital	833	0	3	3	0
Phenobarbital tablets	833	0	1	1	0
Belladonna	833	0	6	6	1
Cinchona	834	0	9	9	5
Colchicum	834	0	4	4	2
Ferric chloride	835	0	18	18	2
Hydrastis	836	0	2	2	0
Hydriodic Acid, diluted	836	0	4	4	1
Hydriodic Acid, Syrup of	836	0	8	8	0
Ipecac	837	0	3	3	1
Lead Subacetate	837	0	4	4	0
Magnesium Citrate	837	0	27	27	21
Mercurial Ointment	839	0	17	17	0
Nitrous Ether, Spirit of	839	0	24	24	14
Nux Vomica	841	0	5	5	3
Stramonium	841	0	1	1	0
Strontium Salicylate	841	0	3	3	0
Witch Hazel Water	841	9	14	23	5
Zinc Chloride	842	0	2	2	2
Zinc Oxide Ointment	842	0	12	12	0
Total for drugs	...	9	184	193	58
MISCELLANEOUS					
Proprietaries, etc	843	0	3	3	1
Tobacco	844	14	0	14	...
Materials examined for poisons, etc	847	20	20	40	...
Water analyses (State Water Commission)	848	6	0	6	...
Total for miscellaneous	...	40	23	63	1
Total for all	...	184	1136	1320	133
Babcock Glassware and Thermometers	848	2746	0	2746	22

The Thirty-Third Report on Food Products and the Twenty-First Report on Drug Products

Food and Drug Inspection and Related Work

By E. M. Bailey

The Station is charged with the administration and enforcement of the fertilizer law; with the administration, but not the enforcement, of the feeding stuffs law and the insecticide law; and, jointly with the Dairy and Food Commissioner, with the administration of the food and drugs act; but enforcement of the last named act rests with the Commissioner. The analytical work required by these statutes is done in the Department of Analytical Chemistry of the Station. In addition special statutes impose other obligations upon this department, notably the responsibility for certification of Babcock glassware and dairy thermometers and for cooperation with the State Water Commission in such analytical work as our facilities permit. Moreover, a considerable amount of work is done each year for the Storrs Experiment Station, and for the last few years the laboratory has collaborated rather extensively in the tobacco investigations being carried on by our own station at Windsor. The department is further required to prepare three annual reports covering the regular inspections of fertilizers, feeding stuffs, and foods and drugs as well as reports, not at fixed intervals, upon insecticides. During the past year a fairly comprehensive compilation of analyses of insecticides, fungicides, bactericides and weed killers has been issued, and other special bulletins are issued from time to time.

The work summarized in this report is that done for the year 1928 for purposes of food and drug control as required by the Dairy and Food Commissioner, and other work of a similar nature closely related thereto which is of public interest. The chemist in charge has continued to serve as a consultant to the Council on Pharmacy and Chemistry of the American Medical Association; as a member of the Executive Committee and of the Committee on Recommendations of Referees of the Association of Official Agricultural Chemists; and as a member of the (Federal) Joint Committee on Definitions and Standards for Foods.

The cooperation of the staff of this department in carrying on the work herein reported, as well as that reported elsewhere, is gratefully acknowledged.

FOODS.

Carbonated Beverages.

Of one hundred and fifty-two samples of carbonated beverages examined for the Dairy and Food Commissioner, sixteen samples contained artificial color, or flavor, or both, the presence of which was not declared upon the labels. One sample was found to contain saccharin; one contained visible dirt, and one bore misleading statements on the label. In no case was the minimum sugar content of 5 per cent not met.

Table I. Misbranded or Adulterated Beverages.

No.	Product	Dealer (Not necessarily the manufacturer)	Remarks
38771	Lemon and lime soda	*Bridgeport:* Berkshire Bottling Works	Undeclared artificial color.
38770	Orange soda	Coco-Cola Bottling Co	Undeclared artificial color.
38765	Orange soda	Hallett Mineral Water Co	Undeclared artificial color.
38763	Orange soda	*Danbury:* R.F. Baker Co., Inc.	Undeclared artificial color.
38960	Lemon, lime and juniper soda	*Hartford:* Boston Branch Groc. Co.	Undeclared artificial color.
38699	Grape soda	Pequot Spring Water Co.	Undeclared artificial flavor and color.
38698	Grape soda	United Bottling Works	Undeclared artificial flavor and color.
38046	Strawberry soda	*Middletown:* Coco-Cola Bottling Works	Undeclared artificial flavor and color.
38038	Lemon and lime soda	*New Britain:* Spring Bottling Works	Undeclared artificial color.
38042	Lemon and lime soda	*New Haven:* Clancy Bottling Works	Undeclared artificial color.
38755	Cherry soda	Elm City Bottling Works	Saccharin present.
38658	Lime soda	*New London:* Nutmeg Club Beverage Co.	Undeclared artificial color.
38690	Ginger ale soda	*Pawcatuck:* Gordon's Market, Mfr. Turk's Head Beverage Co., Prov., R. I.	Visible dirt.
38681	Birch beer soda	*Stamford:* Corbo Spring Water Co	Undeclared artificial color.
38680	Lemon and lime soda	National Spring Water Co	Undeclared artificial color.
38775	Lemon and lime soda	*Thompsonville:* Superior Mineral Water Co	Misleading declaration on label.
38017	Lemon and lime	*Waterbury:* Diamond Bottling Corp.	Undeclared artificial color.
38018	Strawberry soda	Diamond Bottling Corp.	Undeclared artificial flavor and color.
38033	Strawberry soda	*Willimantic:* Hosmer Mt. Spring Bottling Works	Undeclared artificial flavor and color.

In one instance a product was labelled "Imitation Orange Soda" but it contained artificial color with no label declaration to that effect. It is held that the ingredients which give to a product its artificial character should be stated and in this case therefore the declaration of artificial color should not be omitted.[1]

[1] State Regulation 18, p. 21, 1927.

A label on lemon and lime soda, No. 38775, bore a statement to the effect that the contents of the bottle (1 quart), was equal to 308 calories of solid food or seven pounds of oysters. This statement is substantially correct so far as calorie equivalents are concerned but it is misleading in that soda water, in which the solids are practically all sugar, cannot be reasonably compared with oysters, or any other food in which there are other nutrients such as protein, or fat, or both. Calories measure energy production which is only one type of food value.

CATSUP.

One sample of catsup, Elizabeth Park Brand made by S. Vogel Sons, Hartford, Conn., was analyzed as follows:

No.	9815
Total solids	35.99%
Water-sol. solids	34.70
Ash	4.00
Salt (NaCl)	2.92
Salt-free ash	1.08
Protein (Nx6.25)	1.88
Fiber	0.47

CEREAL PRODUCTS.

One sample was examined, No. 8346. This was Roman Meal manufactured by the Roman Meal Corporation of Buffalo, N. Y. and Tacoma, Wash.

The product is said to be a natural laxative because of the bran present and is claimed to contain wheat, rye, bran and deodorized and tasteless flaxseed.

The ingredients claimed were found to be present; but the odor and taste of flaxseed was still evident.

The analysis is as follows:

Moisture	6.30%
Ash	4.10
Protein (Nx6.25)	17.31
Fiber	5.43
Carbohydrate (other than fiber)	61.23
Fat	5.63

COFFEE.

Seven samples of coffee or modified coffee were examined.

40732 and 40920. Roma Brand Perfect Blend Coffee, Roma Coffee Co., Hartford, Conn. Both of these samples were found to contain an admixture of chicory which was identified by microscopic examination. The samples contained 1.03 and 1.04 per cent of caffeine respectively which indicated that chicory did not exceed 10 per cent of the mixture.

There is no objection to the sale of a mixture of this sort provided such is sold under a label which declares the true character of the product. Under the above label this product is adulterated and misbranded.

41266, Coffee, purchased at the Piggly Wiggly store in West Haven was not found to be adulterated.

9523, 39831 and 39834. Sanka Coffee, 97 per cent of caffeine removed. Sanka Coffee Corporation, New York.

One of these samples, 9523, was purchased by the Station agent and the others by the Dairy and Food Commissioner. The caffeine content found was 0.05, 0.07 and 0.03 per cent respectively. Assuming 1.2 per cent as a fair average caffeine content for coffee the indicated caffeine removal varies from 94 to 97.5 per cent which fairly substantiates the manufacturer's claim.

Sample 9523 was examined in more detail as follows:

Ash	4.20%
Water-sol. ash	3.48
Water-insol. ash	0.72
Soluble solids	20.68
Petroleum ether extract	15.09
Caffeine	0.05

39832. Kaffee Hag, Kaffee Hag Corp., owned and operated by the Kellogg Co., Battle Creek, Mich.

This product is likewise claimed to have had 97 per cent of the caffeine removed. Our analysis showed 0.07 per cent present. This product examined in this laboratory on five occasions from 1915 to 1925 showed caffeine ranging in amounts from 0.03 to 0.10 and averaging 0.06. The per cent removed depends upon caffeine content of the original coffee, but on a basis of 1.2 per cent for ordinary coffee the manufacturer's claim is fairly substantiated.

Special and Miscellaneous Foods.

Thirty-nine samples of this class of foods have been examined and the analyses are given in Table II.

Of the Cellu products, 8334 and 8335, the composition of the Soy Bean flour indicates that about one-half of the oil of the original beans has been removed. Soy Bean Crisps have substantially the composition of the entire bean.

The Diet Rite Products Company have taken over the business formerly conducted by the Woman's Baking Company of Boston. The "fat" in these products is largely mineral oil as previous analyses have shown. Mineral matter (ash), is now considerably lower than formerly possibly due to a change in formulas.

