
The 53rd Report on

FOOD PRODUCTS

And the 41st Report on

DRUG PRODUCTS, 1948

Bulletin 538

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H. J. FISHER

Chemist in Charge

**CONNECTICUT AGRICULTURAL EXPERIMENT
STATION, NEW HAVEN, CONNECTICUT**

Edward Monroe Bailey

Edward Monroe Bailey died at his home in New Haven on April 13, 1948, after an illness of several months. He was survived by his wife, the former Myrtle Mix Studley of New Haven; one son, Irving Monroe; and a granddaughter, Beverley.

Bailey joined the staff of this Station in July, 1902, immediately after his graduation from the Sheffield Scientific School of Yale University. He remained continuously at the Station until his retirement on October 1, 1945, a period of 43 years. Until 1918 he was assistant chemist, serving successively under A. L. Winton and J. P. Street. In 1918, when Mr. Street obtained a leave of absence to enter military service, Bailey was appointed acting head of the department, and the following year, upon Street's resignation, he received the permanent appointment as chemist in charge that he held for the ensuing 26 years.

While working at the Station, Bailey continued his advanced studies at Yale, receiving the master's degree in 1905 and the doctorate (under the late Lafayette Mendel) in 1910.

The particular specialty of the department during Bailey's régime was the preparation of tables of the composition of common and unusual foods, including special foods for diabetics. The major part of the information in these tables was obtained from analyses made at the Station. The tables were reproduced in several editions of Joslin's "Treatment of Diabetes Mellitus". It was probably largely as a result of the publication of these tables and of the large amount of information on the composition of foods in the food and drug reports of the Station that Bailey acquired the reputation as an authority on foods that led to his appointment to two national positions of considerable importance. In 1924 he was appointed by the Association of Official Agricultural Chemists as a member of the "Committee to Coöperate with Other Committees on Food Definitions," and he served continuously thereafter on this Committee, which was responsible for promulgating advisory food standards under the Wiley Pure Food Law, until 1940, when the new U. S. Food, Drug and Cosmetic Act became law. In 1930 he was appointed a member of the Council on Pharmacy and Chemistry of the American Medical Association; when this Council set up a Committee on Foods in 1931, he was an original member, and remained on this committee when it became a separate Council in 1936. In 1938 he resigned from both Councils because of ill health.

Bailey served as president of the Association of Official Agricultural Chemists, as had all of his predecessors as head of the department (Johnson, Jenkins, Winton and Street), in 1930; and in 1934 he was president of the Association of American Feed Control Officials. The fourth and fifth editions of the A.O.A.C. "Book of Methods" were prepared under his direction, and he was between 1932 and 1943 chairman of a committee that was

CONTENTS AND SUMMARY

responsible for the chemical section of several editions of "Standard Methods of Milk Analysis" of the American Public Health Association.

For those who worked under him Bailey's detailed knowledge of the chemistry of foods and drugs and his remarkable ability to judge analytical evidence won their respect, but what they will always remember most about him will be his human qualities. He did not tolerate slipshod chemical work nor mental dishonesty in his subordinates, but his friendliness and eagerness to help were always in evidence. This kindness and his excellent judgment were his outstanding characteristics; in his field he will have few equals and no superiors, and his personal character will always be an inspiration to those who knew him.

Material	Page	FROM		Total	Adulterated, misbranded or otherwise questionable
		Food and Drug Commission	Other sources		
<i>Foods</i>					
Baked products	8	6	1	7	5
Beverages, carbonated, etc.	8	70	3	73	17
Cheese	9	20	..	20	12
Coffee	9	2	..	2	..
Confectionery	10	10	2	12	8
Contaminated or decomposed foods ..	11	194	37	231	104
Deceptive packaging	12	50	..	50	46
Eggs	13	5	2	7	1
Extracts and flavors	14	4	1	5	3
Fats and oils:	14	..	..	..	..
Butter and "plastic cream"	14	15	2	17	6
Oleomargarine	16	2	..	2	2
Other oils and fats	16	44	16	60	27
Fish	18	6	..	6	6
Flour	18	4	1	5	1
Fruit, canned	18	13	..	13	4
Fruit juices	19	4	..	4	..
Gelatine desserts	20	3	..	3	1
Honey	20	1	..	1	..
Jams and jellies	20	11	..	11	8
Meat and meat products	21	13	1	14	8
Milk and milk products:	23	..	..	..	..
Unfortified milk and cream	23	..	69	69	1
Vitamin D milk	23	143	..	143	22
Ice cream	23	..	4	4	..
Pickles	23	4	..	4	..
Popcorn	23	5	..	5	5
Preservatives	26	1	..	1	1
Salad dressings and mayonnaise	26	13	1	14	3
Spaghetti and spaghetti sauce	28	9	..	9	6
Spices	28	2	..	2	..
Spray residues	29	58	1	59	6
Syrups	29	17	2	19	3
Vegetables, canned	33	47	6	53	40
Vinegar	37	33	5	38	22
Water	37	1	12	13	4
Miscellaneous	38	20	34	54	12
Totals		830	200	1,030	384
<i>Drugs</i>					
Ascorbic acid tablets	41	10	1	11	..
Cod liver oil	41	2	..	2	..
Cough drops	41	15	..	15	..
Dilute hydrochloric acid	44	23	..	23	3
Thiamine tablets	44	17	..	17	2
Whiskey	46	1	2	3	..
Miscellaneous drugs	46	19	8	27	4
Totals		87	11	98	9
Cosmetics	49	3	2	5	..
Collaborative	49	..	801	801	..
Total for all		920	1,014	1,934	393
Babcock glassware, etc.	50	..	2,414	2,414	8

**The Fifty-Third Report on
FOOD PRODUCTS
and the Forty-First Report on
DRUG PRODUCTS
1948**

H. J. FISHER

This report summarizes examinations of foods, drugs and cosmetics submitted by the Food and Drug Commissioner and the Commissioner of Farms and Markets during the calendar year 1948, as well as like materials analyzed for health departments and others. The numbers of samples of all kinds analyzed for other Federal, State and Station departments and not reported in other bulletins are also listed.

Eleven hundred and thirty-three samples of foods, drugs, cosmetics and related materials were examined during the year. This was a decrease of 537 samples from the number analyzed in 1947; all of this decrease was in food samples, and may have been due in part to difficulties resulting from transfer to a new department of the administrative functions of the Food, Drug and Cosmetic Act. The most striking declines in numbers of samples submitted were in vegetable oils, syrups and vinegars; there were 60 oils in 1948 as against 121 in 1947, 19 syrups as against 112, and 38 vinegars as against 153. The total number of samples examined from all sources was 1,934.

Mr. George R. Nelson (B.S., University of Maine) joined the staff as assistant chemist on December 20, coming from the Eastman Kodak Company; and Mr. Seymour Linsley, a student at Yale University, was employed on a part-time basis to run the infrared spectrophotometer beginning on November 1. The sudden death of Dr. E. M. Bailey, former head of the department, is referred to at the beginning of this bulletin.

Mrs. A. B. Vosburgh retired as secretary on May 31, after 25 years' service; she had joined the Station staff (as Miss Mabel Bacon) on May 14, 1923. Her thorough knowledge of the workings of the department was of immeasurable help to the present writer during his first years as successor to Dr. Bailey. The new secretary, Mrs. Marion C. Thorpe, came to work on April 1.

The writer wishes to express his gratitude to all the members of the staff for their loyal and efficient work. It is they who are primarily responsible for the contents of this bulletin.

FOODS

Baked Products

Five samples of bread and one of doughnuts were submitted by the Commissioner.

All of the bread samples except one were short weight:

K.F.-151. N B C Enriched Old Fashioned Potato Bread. National Biscuit Co., New York, N. Y. The 12 loaves in this sample averaged 0.53 oz. short weight.

J.W.-22 to 25, inclusive. Newton Robertson Check Sliced Enriched Bread. Newton Robertson Baking Co., Hartford, Conn. One of these samples (*J.W.-22*) contained 12 loaves, which averaged 2.1 oz. short weight. The other three samples were individual loaves; two of them were short weight (1.1 and 1.3 oz.), while the other weighed 1.5 oz. more than its declared weight of one pound.

The sample of doughnuts, *K.N.-33, Roly Poly Donuts*, made by The Roly Poly Donut, New Britain, Conn., was examined for the presence of custard filling. The total fat content was 35.99 per cent, but the lipoid phosphoric acid in this fat was only 0.11 per cent, indicating very little egg and, consequently, no custard.

One sample of rolls, *3347*, was examined at the request of the manufacturer. These rolls had picked up a musty odor from the carton, but were not themselves decomposed.

Beverages, Carbonated, etc.

Fifty-six samples of carbonated beverages were examined for the Commissioner. No sample was found to contain saccharin or undeclared artificial color or to be deficient in sugar. Approximate sugar content (solids by refraction) in 55 samples ranged from 9.14 to 14.59 per cent, and averaged 10.92 per cent. (This average was almost exactly the same as that found in 1947—10.86 per cent.) Four of these samples, *K.N.-31, 34, 40 and 46*, all orange soda, contained undeclared benzoate of soda. Another, *E.S.-68, Cobb's Florida Orange Soda*, manufactured by Cobbs Bottling Co., Miami, Fla., contained the misleading statements "Sip some sunshine. An orange in every bottle". *E.S.-91, Cott Vichy Sparkling Water*, manufactured by Cott Beverage Corp., New Haven, Conn., was falsely labelled because it not only was not Vichy water (i.e., it did not come from one of the Vichy springs in France) but its composition did not even resemble that of true Vichy water.

Thirteen official samples of uncarbonated beverages were also examined as follows:

C.J.-12. Bireley's Orangeade. Dart's Dairy, Manchester, Conn. This sample was not labelled with the bottler's name.

J.C.-23 and E.S.-48 to 51, inclusive. Southern Pineapple Fruit Drink. Food Division, Army Packing Co., Inc., Utica, N. Y. Three of these samples had fermented, and contained between 0.72 and 4.12 per cent of alcohol; the other two were passed.

E.C.-168. Sunlife Grape Nectar. Sunvita Fruit Juice Corp., Waldwick,

N. J. This sample was labelled as containing "pure grape juice" and 1,100 U.S.P. units of vitamin C in 32 ounces, among other ingredients. Analysis showed an ash content possibly equivalent to 9 per cent of grape juice and 635 U.S.P. units of vitamin C in 32 ounces. The sample was fermented.

E.C.-166, C.J.-2 and -11 and E.S.-38. Sunlife Orange, a Vitamin Drink. Sunvita Fruit Juice Corp., Waldwick, N. J. This beverage was labelled as containing 1,100 units of vitamin C in the quart bottles and 2,400 units in the half gallon bottles. Analysis showed 1,849 units in the quart bottle and 3,430 units in the half gallon bottle, but the product was not labelled with any statement as to what proportion a specified amount of this drink bore to the minimum daily requirement of vitamin C. Such a statement is required on all food products making claims for the presence of vitamins.

E.C.-167. Sunlife Orange & Grapefruit Blended, a Vitamin Drink. Sunvita Fruit Juice Corp., Waldwick, N. J. Sample contained 2,580 U.S.P. units of vitamin C in 32 ounces as against 1,100 units declared, but it was not labelled with any statement as to the percentage of the minimum daily requirement of vitamin C supplied by the drink.

C.J.-22. Sun-Ripe California Orange Drink. Silver Lane Syrup Co., Hartford, Conn. This product contained 55.78 per cent solids and 0.28 per cent ash, corresponding to 64 per cent of orange juice. It was more properly a base to prepare a drink than a drink itself; the directions called for diluting with 6 parts of water. The sample was passed.

E.C.-81. Vita Orange with Vitamins Added. California Fruit Juice Co., Waltham, Mass. The labelling of this product was misleading because it gave the impression that "Vita Orange" was nearly pure orange juice, when in fact more than half of it was added water.

Three samples of beer analyzed for the New Haven Police Department contained 5.14, 4.86 and 5.14 per cent of alcohol, respectively.

Cheese

Nineteen official samples of grated cheese or grated cheese food were examined; 11 of these were adulterated or misbranded and eight were passed. Analyses are given in Table 1.

A.F.-306, Cheddar Cheese, purchased at the Superior Food Market, West Hartford, contained water, 33.03; casein, 26.21; fat, 32.49, and ash, 3.49 per cent; no lactose was present. The Federal standard for Cheddar cheese requires not more than 39 per cent of water and not less than 50 per cent of fat in the solids. This sample contained only 48.52 per cent of fat on the dry basis.

Coffee

Two official samples of coffee were examined and both were passed.