The Energen products are labelled showing the amounts of protein, fat and carbohydrate per unit of food and these statements are substantially correct as shown by our analyses. The products

in general show large amounts of carbohydrate which must be classed as "available" (starch plus soluble carbohydrate). Agar-Bran Biscuits are relatively low in protein and the carbohydrate is probably very largely unassimilable. Energen Protein Food is low in carbohydrate but the high protein is a potential source of a considerable amount of glucose in digestion.

Loeb's Dietetic Bran Wafers and Starch-free Bran are both low in that part of the carbohydrate which may be regarded as available. Microscopic examination reveals only traces of starch present. A sample of Aerated Gluten Bread, submitted by a purchaser, shows about the same composition as other samples of this product previously examined.

In a previous report[1] an analysis of Thomas Gluten Bread is given. This was the name under which the sample was submitted. but the manufacturer questioned the identity of the product and suggested that the sample was, no doubt, their Protein Bread and not their Gluten Bread. To verify this a sample of one of these products was secured in the market by our station agent and a sample of each of them was later submitted by the manufacturer. From the analyses of these samples it appears that the product which we examined a year ago was in fact the protein bread and not the gluten product as stated in our report.

Diaban Dietetic Flour varies somewhat from the composition shown by our previous analysis of this product,[2] but the difference is not greater than would probably occur in manufacturing practice over a period of time.

Jeru Artichoke Flakes are prepared from Jerusalem artichokes by slicing, and cooking in oil. The carbohydrate is chiefly inulin and the result reported as inulin in our analysis is based upon the reducing sugar obtained upon a 15 minute hydrolysis at which time, in our experience, the maximum reducing power is reached. On longer hydrolysis reducing sugars diminish, probably due to the destruction of levulose.

The advantage of inulin feeding in cases of diabetes has been the subject of extended inquiry on the part of students of this disease. A recent paper by Carpenter and Root[3] describes some convincing experiments.

Diaetei Primar Mehl submitted by a physician is said to be a German product used in diabetic dietaries.

A sample of canned fruit (in tins) was submitted by Dr. E. P. Joslin of Boston. The fruit is variously known as "Bakapple", "Bake-apple berry" or "Cloudberry". It resembles our raspberry and its botanical name is *Rubus chamaemorus*. The plant is found in the peat bogs of the far north even within the Arctic Circle. It is found in northern Europe, Asia and North America. In this country it occurs only as far south as Maine in the east and British Columbia in the west.

[1] Conn. Exp. Sta. Bull. 295, p. 312, 1927.
[2] Conn. Exp. Station Bull. 276, p. 342, 1925.
[3] Archives of Internal Medicine, Vol. 42, p. 64, 1928.

TABLE II. ANALYSES OF SO-CALLED DIABETIC, SPECIAL AND MISCELLANEOUS FOODS.

No.	Manufacturer and name of product	Water	Ash	Protein	Fiber	Carbohydrate other than fiber		Fat
						Starch + soluble	Undetermined	
		%	%	%	%	%	%	%
	Chicago Dietetic Supply House, Chicago, Ill.							
8334	Cellu Soy Bean Flour	6.43	6.20	45.00	4.05	11.19	17.42	9.71
8335	Cellu Soy Crisps	1.40	6.85	46.06	5.38	7.00	13.38	19.93
	Diet Rite Products Co., 440 Huntington Ave., Boston, Mass.							
573	Lemon cookies	3.80	1.48	4.38	20.70	45.67		23.97
574	Anise cookies	5.20	3.11	8.69	9.25	48.03		25.72
575	Vanilla cookies	4.60	1.80	4.63	19.65	47.73		21.59
576	Bran, washed	4.53	1.17	13 63	17.20	2.50	55.50	5.47
577	Bran muffins	7.05	3.42	10.50	13.78	61.74		3.51
578	Carraway cookies	5.33	2.76	9.75	9.53	48.89		23.74
579	Cocoa cookies	4.78	2.84	9.13	7.80	44.55		30.90
580	Spice cookies	5.78	2.84	7.50	10.03	51.71		22.14
581	Soup wafers	3.53	6.69	4.25	15.85	45.16		24.52
	Energen Foods Co., 261 Broadway, N. Y.							
8220	Energen Biscuits, Endobran	3.18	3.00	16.13	6.35	20.63	24.64	26.07
8221	Energen Biscuits, Digestive	3.80	1.47	22.75	0.45	38.25	4.96	28.32
8222	Energen Starch-reduced Rolls	4.13	0.89	37.94	0.65	44.69	3.05	8.65
8223	Energen Wheat Meal Bread	4.39	0.95	41.44	1.00	41.00	3.14	8.08
8224	Energen Biscuits, Agar-Bran	4.64	5.03	15.13	10.18	8.00	52.84	4.18
8225	Energen Bread, Batons	4.28	0.64	39.63	0.35	47.44	1.24	6.42
8226	Energen Rusks	4.70	0.67	39.38	0.58	46.44	2.24	5.99
8227	Energen Bread with Casein	4.77	0.91	45.75	0.35	37.44	4.28	6.50
8228	Energen Gluten Semolina	5.85	0.65	21.75	0.35	68.38	0.42	2.60
8229	Energen Protein Food	6.75	4.46	73.25	0.45	1.19	7.50	6.40
8230	Energen Pastry Flour	7.03	0.58	23.88	0.43	54.38	11.06	2.64
8231	Energen Macaroni with Gluten	6.23	0.96	30.50	0.48	58.01	none	3.82
8232	Energen Bismeal Breakfast Food	5.18	1.33	31.56	1.18	52.88	3.27	4.60

TABLE II. ANALYSES OF SO-CALLED DIABETIC, SPECIAL AND MISCELLANEOUS FOODS—*Concluded.*

No.	Manufacturer and name of product	Water	Ash	Protein	Fiber	Carbohydrate other than fiber: Starch + soluble	Carbohydrate other than fiber: Undetermined	Fat
		%	%	%	%	%	%	%
	Energen Foods Co., 261 Broadway, N.Y.—Con.							
8233	Energen Tapioca	6.45	0.24	8.50	0.35	83.48	none	0.98
8234	Energen Cocoa with Gluten	4.05	4.86	38.94	3.85	11.33	18.38	18.59
	Loeb's Dietetic Food Bakery, 505 W. 171st St., New York City.							
9402	Dietetic Bran Wafers	7.61	6.04	22.69	12.04	4.88[1]	36.83	9.91
9403	Starch-free Bran	7.47	4.91	18.75	16.75	5.00[1]	40.75	6.37
9883	Aerated Gluten Bread	7.21	1.59	42.86[2]	0.75	34.25	3.22	10.12
	The Pure Gluten Food Co., 90 West Broadway, New York City.							
9399	Hoyt's Gluten Muffin Flour	9.32	6.00	36.71[2]	0.27	40.81	5.75	1.14
9400	Hoyt's Gluten Bread Flour	9.64	6.07	37.45[2]	0.28	40.31	5.35	0.90
9401	Hoyt's Whole Wheat Pancake Flour	10.13	6.78	14.42[2]	1.71	55.94	9.17	1.85
	S. B. Thomas, Inc., Long Island City, N. Y.							
599	Thomas' Protein Bread	39.89	2.33	11.28	....	....	45.14[3]	1.36
978	Thomas' Protein Bread	37.53	2.00	10.42	0.58	....	48.00[4]	1.47
979	Thomas' Gluten Bread	35.49	1.81	30.68	0.37	....	30.17[4]	1.48
	MacDowell Bros., Ogdensburg, N. Y.							
9464	Diaban Dietetic Flour	8.21	6.24	25.00	2.31	34.19	7.64	16.41
	Jeru Artichoke Products Co., Denver, Col.							
9876	Jeru Artichoke Flakes	6.91	3.30	3.79	2.01	35.86[5]	5.29	42.84
	Miscellaneous.							
9875	Diaetei Primar Mehl	9.84	3.88	48.50	0.75	34.13	1.70	1.20
8730	Bakapple,[6] canned	84.24	0.52	1.94	3.33	4.70[7]	4.99	0.28

[1] Starch, trace only.
[2] Factor 5.7
[3] Includes starch and fiber.
[4] Includes starch and soluble carbohydrate.
[5] Reducing sugar after 15 mt. hydrolysis, calc. as inulin.
[6] Also called Bake-apple or Cloudberry.
[7] Total sugar calc. as invert sugar.

Eggs and Egg Products.

Three samples of liquid eggs were submitted by the Dairy and Food Commissioner. Nos. 38616 and 38617 were commercial products and 38618 was freshly broken whole eggs. The question was to determine whether the commercial products were whole eggs or whether they contained excess of white.

The analyses were as follows:

	No. 38616	No. 38617	No. 38618
Ammoniacal nitrogen, mgms. per 100 cc.	3.1	5.5	2.1
Solids	27.96%	27.41%	28.04%
Ether extract	10.47	10.49	10.21
Lipoids	15.31	11.38	13.90
Lipoid P_2O_5	0.40	0.30	0.37
Water-sol. protein nitrogen precipitated by 40% alcohol	0.76	0.77	0.73
Odor	none	offensive	none

Compared with the sample known to be freshly prepared whole eggs the other two samples appear to be whole egg products. The average ether extract in whole egg is about 10 per cent whereas it is over 25 per cent in egg yolk and less than 0.1 per cent in egg white. The average for lipoid P_2O_5 in whole eggs is about 0.36%, and for water-soluble protein nitrogen precipitable by 40 per cent alcohol about 1 per cent.[1]

The high content of ammoniacal nitrogen in sample 38617 indicated a state of decomposition as did also the noticeably offensive odor of the product. Assuming 2.6[2] as about the upper limit for ammoniacal nitrogen in edible eggs of 10 per cent ether extract, sample 38616 showed some evidence of deterioration but no odor was perceptible.