Confectionery

Ten samples of confectionery were submitted by the Commissioner and two were examined for the New Haven Health Department; eight were adulterated or misbranded and four were passed:

K.C.-33. Candy. J. H. Millstein Co., Jeannette, Pa. Sample was mis-

TABLE 1. GRATED CHEESE

No.	Manufacturer or distributor and brand	Water per cent	Lactose per cent	Dry skim milk per cent	Fill of container per cent	Remarks
K.N.-23	Acierno Bros., Brooklyn, N. Y. <i>Supreme Quality</i> .....	.....	0.00	0	67	Short weight 0.29 oz.
K.F.-54	Belleview Olive Oil Co., New York, N. Y. <i>Belleview</i> ..	5.75	2.30	0	..	Pass.
K.F.-256	Brooklyn Cheese Packing Co., Brooklyn, N. Y. <i>4 CCCC</i>	.....	0.00	0	..	Pass.
K.F.-129	Carmela Grated Cheese Co., Philadelphia, Pa. <i>Superfine</i>	3.70	28.37	52	56	Labelled "Grated Cheese Food"; short weight 0.24 oz. and slack filled.
E.C.-66	Wm. Faehndrich, Inc., New York, N. Y. <i>Famous</i> .....	.....	0.00	0	..	Pass.
A.F.-88	Icco Cheese Co., Inc., Brooklyn, N. Y. <i>Icco</i> .....	.....	0.00	0	78	Short weight 1.68 oz.
E.C.-43	D. J. Introvigne & Son, West Springfield, Mass. <i>Introvigne's</i> .....	.....	0.00	0	..	Pass.
E.C.-86	Loral Foods, New York, N. Y. <i>Loral</i> .....	.....	.....	..	..	Labelled "Grated Cheese Food"; starch present (6.43%) not declared.
E.S.-60	Loral Foods, New York, N. Y. <i>Loral</i>	3.80	22.32	39	76	Starch 20.59 per cent; short weight 3.27 oz.; adulterated and misbranded.
K.C.-66	Manufacturer unknown. <i>Roman</i>	8.05	1.46	0	70	Short weight 0.15 oz.; no manufacturer's name or address.
A.F.-311	Helen Morgan, Babylon, N. Y. <i>Helen Morgan</i> .....	.....	0.00	0	..	Short weight 0.16 oz.
E.C.-64	Quality Grated Cheese Co., Roxbury, Mass. <i>Quality</i> ..	.....	0.00	0	57	Short weight 0.07 oz. and slack filled.
E.C.-65	Quality Grated Cheese Co., Roxbury, Mass. <i>Quality</i> ..	.....	0.00	0	..	Pass.
A.F.-37	Quality Grated Cheese Co., Roxbury, Mass. <i>Quality</i> ..	2.53	17.44	29	75	Adulterated with dry skim milk.
E.C.-61	Rialto Food Products, Philadelphia, Pa. <i>Rialto</i>	12.77	1.29	0	..	Pass.
K.F.-22	Gus Sclafani, Stamford, Conn. <i>Lina</i>	16.00	0.00	0	..	Pass.
E.S.-1815	Serto Packing Co., New York, N. Y. <i>Serto</i>	20.35	0.20	0	..	Pass.
E.S.-112	Spartan Packing Co., New York, N. Y. <i>Spartan</i> .....	.....	0.00	0	58	Short weight 0.13 oz.; slack filled.
A.F.-317	Ralph Zolan, Inc., Bridgeport, Conn. <i>Italian Style</i> ..	7.33	22.56	39	85	Adulterated with dry skim milk.

branded because the only label was hidden inside the container, which was in the shape of a glass horn with a plastic mouthpiece.

2020. *Candy*. Tecco Products Co., Berkeley, Calif. Ingredient declaration was "Plastic chewing gum base, certified food color, items containing 'Tecola', dextrose, citric acid and artificial flavoring, softeners, sugar, water, less than 1/10 of 1% sodium benzoate". Actually these candies, which were in the form of molded black human figures, were almost pure paraffin (95.65 per cent), colored black with carbon. They had a licorice-like odor but no flavor at all.

K.C.-37. *Candy Pellets*. T. H. Stough Co., Jeannette, Pa. The only label was hidden inside the mouthpiece of the glass clarinet in which the candy was packed, and consequently was completely invisible to the purchaser. The sample was therefore misbranded.

K.C.-13. *Cheerio Pops*. Modern Tobacco and Candy Co., Bridgeport, Conn. These lollipops bore no labels at all; they were artificially colored.

K.C.-9. *Easter Greetings*. Enterprise Paper Co. This Easter egg was misbranded because it bore no manufacturer's address and no list of ingredients.

E.S.-113. *Frankes High Grade Salt Water Taffy*. Peter Franke's Fun House, West Haven, Conn. Sample was misbranded because it bore no list of ingredients.

K.F.-170. *Gumperts Smooth Ice*. Hunt Bros. Circus. This sample was a powder composed of sucrose, gum and artificial flavor and color; no lactose was present. It was passed.

E.C.-84. *Ice Cream Plates*. P. Margarella, New York, N. Y. These candies were properly labelled and were passed.

E.C.-31. *Lofts Vitamin Joy Pops*. Loft Candy Corporation, Long Island City, N. Y. These lollipops were labelled "Contains Vitamin A and D—Two pops supply not less than one-fifth the daily requirements of Vitamin A and D and not less than 800 U.S.P. Units Vitamin A and 80 units U.S.P. Vitamin D". Feeding tests on rats showed that the claim of not less than 80 units of vitamin D in two lollipops was justified.

3001. *Ruby Lips Chewing Gum*. W & F Mfg. Co., Buffalo, N. Y. This gum contained 60.30 per cent paraffin, the balance being sugar, calcium carbonate and artificial flavor and color. Paraffin was not declared except under the unrevealing name "gum base".

K.C.-26. *White Chocolate*. Bridgeport Candy Co., Bridgeport, Conn. This product contained 30.26 per cent fat and 1.04 per cent ash. The constants of the fat indicated that it was probably a mixture of coconut oil and cocoa butter. There is no such thing as "white chocolate".

A.F.-257. *Zion Kitchen Fresh Kandies Black Walnut Chips*. Zion Candy Makers, Zion Industries, Inc., Zion, Ill. Declared ingredients were "Sugar, corn syrup, coconut, nuts, cereal, salt and artificial flavor"; the sample was passed.

Contaminated or Decomposed Foods

One hundred and ninety-four samples of foods were submitted by the Commissioner because of suspected rodent or insect contamination or the

presence of foreign matter, or because of complaints that the foods had made people ill. Insects or insect webbing were found in 35 samples, including seven samples of flour, four each of corn meal and pickles, three each of candy and rye meal, two each of carbonated beverages, egg noodles, kernel pastes, muffin mixes and raisins, and one sample each of cereals, imitation pepper, peanuts and popcorn. Mouse feces and urine were found in one sample of flour, and 60 other samples were either decomposed or contained foreign matter, including 41 samples of pickles, six of candy, four of carbonated beverages, three of grapes, and one sample each of canned cherries, canned peas, canned string beans, marshmallow topping, red cabbage and sauerkraut.

The pickle samples were mostly "Spare-Way" brand, manufactured by Spare-Way Food Products, Brooklyn, N. Y., at a filthy plant in Ellington, Conn. The condition of these pickles varied from soft to putrid; the plant was closed down. One of the carbonated beverage samples, *K.N.-18, Imitation Orange Soda*, bottled by Gra-Rock Ginger Ale Co., contained fragments of glass; and another, *E.S.-77, Krueger Cream Ale*, made by Krueger Brewing Co., Newark, N. J., contained 0.14 per cent of nicotine. Other samples of this ale contained no nicotine, however, and there was reason to suspect that the nicotine in *E.S.-77* was added elsewhere than at the brewery. The sample of canned peas, *K.F.-132, Kounty Kist Brand Sweet Peas*, distributed by Minnesota Valley Canning Co., Le Sueur, Minn., contained one large glass fragment when received from a complainant, but nine unopened cans of the same brand contained no glass.

Thirty-seven miscellaneous samples were examined for city health departments and private individuals; eight of these contained foreign matter or were decomposed:

3308. *Bamby Old Fashioned Donuts*. Cottage Donuts, Inc., New York, N. Y. These doughnuts were moldy.

5349. *Bread*. This bread contained a sliver of dried paint.

2877 and 2878. *Delicio Brand Sliced Salmon*. Manhattan Packing Co., Middle Village, L. I., N. Y. This salmon was badly decomposed.

2418. *Cheerios*. General Mills, Inc., Minneapolis, Minn. This sample was infested with the Indian meal moth.

3920. *Milk*. This sample contained 4 parts per million of lead.

3994. *Sugar*. This sugar was contaminated with borax.

5218. *Treesweet Brand Pure California Lemon Juice*. Treesweet Products Co., Santa Ana, Calif. This sample was moldy.

Deceptive Packaging

Under the Food, Drug and Cosmetic Act a food is misbranded "if its container is so made, formed or filled as to be misleading" (G.S. 3940(d)). It is a fact well known to food manufacturers that of two packages of a food, each containing the same weight of food but of different sizes, the average customer will choose the largest package. This trait of consumer psychology offers a strong temptation to manufacturers to get the better of their competitors by putting up their foods in outsized packages; the purpose of Sec. 3940(d) is to prevent this type of deception. For the law to be

violated the element of deception must be present, however; a food packed in a transparent container is not misbranded even if the package is slack filled, because the slack filling is readily visible to the purchaser.

Fifty samples were submitted by the Commissioner because of suspicion that they were deceptively packed. Forty-six of these were in packages containing so much waste space as to be definitely misleading and four were passed. Deceptively packed samples included 20 candies, 15 gelatine desserts and pudding mixes, four samples of flavoring extracts, three of tea, two pie fillings, and one each of egg noodles and a "Brownie mix". The candies were mostly either penny candies or Christmas and Easter novelties. The desserts and pudding mixes were the following:

K.F.-251, Dainty Dessert Vanilla Flavor Pudding. First National Stores, Inc., Somerville, Mass. Fill of container 53 per cent.

K.F.-252, Dainty Jell, Orange Flavor. First National Stores, Inc., Somerville, Mass. Fill of container 59 per cent.

J.L.-725, Hixson's Coconut Pudding. Verifine Foods, Inc., Chicago, Ill. Fill of container 50 per cent.

J.L.-726, Hixson's Vanilla Flavor Tapioca Dessert. Verifine Foods, Inc., Chicago, Ill. Fill of container 50 per cent.

E.S.-122, Jeld. Jeld, Ltd., Burbank, Calif. Fill of container 56 per cent.

K.F.-165, 164 and 166, Jello Tapioca Pudding, Chocolate, Orange Coconut and Vanilla Flavors. General Foods Corp., New York, N. Y. Fill of container 65 per cent.

J.L.-727, Jello Vanilla Flavor Pudding. General Foods Corp., New York, N. Y. Fill of container 41 per cent.

E.S.-39, Kosto Vanillin Dessert. Kosto Co., Chicago, Ill. Fill of container 41 per cent.

K.F.-147, 148 and 146, Royal Tapioca Pudding, Chocolate, Orange Coconut and Vanilla Flavors. Fill of container 56 per cent.

K.F.-154, 6 O'Clock Chocolate Flavor Tapioca Pudding. 6 O'Clock Foods, Inc., Norristown, Pa. Fill of container 52 per cent.

K.F.-153, 6 O'Clock Vanilla Flavor Tapioca Pudding. 6 O'Clock Foods, Inc., Norristown, Pa. Fill of container 55 per cent.

The four flavoring extract samples, *K.F.-109 to 111, inclusive, and K.F.-116, Virginia Dare Lemon, Orange and Vanilla Extracts*, made by Virginia Dare Extract Co., Brooklyn, N. Y., were only 62 per cent filled.

The three tea samples were the following:

K.F.-150, Richmond Tea Bags. First National Stores, Inc., Somerville, Mass. Fill of container 52 per cent.

A.F.-213 and K.F.-53, Tender Leaf Brand Tea Balls. Standard Brands, Inc., New York, N. Y. Fill of container 55 per cent.

Eggs

Five samples of shell eggs were examined for the Commissioner. All were sold as Grade A large eggs, and four were passed as fresh eggs, although

two of these were oil-dipped eggs. One sample was probably cold storage eggs:

K.F.-108. Large Grade A Eggs. Yankee Peddler, Waterbury, Conn. Air spaces averaged 1 1/16" in diameter, yolks were weak and whites were watery, but ammonia nitrogen was only 1.5 milligrams per 100 grams of egg.

Two samples of dried egg yolk, 3931 and 3932, were analyzed for the New Haven Health Department. The average lipoid phosphoric acid content on a dry basis was 2.72 per cent, which is within the normal range (2.67-2.82) for egg yolk.¹

Extracts and Flavors

Four imitation vanilla flavors were examined for the Commissioner:

K.F.-118. Big C Imitation Vanilla Flavoring. Clyde Collins, Inc., Memphis, Tenn. This sample was labelled "Coumarin, vanillin, caramel, caramel color and water". It contained 6.68 per cent of undeclared propylene glycol, and was therefore misbranded.

E.C.-58. Good Hope Brand Imitation Vanilla Flavor. Red Line Commercial Co., Inc., New York, N. Y. The ingredient statement was "Composed of vanillin, coumarin, glycerin, water, sugar, colored with caramel". This sample contained no artificial sweetener and only 0.72 per cent of invert sugar; it was passed.

K.F.-123 and 1421. Imitation Vanilla Flavor. Edward N. Nichols, Oakville, Conn. Declared ingredients were "coumarin, vanillin, heliotropine, synthetic aldehydes, glyzone, alcohol, sugar, artificially colored". The samples contained 7.22 per cent of propylene glycol; this was apparently what was meant by "glyzone", but the use of such an unrevealing name in place of the common name does not meet the requirements of the law.