Four samples of dried egg yolk and milk powder mixtures were examined. These samples were submitted by the purchasers from stock bought in quantity for use in ice cream manufacture. While these mixtures were referred to by the purchasers as "egg yolk" or "egg yolk powder" there now appears to have been no misunderstanding on their part as to the character of the mixtures, and we were asked to determine the proportions of egg and milk product in them.

Samples 603 and 604 were submitted by R. F. Worden & Sons, Inc., Waterbury. The first sample represented goods bought from the John Lowe Co. of Brooklyn and the second from the National Kreem Co. of New York City.

Samples 734 and 735 were submitted by the Rider Dairy Co. of Danbury, manufacturer not stated.

[1] Jour. A. O. A. C., 8.614.
[2] U. S. Dept. Agr., Bull. 846, (1920).

The analyses are as follows:

	603	604	734	735
	%	%	%	%
Moisture	4.37	4.22	....	....
Ash	5.20	4.51	4.63	4.53
Total nitrogen	5.32	5.27	5.25	5.11
Ether extract	30.23	36.73	....	....
Lipoids	39.73	46.88	....	....
Lipoid-P_2O_5	1.00	1.23	....	....
Sugar (as lactose)	18.60	13.46	16.93	14.52

The samples contain egg yolk in the approximate proportions of 65 to 75 per cent the remainder being skim milk powder or a similar product.

Fats and Oils.

BUTTER.

Sixty-six samples of butter were examined for the Dairy and Food Commissioner and no serious deficiencies in fat or excesses of moisture were found except in one sample, 37888, which contained 18.3 per cent of water and 77.9 per cent of fat. Butter should contain not less than 80 per cent of fat and not over 16 per cent of water.

The deficient sample was purchased of Andrew Koleskenik, Seymour.

The results of the inspection are summarized as follows:

	Moisture	Fat
	%	%
Maximum	18.3	87.7
Minimum	10.1	77.9
Average	14.5	82.0

OLEOMARGARINE.

One sample of Verco Brand Margarin, 37127, made by the Mayfair Margarin Co., Providence, R. I. was examined for the Dairy and Food Commissioner.

The product was sensibly yellow but no artificial color was found to be present. It was properly labelled as oleomargarine, but the pictorial sign of a coconut tree and coconuts and the declaration that the product contains no lard, oleo oil or any animal oil, thus emphasizing its exclusively vegetable character, was objected to in view of the fact that admittedly a substantial part (10 per cent), of the fatty ingredients is butter fat.

The analysis was as follows:

Moisture	9.60%
Ash	2.65
Casein, Nx6.38	0 84
Fat	87.00

LARD.

Sixteen samples bought for pure lard were examined for the Commissioner. No evidence of adulteration was found in any case. Four samples were collected by the Station for experimental purposes, and one was submitted by a purchaser.

The samples were examined as shown in Table III.

TABLE III. EXAMINATION OF LARD.

No.	Dealer	Butyro-refractometer reading @ 40° C.	M. P. of glycerides, degrees C.	M. P. of fatty acids from glycerides, degrees C.	Halphen test
	Hartford:				
40296	Atlantic and Pacific Tea Co., Main St.	50.6	64.2	....	faint red
40295	Atlantic and Pacific Tea Co., Park St.	50.6	64.3	....	faint red
40294	Atlantic and Pacific Tea Co., Washington St.	50.7	64.3	....	faint red
40745	Atlantic and Pacific Tea Co., Park St.[1]	50.9	64.5	....	faint red
40744	Atlantic and Pacific Tea Co., Lawrence St.[2]	50.4	64.2	57.5	negative
39945	Atlantic and Pacific Tea Co., Albany Ave. and Chestnut St.	50.8	....	....	negative
	New Haven:				
40737	A. Cavellero, Oak St.	50.3	63.2	57.0	faint color
40741	Kolligian and Okooman, Orchard St.	50.5	63.7	56.5	negative
40742	Kolligian and Okooman, Orchard St.	50.5	63.8	57.2	faint color
40739	Lazar, Harry, Goffe St.	50.7	63.9	57.0	negative
40740	Nederman, A., Goffe St.	50.4	63.8	56.8	trace of color
40743	Terrece, O. S., Bassett St.	50.7	63.7	56.8	faint red
	Stafford Springs:				
40747	Economy Grocery	50.6	64.3	....	trace of color
40746	First National Stores, Inc.	50.6	64.0	....	negative
	Suffield:				
40748	Economy Grocery	50.7	64.0	....	trace of color
40749	Atlantic and Pacific Tea Co	50.6	64.3	....	trace of color

[1] Iodine No. 63.4.
[2] Iodine No. 61.8.

Examination of the crystals obtained by the Belfield test were in nearly all cases typical of lard and no evidence of beef stearine was found. In one sample typical lard crystals were formed and also some of a very different type. The two types were separated and their melting points determined. The figures for each were nearly identical and within the limits for pure lard as were the melting points of the fatty acids obtained from the glycerides.

In many cases the Halphen test gave faint reddish colors. In view of the fact that cottonseed products when fed to animals may impart characters to animal fats which result in a positive reaction by this test, these results are probably not significant as an index of adulteration.

OLIVE OIL.

Twenty-seven official samples of olive oil were examined. Six were adulterated. The adulterated samples are as follows:

No.	Brand, Manufacturer or Dealer	Retailer	Remarks
40709	Titan.....	*Ansonia;* James Phillips	Contained cottonseed oil.
39844	Roma Importing Co., Waterbury.....	Stephen Senecky	Contained cottonseed oil.
38975	Cream Olive Oil, Lucca.	*New Haven;* C. Cavellaro, Oak St.....	Contained cottonseed oil.
38664	Blue Star, H & W, Inc., New York.....	E. Rosner, Dixwell Ave.	Contained peanut oil.
40724	Marca Crestena.....	A. Cocco, Washington Ave..	Contained cottonseed oil.
39841	El Toro, Stack Bros.,	*Seymour;* Chas. Plink, New York.....	Contained cottonseed oil.

FRUIT PRODUCTS.

SWEET CIDER, ETC.

Four samples of apple cider were submitted by the Commissioner. They contained from 10.7 to 15.7 per cent of solids. One was preserved with benzoate of soda but in the others no preservative was found. The preserved sample contained 11.12 per cent of solids, 0.57 per cent of ash and 0.59 per cent of acid expressed as malic acid.

A sample of Monquin Brand orange juice labelled as unheated natural juice with cane sugar, and 0.2 per cent benzoate of soda, but without artificial color or flavor, was found to be of the substance and quality stated so far as our examination could discover.

DRIED FRUITS.

In the process of preparing dried fruits the fumes of burning sulphur are employed in order to prevent or diminish discoloration due to oxidation which would impair the marketability of these products.

The limit beyond which sulphur dioxide should not be allowed in food products is a debated question. The regulations in this State raise no objection to this substance in products which by long usage have been prepared with sulphur dioxide provided it is not used to conceal damage or inferiority, such as the marketing of excessive water; and provided the proper label declaration is made. What quantity may be regarded as a menace to health has not been determined and no official limit for sulphur dioxide in foods has been fixed. At one time a limit of 350 milligrams per kilo was proposed.

During the past year thirteen samples of dried fruits were examined for sulphur dioxide content with the results as shown in Table IV.

TABLE IV. SULPHUR DIOXIDE IN DRIED FRUITS.

No.	Manufacturer	SO_2, mgms. per kilo of fruit
	Apples:	
39837	Hartmann Dried Fruit Co., Rochester, N. Y...	47.2
	Apricots:	
40731	Guggenheim & Co., California.....	492.1
40706	Richmond Chase Co., San Jose, California.....	982.4
39849	F. H. Liggett & Co., New York.....	554.3
39835	California Packing Co., San Francisco.....	885.1
39833	Rosenberg Bros. & Co., California.....	1,185.0
40734	Rosenberg Bros. & Co., California.....	1,470.0
40704	C. C. Collins & Co., Santa Ana, California.....	2,152.0
	Peaches:	
40735	R. Fair, Modesto, California.....	1,562.0
40707	Napa Fruit Co., Napa, California.....	299.1
39838	California Peach and Fig Growers' Association, Fresno, Cal.....	1,013.0
39836	R. C. Williams, Inc., New York.....	268.2
40733	Rosenberg Bros. & Co., California.....	1,724.0

A limited amount of data on the sulphur dioxide content of dried fruits is found in a previous report from this laboratory[1] where it appears that the quantity found did not exceed 600 milligrams per kilo. The results obtained now show a wide range of variation, and in view of the fact that about one-half of the samples contain less than 1000 milligrams per kilo (0.1 per cent), amounts of from 50 to 100 per cent more than this would appear to be excessive.

PRESERVES.

Fifty-five samples of fruit preserves were examined for saccharin and preservatives. No saccharin was found and no preservatives were found except in two instances where declaration of benzoate of soda was made.

[1] Conn. Exp. Sta. Report 1912, p. 101.

HONEY.

One sample of honey, 40903, was submitted by the Commissioner. It was within the limits of composition for pure honey and was passed.

ICE CREAM, ETC.

Two hundred and seventy samples of ice cream were examined. The distribution of samples with report to fat content is shown by the following summary.

Per cent of fat	No. of samples	Per cent of total
8.0 to 9.9	25	9.3
10.0 to 11.9	65	24.1
12.0 and above	178	65.9
7.9 and below	2	0.7

From this data it is seen that about two-thirds of the samples examined contained 50 per cent more milk fat than the minimum specified in our law, viz., 8 per cent. This does not mean however, that two-thirds of the production in the State is of that grade.

FROZEN PUDDING.

Five samples of this type of products were examined. They generally contain less than 8 per cent of fat but are sold under declarations which make them legal products. Regulations require these products to observe the same sanitary measures as are in force for ice cream.