Analysis of another sample of this same product, 5111, for the manufacturer, showed vanillin and ethyl vanillin (heliotropine), 0.27, and coumarin, 0.20, gram per 100 cc.

Fats and Oils

Butter and "Plastic Cream"

Butter is defined by Act of Congress as being "The food product usually known as butter, and which is made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter. It contains not less than 80 per cent by weight of milk fat, all tolerances having been allowed for". This definition applies in enforcement of the Connecticut law also. There is one difference between Federal and State laws, however. Under the Federal law two foods, butter and cheese, are exempted by law from the obligation applying to all other foods, to declare artificial color on the label when it is present. No such exemption exists in the Connecticut law, and some years ago a request that such an exemption be established by regulation was denied by the Dairy and Food Commissioner.

Lately a type of product sold as "plastic cream" has appeared on the market. This product has a butter fat content far in excess of that of

¹Jour. Assoc. Official Agr. Chem., 15, 322 (1932).

TABLE 2. BUTTER AND "PLASTIC CREAM"

No.	Manufacturer and brand	Dealer	Water per cent	Casein per cent	Lactose per cent	Salt per cent	Fat per cent	Remarks
3560	Breakstone Bros., Inc., New York, N. Y. <i>Breakstone's Creamery Butter</i>	Town Health Dept., West Haven	....	...	...	...	....	Rancid.
J.L.-452	H. C. Christian Co., Chicago, Ill. <i>Unsalted butter</i>	Bryant and Chapman, Hartford	16.66	0.81	0.23	0.03	82.50	Not labelled with manufacturer's name and address.
E.S.-1813	Coburn Farm Products Corp., New York, N. Y. <i>Sondra creamery butter</i>	The Mohican Co., New Haven	14.59	0.83	...	0.89	83.69	Pass.
E.S.-82	Great Atlantic & Pacific Tea Co., New York, N. Y. <i>Silverbrook Creamery Butter</i>	A. & P. Tea Co., Milford	12.57	1.98	...	0.86	84.59	Pass.
E.S.-83	Great Atlantic & Pacific Tea Co., New York, N. Y. <i>Silverbrook Creamery Butter</i>	A. & P. Tea Co., Milford	8.30	1.90	...	0.81	88.99	Pass.
3914	Manufacturer unknown. <i>Butter</i>	City Health Dept., New Haven	10.71	0.94	...	1.51	86.84	Pass.
K.C.-6	Manufacturer unknown. <i>Butter</i>	E. A. Leveen, Bridgeport	20.72	2.17	0.73	0.10	77.01	Labelled only "Kentland M.M.C.A."; would be adulterated if sold as butter.
J.L.-451	Manufacturer unknown. <i>Plastic cream</i>	Beebe Dairy, Norwich	...	...	...	...	...	...
J.L.-449	Manufacturer not stated. <i>Land O'Lakes Super Rich Sweet Cream</i>	J. H. Daly Co., Wallingford	17.92	1.94	0.64	0.08	80.06	No manufacturer's name or address.
J.L.-453	Manufacturer not stated. <i>Land O'Lakes Super Rich Sweet Cream</i>	Torrington Creamery, Torrington	16.84	2.17	0.61	0.06	80.93	No manufacturer's name or address.
J.L.-454	Manufacturer not stated. <i>Land O'Lakes Super Rich Sweet Cream</i>	Rider's Dairy, Danbury	13.76	2.08	0.61	0.05	84.10	No manufacturer's name or address.
K.N.-26	Manufacturer unknown. <i>Butter</i>	Ida Roberg, Cromwell	....	...	...	...	....	Pass.
E.S.-63	Manufacturer unknown. <i>Butter</i>	Walsh's Market, Milford	....	...	...	...	....	Pass.
J.L.-455	National Butter Co., Dubuque, Iowa. <i>Unsalted butter</i>	Rider's Dairy, Danbury	16.52	0.94	0.42	0.05	82.69	Pass.
J.L.-448	National Butter Co., St. Paul, Minn. <i>Unsalted butter</i>	Bryant and Chapman, Hartford	15.70	0.77	0.35	0.03	83.50	Pass.
K.F.-167	Swift & Co., Chicago, Ill. <i>Cake butter</i>	Swift & Co., Waterbury	....	...	...	...	....	Pass.
J.L.-450	Swift & Co., Chicago, Ill. <i>Unsalted butter</i>	Lincoln Dairy, Hartford	17.78	1.02	0.25	0.05	81.15	Pass.

ordinary heavy cream, which must contain 36 per cent butter fat but usually contains no more than 40 per cent. "Plastic cream" usually contains very close to 80 per cent fat and is scarcely distinguishable from unsalted butter in appearance and taste. Possibly the process used to make it is somewhat different from the churning process used in making butter, and it is not required to contain a minimum of 80 per cent butter fat as is any material sold as "butter".

Eleven official and two unofficial samples sold as "butter", and four official samples sold as "plastic cream", were examined. Five of these were not properly labelled with the manufacturer's name and address, and one was rancid. Analyses are given in Table 2; on the basis of the few samples we analyzed, the product sold as "plastic cream" contains about two and one-half times as much casein and twice as much lactose as does unsalted butter.

Oleomargarine

Two samples of *Cloverdale Vegetable Oleomargarine, E.C.-160 and 162*, distributed by First National Stores, Inc., Somerville, Mass., were examined for the Commissioner. These were labelled "Enriched with 15,000 units Vitamin A — 1/10 of 1% sodium benzoate added as preservative — 2 oz. of this product supply 46% minimum daily requirements of Vitamin A — Ingredients cultured skim milk 16.3% (milk solids 1%, moisture 15.3%), soya oil 80%, salt 3.5%, emulsifiers 0.2%". Analysis showed water, 14.06; casein, 1.40; salt, 3.88; and fat, 80.66 per cent. This oleomargarine obviously did not contain 80 per cent of soy oil as claimed, both because soy oil is liquid and the oleomargarine was a firm solid and because the refraction of the fat (52.0 at 40°C.) was far too low for soy oil. Correspondence showed that what was used was not soy oil but hydrogenated soy oil.

Other Oils and Fats

Forty-four official and 16 unofficial samples of edible oils were examined. Thirty-two were sold as pure olive oil and 28 as mixtures of oils or as "imitation olive oil", "edible oil", etc.

Of the 32 samples sold for pure olive oil only one contained a foreign oil but four were rancid and four were short volume. The adulterated and misbranded samples were the following:

2528. This sample was rancid.

K.C.-12. Louis Licamelle, Bridgeport, Conn. This sample was an artificially colored mixture of peanut and cottonseed oils.

K.F.-227, 243 and 244. *Morocco Pure Olive Oil.* Capitol Importing Co., Waterbury, Conn. These samples were rancid.

K.F.-115, 240 and 242. Minervini Pure Olive Oil. Giovanni Minervini, Molfetta (Bari), Italy. These samples averaged 2 fluid ounces short volume.

A.F.-322. *Grande Sublime Italia Brand Pure Olive Oil.* J. Ossola Co., New York, N. Y. Short volume 3.3 fluid ounces.

Of the 28 blended oils, 18 were adulterated or misbranded and 10 were passed. Adulterated and misbranded samples are listed in Table 3.

TABLE 3. ADULTERATED AND MISBRANDED SALAD OILS

No.	Manufacturer or distributor and brand	Remarks
F.H.-933	Bella Donna Packing Co., Brooklyn, N. Y. <i>Rinaldi</i>	Artificial color present not declared; short volume 2.3 fl. oz.
F.H.-934	Bella Donna Packing Co., Brooklyn, N. Y. <i>Rinaldi</i>	Artificial color present not declared; short volume 1.2 fl. oz.
F.H.-936	Bella Donna Packing Co., Brooklyn, N. Y. <i>Rinaldi</i>	Artificial color present not declared.
F.H.-937	Bella Donna Packing Co., Brooklyn, N. Y. <i>Rinaldi</i>	Artificial color present not declared; short volume 1.3 fl. oz.
E.C.-94	Albert N. Caputo, Providence, R. I. <i>Favorita</i>	No peanut oil present as declared; short volume 2.8 fl. oz.
K.F.-144	Chicago Macaroni Co., Brooklyn, N. Y. <i>San Leo</i>	Short volume 2.9 fl. oz.
K.F.-213	Chicago Macaroni Co., Brooklyn, N. Y. <i>San Leo</i>	Did not contain 10 per cent olive oil as claimed; short volume 1.9 fl. oz.
E.C.-24	Concetta Packing Co., Providence, R. I. <i>Concetta</i>	Corn and olive oil declared; no olive oil present.
2889	Di Carlo Importing Co., Brooklyn, N. Y. <i>Aquila</i>	Artificial color not declared; not 22 per cent olive oil as labelled.
E.S.-84	Di Carlo Importing Co., Brooklyn, N. Y. <i>Aquila</i>	Cottonseed oil and artificial color present not declared.
K.C.-17	Manufacturer unknown. <i>Edible oil</i>	Contaminated with cresote.
E.S.-128	Modern Eye Products Co., Brooklyn, N. Y. <i>Eze</i>	Coal tar dye present improperly declared as "vegetable color"; imitation olive oil and not so labelled.
E.S.-134	Modern Eye Products Co., Brooklyn, N. Y. <i>Eze</i>	Coal tar dye present improperly declared as "vegetable color"; imitation olive oil and not so labelled.
E.S.-136	Modern Eye Products Co., Brooklyn, N. Y. <i>Eze</i>	Coal tar dye present improperly declared as "vegetable color"; imitation olive oil and not so labelled.
E.S.-137	Modern Eye Products Co., Brooklyn, N. Y. <i>Eze</i>	Coal tar dye present improperly declared as "vegetable color"; imitation olive oil and not so labelled.
E.C.-95	Unita Packing Co., Providence, R. I. <i>White Pigeon</i>	Cottonseed oil present not declared; short volume 3.3 fl. oz.
K.F.-97	Vulcana Food Products, Hoboken, N. J. <i>Ace Maria</i>	No peanut or olive oil present as declared; corn or soy oil artificially flavored.
A.F.-284	Vulcana Food Products, Hoboken, N. J. <i>Ace Maria</i>	No peanut or olive oil present as declared; corn or soy oil artificially flavored.

The total of 26 adulterated or misbranded samples of edible oil found in 1948 is less than one-fifth of the 138 samples found in the 1946 inspection, and no sample contained mineral oil in 1948, while this form of adulteration occurred nine times in 1946.

Fish

Four samples of sardines and two of tuna fish were examined for the Commissioner:

K.F.-179 and 180 and E.S.-123 and 124. Allied Brand California Sardines in Tomato Sauce. Allied Produce Co., San Francisco, Calif. These fish were put up in water instead of tomato sauce.

E.S.-88 and 90. Corretora Tuna Fish. St. Michael's, Azores. This fish was decomposed.

Flour

Four official and one unofficial samples of flour were examined:

K.C.-31. Durum Second Clear Flour. King Midas Flour Mills, Minneapolis, Minn. Chlorine in fat, 0.11 mgm./gm.

K.C.-32. Pillsbury's Verona Durum Wheat Product, Unenriched. Pillsbury Mills, Inc., Minneapolis, Minn. Chlorine in fat, 0.10 mgm./gm.

3879. Potato Flour. Starch Industries, Inc., Bridgeport, Conn. Analysis showed water, 11.37; ash, 2.33; protein, 5.94; fat, 0.27; fiber, 2.71; starch, 67.60, and other carbohydrates, 9.78 per cent.

K.C.-30. Santa Durum 2nd Clear Unbleached. General Mills, Inc., Minneapolis, Minn. Chlorine in fat, 0.13 mgm./gm.

E.C.-96. Southern Maid Prepared Donut Flour. Southern Maid Donut Flour Co., Dallas, Tex. This sample bore no ingredient declaration but was stated to have been sold with a claim that it contained cream. The Reichert-Meissl value of its fat was only 3.1, precluding the presence of cream.

Fruit, Canned

Thirteen official samples of canned fruit were examined. Four of these were adulterated or misbranded and nine were passed:

K.F.-176. Allens Blueberries in Water. G. M. Allen & Sons, Sedgwick, Maine. This product contained 55 per cent berries and 45 per cent liquid; it was passed.

E.C.-54. Finast Brand Fruit Cocktail in Extra Heavy Syrup. First National Stores, Inc., Somerville, Mass. Analysis showed invert sugar, 10.16; sucrose, 11.72, and total sugars, 21.88 per cent. The Brix gravity was 23.4, which met the Federal standard of 22-35° Brix for extra heavy syrup.

E.C.-161. John Alden Brand Blueberries in Heavy Syrup. Standard Grocery Co., Providence, R. I. This product contained 59 per cent berries and 41 per cent liquid. Analysis of the liquid portion showed invert sugar, 12.32; sucrose, 6.71, and total sugars, 19.03 per cent; the Brix gravity was 18.8. There is no Federal standard for canned blueberries, but the standard for heavy syrup in some other fruits (pears and fruit cocktail) is as low as 18-22° Brix; the sample was therefore passed.