MAPLE PRODUCTS.

One sample of maple sugar, 9092, submitted by Daigle Bros., Marion, was examined and not found adulterated.

Analysis:

> Moisture 13.28 per cent; ash 0.97 per cent; insoluble ash 0.38 per cent; lead number (Winton), 2.38 per cent; malic acid value 0.58 per cent.

One sample of maple syrup, 37123, St. Johnsbury Pure Vermont Maple Sap Syrup was examined for the Dairy and Food Commissioner and was not found adulterated.

MEAT PRODUCTS.

Eight samples of frankfurt sausage were examined six of which contained starchy material, or color, or both for which proper declaration was not made. This should not be understood to mean that such a large proportion of frankfurts is illegally sold in this State. The explanation is that the inspector takes only those

samples which are suspicious. Iodine tests made by him at the store or factory enable him to avoid the collection of a large number of unnecessary samples.

With proper declaration cereal or starchy material may be used in sausage provided the amount does not exceed 3.5%. Samples not properly branded are listed in the following summary.

No.	Retail dealer (not necessarily the manufacturer)	Remarks
	Forestville:	
38011	The Atlantic and Pacific Tea Co.	Undeclared cereal and color
38012	The Atlantic and Pacific Tea Co.	Undeclared cereal and color
	New Canaan:	
40907	P. Calaluca	Undeclared cereal
	Norwich:	
38013	F. G. Thum	Undeclared cereal
	Torrington:	
38004	O'Meara's Market	Undeclared cereal
	Winsted:	
40914	J. P. Gagner	Undeclared cereal

Two samples were examined for moisture and nitrogen. From these values excess water in sausage can be estimated. It is permissible to use 3 per cent of water or ice in the manufacture of sausage and somewhat more in the case of those types of sausage which are smoked or cooked, but in no case should more water be added than is required to make the products palatable. The ratio of water to protein in the usual cuts of meat which are used in sausage making is about 4 to 1. In one of the samples above mentioned moisture was found to be 54.7% and protein (nitrogen x 6.25), 13.63%, and no added water was indicated. In the other sample 54.5% of water and 14.13% of protein were found which would indicate that not more than 2% of water had been added.

Skimmed milk powder if used in the manufacture of sausage requires a declaration. A sample said to contain about 5 per cent of such powder, and so labelled, was examined; and also a sample of the milk product used. The powder contained 49.5 per cent of sugar, calculated as lactose. The sausage on microscopic examination showed the presence of the milk product and direct reducing sugar was present in the amount to 1.9 per cent which would indicate approximately 4 per cent of milk product in the sausage.

In our report of a year ago[1] it appears that a sample of frankfurts purchased at the Reliable Market in New Haven were manufactured by Chas. Hertler of New Haven. This is the information as it appears on our records made by the inspector at the time

[1] Conn. Exp. Sta. Bull. 295, p. 317, 1928.

and place of sale, but in view of the explanation made by Mr. Hertler and of our further information we are inclined to believe that this sample did not represent a product of his manufacture.

Milk, Milk Products, Etc.

Two hundred and ninety-four samples of market milk have been examined of which 277 were submitted by the Dairy and Food Commissioner and the remaining samples (17), were examined for producers and consumers.

On analysis of 146 official samples the following classification is made:

	No. of samples	Per cent
Not found adulterated	63	43.2
Adulterated by watering	32	21.9
Adulterated by skimming	3	2.0
Below standard:		
in solids and solids-not-fat	32	21.9
in solids and fat	1	0.7
in solids, fat and solids-not-fat	15	10.3
Totals	146	100.0

The list of adulterated samples is given in Table V.

Six samples of cream were tested for fat content; and two samples of human milk were examined for protein and fat.

Two samples of flavored milk product resembling so-called chocolated milk were submitted by the Dairy and Food Commissioner together with a syrup and a powder which were to be used in preparing the drink in the home. The liquids contained 14 and 14.9 per cent of solids respectively with 2.7 and 3.7 per cent of fat, largely milk fat. One sample was evidently made with milk of standard quality while in the other partially skimmed milk was apparently used. The flavor, both syrup and powder, consisted of cocoa, honey and malt and contained 13.5 per cent of protein and 4.9 per cent of fat when calculated to the water-free basis. In the proportion in which the flavor was added to milk (one teaspoonful to a glass of milk), food solids in the beverage would be about 10 per cent more than in the original milk.

A sample of Swiss Sterilized Milk and one of Swiss Cream were submitted by the Commissioner. So far as chemical analyses indicate the products meet the requirements of the standards for milk and cream in this State. The milk is not claimed to have been evaporated. It contains 3.7 per cent of fat and 12.5 per cent of solids. The cream contained 25.1 per cent of fat.

TABLE V. ADULTERATED MILK.

CONTAINING ADDED WATER.

No.	Dealer	Solids	Fat
	Bridgeport	%	%
40407	City Dairy Co.	10.23	3.0
40408	City Dairy Co.	8.94	2.2
40409	City Dairy Co.	10.67	3.1
40410	City Dairy Co.	9.01	2.3
40411	City Dairy Co.	9.83	2.8
40412	City Dairy Co.	10.32	3.1
40413	City Dairy Co.	9.22	2.5
40414	City Dairy Co.	9.49	2.7
40415	City Dairy Co.	9.87	2.6
40416	City Dairy Co.	9.75	2.5
40417	City Dairy Co.	9.51	2.8
40418	City Dairy Co.	9.76	2.8
40419	City Dairy Co.	10.01	2.9
40420	City Dairy Co.	10.37	3.2
40421	City Dairy Co.	10.25	3.1
40422	City Dairy Co.	9.66	2.8
40995	Henry Foland	11.24	3.5
	Danbury		
37756	O. W. Starr	10.76	3.3
	Fairfield		
37758	John Zadny	9.45	2.9
37759	John Zadny	9.45	3.0
	Gaylordsville		
38634	Walter Kilian	10.16	2.9
	Litchfield		
38811	John Walter	11.15	3.9
38812	John Walter	8.86	2.3
38813	John Walter	10.79	4.2
38814	John Walter	10.13	2.9
38815	John Walter	9.36	2.9
38816	John Walter	11.35	3.7
38817	John Walter	10.46	3.3
	New Haven		
38488	Chas. Philips	10.51	3.3
40959	State Dairy Co.	11.28	3.6
	Old Saybrook		
40168	Mrs. Grace Appleby	9.35	3.1
40169	Mrs. Grace Appleby	9.44	3.1

SKIMMED MILK.

	Southington		
39300	B. Yuekiewick	10.83	2.4
39301	B. Yuekiewick	10.48	2.4
	Address Unknown		
39991	Victory Restaurant	10.88	2.1

SPICES.

Nine samples of paprika were examined and no evidence of adulteration found. One sample somewhat exceeded the limit for ash, as set by the standard, and another exceeded the limits for total ash and acid insoluble ash. Two samples were examined for experimental purposes.

TEA.

Supplementing a study carried on by Mr. G. F. Mitchell, Supervising Tea Examiner of the United States, to determine the effect of various types of containers upon the keeping qualities of teas, analyses of fourteen samples of tea were made during the past year. Corresponding samples were examined in 1927 and the original teas which formed the basis of the study were analyzed in 1926. A summary of the analytical data is given in Table VI.

It is generally recognized that quality in tea as judged by the expert taster cannot be postulated in terms of definite chemical constituents so far as they have been determined, and the data here given probably reveals no definite and consistent relationship to changes in quality which have been observed by tasting methods. Moreover the proportions of constituents in the leaves are quite different from those in infusions upon which judgment of quality is largely based.

The figures for moisture do not necessarily reflect the moisture conditions in the various packages, but rather that of the teas as prepared for analysis under the atmospheric conditions prevailing at the time. The total ash and the several constants thereof show no variations other than those incidental to analysis and sampling. Total nitrogen and caffeine remain remarkably constant. Variations in fiber are not significant. Results for tannin must be interpreted with some reservation because of the limitations of the method generally employed for its determination, but notwithstanding this the data show a consistent increase in this constituent group as the teas age. The observation of tea tasters that old teas are markedly astringent suggests a possible relation between this quality and the tannin increase shown. It might be questioned whether this relatively small increase in tannin would be reflected in the taste of the infusion; and whether the amount of tannin soluble in water is likewise increased. Materials soluble in petroleum ether decrease somewhat in the teas held for one and two year periods. This decrease amounting to about 50 per cent in the case of green tea appeared to be exaggerated but the value obtained for the original sample (2.82 per cent), was thoroughly checked and is not an abnormal value for green tea. Although total petroleum ether extract decreased, that portion of it which was lost on heating at 110° C showed a slight but consistent increase. An attempt was first made to determine volatile oil by