E.C.-53. Premier Fancy Peppermint Flavored Pear Halves in Heavy Syrup. Francis H. Leggett & Co., New York, N. Y. Analysis showed invert sugar, 7.00; sucrose, 10.40, and total sugars, 17.40 per cent. The Brix gravity was 18.6, which falls within the limits of 18-22° Brix for heavy syrup in canned pears.

K.N.-24. Rustic Brand Michigan Spiced Whole Crabapples in Heavy Syrup. Michigan Fruit Cannery, Inc., Benton Harbor, Mich. Analysis showed invert sugar, 13.76; sucrose, 2.26, and total sugars, 16.02 per cent. The Brix gravity was 25.8, which was much higher than would be expected from the actual sugar content. The sample was passed.

E.C.-57 and 163. Selkirk Bartlett Pears in Heavy Syrup. C. S. Kale Canning Co., Everson, Wash. Analysis showed invert sugar, 6.80; sucrose, 9.58, and total sugars, 16.38 per cent. The Brix gravity was 17.6, which is below the minimum of 18° Brix for heavy syrup in canned pears; the samples were therefore misbranded.

A.F.-293. Servoy Blueberries. Northeastern Packing Co., Columbia Falls, Maine. This sample contained 69 per cent berries and 31 per cent liquid. Analysis of the liquid portion showed 11.78 per cent invert sugar and no sucrose. The label did not claim that these blueberries were packed either in water or syrup; it is possible that they were actually solid pack, because processing might produce as much as 31 per cent liquid (blueberries contain about 83 per cent water). The sample was passed.

E.C.-51. Silver River Puerto Rican Crushed Pineapple in Extra Heavy Syrup. Francisco Vasquez, Inc., Manati, Puerto Rico. Analysis showed invert sugar, 13.76; sucrose, 8.30, and total sugars, 22.06 per cent; the Brix gravity was 22.8. The sample was passed.

E.C.-25 and 48. Thames Valley Fancy Maine Blueberries Packed in 40% Sugar Syrup. Universal Food Stores, Inc., Norwich, Conn. These samples contained on the average 59 per cent berries and 41 per cent liquid, and the liquid portion contained 16.98 per cent invert sugar and no sucrose; the Brix gravity was 18.2. The syrup was not therefore a 40 per cent sugar syrup, and the samples were misbranded.

E.C.-49. Thames Valley Fancy Sliced Yellow Freestone Peaches in Heavy Syrup. Universal Food Stores, Inc., Norwich, Conn. Analysis showed invert sugar, 10.44; sucrose, 8.34, and total sugars, 18.78 per cent. The Brix gravity was 21.4, which falls within the limits of 19-24° Brix for heavy syrup in canned peaches.

E.C.-50. Thames Valley Fancy Whole Apricots in Heavy Syrup. Universal Food Stores, Inc., Norwich, Conn. Analysis showed invert sugar, 10.92; sucrose, 7.85, and total sugars, 18.77 per cent. The Brix gravity was 20.8, which is within the limits of 21-25° Brix for heavy syrup in canned apricots.

Fruit Juices

Four samples of canned fruit juices were examined for the Commissioner; all were passed:

S.O.-4. Flagmaid Brand Tomato Juice. Flagmaid Foods, Inc., Stamford, Conn. Analysis showed total solids, 6.23; total ash, 1.05; salt, 0.54, and

salt-free solids, 5.69 per cent. Tomato juice contains 4.8-8.3 per cent solids and 0.5-1.4 per cent ash.¹

A.F.-89. Guaranteed Pure Orange Juice. Pure Orange Products Co., Inc., Hartford, Conn. The analysis of this sample, as compared with that of a sample of fresh orange juice analyzed by us in 1937,² was as follows:

	<i>A.F.-89</i>	<i>Fresh orange juice</i>
Total acidity as citric acid	0.70	0.89
Ash	0.35	0.41
Potassium oxide (K ₂ O)	0.21	0.23
Phosphorus pentoxide (P ₂ O ₅)	0.031	0.032

E.C.-87. Holleyripe Apple Juice. Holley Canning Co., Inc., Holley, N. Y. Analysis was as follows: Specific gravity, 20° C., 1.0467; total sugars as invert sugar, 10.30, and ash, 0.31 grams per 100 cc.; potassium carbonate in ash, 74.9 per cent. All of these constants fall within the limits for apple juice established by regulation.³

K.C.-14. D. Mann Tomato Juice. Adams Apple Products Corp., Aspers, Pa. Total solids, 6.61; total ash, 1.25, and salt, 0.94 per cent.

Gelatine Desserts

Three gelatine dessert samples were submitted by the Commissioner; two were passed and one was misbranded:

E.C.-19. Kojel Imitation Raspberry Flavor Genuine Kosher Gelatin Dessert. Kosher Desserts, Inc., New York, N. Y. Analysis showed moisture, 0.80; ash, 0.92; gelatin, 8.18; citric acid, 1.67; dextrose, 11.06, and sucrose, 77.37 per cent.

K.N.-17. Pure Fruit Flavor Tip Top True Fruit Gelatin Dessert. Tip Top Food Corp., New York, N. Y. The flavors were not natural as claimed, but artificial.

E.C.-17. Sweet Life Gelatine Dessert, Imitation Raspberry Flavor. Springfield Sugar and Produce Co., Springfield, Mass. Analysis showed moisture, 3.43; ash, 0.82; gelatin, 8.05; citric acid, 1.68; dextrose, 41.00, and sucrose, 45.02 per cent.

Honey

One official sample of honey was passed:

E.S.-6. Farmela Brand Imported 100% Pure Honey. Farmela Food Products Corp., Brooklyn, N. Y. Analysis was as follows: Direct polarization, 20° C., -6.4° V.; direct polarization, 87° C., + 17.8° V.; invert polarization, 20° C., -11.5° V.; invert polarization, 87° C., + 11.5° V.; water, 16.15; invert sugar, 69.67; sucrose, 4.24, and ash, 0.17 per cent; aniline chloride no., 4.5.

Jams and Jellies

Eleven jam, jelly and marmalade samples were examined for the Commissioner. Eight were misbranded and three were passed:

¹ "Accepted Foods", American Medical Association, 1939, p. 51.

² *Conn. Agr. Expt. Sta. Bul.* 415, 684 (1938).

³ Revision of Regulation 36, Dairy and Food Commission, April 6, 1938.

E.C.-29. Bessey's Brand Pure Grape Jelly. Buckfield Packing Co., Buckfield, Maine. Analysis showed soluble solids, 68.72; ash, 0.23; alcohol precipitate, 0.43; pectic acid, 0.26; acidity as tartaric acid, 1.59, and total sugars as invert sugar, 69.62 per cent; potassium oxide (K₂O), 93 mgm., and phosphorus pentoxide (P₂O₅), 28 mgm., in 100 grams. These figures indicate that this jelly contained added phosphoric acid and pectin and only about 37 pounds of grape juice to each 55 pounds of added sugar, instead of the 55 pounds required by Federal regulations.

K.F.-155. Honeydew Brand Pure Mint Flavored Apple Jelly, Artificially Colored. General Preserve Co., Inc., Brooklyn, N. Y. This sample was examined only for labelling and was passed.

K.F.-83, 99 and 128. Mrs. Anna Myer's Pure Homestyle Cherry Flavored Orange Marmalade. Anna Myers Pure Foods, Inc., Garfield, N. J. This marmalade was labelled "Contains oranges, sugar, fruit pectin, fruit acid, artificial color and flavor". An artificially flavored and colored marmalade is neither "pure cherry flavored" nor home style.

K.F.-127. Mrs. Anna Myer's Pure Homestyle Mint Flavored Apple Jelly, Artificially Flavored and Colored. Anna Myers Pure Foods, Inc., Garfield, N. J. An artificially flavored jelly is not a "pure mint flavored" jelly.

K.F.-100. Mrs. Anna Myer's Pure Homestyle Raspberry Jam. Anna Myers Pure Foods, Inc., Garfield, N. J. No artificial flavor nor color was detected and this sample was passed.

K.F.-98. Mrs. Anna Myer's Pure Homestyle Sweet Orange Marmalade. Anna Myers Pure Foods, Inc., Garfield, N. J. No artificial flavor nor color was found and this sample was passed.

J.C.-17 and E.S.-144. M. Polaner's Buttered Grape Jelly, 100% Pure. M. Polaner & Son, Inc., Newark, N. J. The jelly was labelled "Consists of choicest Concord grapes, fresh creamery butter and pure cane sugar". The samples contained an average of 1.00 per cent of fat whose refraction was 45.9 at 40°C. No more than 1.25 per cent of butter could therefore be present, which is insufficient to justify the claims for the presence of butter and the picture of a large pat of butter. No butter flavor could be detected on tasting this jelly.

K.F.-291. Sage Farm Herb Jellies. Sage Farm, Bethel, Conn. This sample consisted of a box containing five jars labelled "rose geranium", "rosemary", "marjoram", "lemon basil" and "minted grape", respectively, and bearing the following ingredient statement: "Pure sugar, fresh fruit juices and cleaned green herbs". The names of the fruit juices should have been declared on the labels.

Meat and Meat Products

Thirteen official and one unofficial samples of meat and meat products were examined. Eight were adulterated or misbranded and six were passed.

The three following samples were examined because of a question as to just what "dried beef" was:

K.N.-87. Dried Beef. Public Market, Middletown, Conn.

K.N.-88. Dried Beef. Kelley Food Stores, East Haven, Conn.

J.W.-82. Dried Beef Loaf. Sachem Provision Co., Inc., Norwich, Conn.

K.N.-87 was being sold as "dried beef" unqualified; it differed in appearance from normal dried beef, and was identical with the "dried beef loaf", *J.W.-82*. *K.N.-88* was a sample of normal dried beef that was analyzed for comparison. Analyses were as follows:

	<i>K.N.-87</i> per cent	<i>J.W.-82</i> per cent	<i>K.N.-88</i> per cent
Moisture	68.62	68.76	53.28
Salt	4.04	3.48	6.53
Sugar	0.84	0.73	0.00

K.N.-87 and *J.W.-82* differed from the normal dried beef in containing more water and less salt and in being sweetened. A conference between the Food and Drug Commission, the Department of Farms and Markets and the Sachem Provision Co. resulted in an agreement that the product represented by *K.N.-87* and *J.W.-82* would be labelled "Mock Dried Beef Loaf".

The other 10 samples were the following:

J.C.-63. Beef Steak Pie. Pring Specialty Co., Meriden, Conn. This was labelled "No peas—no potatoes—Ingredients: Flour, water, beef, carrots, onions, pure lard, salt, color added". This label declaration appeared to be correct, although very little onion was present; the sample was passed.

C.J.-7. Brandywine Brand Mince Meat. California Preserving Co., Los Angeles, Calif. Declared ingredients were "Selected fresh and dried apples, choice raisins, candied orange and lemon peel, choice spices, sugar, salt, rum flavor, 1/10 of 1% benzoate of soda". Another sample of this product was examined in 1947.¹ Mince meat by definition must contain either meat or suet, and because this sample contained neither it was misbranded.

3339. *Canned ham.* The gelatin surrounding this ham, submitted by a private individual, had an objectionable animal-like odor.

J.C.-61 and 62. Chicken Pie. Pring Specialty Co., Meriden, Conn. This was labelled "No peas—no potatoes—Ingredients: Flour, water, carrots, poultry, onions, pure lard, salt, color added". The ingredients were as claimed (although very little onion was present), and the samples were passed.

K.C.-19. Hamburg. "L" Bar and Restaurant, Bridgeport, Conn. Adulterated with sulphite.

K.C.-20. Hamburg. Fountain Diner, Bridgeport, Conn. Adulterated with sulphite.

K.F.-239. Kosher Chopped Beef. This sample was examined for the presence of salt to determine if it were Kosher beef, since Kosher beef is supposed to be treated with a brine solution. The salt content was only 0.07 per cent.

K.N.-27. Pure meat frankforts. Home Pride, Rockville, Conn. These frankforts contained 4.88 per cent of lactose, indicating adulteration with 9.32 per cent of dry skim milk.

¹ *Conn. Agr. Expt. Sta. Bul. 528*, 24 (1949).

E.C.-150. Rolets Fried Pork Skins. Rolet Food Products Co., Inc., Brooklyn, N. Y. This sample was passed.

E.C.-92. Smoked bacon. A. Feldman, Norwichtown, Conn. This bacon developed an objectionable taste on cooking.

Milk and Milk Products

Unfortified Milk

Sixty-eight samples of cow's milk and one of cream, submitted by dairy-men and the New Haven Health Department, were tested for butter fat. One sample of goat's milk, 3960, submitted by a purchaser, was found to be skimmed; analysis was as follows: specific gravity, 1.0323; total solids, 11.20; fat, 2.50; solids not fat, 8.70, and protein, 3.11 per cent.

Vitamin D Milk

Vitamin D milk is standardized to contain 400 U.S.P. units of vitamin D per quart. Since 1935 this laboratory has checked the vitamin D content of all brands of vitamin D milk on the market by feeding tests on rats. Samples were submitted by the Dairy and Food Commission until July 1, 1947; since then they have been supplied by the Department of Farms and Markets.