TABLE VI. SUMMARY OF ANALYSES OF EXPERIMENTAL PACKAGE TEAS

Sample Nos.	Water	ASH						Nitrogen	Caffeine, from N	Fiber	Tannin	Pet. Ether Extract 40 hrs. extraction	Vol. oil; Loss at 110° C, basis of 40 hrs. extraction
		Total	Water-soluble	Water-insoluble	Acid-insoluble	Alkalinity water-sol., cc N acid/100 gms.	Alkalinity water-insol., cc N acid/100 gms.						
1926	%	%	%	%	%			%	%	%	%	%	%
Black	5.03	5.21	2.96	2.25	0.07	29.5	34.5	4.20	2.78	9.89	6.16	1.08	0.10
1927													
Black—Maximum	6.28	5.26	3.18	2.35	0.25	32.0	37.5	4.21	2.84	10.48	8.01	1.01	0.20
Minimum	5.68	5.00	2.89	1.98	0.05	30.0	34.0	4.15	2.71	9.06	6.65	0.81	0.14
Average	6.07	5.17	3.04	2.13	0.10	31.3	34.9	4.18	2.76	9.76	7.29	0.90	0.17
1928													
Black—Maximum	7.23	5.83	3.14	2.69	0.14	32.8	40.5	4.22	2.84	10.15	9.35	0.90	0.27
Minimum	6.01	4.99	2.93	2.06	0.05	29.0	35.0	4.06	2.74	9.73	7.97	0.70	0.20
Average	6.61	5.21	3.00	2.22	0.09	30.9	36.9	4.16	2.80	9.93	8.46	0.82	0.22
1926													
Green	3.23	5.53	3.27	2.26	0.20	32.8	31.8	4.37	2.15	11.0	5.87	2.82	0.10
1927													
Green—Maximum	5.65	5.58	3.66	2.18	0.28	36.0	28.0	4.44	2.45	10.61	7.54	1.79	0.24
Minimum	4.11	5.35	3.37	1.92	0.19	34.5	26.5	4.31	2.12	9.77	6.61	1.49	0.20
Average	4.71	5.50	3.50	2.01	0.24	35.4	27.3	4.34	2.21	10.20	7.03	1.66	0.22
1928													
Green—Maximum	5.74	5.43	3.39	2.13	0.32	35.5	30.5	4.38	2.19	11.10	9.11	1.89	0.28
Minimum	4.50	5.32	3.25	1.97	0.17	34.3	27.8	4.26	2.13	10.57	7.20	1.11	0.21
Average	5.01	5.38	3.32	2.05	0.23	35.0	29.1	4.31	2.16	10.78	8.26	1.42	0.25

the tentative method[1] recommended for tea but the results were unsatisfactory. Only minute quantities were obtained even on prolonged distillation. Loss on heating the petroleum ether extract at 110° C suggested itself as affording some measure of the volatile oil, but this procedure is not entirely satisfactory. The results obtained suggest that further study of volatile oil content of tea by more exact methods of measurement might be of interest and value.

VINEGAR.

Ten official samples of vinegar were examined for the Dairy and Food Commissioner and all were passed. Fourteen samples were submitted by producers of home made cider vinegar.

MISCELLANEOUS FOODS, ETC.

BEMAX.

This preparation made by or prepared for Vitamins Ltd. of London is claimed to be a concentrated extract of natural B vitamin, the detoxicated embryo.

Wheat embryo is a commercial article and a well recognized source of vitamin B. Our sample of Bemax was not unlike commercial wheat embryo in general appearance and character. From the comparative analyses it is evident that the two articles are substantially alike in composition, particularly when compared on the water- and fat-free basis.

Feeding tests revealed no superiority of Bemax over our laboratory sample of commercial wheat embryo. All experimental animals failed on both products when amounts under 300 milligrams daily were fed and 400 milligrams in both cases were required for conspicuous gains.

Analyses are given in Table VII.

TABLE VII. ANALYSES OF "BEMAX" AND WHEAT EMBRYO.

	Bemax No. 678		Commercial Wheat embryo No. 679	
	Air dry	Water- and fat-free	Air dry	Water- and fat-free
	%	%	%	%
Water	4.88	....	8.68	....
Ash	5.22	6.09	4.30	5.40
Protein (Nx5.7)	30.44	35.50	24.97	31.36
Fiber	2.45	2.86	2.18	2.74
Nitrogen-free extr	47.63	55.55	48.17	60.50
Fat	9.38	....	11.70	....
Total phosphorus (P_2O_5)	2.87	3.34	2.37	2.98

POTATOES.

Twenty-two samples of potatoes representing different stages of maturity were analyzed after digging in the fall and before planting in the spring. These analyses were made for the Storrs Station and results are for discussion elsewhere.

[1] A. O. A. C. Methods of Analysis, p. 340.

COLLABORATIVE WORK ON CHOCOLATE.

Crude fiber determinations were made on two samples of chocolate in a trial of methods suggested by the A. O. A. C. referee on cacao products. These results appear in the proceedings of the association.

DRUGS.

ASPIRIN.

Twelve samples of aspirin tablets were examined and the results are given in Table VIII.

TABLE VIII. ANALYSES OF ASPIRIN.

No.	Dealer	Mfr.	Aspirin, grains per tablet claimed	Aspirin, grains per tablet found	Free salicylic acid, grains per tablet found
	Clinton				
38995	Allen's Pharmacy,	Davies Rose & Co., Boston	5.0	5.1	none
38996	Neal's Pharmacy,	McKesson & Robbins, New York	5.0	4.9	none
	Cromwell				
39247	Hatchcock Pharmacy,	Hance Bros. & White, Philadelphia	5.0	4.9	0.02
	Devon				
39214	Signor Shoppe,	Aspirin Co. of America, New York	....	5.6	0.02
	Hartford				
39521	State Pharmacy,	Brewer & Co., Worcester	5.0	5.0	trace
	Jewett City				
39515	Chas. R. Carey,	Norwich Pharm. Co	5.0	4.9	trace
	Meriden				
39101	Broderick & Curtin,	A. D. S., New York	....	5.1	trace
	New Britain				
39520	City Drug Store,	Squibbs	5.0	4.8	trace
	Norfolk				
39240	Geo. T. Johnson,	United Drug Co., Boston	5.0	4.7	0.02
	Suffield				
39143	Suffield Pharmacy,	Lilly's	5.0	4.9	0.02
	Torrington				
39205	Collins & Collins,	United Drug Co., Boston	....	4.6	0.02
	Willimantic				
39234	Curran & Flynn,	Albany Chem. Co., Albany, N. Y.	5.0	4.7	0.04

In several instances our inspection records do not show the claimed dosage of aspirin but it is presumably 5 grains in each case. Conferences between committees representing manufacturers and Federal control officials have reached the conclusion that good commercial practice justifies a tolerance not exceeding 7.5 per cent above or below the dosage claimed for tablets of this kind. We have heretofore regarded 10 per cent variation as acceptable. All of the products here reported however come within the stricter limit except in one case which is also outside the more liberal tolerance.

Barbital, Etc.

Barbital and soluble barbital are new admissions to the pharmacopoeia. Barbital, sometimes called "veronal", is diethylbarbituric acid, and soluble barbital is the sodium salt of that acid.

Phenobarbital, also newly admitted to the pharmacopoeia, is phenylethylbarbituric acid and is sometimes known as "luminal".

Three samples of soluble barbital were examined and found to range from 99.2 to 99.8 per cent purity. The requirement is not less than 98.5 per cent. The samples were procured at the Halley Pharmacy and Leroy Tucker's drug store in Bristol and at the Case Drug Store in Winsted.

Five samples of barbital tablets, all declared to contain 5 grains of medicament, were analyzed and all were satisfactory, barbital dosages of from 4.7 to 4.9 grains being found. The samples were obtained at the Spaulding Co. and the Branford Drug Store in Branford, the Bridge Pharmacy in Windsor Locks, the Case Drug Store in Winsted, and the Walling Drug Co., Wallingford.

One sample of phenobarbital tablets, ½ grain, was purchased at Miner's Pharmacy in South Manchester and was satisfactory. The tablets contained 0.52 grain of medicament.

Belladonna

Fluid extract of belladonna leaves should contain in each 100 cc not less than 0.27 gm. and not more than 0.33 gm. of the total alkoloids of belladonna leaves.

Tincture of belladonna should contain in each 100 cc not less than 0.027 gm. and not more than 0.033 gm. of total alkaloid of belladonna leaves.

Assays of three samples of fluid extract and three samples of tincture are given in Table IX.

Table IX. Assays of Belladonna.

No.	Dealer	Manufacturer (as stated)	Alkaloids gm/100 cc
		Fluid Extract.	
	Waterbury		
39534	Ebbo Drug Co.....	Norwich Pharm. Co..	0.25
	Willimantic		
39231	J. J. Hickey Drug Co..	Park, Davis & Co....	0.22
39233	Wilson Drug Co.....	United Drug Co.....	0.31
		Tincture.	
	Manchester		
39813	E. J. Murphy.....	Lilly.....	0.025
	Putnam		
39802	E. H. Burt.....	Lilly.....	0.026
	Taftville		
39820	Taftville Pharm.....	Sharp & Dohme.....	0.025

All samples were 90 per cent of respective standards or better, excepting one sample of fluid extract.

Cinchona.

Fluid extract of cinchona should yield not less than 4 gms. nor more than 5 gms. of total alkaloids of cinchona from each 100 cc.

Tincture of cinchona should yield from like volume not less than 0.8 gm. nor more than 1.0 gm. of alkaloids.

Compound tincture of cinchona should yield not less than 0.4 and not more than 0.5 gm. of alkaloids per 100 cc of tincture.

Both samples of fluid extract were below standard, but one of them was within a tolerance of ten per cent.

All of the tinctures obtained were compound tinctures. None of them were within the U. S. P. limits and only three could be passed with a liberal tolerance. Nos. 39538 and 39817 are duplicates from the same source as are also 39540 and 39818. No second samples were obtained in the other cases.

Assays are given in Table X.

Table X. Assays of Cinchona.

No.	Dealer	Alkaloids found gm/100 cc
	Fluid Extract.	
	New Britain	
39519	Egan Pharmacy	3.71
	Rockville	
38972	Crosby's Pharmacy	2.15
	Compound Tincture.	
	Oakville	
39817	Byrnes Drug Co	0.10
39538	Byrnes Drug Co	0.20
	Seymour	
39504	Geo. Smith & Son	0.57
	South Manchester	
39812	Quinn's Pharmacy	0.19
	Waterbury	
39816	Apothecaries Hall Co	0.34
	Watertown	
39818	Post Office Drug Store	0.29
39540	Post Office Drug Store	0.34

Colchicum.