In 1948, 143 samples were examined; results of the assays are shown in Table 4. Twenty-two samples were definitely below the unitage claimed. The percentage of samples fully or substantially meeting guaranties was 85.

In the 14-year period, 1935-1948 inclusive, 1,343 samples have been tested; 84 per cent contained the unitage claimed for them or were sufficiently close to the guaranties to be passed.

Ice Cream

Two samples of ice cream were examined for the State Supervisor of Purchases and two were analyzed for a manufacturer; all were passed.

Pickles

Four samples of pickles (not including the decomposed samples described under "Contaminated or decomposed foods") were examined for the Commissioner, chiefly for the presence of artificial color. All were passed.

Popcorn

Five official samples of popcorn were examined; all of these were misbranded:

E.S.-110. Better Flavored Hollywood Original Theatre Delicious Popcorn. American Theatre Candy Co., New Haven, Conn. There was an average shortage of 0.76 oz. in the weight of these packages.

E.S.-114. Peter Franke's Always Crispie Popcorn. Peter Franke's Honey Boy, West Haven, Conn. This sample was short weight 1.72 oz., contained undeclared artificial color, and was not labelled with the manufacturer's address.

E.S.-116. Peter Franke's Honey Boy Pop Corn, Always Crispie. Peter Franke's Fun House, West Haven, Conn. Declared ingredients were

TABLE 4. SUMMARY OF ASSAYS OF VITAMIN D MILK

City or Town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Berlin	Johnson's Dairy	2	..	2	..
	Ventres Dairy	2	1	..	1
Bloomfield	Peter Boysen	2	1	..	1
	H. E. Holcomb	2	..	..	2
	Chris Neilsen & Sons	1	1	..	..
	A. J. Wade	1	..	1	..
Bridgeport	Beechmont Dairy	2	1	..	1
	Clover Farm, Inc.	2	1	..	1
	Dewhurst Dairy	2	2	..	..
	Marsh Dairy	1	1	..	..
	Mitchell Dairy	1	1	..	..
	Supreme Dairy	1	1	..	..
Bristol	E. H. Elton	1	1	..	..
	Roberge Dairy	1	1	..	..
Clinton	Burr Dairy	3	1	..	2
Danbury	Marcus Dairy	1	1	..	..
	Rider Dairy Co.	2	..	2	..
East Hampton	Woodland View Farm	1	..	..	1
East Hartford	J. A. Bergren Dairy	2	1	1	..
East Norwalk	Devine's Dairy	1	..	1	..
Fairfield	Wade's Dairy	1	1	..	..
Greenwich	Round Hill Farms	2	1	1	..
Hamden	Brock-Hall Dairy	2	2	..	..
Hartford	Eryant & Chapman Co.	3	3	..	..
	Cloverdale Dairy	2	2	..	..
	A. Dubrow	1	1	..	..
	Farmers' Co-operative, Inc.	2	2	..	..
	H. P. Hood & Sons	3	1	..	2
	Lincoln Dairy	1	1	..	..
Kensington	Ferndale Dairy	1	1	..	..
Litchfield	Tollgate Farms	1	1	..	..
Manchester	Dart's Dairy	2	1	1	..
	Sunshine Dairy	1	1	..	..
	West Side Dairy	2	2	..	..
Meriden	Charles Greenbacker & Sons ..	2	2	..	..
	E. J. Kaemmer & Son	2	2	..	..
	William Knapp	4	2	..	2
	Lawrence Bros.	2	2	..	..
Middletown	C. O. & H. J. Brock	1	1	..	..
	Hillside Dairy	3	1	..	2
	Lake View Dairy	1	..	..	1
Milford	Cold Spring Farm	2	2	..	..
	Clover Dairy	3	2	..	1
	McDermott Dairy	1	1	..	..
Nepaug	Mountain View Farm	1	1	..	..

TABLE 4. SUMMARY OF ASSAYS OF VITAMIN D MILK (Continued)

City or Town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
New Britain	Bayer Milk Co.	1	1	..	..
	Heslin Dairy	2	1	1	..
	Seibert & Guida's Dairy	2	2	..	..
	A. J. Spring & Son	1	1	..	..
New Canaan	Miller Farm Products	1	1	..	..
New Haven	Augur's Dairy	1	..	..	1
	General Ice Cream Corp.	3	3	..	..
New London	Michael's Dairy	2	1	1	..
	New London & Mohegan Dairies	3	2	..	1
	Radway's Dairy	3	2	1	..
Newington	Eckert's Dairy	1	1	..	..
	Spring Brook Farm Dairy	1	1	..	..
North Haven	Knudsen Bros.	1	1	..	..
	Twin Maple Farm	2	2	..	..
Norwalk	Clover Farm Dairy	1	1	..	..
	Devine's Dairy	1	1	..	..
Norwich	Beebe Dairy	2	2	..	..
Oakville	Sanford's Overlook Farm	1	1	..	..
Orange	Wayside Dairy	1	1	..	..
Plainville	Peterson's Dairy	1	..	1	..
Putnam	Fisher Bros.	2	2	..	..
Rocky Hill	Charles B. Gilbert	1	1	..	..
	Sunny Crest Farm	2	2	..	..
South Norwalk	Harrick's Dairy	2	1	1	..
Southbridge, Mass.	Southbridge Farmers' Co-op. ..	1	..	..	1
Springdale	Sheffield Farms	2	2	..	..
Stratford	Deering's Dairy	2	2	..	..
Thompsonville	H. S. Reid's Dairy	1	1	..	..
	Skipton's Dairy	2	2	..	..
	Smyth Farm Dairy	1	1	..	..
Torrington	Clover Dairy	1	1	..	..
	Co-operative Dairy	2	2	..	..
	Torrington Creamery	1	1	..	..
Wallingford	Beaumont Farm	1	1	..	..
	J. H. Daly	2	2	..	..
Waterbury	Brookside Dairy	1	1	..	..
	Cashin Dairy Products, Inc. ...	1	..	1	..
	R. F. Worden & Sons	1	..	..	1
Webster, Mass.	Deary Bros.	3	3	..	..
West Hartford	A. C. Petersen	1	..	1	..
West Haven	Clark Dairy, Inc.	2	1	1	..
Westerly, R. I.	City Dairies	1	..	..	1
Westport	Ferris Dairy	2	2	..	..
		143	104	17	22

"Imitation flavoring, pop corn, sugar, butter, corn syrup, bakery soda, salt, cocanut". No cocanut was present.

K.N.-32. Pop Corn. All American Products Co., New Haven, Conn. Sample was 0.69 oz., or one-third of the declared net weight of 2 $\frac{1}{8}$ oz., short weight.

E.S.-115. Terry's Honey Dew Pop-Corn. Terry's Honey Dew Pop-Corn, West Haven, Conn. Contained artificial color not declared.

Preservatives

E.S.-141, Whitaker Man-Ah Stabilizer, Preservative and Seasoning, made by Whitaker "Man-Ah", Tulsa, Okla., was examined for the Commissioner. Another sample of this product was analyzed quantitatively in 1947.¹ Qualitative tests on the present sample showed sugar, spices, carbonate, chloride and benzoate present, and no nitrate, nitrite, sulphite nor quaternary ammonium compounds. The product did not bear any direct statement of ingredients.

Salad Dressings and Mayonnaise

Thirteen official and one unofficial samples of various types of salad dressings were examined. Three were adulterated or misbranded and 11 were passed.

Mayonnaise

Ten samples were labelled as "mayonnaise"; all were passed. Mayonnaise must contain not less than 50 per cent of vegetable oil, but the average oil content of market mayonnaise is about 78 per cent. Analyses are given in Table 5; similar analyses were reported in 1937² and 1947.³

French Dressing

The essential ingredients of French dressing are oil and vinegar or lemon juice; preparations consisting chiefly of diluted vinegar thickened with gum, with little or no oil, are not French dressing nor "French style" dressing. One sample examined for the Commissioner, *K.N.-48, Virginia Dare Non-Separating French Dressing, Wine Style,* manufactured by Virginia Dare Extract Co., Inc., Brooklyn, N. Y., contained only 1.14 per cent of total fat, and was not therefore French dressing as labelled.

Other Salad Dressings

One other salad dressing was passed and two were misbranded:

J.W.-60. Marshal Salad Dressing. Spare-Way Food Products of New York, Brooklyn, N. Y. Total oil content was 12.22 per cent.

A.F.-314. Old Monk Tartare Sauce. Old Monk Co., New York, N. Y. This was labelled "Made with a blend of olive & vegetable oil, selected egg yolks, French capers and vinegar". Analysis showed 61.34 per cent of cottonseed oil; the squalene content (12 mgm./100 gm.) indicated that olive oil was not present as claimed.

¹ *Conn. Agr. Expt. Sta. Bul. 528, 29 (1949).*

² *Conn. Agr. Expt. Sta. Bul. 415, 692 (1938).*

³ *Conn. Agr. Expt. Sta. Bul. 528, 31 (1949).*

TABLE 5. MAYONNAISE

No.	Manufacturer and brand	Egg, per cent	Vegetable oil, per cent	Vinegar, per cent	Sugar, salt, spices, per cent	Added water, per cent	Remarks
A.F.-229	James A. Aicardi & Sons, Inc., Boston, Mass. <i>I-Car-De</i>	8.47	76.50	10.16	4.87	0.00	Oil was corn or soy oil.
3913	Birdsall & Wilcox, New Haven, Conn. <i>Birvil</i>	11.59	72.82	8.25	5.91	1.43	Oil was cottonseed oil.
J.W.-21	First National Stores, Inc., Somerville, Mass. <i>Finast</i>	...	...	...	...	...	Tested only for preservatives and none found.
E.S.-92	Hodes Bros., New Haven, Conn. <i>High Star</i>	9.00	73.89	11.75	5.36	0.00	Oil was corn or soy oil.
E.C.-55	Independent Grocers Alliance Distributing Co., Chicago, Ill., <i>I.G.A.</i>	11.86	66.49	14.50	7.15	0.00	Oil was cottonseed oil.
E.S.-103	Spare-Way Food Products, Brooklyn, N. Y. <i>Gold Crest</i>	...	...	...	...	...	Total oil content 63.70 per cent.
E.S.-104	Spare-Way Food Products, Brooklyn, N. Y. <i>Gold Crest</i>	...	...	...	...	...	Total oil content 77.45 per cent.
E.S.-105	Spare-Way Food Products, Brooklyn, N. Y. <i>Spare-Way</i>	...	...	...	...	...	Total oil content 79.09 per cent.
E.S.-102	Three Roses Co., Hartford, Conn. <i>Three Roses</i> .....	...	...	...	...	...	Total oil content 83.35 per cent.
E.S.-140	Venice Importing Co., Brooklyn, N. Y. <i>Heller's</i>	6.04	79.39	5.25	9.32	...	Oil mostly corn or soy oil with a little peanut oil.

A.F.-315. Old Monk Thousand Island Dressing. Old Monk Olive Oil Co., New York, N. Y. Declared ingredients were "Selected egg yolks, a blend of vegetable and olive oil, mustard, sugar, paprika and sweet pickles". Analysis showed that this sample contained 37.81 per cent of cottonseed oil; the squalene value (16 mgm./100 gm.) indicated absence of the declared olive oil.

Spaghetti and Spaghetti Sauce

One sample of "spinach macaroni", one of cooked spaghetti, and seven of spaghetti sauces were examined for the Commissioner. Six were adulterated or misbranded and three were passed:

E.S.-11. Armada Spaghetti with Cheese Sauce. Armada Food Products Co., Chicago, Ill. Declared ingredients were "Tomato paste, cheese, butter, vegetable shortening, spices, seasoning, spaghetti flour, salt, water". The total fat content was only 0.39 per cent, but the refraction of this fat (46.4 at 40° C.) was within the limits for butter fat, and the sample was passed.

A.F.-310. Helen Morgan Spaghetti Sauce. Helen Morgan, Babylon, L. I., N. Y. Declared ingredients were "Tomato paste, carrots, celery, onions, olive oil, mushrooms and herbs". Total oil content was 4.31 per cent; this oil contained 440 mgm./100 gm. of squalene, indicating that the oil was olive oil as claimed.

A.F.-212. Maria Rosa Marinaia Sauce. Dormi Packing Co., New York, N. Y. Declared ingredients were "Tomatoes, spices and olive oil"; the sample contained 7.42 per cent of peanut oil; the squalene value (30 mgm./100 gm.) indicated that no olive oil was present.

E.S.-155 and 173. Pee Gee Special Sauce. Claribel Packing Co., Claribel, Oakdale, Calif. This product, which was labelled "Made of tomatoes, sweet bell peppers, onions, celery, olive oil and/or cottonseed oil, salt, and trace of wine and/or citric acid", contained only 0.12 per cent of solid ether extract; no olive, cottonseed nor any other vegetable oil was present.

K.C.-25. Pfaffman's Climax Spinach Soy-Mac. Pfaffman Co., Cleveland, Ohio. This spinach macaroni was labelled "Contains 3 per cent spinach solids, equivalent to 36 per cent fresh spinach; the color of this product is from the natural fresh vegetable only, no artificial coloring". The sample was passed.