The fluid extract of colchicum should yield from each 100 cc of solution not less than 0.36 gm. and not more than 0.44 gm. of colchicine.

The tincture should yield from 0.036 to 0.044 gm. from each 100 cc.

A sample of fluid extract from the J. H. Lee Pharmacy in Rockville yielded 0.34 gm. of colchicine per 100 cc and was of standard strength. One from the Chatham Pharmacy in East Hampton contained 0.27 gm. and was deficient.

One sample of tincture from Leary's Drug Store in Naugatuck yielded 0.038 gm. colchicine per 100 cc and was of standard quality. A sample from the W. P. Lynch Drug Store in Wallingford yielded only 0.016 gm. and was below standard. A second sample of this stock could not be obtained as the supply was exhausted.

Tincture of Ferric Chloride.

Eighteen samples of tincture of ferric chloride were analyzed. The official preparation should contain not less than 4.48 gms. iron (Fe), per 100 cc of solution.

Two samples showed conspicuous excesses of iron possibly as a result of evaporation of alcohol. The others were reasonably close to the requirements of the standard.

Analyses are given in Table XI.

Table XI. Analyses of Tincture of Ferric Chloride.

No.	Dealer	Iron (Fe), gms/100 cc
	Ansonia	
39507	S. W. Smith & Co.	5.25
	Cheshire	
39216	Gladding's Pharmacy	4.78
	Darien	
39114	The Bell Pharmacy	5.60
	Devon	
39213	J. L. Mallard Drug Co.	5.55
	Fairfield	
39118	Clampett's Pharmacy	4.25
	Greenwich	
39110	Veandrey & Co., Inc.	4.88
	Meriden	
39102	Victor W. Schmalzer	4.78
	New Canaan	
39106	Windt Pharmacy	6.55
	New London	
38987	Downey's Pharmacy	4.79
	New Milford	
39120	Harrison F. Bassett	5.33
	Simsbury	
39149	The Lathrope Pharmacy	4.91
	Stamford	
39107	Chas. S. Finch	5.06
	Stonington	
38980	Conner's Drug Store	5.16
	Thompsonville	
39141	Thompsonville Drug Co.	4.98
	Waterbury	
39536	Higgins & Glynn	7.88
39537	Kipp Pharmacy	5.24
	Westport	
39116	The Bridge Pharmacy	5.08
	Willimantic	
39229	The Nathan Hale Drug Store	5.48

Hydrastis.

One sample of fluid extract and one of tincture of hydrastis were examined. The fluid extract should contain 1.8 to 2.2 gms. of ether-soluble alkaloids of hydrastis in each 100 cc. The tincture is no longer a U. S. P. preparation.

The fluid extract, from the Spaulding Co., Branford, yielded 1.86 gms. of alkaloids per 100 cc and was of standard strength. The tincture, from the Boulevard Pharmacy, Bristol yielded 0.32 gm. of alkaloids and was passed.

Hydriodic Acid.

Diluted hydriodic acid should contain not less than 9.5 per cent nor more than 10.5 per cent of hydriodic acid, HI.

In the inspection last year, out of four requests for this article only once did the inspector receive a product of the identity and strength called for. This year better results were obtained. Four samples were taken, three of which were within the limits of the standard and one was a little over 10 per cent over strength. The percentage ranged from 9.5 to 11.8.

Samples were taken at the following drug stores:

Town Hill Pharmacy (11.8%), Starr Bros., Inc. (10%), Nichols & Harris (10.2%), all of New London, and Claxton's Pharmacy (9.5%), of Torrington.

Syrup of Hydriodic Acid.

Syrup of hydriodic acid should contain not less than 1.3 mg. and not more than 1.5 gm. of hydriodic acid (HI), per 100 cc.

Eight samples were examined and all were within the limits of the standard with the exception of two which were reasonably close to the minimum.

Analyses are given in Table XII.

Table XII. Analyses of Syrup of Hydriodic Acid.

No.	Dealer	Hydriodic Acid HI, gms/100 cc
	Deep River	
39241	LaPlace Pharmacy	1.3
	Derby	
39543	Blume's Pharmacy	1.2
	New London	
38991	Nichols & Harris	1.4
	Rockville	
38973	Vincent's Pharmacy	1.5
	Saybrook	
38992	Watson's Drug Store	1.4
	Winsted	
39238	F. S. Bunnell	1.3
39236	Opera House Pharmacy	1.2
	Westbrook	
38994	Neidlinger's Pharmacy	1.4

Ipecac.

The fluid extract of ipecac should yield from 1.35 to 1.65 gms. of ether-soluble alkaloids per 100 cc of solution.

A sample from Callahan's Drug Store, New London, yielded 1.24 gms. per 100 cc. One from Notkin's Pharmacy, Waterbury yielded 1.80 gms. Another from the Bristol Drug Co. of Ansonia yielded 0.79 gm. None of the preparations were within the prescribed limits but the last named sample was notably deficient.

Solution of Lead Subacetate.

This solution should contain lead subacetate equivlaent to not less than 18 per cent of lead (Pb).

Four samples were examined and were found to equal or exceed this limit or to be within a reasonable tolerance of the standard. The analyses showed percentages ranging from 17.7 per cent to 24.4 per cent.

Samples were obtained from W. J. Dumphy, Waterbury; Central Drug Co., Bristol; J. J. Cody, New Canaan; and the Service Drug Co., Meriden.

Solution of Magnesium Citrate.

The Pharmacopoeia requires that this preparation contain magnesium citrate corresponding to not less than 1.5 gms. of magnesium oxide (MgO), in each 100 cc of solution. Additional specifications require not less than 3.33 gms. of free citric acid and not less than 9.81 gms. of total citric acid in 100 cc.

An experimental sample prepared according to the directions given in the U. S. P. showed that these standards can easily be met or closely approximated.

	Experimental sample	Standard
Free citric acid	3.31	3.33
Total citric acid	9.65	9.81
Magnesium oxide	1.73	1.50

In several instances the inspection samples bore labels showing that they were made according to the 9th revision of the pharmacopoeia instead of the 10th to which there is no objection if the composition of the product conforms to the standard indicated by the label.

One product was labelled as "Aperient Magnesia". Our law permits substandard drugs to be sold provided their substandard character or true strength is indicated. Since "aperient" means "laxative" or "purgative" and applies to a standard product as well as to a substandard one, the term is not sufficiently descriptive. The label should bear the further statement "not a U. S. P product" or words of similar effect.

Of twenty-seven samples examined, four met or substantially equalled the requirements of the standard and two others met the U. S. P. IX as their labels indicated. All other samples were deficient in one or more particulars although many of them met the major requirement as to content of magnesium oxide.

Analyses are given in Table XIII.

TABLE XIII. ANALYSES OF SOLUTION OF CITRATE OF MAGNESIA.

No.	Dealer	Free citric acid, gms/100 cc	Total citric acid, gms/100 cc	Magnesium oxide, MgO, gms/100 cc
	Derby			
39545	Harding Drug Store.....	2.56	8.36	1.58
39544	Hotchkiss Pharmacy.....	1.72	7.02	1.42
	East Hampton			
39245	The Barton Drug Co.....	2.73	8.58	1.64
	Fairfield			
39119	Randall's Pharmacy.....	2.37	6.87	1.16
	Guilford			
39132	Frank E. Douden.....	3.19	9.07	1.54
39130	Monroe's Pharmacy.....	0.26	4.68	1.03
	Milford			
39212	A. H. Botsford.....	2.25	7.89	1.51
39210	Milford Pharmacy.....	2.10	7.93	1.62
39209	John T. Howes.....	2.81	7.74	1.45
	Manchester			
38968	North End Pharmacy.....	1.89	4.87	0.71
	New Hartford			
38953	Marble's Pharmacy.....	4.10	8.72	1.21
	New London			
38986	E. Callahan's Drug Store..	2.88	9.03	1.74
	New Milford			
39121	Harison T. Bassett.....	2.77	7.21	1.20
	Norwich			
39127	W. D. Ricker.....	3.15	8.38	1.46
	Plantsville			
39217	F. J. Hallahan.....	2.72	7.52	1.27
	Rockville			
38971	J. H. Lee.....	3.20	8.73	1.51
38969	Est. F. E. Metcalf.....	2.16	6.64	1.20
	Seymour			
39506	The Corner Drug Store....	1.88	6.97	1.39
	South Manchester			
38965	Packard's Pharmacy.....	2.30	8.07	1.74
38961	Magnell Drug Co.....	2.02	6.24	1.12
	Stonington			
38979	Burtch's Drug Store.....	3.16	9.25	1.62
	Stafford Springs			
39227	E. H. Wicks, Est.....	3.39	9.41	1.65
	Torrington			
38958	North End Drug Store....	1.81	6.43	1.22
	Union City			
39500	E. J Sodlosky	1.82	7.63	1.57
	Windsor			
39147	Charles E. Paxson.....	2.83	8.70	1.69
	Winsted			
38956	The Case Drug Store.....	3.82	9.67	1.64
	Place Unknown			
39136	.....	2.47	8.54	1.72

Mercurial Ointment.

Mercurial ointment, stronger, contains not less than 49 per cent and not more than 51 per cent of mercury (Hg).

Mild mercurial ointment contains not less than 29 per cent and more than 31 per cent of mercury (Hg).

Four samples of the stronger preparation and thirteen of mild ointment were examined and all found to be within the limits for the official preparations or reasonably close to the minimum requirements.

Analyses are given in Table XIV.

Table XIV. Mercurial Ointment.