A.F.-294 and K.F.-257 and 258. Gino Sauce for Spaghetti. Gino Corp., Milford, Conn. Declared ingredients were "Tomato, beef, pork, olive oil, herbs, garlic". These samples contained 7.05 per cent of a semi-solid fat whose squalene value averaged 73 mgm./100 gm., indicating less than 2 per cent of olive oil in the sauce, which is too little to justify a claim for the presence of olive oil.

Spices

Two samples of black pepper examined for the Commissioner showed no evidence of adulteration:

K.F.-284. Aljim Brand Black Pepper. Aljim Wholesale Grocery Co., Waterbury, Conn.

K.F.-126. Fredricks Pure Black Pepper. Fredrick's Fine Foods, Boston, Mass.

Spray Residues

Since 1931 apples grown in the orchards of this State have been sampled by agents of the Dairy and Food Commissioner or his successor, the Food and Drug Commissioner, and examined in this laboratory for spray residue. During the 1948 season, 58 samples were examined. Of these, only five exceeded the tolerances of 0.050 grain/lb. of lead and 0.025 grain/lb. of arsenic (expressed as the trioxide, As_2O_3), and the excesses were not large:

No.	Orchard	Lead (Pb), grains/lb.	Arsenious oxide (As_2O_3), grains/lb.
E.C.-154	William I. Allyn Farm, Mystic	0.051	0.027
K.N.-75	Blue Hills Farm, Wallingford	0.083	0.040
L.R.-12	John McClellan, Woodstock	0.059	0.026
K.F.-230	A. S. Waterbury, Danbury	0.054	0.021
K.F.-229	A. S. Waterbury, Danbury	0.061	0.026

One sample of peaches, 4302, submitted by our Entomology Department, contained 0.12 part per million of parathion.

Syrups

Seventeen official and two unofficial samples of syrups were examined. Thirteen were fruit, coffee or vanilla flavored syrups, either carbonated beverage base syrups or syrups for preparing beverages in the home; four were sold as pure maple syrup; and one was molasses. Three were adulterated or misbranded and 16 were passed.

Maple Syrup

Two official and two unofficial samples were examined. One of the unofficial samples, 2904, contained 100 parts per million each of tin and iron. The two official samples were passed:

K.C.-15. Pure Vermont Maple Syrup. Walter Steward Co., New Canaan, Conn. Water, 32.68, and ash, 0.54 per cent; lead number 1.46.

E.S.-57. Susan Baker 100% Pure Maple Syrup. Susan Baker Products, Inc., New York, N. Y. Water, 34.06, and ash, 0.52 per cent; lead number 1.71.

Molasses

E.C.-693. Grandma's Old Fashioned Molasses, packed by Boston Molasses Co., Boston, Mass., was analyzed as follows: Direct polarization, 20° C., + 14.2° V.; invert polarization, 20° C., -22.8° V.; invert polarization, 87° C., + 7.6° V.; sucrose, 25.37; invert sugar, 42.96; total sugars, 68.33; glycerine, 0.06; water, 21.35, and ash, 1.73 per cent; sulphur dioxide, 5.9 parts per million. The sample was passed.

Fruit, Coffee and Vanilla Syrups

E.C.-733. Arabian Brand Coffee Syrup, manufactured by Arabian Syrups & Extracts, Inc., North Providence, R. I., was analyzed as follows: Water, 38.70; sucrose, 50.39; invert sugar, 5.48; glycerine, 0.84, and caffeine, 0.18 per cent. Declared ingredients were "Sugar, water, extract of coffee, chicory and glycerine". The sample was passed.

Two fruit flavored syrups were submitted because of claims for the presence of true fruit:

TABLE 6. TOMATO PASTE AND PURÉE

No.	Manufacturer and brand	Total solids per cent	Salt per cent	Salt-free solids per cent	Remarks
K.F.-92	Brant-Fredonia Cammers Coöperative, Inc., Fredonia, N. Y. <i>B. & F. Brand Tomato Paste</i>	35.27	1.21	34.06	Pass.
E.S.-188	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	9.72	0.11	9.61	This sample was decomposed.
E.S.-193	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	.....	...	.....	This sample was decomposed.
E.S.-194	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	5.94	0.87	5.85	Low in salt-free solids.
E.S.-195	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	.....	...	.....	This sample was decomposed.
E.S.-196	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	.....	...	.....	This sample was decomposed.
E.S.-197	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	.....	...	.....	This sample was decomposed.
E.S.-198	Brooklyn Wholesale Grocery Co., Brooklyn, N. Y. <i>Nazarre Brand Tomato Purée</i>	.....	...	.....	This sample was decomposed.
K.F.-93	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	23.81	0.66	23.15	This sample was decomposed.
K.F.-216	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	25.28	0.53	24.75	Low in salt-free solids.
K.F.-217	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	23.99	0.64	23.35	Low in salt-free solids.
K.F.-218	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.12	0.63	23.49	Low in salt-free solids.
K.F.-222	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.53	0.59	23.94	Low in salt-free solids.
K.F.-223	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.52	0.55	23.97	Low in salt-free solids.
K.F.-224	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.51	0.57	23.94	Low in salt-free solids.
K.F.-225	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.70	0.32	24.38	Low in salt-free solids.
K.F.-226	Capolino Packing Corp., Atwater, Calif. <i>Somma Brand Tomato Paste</i>	24.83	0.32	24.51	Low in salt-free solids.
E.S.-189	Cedar Lake Canning Co., Inc., Cedarville, N. J. <i>Cedar Lake Brand Tomato Purée</i>	12.00	0.11	11.89	Pass.
2009	Escalon Packers, Inc., Escalon, Calif. <i>Bontá California Tomato Paste</i>	29.86	0.32	29.54	Pass.

TABLE 6. TOMATO PASTE AND PURÉE (Continued)

K.F.-94	First National Stores, Inc., Somerville, Mass. <i>Finest Tomato Paste</i>	25.24	0.22	25.02	Pass.
K.N.-1175	Flohill Products, Inc., Stockton-Modesto, Calif. <i>Flohill Tomato Paste, Concentrated</i>	26.54	0.30	26.23	Not "concentrated" tomato paste.
K.F.-234	Hunt Foods, Inc., Los Angeles, Calif. <i>Hunts Tomato Paste</i>	25.21	0.35	24.86	Low in salt-free solids.
K.F.-91	La Sierra Heights Canning Co., Inc., Buena Park, Calif. <i>Mountain Beauty Tomato Paste</i>	28.25	0.33	27.92	Pass.
4010	Manufacturer unknown. <i>Matmor Tomato Paste</i>	26.97	...	.....	Pass.
K.F.-263	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.32	0.08	7.24	Low in salt-free solids.
K.F.-264	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	6.97	0.08	6.89	Low in salt-free solids.
K.F.-265	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.03	0.08	6.95	Low in salt-free solids.
K.F.-266	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.02	0.08	6.94	Low in salt-free solids.
K.F.-267	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.45	0.08	7.37	Low in salt-free solids.
K.F.-280	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	8.25	0.09	8.16	Low in salt-free solids.
K.F.-281	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	6.92	0.08	6.84	Low in salt-free solids.
K.F.-282	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.75	0.09	7.64	Low in salt-free solids.
K.F.-292	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.60	0.09	7.51	Low in salt-free solids.
S.O.-1	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	6.98	0.18	6.80	Low in salt-free solids.
S.O.-2	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.19	0.17	7.02	Low in salt-free solids.
E.S.-178	New Jersey Italian Food Products Co., Newark, N. J. <i>Alesco Brand Tomato Purée</i>	7.43	0.08	7.35	Low in salt-free solids.

TABLE 6. TOMATO PASTE AND PURÉE (Concluded)

No.	Manufacturer and brand	Total solids per cent	Salt per cent	Salt-free solids per cent	Remarks
E.S.-179	New Jersey Italian Food Products Co., Newark, N. J. <i>Altesco Brand Tomato Purée</i>	7.67	0.10	7.57	Low in salt-free solids.
E.S.-180	New Jersey Italian Food Products Co., Newark, N. J. <i>Altesco Brand Tomato Purée</i>	7.07	0.09	6.99	Low in salt-free solids.
E.S.-183	New Jersey Italian Food Products Co., Newark, N. J. <i>Altesco Brand Tomato Purée</i>	7.11	0.09	7.02	Low in salt-free solids.
2006	Pepe-Maisano Co., New Haven, Conn. <i>Maisano Quality Tomato Paste, Extra Heavy Fancy</i>	29.30	0.34	28.96	Not heavy tomato paste.
2007	Pepe-Maisano Co., New Haven, Conn. <i>Maisano Quality Tomato Paste, Extra Heavy Fancy</i>	29.44	0.36	29.08	Not heavy tomato paste.
2008	Pepe-Maisano Co., New Haven, Conn. <i>Maisano Quality Tomato Paste, Extra Heavy Fancy</i>	29.55	0.25	29.20	Not heavy tomato paste.
K.F.-219	Gus Sclafani, Stamford, Conn. <i>Sclafani Tomato Paste</i>	24.92	0.85	24.07	Low in salt-free solids.
K.F.-220	Gus Sclafani, Stamford, Conn. <i>Sclafani Tomato Paste</i>	24.97	0.85	24.12	Low in salt-free solids.
K.F.-286	Stockton Food Products, Inc., Stockton, Calif. <i>Real-Red Tomato Purée</i> ..	12.50	0.10	12.40	Pass.
E.S.-184	Sun Garden Packing Co., San José, Calif. <i>Blue Bow Tomato Purée</i> ..	11.60	0.09	11.51	Pass.
4011	Thornton Canning Co., Thornton, Calif. <i>Lido Brand Tomato Paste</i> ..	26.71	...	....	Pass.

J.C.-58. *Reco Genuine True Fruit Raspberry Compound*. Reco Sales Co., New York, N. Y. Ingredient declaration was "Contains water, cane sugar, true fruit flavor, citric acid, U. S. certified color, preserved with 1/10 of 1% benzoate of soda". Analysis showed water, 41.68, and ash, 0.049 per cent. The sample was passed.

J.C.-59. *Reco True Orange Flavor Compound*. Reco Sales Co., New York, N. Y. Declared ingredients were "Water, cane sugar, natural orange extracts, citric acid, U. S. certified color, preserved with 1/10 of 1% benzoate of soda". Analysis showed water, 42.22, and ash, 0.05 per cent. The sample was passed.

Six samples of *Pitcher-Ade Beverage Bases, E.C.-70 to 75 inclusive*, of assorted flavors, manufactured by Pitcher Products Co., Trenton, N. J., were examined for labelling only. All were passed. Five other samples were examined and three were passed:

C.J.-18. *Duchess Brand Grape Flavored Syrup*. Native Meat Market, Manchester, Conn. Water, 43.49 per cent.

J.C.-21. *Imitation Cherry Fruite-Ade Syrup*. Atlantic Food Packing Co., Trenton, N. J. Water, 48.18 per cent.

K.C.-41. *Orange Za-Rex*. S. C. Clayton Co., Inc., Boston, Mass. No quaternary ammonium compound, monochloroacetic acid nor fluoride was present.

K.C.-10. *SUK, Rose Brand Syrup*. Rose Brand Syrup, New York, N. Y. This sample bore no net content declaration.

C.J.-17. *Tamarindo Compound*. P. Lucarini, New York, N. Y. No ingredient declaration.

Vegetables, Canned

Tomato Paste and Purée

Federal standards require that tomato paste contain not less than 25.00 per cent of salt-free solids, and that tomato purée contain not less than 8.37, but less than 25.00, per cent of salt-free solids. There is now no Federal standard for heavy tomato paste, but our old advisory standard¹ required not less than 33 per cent of tomato solids in heavy paste or "concentrato". Sixteen official and six unofficial samples of tomato paste and 25 official samples of tomato purée were examined; nine of these were passed and 38 were low in solids or decomposed. Analyses are given in Table 6.

Other Canned Vegetables

Six miscellaneous samples of canned vegetables or vegetable products were examined for the Commissioner; four were passed and two were misbranded:

K.C.-588. *Caroline Brand Early June Peas*. Saulsbury Bros., Inc., Ridgeley, Md. Federal standards require that alcohol-soluble solids in smooth-skinned or "Early June" peas shall not exceed 23.5 per cent. This sample contained 24.81 per cent of alcohol-soluble solids, and was therefore substandard.

¹ *Rules and Regulations Relating to the Food and Drug Law of Connecticut, Revision of July 1, 1937, p. 84.*

TABLE 7. VINEGAR

No.	Manufacturer or distributor and brand	Total solids, per cent	Total ash, per cent	Total acidity as acetic acid, per cent	Tartaric acid, per cent	Remarks
<i>Cider Vinegar</i>						
A.F.-292	Denning Peaslee Cider Mill, Burlington, Conn. <i>Cider Vinegar</i> .....	...	...	3.55	...	Low in acidity.
K.F.-95	First National Stores, Inc., Boston, Mass. <i>Fi-Na-St</i>	1.32	...	4.36	...	Low in solids.
K.F.-112	First National Stores, Inc., Boston, Mass. <i>Fi-Na-St</i>	1.75	...	4.77	...	Pass.
K.F.-113	First National Stores, Inc., Boston, Mass. <i>Fi-Na-St</i>	1.35	...	4.74	...	Low in solids.
J.W.-13	First National Stores, Inc., Boston, Mass. <i>Fi-Na-St</i>	1.70	...	4.62	...	Pass.
J.W.-14	First National Stores, Inc., Boston, Mass. <i>Fi-Na-St</i>	1.30	...	4.59	...	Low in solids.
K.C.-49	Flagstaff Foods, Perth Amboy, N. J. <i>Flagstaff</i>	1.44	...	5.20	...	Low in solids.
E.C.-52	Great Atlantic & Pacific Tea Co., New York, N. Y. <i>Ann Page</i>	1.32	...	5.45	...	Low in solids.
K.F.-131	H. E. Jewitt Co., Lowell, Mass. <i>Jewitt's</i>	1.43	...	5.29	...	Labelled "Reduced with water to 4.0 grain strength"; pass.
3005	Manufacturer unknown. <i>New Lot Vinegar</i>	1.63	0.24	5.20	...	Non-sugar solids 1.28; reducing sugars in solids 21.7%; alkalinity of soluble ash 27.3 cc. N/10 solids 18.8%; ash in non-sugar solids 18.8%; soluble P ₂ O ₅ 8.3, insoluble P ₂ O ₅ 8.4, and total P ₂ O ₅ 16.7 mgm./100 cc.; polarization -0.7° V.; pass.
4639	Nicholas Melillo, Hamden, Conn. <i>Cider Vinegar</i> .....	...	...	1.90	...	Incompletely fermented cider.
K.F.-114	C. H. Musselman Co., Biglerville, Pa. <i>Pure Apple Cider Vinegar</i>	1.53	...	4.99	...	Low in solids and acidity.
E.C.-82	Sterling Cider Co., Sterling, Mass. <i>Co-Op</i>	1.97	...	4.77	...	Pass.

TABLE 7. VINEGAR (Continued)

A.F.-294	Stop & Shop, Boston, Mass. <i>Stop & Shop Superior Quality</i>	1.64	...	5.16	...	Pass.
E.C.-93	Universal Food Stores, Inc., Norwich, Conn. <i>Thames Valley</i>	1.44	0.24	5.14	...	Labelled "Full Strength": Non-sugar solids 1.15%; adulterated with water.
E.C.-99	Universal Food Stores, Inc., Norwich, Conn. <i>Thames Valley</i>	1.48	...	5.14	...	Low in solids.
E.C.-100	Universal Food Stores, Inc., Norwich, Conn. <i>Thames Valley</i>	1.45	...	5.02	...	Low in solids.
E.C.-101	Universal Food Stores, Inc., Norwich, Conn. <i>Thames Valley</i>	1.66	...	5.44	...	Pass.
2518	<i>Wine Vinegar</i>					
	A. De Caprio, New Haven, Conn. <i>Wine Vinegar</i> .....	...	...	1.99	...	Alcohol 2.46%; invert sugar 0.05 gm./100 cc.; incompletely fermented wine.
K.F.-254	Giambanco Wine Vinegar Plant, Oakland, Calif. <i>Pee Gee California</i>	1.63	0.32	5.05	0.087	Pass.
K.F.-253	Grocer's Wholesale Outlet, Inc., New Haven, Conn. <i>Salvatore</i>	1.57	0.16	5.54	0.035	Adulterated with water.
E.S.-174	Grocer's Wholesale Outlet, Inc., New Haven, Conn. <i>Salvatore</i>	2.12	0.17	5.66	0.021	Adulterated with water.
E.S.-175	Grocer's Wholesale Outlet, Inc., New Haven, Conn. <i>Salvatore</i>	1.98	0.17	5.39	0.027	Adulterated with water.
E.S.-176	Grocer's Wholesale Outlet, Inc., New Haven, Conn. <i>Salvatore</i>	2.00	0.17	5.45	0.026	Adulterated with water.
K.F.-130	Old Dutch Mustard Co., Inc., New York, N. Y. <i>Pure Wine Vinegar</i>	1.15	0.18	5.03	0.046	Diluted with water and not so labelled.
2974	Randall Wine Vinegar Co., New York, N. Y. <i>Eideen</i>	5.96	0.29	5.12	0.000	Not pure wine vinegar.

TABLE 7. VINEGAR (Concluded)

No.	Manufacturer or distributor and brand	Total solids, per cent	Total ash, per cent	Total acidity as acetic acid, per cent	Tartaric acid, per cent	Remarks
<i>Blended Distilled and Wine Vinegars</i>						
J.C.-18	J. Assola Co., New York, N. Y. <i>Torino</i>	0.38	0.07	5.40	0.038	Pass.
J.C.-16	J. Assola Co., New York, N. Y. <i>Torino</i> .....	...	...	5.39	...	Colored with coal tar dye.
J.C.-20	Muro Importing Co., Brooklyn, N. Y. <i>Muro</i>	0.47	0.07	4.91	0.020	Below claimed strength of 5% acidity.
C.J.-10	Sulkin Spice Co., Boston, Mass. <i>Sulkin's Koktil</i>	0.61	...	5.02	...	Pass.
E.S.-86	Uddo & Taormina Co., Brooklyn, N. Y. <i>Progresso</i>	0.60	0.11	5.32	0.041	Labeled "Reduced with water to 5% acidity"; pass.
E.C.-41	Unita Packing Co., Providence, R. I. <i>Barbera</i>	0.18	0.03	6.05	0.021	Colored with coal tar dye.
J.C.-25	Unita Packing Co., Providence, R. I. <i>Barbera</i>	0.54	0.16	4.55	0.008	Pass.
J.C.-26	Unita Packing Co., Providence, R. I. <i>Barbera</i>	0.47	0.16	4.47	0.008	Pass.
K.F.-178	Unita Packing Co., Providence, R. I. <i>Barbera</i> .....	...	...	5.21	...	Pass.
<i>Distilled Vinegar</i>						
E.C.-28	New England Vinegar Works, Littleton, Mass. <i>Veryfine</i>	...	...	4.04	...	Oxidation value 241. Pass.
<i>Honey Vinegar</i>						
2938	J. P. Johnson, Entomology Dept. ....	...	...	5.39	...	Pass.
<i>Red Wine Flavored Distilled Vinegar</i>						
K.F.-285	Joseph L. Scalfani, Inc., Brooklyn, N. Y. <i>Scalfani</i> .....	...	...	...	...	Misleadingly labelled.

¹ Conn. Agr. Expt. Sta. Bul. 426, 22 (1939).

E.C.-30. Collins White Hominy. Collins Hulled Corn Co., Lancaster, Mass. This sample was composed of unsalted cooked swollen white kernels of corn. Webster's Dictionary¹ defines hominy as "maize hulled and often, also, broken, for food". The sample was passed.

E.S.-53. Four Sister Brand Giardiniera. V. Tortera, Waterbury, Conn. Only "vinegar, oregano, water, salt" were declared; the product also contained large pieces of peppers, carrots, string beans, cauliflower, cucumber and celery or fennel or both.

E.S.-52. New Haven Native Peeled Hand Packed Tomatoes. F. Mosca & Son, New Haven, Conn. This sample was passed.

K.F.-124 and 125. Sweet Violet Whole Kernel Golden Sweet Corn. Comstock Canning Corp., Newark, N. J. Odor, taste and appearance were normal, and these samples were passed.

Vinegar

Sixteen samples of cider vinegar, six of wine vinegar, one of distilled vinegar, nine of blended distilled and wine vinegar, and one of distilled vinegar flavored with red wine, or 33 samples in all, were examined for the Commissioner. Two samples each of cider vinegar and wine vinegar and one of honey vinegar were analyzed for private individuals. Of the 38 samples, 22 were adulterated or misbranded and 16 were passed. Analyses are given in Table 7.

There was a rather extended discussion of the composition of wine vinegar in the 1947 Report,² which need not be repeated here. It is sufficient to say that on the basis of published analyses the average composition of undiluted wine vinegar is about as follows, in grams per 100 cc.:

Total solids	2.01
Ash	0.32
Total acidity as acetic acid	6.35
Tartaric acid	0.12

Less than 0.12 per cent ash or 0.05 per cent tartaric acid indicates adulteration.

By law (G.S.-3896) no vinegar that is artificially colored, with caramel or otherwise, or whose acidity is less than 4 per cent, or that contains less than 1.60 per cent of solids, may be sold as pure cider vinegar.

The sample of honey vinegar, 2938, was an experimental vinegar made from honey, obtained from Mr. Johnson of our Entomology Department. Unfortunately, the sample was insufficient for a complete analysis.

Water

One sample of carbonated water, *K.C.-36*, from Pat's Fountain Service, Bridgeport, Conn., was examined for the Commissioner. Total solids were 52 parts per million, the pH was 4.5, and 1.6 parts per million of copper were present. This is more copper than the 0.2 p.p.m. that the U. S. Public Health Service allows in drinking water on interstate carriers.

Twelve samples were examined for the State Board of Fisheries and Game and private individuals. One sample, 4559, stated to be a well water,

¹ Webster's New International Dictionary, p. 1028.

² Conn. Agr. Expt. Sta. Bul. 528, 41-45 (1949).

was actually a dilute lime water (0.05 per cent calcium hydroxide); a sample from North Farms Reservoir, Branford, 1617, contained 1.03 parts per million of potassium and 0.07 p.p.m. of phosphorus; two samples of boiler water contained 81 p.p.m. of sodium silicate; a sample of spring water was slightly contaminated with a petroleum distillate; and a sample of well water contained 25 p.p.m. of zinc. This zinc was probably picked up from new galvanized pipe.

Miscellaneous

Twenty official and 34 unofficial samples of miscellaneous foods and other materials were examined. Twelve were adulterated or misbranded or otherwise unsatisfactory and 42 were passed. The following samples are of interest:

J.W.-27. Au Gourmet Brand Whip'O. Meyer & Lange, New York, N. Y. This preparation was designed to be added to light cream to thicken it so that it could be whipped. Declared ingredients were "Sugar, water, lime and epsom salts". The addition of calcium sucrate to cream to thicken it was once a common fraudulent practice. Since the present product was sold for use in the home, no question of adulteration was involved and the sample was passed.

E.C.-13. C-A-C Brand Grated Coconut. Catz Trading Co. of Cuba, S. A., Havana, Cuba. Declared ingredients were "Grated cocoanut, refined cane sugar syrup, 1/10 of 1% sodio (sic) benzoate". The liquid portion contained 16.63 per cent of sucrose and 2.76 per cent of invert sugar, or 19.39 per cent total sugars. The sample was 0.55 oz. short weight.

E.C.-149. Chef's Best Macaroni Salad. Blue Ribbon Foods, Newark, N. J. This sample had a floury taste, but was not decomposed.

3559. Chesterfield Cigarettes. Nicotine content was 1.82 per cent. This is less than the 2.53 per cent found in Chesterfields in 1927.¹

F.H.-18. Clearate B-60815. W. A. Cleary Corp., New Brunswick, N. J. This preparation was sold as an ice cream "stabilizer". Analysis showed moisture, 0.72; ash, 4.68; protein, 8.25; ether extract, 82.18, and nitrogen-free extract, 4.17 per cent. The ether extract had a refraction of 86.7 at 25° C.; an iodine number of 91; and a saponification value of 186. These constants do not correspond to those of any natural fat; the material is probably a synthetic ester. Its identity should be declared on the label.

1993. Devil's Food Mix. Vee-Bee Co., Inc., Chicago, Ill. Declared ingredients were "Wheat flour, cocoa, molasses, shortening, dextrose, salt and spices, artificial flavoring added". This sample was submitted with a complaint that cake made according to the directions on the package would not rise. We found this to be true; the product contained no sodium bicarbonate nor other baking powder ingredient, and obviously could not rise.

E.S.-15. Drew-Mulse ME. E. F. Drew & Co., Inc., Boonton, N. J. This was another ice cream "stabilizer". Analysis showed moisture, 0.20; ash, none, and ether extract, 97.95 per cent. Saponification value of the ether extract was 256. Correspondence with the manufacturer revealed that this product was glyceryl monostearate dilactate. This information should have been declared on the label.

¹ *Conn. Agr. Expt. Sta. Bul.* 295, 343 (1928).

K.F.-177. Dri-Keep. Dri Keep Products, Brooklyn, N. Y. This sample consisted of silica gel beads to be placed in a salt cellar to absorb moisture and so keep the salt free-running. It contained 86.08 per cent of silica (SiO₂).

5034. Floor Oil. This oil, examined for the East Haven Board of Education, was 90 per cent mineral oil. It was perfumed with an organic ester, probably amyl acetate.

2538. Foxbrand Granulated Soap. G. Fox & Co., Hartford, Conn. Analysis showed soap, 58.35; trisodium phosphate, 9.90; sodium silicate, 15.09; free fatty acids, 0.89, and moisture, 15.77 per cent. This sample was misbranded, since it was not straight soap.