No.	Dealer	Mercury %
	Stronger.	
	Essex	
39242	W. H. Pond	49.47
	New Britain	
39518	Packard Drug Co	49.08
	New Canaan	
39104	Rinyon's Pharmacy	49.11
	Willimantic	
39230	Wilson's Windham Pharmacy	47.34
	Mild.	
	Bristol	
39529	Madden Drug Store	29.50
	Canaan	
39239	Freeman Dempsey	29.00
	Collinsville	
39201	McNamara's Pharmacy	29.87
39202	Valley Pharmacy	29.16
	Meriden	
38999	Palace Pharmacy	29.44
	Naugatuck	
39502	Olson's Drug Store	29.32
	New Milford	
39122	Park Pharmacy	30.17
	Shelton	
39546	Mahoney's Corner Drug Store	29.63
	Suffield	
39142	Suffield Pharmacy	28.89
	Torrington	
38959	North End Drug Store	29.29
	Westport	
39117	The Westport Drug Co	30.24
	Willimantic	
39232	Bay State Drug Co	28.93
	Windsor Locks	
39144	R. J. Keefe	30.86

Spirit of Nitrous Ether.

This preparation is a solution in alcohol and should contain not less than 3.5 per cent and not more than 4.5 per cent of ethyl nitrite.

More than one-half of the twenty-four samples examined were below standard. These deficiencies are no doubt largely due to lack of necessary precautions in preserving the solution after it is made. The pharmacopoeia emphasizes that this product should be kept in "small, well-stoppered dark amber-colored bottles, in a cool, dark place, remote from fire."

Analyses of inspection samples are given in Table XV.

TABLE XV. ANALYSES OF SPIRIT OF NITROUS ETHER.

No.	Dealer	Ethyl nitrite %
	Ansonia	
39509	McQuade's Corner Drug Store	3.48
	Essex	
39243	Veales Drug Store, Inc	1.99
	Guilford	
39131	Frank E. Douden	3.07
39129	Monroe's Pharmacy	1.76
	Madison	
39128	Monroe's Pharmacy	2.83
	Manchester	
38967	E. J. Murphy	3.90
	Meriden	
38998	N. P. Forcier	3.38
	Milford	
39211	Primrose Drug Store	1.81
	Mystic	
38981	Mystic Pharmacy	2.94
	New London	
38983	James Drug Store	2.82
38984	The Moon Pharmacy	3.39
	Norwich	
39516	Central Ave. Pharmacy	1.56
	Saybrook	
38993	A. L. James	2.78
	Seymour	
39505	The Seymour Pharmacy	0.08
	South Manchester	
38966	Packard's Pharmacy	3.52
	South Norfolk	
39115	Newbauer's Drug Store	3.75
	Stafford Springs	
39228	D. H. McCormick	3.74
	Stamford	
39108	The Church Pharmacy	3.13
	Stonington	
38978	Burtch's Drug Store	0.08
	Thompsonville	
39139	O'Brien's Pleasant St. Pharmacy	2.08
	Torrington	
39204	Opperman's Drug Store	4.26
	Wallingford	
39549	F. W. Marx	2.99
	Winsted	
39237	Bannon's Drug Store	4.42
39235	The City Pharmacy	3.18

Nux Vomica.

Tincture of nux vomica should yield from each 100 cc not less than 0.237 nor more than 0.263 gm. of alkaloids of nux vomica.

Five samples were examined. None were within the U. S. P. limits noted above but two were within 10% of the minimum required and three were from 16% to 24% under the minimum.

Assays are given in Table XVI.

Table XVI. Assays of Nux Vomica.

No.	Dealer	Nux Vomica alkaloids gm/100 cc
	Bridgeport	
39218	Schines Pharmacy	0.18
	Naugatuck	
39503	Naugatuck Drug Co	0.20
	Shelton	
39815	E. J. Bordin	0.22
	Thompsonville	
40701	Steele's Corner Drug Store	0.20
	Torrington	
39206	Thourlough's Pharmacy	0.21

Stramonium.

Tincture of stramonium should yield not less than 0.0225 and not more than 0.0275 gm. of alkaloids of stramonium from 100 cc.

The one sample examined was obtained from the Sisson Drug Co., Hartford, and was of standard quality. It yielded 0.0230 gm. of alkaloid.

Strontium Salicylate.

Two samples of strontium salicylate were tested and both found to be of standard quality. Both were over 99 per cent pure.

The samples were obtained from J. H. Quinn & Co., So. Manchester and from Edw. Prouty, Windsor.

A sample of strontium salicylate tablets, 5 grain, was obtained from Metcalf's Drug Store, East Haven, and passed as satisfactory. They contained 4.5 grains of strontium salicylate per tablet.

Witch Hazel.

Distilled extract of witch hazel or witch hazel water should contain not less than 14 per cent of alcohol by volume and, among other specifications, should not show the presence of denaturing substances such as wood alcohol, diethylphthalate, etc.

Fourteen official samples were examined. Of nine taken from various druggists all being the product of the Connecticut Chemical and Disinfectant Co. of New Haven, five were considerably under the required alcoholic strength due, as was later determined, to faulty methods of checking alcohol content in the

factory. No denaturants were found except in one sample which showed a trace of diethylphthalate. The remaining samples representing products of the Dickenson Co. of Essex, Pond's Extract Co. of Clinton, and the Williams and Carleton Co. of Hartford were all passed.

Nine unofficial samples were also tested in a comparative study of methods for detecting denaturants.

Zinc Chloride Solution.

Solution of zinc chloride is an aqueous solution containing not less than 48.5 per cent nor more than 52.0 per cent of zinc chloride, $ZnCl_2$.

Two samples were obtained, one from the Boswell Drug Co. and one from the Greenwich Drug Store, Inc., both of Greenwich. Both samples were below standard. They contained 35.1 per cent and 36.9 per cent of zinc chloride respectively.

Zinc Oxide Ointment.

Zinc Oxide ointment should contain about 19.8 per cent of zinc oxide assuming zinc oxide to be of U. S. P. purity—viz. 99%.

Samples examined are listed in Table XVII.

All were passed as satisfactory.

Table XVII. Analyses of Zinc Oxide Ointment.

No.	Dealer	Zinc oxide, ZnO %
	Canaan	
39125	Farnum's Drug Store	18.6
39124	The Service Pharmacy	19.4
	Cheshire	
39215	Edson N. Sperry	19.9
	Darien	
39113	Lombardi Drug Store	21.0
	Forestville	
39523	Kent's Pharmacy	20.4
	Pawcatuck	
38977	Higgins' Pharmacy	19.5
	Portland	
39246	Conklin's Pharmacy	20.0
	Simsbury	
39200	Hoffert's Pharmacy	20.0
	Thomaston	
39207	Doyle's Drug Store	20.2
39208	G. A. Lemmon	20.3
	Waterbury	
39532	R. E. Holmes	20.3
	Watertown	
39539	D. G. Sullivan	19.2

PROPRIETARIES, ETC.

"VINDOR DIABETIC WINE."

This preparation was made by the Zarol Medical Research, West Haven, Conn.

Analysis:

Sp. Gr. 20° C. 1.0106; solids 10.92 gms/100 cc; ash 1.07; extract (calc.) 9.46; acidity, as tartaric acid 0.74; invert sugar 0.38; sucrose trace; iron and aluminum trace; calcium oxide 0.26; phosphoric acid (P_2O_5) 0.56; P_2O_5 in ash 0.40; total nitrogen 0.02; alcohol by vol. 17.74%. Sodium glycerophosphate (calculated from P_2O_5) 2.48. Aloes, quinine, glycerophosphates and saccharin present.

The label on the product stated, in part, that this wine "is a powerful tonic and nerve restorative highly recommended by leading physicians for diabetes, wasting diseases," etc.; and further, in part, "a valuable auxiliary in the treatment of diabetes and an aid in the disappearance of sugar in the urine."

Direct claims of curative properties were not made but the language was such as to convey the impression to the consumer that curative or mitigative effects were to be expected in cases of the disorders mentioned, whereas the substances contained in medicine are not recognized by authoritative opinion as likely to produce such results. The manufacturer of the article at a hearing before the Dairy and Food Commissioner readily agreed to thoroughly revise their label to omit false and misleading declarations and this has now been done.

SLENDS.

This is said to be "a delicious medicated gum". Made by Slends, Inc., New York.

The gum is in the form of pink, sugar coated lozenges with wintergreen flavor. Phenolphthalein equivalent to 1.2 grains per tablet was found but no alkaloids were found and no vegetable extractives were identified.[1]

ASPERGUM, DILLARD'S.

This product is made by the Health Products Corp., Newark, N. J., who are also the makers of Feen-a-mint, "the chewing laxative".

Aspergum is an orange flavored gum containing aspirin in the amount of about 3.5 grains per tablet according to our analysis.

The label on the package makes it plain that aspirin is present and directions are given for its use. The declaration is further made that the product is "a medicine not a confection". Under these circumstances it seems clear that the article must be classed

[1] See Jour. Am. Med. Assoc. 87, 1665 (Nov. 13, 1926) and 89, 138 (July 9, 1927) for other reports on Slends.

as a drug, yet so far as can be judged by the ordinary sense of taste Aspergum is merely a chewing gum with a delicious orange flavor—a very acceptable confection. The rather indiscriminate use of aspirin, as such, is prevalent enough and regarded with disfavor by medical authorities, and it seems unwise and even dangerous to encourage its unrestricted use by dispensing it in such a palatable form.

It is true that many bitter or otherwise unpleasant drugs are frequently masked by added flavors or by chocolate or other palatable coatings, but in all such cases the medicinal character of the finished product remains evident to the taste, or the form of the article still suggests a medicine rather than a confection. Moreover there is not the same objection to the disguising of simple medicaments, such as certain laxatives, for example, that there is to the same practice in the case of more potent drugs.

Tobacco.

In a previous report analyses of a number of brands of tobaccos of reduced nicotine content were given and for comparison the nicotine content of ordinary tobaccos was given based upon analyses made in this laboratory and upon some cited from the reports of other analysts. This work attracted some interest on the part of physicians and others and during the past year further analyses of tobaccos of both types have been made. For convenience the data already published together with additions made later are summarized in Table XVIII.

Through the courtesy of the Carl Henry Co. a sample of pipe mixture of reduced nicotine content and a sample representing the same tobacco prior to the nicotine-reducing process were examined thus affording direct evidence of the extent to which nicotine is removed. Without such data conclusions as to nicotine removal are necessarily based upon averages accepted as fairly representative of unprocessed leaves of various types and grades. Nicotine, basis of air-dry tobacco, was found as follows:

	Total nicotine	"Free" nicotine
Before treatment, No. 1861.....	2.09%	0.16%
After treatment, No. 1862.....	0.98%	trace

Table XVIII. Nicotine Content of Some Tobacco Products. (Air Dry Basis)

Pipe Tobacco.	Total nicotine %	"Free" nicotine %
Ordinary (unprocessed)		
Black Bass (chewing and smoking).	2.46	....
BL Light Plug.....	2.62	....
Blue Boar.....	1.45	0.33
Craven Mixture.....	2.84	0.28
Gilbert's Mixture.....	2.09	0.45
Hudson's Bay Imperial Mixture...	1.95	0.13
Lucky Strike Plug.....	1.76	....

TABLE XVIII. NICOTINE CONTENT OF SOME TOBACCO PRODUCTS. (Air Dry Basis)—*Continued*

	Total nicotine %	"Free" nicotine %
PIPE TOBACCO.		
Ordinary (unprocessed)		
Main Brace Cut Plug	1.29	....
Old English Curve Cut	1.94	....
Prince Albert	1.82	....
Tuxedo	2.22	....
Maximum	2.84	0.45
Minimum	1.29	0.13
Average	2.04	0.30
So-called "denicotinized"		
Dormy (Cestrada)	2.26	0.28
Henry, Carl	0.98	trace
O-Nic-O	0.97	0.21
Sackett	0.98	0.18
Maximum	2.26	0.26
Minimum	0.97	trace
Average	1.30	0.17
CIGARS		
Ordinary (unprocessed)		
Evermore	1.82	1.36
Judges Cave	1.80	0.79
Knickerbocker (Osterweis)	1.62	0.75
Knickerbocker (Osterweis)	1.90	0.60
King Perfectos	0.91	0.37
Manilla	1.31	0.72
Partagas, Habana	1.38	1.11[1]
Reyes de Espana	1.16	0.79
Rosedale	1.53	0.37
Seven-Twenty-Four	1.64	....
Maximum	1.90	1.36
Minimum	0.91	0.37
Average	1.51	0.76
So-called "denicotinized"		
Girard	1.54	....
Haddon Hall[2]	1.39	0.67
Henry, Carl	0.99	0.26
Henry, Carl	0.61	0.19
Henry, Carl	0.62	0.19
Sackett	0.67	0.18
Sano	0.87	....
Maximum	1.54	0.67
Minimum	0.61	0.18
Average	0.95	0.30

[1] pH value 7.8

[2] Our information is that these cigars were bought as "low in nicotine". It is not known that they are actually advertised as "denicotinized".

TABLE XVIII. NICOTINE CONTENT OF SOME TOBACCO PRODUCTS. (Air Dry Basis)—*Continued*

CIGARETTES.	Total nicotine %	"Free" nicotine %
Ordinary (unprocessed.)		
Benson and Hedges	1.26	0.17
Camel	2.21	0.42
Capstan Navy Cut	2.30	0.26
Chesterfield	2.53	0.45
Condax	1.06	....
Egyptian	1.59	....
Egyptian Arabs	1.35	....
Egyptian Deities	1.28	0.15
Egyptian Luxury	1.60	....
Egyptienne Straights	1.45	....
Fatima	2.79	....
Fifty-six	1.43	....
Hassan	1.94	....
Helmar	1.56	....
Home Run	1.89	....
Home Run	1.67	....
Home Run	1.78	....
La Lucbana	0.43	....
Lucky Strike	1.88	0.41
Makaroff	1.21	....
Marlboro	1.94	0.37
Mecca	2.17	....
Melachrino	1.31	0.11
Mogul	1.45	....
Mogul	1.52	....
Murad	1.52	....
Nebo	2.03	....
Nebo	1.93	....
Old Gold	2.17	0.43
Omar	1.98	....
Pall Mall	1.38	0.14
Phillip Morris	1.48	....
Phillip Morris	1.40	0.17
Piedmont	2.89	0.37
Piedmont	3.34	....
Rameses II	1.73	....
Richmond Straight Cuts	2.79	....
Royal Nestor	1.47	....
Schinasi	1.51	....
Sweet Caporal	2.05	....
Sweet Caporal	2.85	....
Tareyton	1.75	....
Turkish Trophies	1.44	....
Toro, Porto Rican	1.06	0.37
Toro, Porto Rican	1.08	0.45
Zubelda	1.97	....
Maximum	3.34	0.45
Minimum	0.43	0.11
Average	1.77	0.31

TABLE XVIII. NICOTINE CONTENT OF SOME TOBACCO PRODUCTS. (Air Dry Basis)—*Concluded*

CIGARETTES	Total nicotine %	"Free" nicotine %
So-called "denicotinized".		
Cestrada, Virginia	2.10	0.33
Dormy Blue Ribbon Turkish	1.19	0.15
Dormy Red Ribbon Turkish	1.19	0.19
Henry, Carl	0.95	0.16
Nestor Lord (Lord Nestor Gianaclis)	0.92	0.11
O-Nic-O	1.14	0.20
O-Nic-O	0.73	....
O-Nic-O	0.95	....
Sackett	1.07	0.20
Sackett	1.07	0.13
Sackett	0.97	....
Sano	0.79	0.11
Maximum	2.10	0.33
Minimum	0.73	0.11
Average	1.09	0.18

MISCELLANEOUS DRUGS, ETC.

The following materials, nine in number, have been examined for the Dairy and Food Commissioner, health officers or other officials interested.

37129. *Essence of Anice.* Said to have been sold as such but analysis did not show it to be the article demanded. It contained no determinable amount of oil of anise, 17.3% of alcohol, 56.9% of solids, and 49.5% of sugar. Petroleum ether extract was colorless and crystalline (anethol?). Preparation may have been the elixer of anise but was not the essence or spirit of anise.

37133. *Kelloids.* (*F. J. Kellogg & Co.*) One grain tablets with sweetish taste. Mineral (ash) 10.35%, sugars 66.6%. Magnesium, sodium and potassium present in ash. Starch present. Iodine, alkaloids, phenolphthalein or vegetable cathartics not detected. Other medicament, if present, not identified.

7713. *Medicine for Turkeys.* Brown-white powder with odor of orris root. Starch grains resembled orris root starch. No ipecac detected. Borax or boric acid present. Sample appeared to be orris root with small amount of boric acid. No other medicament found.

9659. *Paint, Liquid.* Found pigment 59.7%, vehicle 40.33%. Pigment contained 61.2% basic lead carbonate and 35.2% of zinc oxide. Guaranteed pigment 60%, vehicle 40%. Pigment, 59% basic lead carbonate, 39% zinc oxide and 2% tinting materials.

3509. *Painters' Savogan.* Moisture 10.06%, ash 82.82%; total fatty acids 7.94%; free fatty acids 0.25%; sodium carbonate 79.79%. Calculated composition: water 10.06%, sodium carbonate 79.79%; soap as sodium stearate 8.28%; free fatty acids (as oleic acid) 0.25%; undetermined 1.62%.

8293, 8322. *Prescription.* Prescription called for 1/10 mgm. (1/650 grain), of atropine sulphate per capsule, with sodium salicylate and acetphenetidine. Atropine sulphate found was approximately 1/12 grain per capsule, a dosage which is within the range regarded as dangerous. A second lot compounded on the same prescription was found to contain 1/110 grain which is in excess of the amount called for, but within the limits of safety. One capsule of the larger dosage produced alarming symptoms but the patient recovered.

8875. *Prescription.* Medicine prescribed for a dog. Nux vomica was among the ingredients and symptoms of strychnine poisoning were noted. Approximately .024 grain per capsule was found. Two capsules had evidently been administered, equivalent to about 1/20 grain of strychnine. The effect of this dosage would no doubt depend upon the size and condition of the animal. The usual dosage (for humans) is 1/12 to 1/60 grain.

8129. *Spring water.* Residue from evaporation of 20 quarts of spring water, source Hazardville, Conn. Wt. of solids 1.5 gms. equivalent to 75 p.p.m. in original water. Solids chiefly calcium and magnesium combined as carbonates and sulphates. Appears to have no unique value medicinally. (See Conn. Food Report 1900 p. 201 for discussion of Connecticut spring waters.)

Other Miscellaneous Materials, Examined for Poisons or Other Injurious Substances.

Thirty-one other samples, chiefly instances of suspected poisoning of domestic animals, have been examined but do not require individual discussion or comment. These examinations were made largely for the Commissioner on Domestic Animals or for local authorities charged with similar supervision. Some have been made also for the Dairy and Food Commissioner, for local Health officers and for individuals.

State Water Commission.

Six samples of trade waste liquors from manufacturing plants in the State have been examined in considerable detail and reported to Mr. Copeland, sanitary engineer to that Commission. This work is done by statutory provision which enlists the collaboration of this Station when desirable.

Babcock Glassware, Etc.

The following tabulation summarized the work done under the statutes providing for the checking of glassware which is to be used in carrying out the Babcock test upon milk and cream and the checking of thermometers which are to be used for the control of pasteurization temperatures.

	Accurate	Rejected	Total
Babcock glassware, test bottles and pipettes	2561	13	2574
Thermometers	163	9	172

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