2537. Foxbrand Pure White Soap Flakes. G. Fox & Co., Hartford, Conn. Analysis showed soap, 94.86; free fatty acids, 0.59, and moisture, 4.54 per cent. The sample was pure soap as labelled.

A.F.-34 and 35. Fruit Wax Coating. Manufacturer unknown. These samples were aqueous suspensions containing an average of 16.86 per cent of a wax with a melting point of 69° C., a saponification value of 64 and an iodine number of 33. These properties agree with those of candelilla wax, which is obtained from a plant (*Pedilanthus pavonis*) growing in northern Mexico and southern Texas.

E.C.-27. Hi-Hat Soup Base, Beef Style. Hi-Hat Food Products Co., Providence, R. I. Declared ingredients were "Chicken fat, oleo oil, hydrolyzed plant proteins (artificial seasoning), dextrose, salt, flavorings". Analysis showed moisture, 13.34; fat, 14.93; protein, 18.38; salt, 31.26; other mineral matter, 5.34, and dextrose, 14.70 per cent. The sample was passed.

E.C.-26. Hi-Hat Soup Base, Chicken Style. Hi-Hat Food Products Co., Providence, R. I. This was labelled "A seasoning to help bring out more flavor in the finest foods. Contains salt, dextrose, chicken fat, hydrolyzed (sic) plant proteins (artificial seasoning), flavorings, spice, parsley". Analysis showed moisture, 2.90; fat, 16.13; protein, 10.56; salt, 41.64; other mineral matter, 7.79, and dextrose, 16.65 per cent. The sample was passed.

3915, 3935, 3961, 4013, 4014 and 4247. Ice Cream Mix. Tenin, Inc., New Haven, Conn. Fat contents were 13.25, 13.69, 14.51, 13.64, 13.69 and 14.97 per cent, respectively.

K.C.-27 and 28 and A.F.-211. K.F.S. Cero-Meato Brand Baked and Kibbled Dog Food. Kennel Food Supply Co., Fairfield, Conn. Analyses were as follows:

	K.C.-27	K.C.-28	A.F.-211
Total ash, per cent	11.66	12.26	12.00
Calcium (Ca), per cent	1.16	1.13	1.43
Chlorine in fat, mgm./gm.	0.02	0.04	0.04

This amount of chlorine in the fat is too low to indicate the presence of nitrogen trichloride bleached ("Agenized") flour.

3593. Klensz. Klensz Products, New Haven, Conn. This silver polish was labelled "Contains sodium cyanide, keep out of mouth"; the sodium cyanide content was 0.88 per cent. According to Peterson, Haines and Webster¹

¹ "Legal Medicine and Toxicology", vol. II, p. 679.

the lethal dose of hydrocyanic acid is one grain, which is equivalent to 1.8 grains of sodium cyanide. The 4.05 fluid ounces in this sample contained nine lethal doses of sodium cyanide. We understand that cyanide silver polishes are illegal in some states; certainly they are too dangerous for general sale when other polishing materials are available.

3557. *Potatoes*. These potatoes were very green, but contained only 11 milligrams of solanine in 100 grams, which is not much more than the normal quantity of 9 mgm./100 gm. found in wholesome potatoes.²

W.S.-72. Protam. Associated Nutrition Products, Inc., New York, N. Y. This was labelled as a "special purpose food"; the label bore a long detailed list of vitamins, amino acids and minor elements contained in the "Protam", and a pamphlet in the package outlined the "Protam Plan" for reducing. Essentially the "plan" consisted in drinking the "Protam" in vegetable juice (to supply vitamins and minerals and take the edge off hunger) and cutting down on the calorie intake. The general tenor of the labelling was misleading because it was designed to convey the impression that taking "Protam" alone was all that was needed to reduce, while actually the essential part of the plan was eating less food.

A.F.-300. St. Germain's New Maple Butter. The St. Germain's, Waterbury, Conn. This was labelled "Contains Mapleine, artificial maple flavor, pure glucose, fresh milk, sugar". Such a product is not maple butter, which is a soft maple sugar.³

C.J.-5. Scintilla De Luxe Crushed Olives, Sicilian Style. Muller Products Co., Inc., New York, N. Y. The label of this product declared "Olives, sour mixed pickles, capers, salt, vinegar and spices with peanut and olive oil", but no peanut nor olive nor any other vegetable oil was present; the total ether extract consisted of only 0.16 per cent of a solid fat melting at 180-190° C.

3895 and *J.W.-81. Squash*. These squashes contained a bitter glucoside, melting at 134° C., which gave a series of color changes from bright yellow to deep rose with concentrated sulphuric acid. They are believed to represent an unknown variety possibly produced from normal squash as a sport.

S.O.-3. Sugar. S. S. Kresge, Stamford, Conn. This "sugar" for sugaring doughnuts contained no cane sugar at all, but was a mixture of dextrose and starch containing 78.72 per cent dextrose.

J.C.-57. Sweet Apple. Syrup & Fruit Products Co., Chicago, Ill. This was a preparation for making apple jelly; declared ingredients were "Pure apple juice and fruit pectin". Tests for monochloroacetic, salicylic and benzoic acids and quaternary ammonium compounds were negative.

K.F.-255. Zip-Freeze for Making Ice Cream at Home. Albulac Co., Chicago, Ill. Declared ingredients were "Starch, tragacanth, psyllium husk, karaya"; the product was labelled "Produces rich ice cream from ordinary cream and sugar". Actually "Zip-Freeze" is only a mixture of starch and gums that would thicken cream but not enrich it; it is not even a complete ice cream mix of any sort, because cream and sugar must be added to it before ice cream can be made.

² Bamford, "Poisons, Their Isolation and Identification", p. 204.

³ *Conn. Agr. Expt. Sta. Bul.* 528, 46 (1949).

DRUGS

Ascorbic Acid Tablets

According to the U.S.P. XIII, ascorbic acid or vitamin C tablets must contain not less than 95 nor more than 120 per cent of the labelled amount of ascorbic acid. Ten official and one unofficial samples were examined. The declared dosages varied between 25 and 100 milligrams per tablet. Analyses, as given in Table 8, showed that all samples either met the U.S.P. requirements or were reasonably close thereto.

Cod Liver Oil

Two official samples of cod liver oil were analyzed chemically and assayed for vitamin D by feeding to rats. Both samples were passed:

P.S.-983. Cod Liver Oil U.S.P. McKesson & Robbins, Inc., New York, N. Y. Test for vitamin D satisfactory; unsaponifiable, 0.98, and free fatty acids, 0.63 per cent; iodine no. 163; saponification no. 182.

P.S.-982. Heckler Brand Cod Liver Oil U.S.P. XII. Wise, Smith & Co., Inc., Hartford, Conn. Claimed 85 units of vitamin D per gram, assay satisfactory; unsaponifiable, 0.82, and free fatty acids, 0.85 per cent; iodine no. 157; saponification no. 181.

Cough Drops

Fifteen samples of cough drops were submitted by the Commissioner for an opinion as to whether these products were drugs within the meaning of the law. The Food, Drug and Cosmetic Act (G.S. 3930(g)) defines the word "drug" to include "(1) articles recognized in the official United States pharmacopoeia, official homoeopathic pharmacopoeia of the United States or official national formulary, or any supplement to any of them; (2) articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease in man or other animals; (3) articles, other than food, intended to affect the structure or any function of the body of man or any other animal; and (4) articles intended for use as a component of any article specified in this subsection". This definition is very broad, because materials like salt, sugar and water are listed in the Pharmacopoeia and because even a house could be construed as an article intended to prevent disease. Common sense must therefore be used in deciding what articles are drugs. However, we believe that no one would deny that coughs and colds are diseases, and that consequently any product sold to relieve a cough or cold is a drug. Of the 15 brands of cough drops submitted by the Commissioner all except two specifically mentioned coughs or colds, and were therefore, we believe, unquestionably drugs. Further, many of the manufacturers tacitly admitted that their products were drugs by declaring their "active ingredients", a type of declaration that is not used for foods.

The products were the following:

P.S.-976. Bunte Menthol-Horehound Cough Drops. Bunte Brothers, Chicago, Ill. Labelled "Stop that tickle in the throat—give relief and comfort".

P.S.-973. Cocilana Cough-Nips. Cocilana, Inc., Brooklyn, N. Y. Labelled "Recommended for coughs, hoarseness, bronchial and throat irritations due to colds. The bark of the tree yielding Cocillana has been and is extensively

TABLE 8. ASCORBIC ACID TABLETS

No.	Manufacturer	Pharmacy	Ascorbic acid mgm./tablet	
			Declared	Found
P.S.-998	Abbott Laboratories, North Chicago, Ill.	Liberty Pharmacy, Wallingford	50	50.0
P.S.-5	American Home Products Co., New York, N. Y.	Jaivin's Drug Store, Hartford	50	53.0
P.S.-25	Lederle Laboratories, Inc., New York, N. Y.	John M. Rosenthal, Hartford	100	97.6
P.S.-56	Eli Lilly & Co., Indianapolis, Ind.	Euclid Pharmacy, Hartford	25	22.1
P.S.-991	Eli Lilly & Co., Indianapolis, Ind.	Arthur Drug Store, Hartford	50	56.0
P.S.-13	McNeil Laboratories, Inc., Philadelphia, Pa.	Johnson's Pharmacy, Poquonock	50	55.3
P.S.-14	Premo Pharmaceutical Laboratories, Inc., New York, N. Y.	Beir's Pharmacy, Hartford	25	27.4
P.S.-987	E. R. Squibb, New York, N. Y.	Forest Drug Co., Hartford	50	56.0
P.S.-58	United Drug Co., Boston Mass.	Sless Pharmacy, Hartford	25	27.4
4724	West-Ward Drug Co., New York, N. Y.	Gilbert Pharmacy, New Haven	100	98.0
P.S.-9	Whelco Drug Co., Inc., New York, N. Y.	Whelan Drug Store, Hartford	50	49.0

prescribed in various forms by the medical profession with excellent results for coughs, bronchitis due to colds".

P.S.-981. F & F Medicated Lozenges. F & F Laboratories, Chicago, Ill. Labeled "Active ingredients: menthol, beechwood creosote, eucalyptol, horehound, white pine, wild cherry"; also "Recommended for coughs due to colds".

P.S.-979. Frog In Your Throat Lozenges. Hance Bros. and White Co., Philadelphia, Pa. Labeled "Beneficial alleviating coughs due to . . . colds".

P.S.-980. Gibson's L-L-M's. E. C. Rich, Inc., New York, N. Y. Labeled "Active ingredients, linseed-licorice-menthol-sugars-gelatine"; also "Soothing for mild throat irritations". This was one of the two products whose labels did not mention coughs or colds.

P.S.-972. H-B Cough Drops. H. B. Sales Co., Cambridge, Mass. Labeled "Active ingredients: licorice, ammonium chloride, malt, aromatics, menthol and eucalyptol"; also "Sweetens breath, soothing to tickling of the throat, a great aid to singers, speakers and smokers".

P.S.-974. Licorice Pastilles. Henry Heide, Inc., New York, N. Y. Labeled "A soothing confection for speakers, singers, smokers, a favorite 'chaser'". The label did not mention coughs or colds.

P.S.-967. Listerine Cough Drops. Lambert Pharmacal Co., St. Louis, Mo. Labeled "Active ingredients: ammonium chloride, menthol, benzocaine, camphor, glycyrrhizin"; also "Useful in cases of coughing caused by common colds". Certainly benzocaine would never be permitted as an ingredient of a product that was not a drug.

P.S.-977. Luden's Honey-Licorice Medicated Cough Drops. Luden's, Inc., Reading, Pa. Labeled "Active ingredients: honey, licorice, glycerine, in a sugar base"; also "For the relief of coughs due to colds". The fact that this preparation is labelled "medicated" is of itself enough to indicate that it is sold as a drug.

P.S.-971. Medicated Cocillana Cough Drops. Luden's, Inc., Reading, Pa. Labeled "Active ingredient: cocillana in a sugar base"; also "Use . . . for the relief of coughs due to colds".

P.S.-970. Menthol Cough Drops. Smith Brothers, Inc., Poughkeepsie, N. Y. Labeled "Active ingredients: menthol in a sugar base, U. S. certified color added"; also "For temporary relief of coughs due to colds".

P.S.-975. Pine Bros. Glycerine Tablets. Pine Bros., Inc., Philadelphia, Pa. Labeled "To relieve coughs due to common colds".

P.S.-978. Smith Brothers Black Cough Drops. Smith Brothers, Inc., Poughkeepsie, N. Y. Labeled "Active ingredients: anise and licorice in a sugar base"; also "For temporary relief of coughs due to colds".

P.S.-968. Vicks Medicated Cough Drops. Vick Chemical Co., New York, N. Y. Labeled "Active ingredients: menthol, oil of eucalyptus, thymol, camphor, tolu and benzyl alcohol (6 minims/tablet) in a sugar base"; also "Coughs due to colds". The quantitative declaration of benzyl alcohol is proof positive that the manufacturer considers this preparation a drug, because a quantitative dosage declaration is only made in the case of

active drugs, not foods; further, a drug like benzyl alcohol would not be permitted in a food.

P.S.-969. Zymole Trokeys. Frederick Stearns & Co., Detroit, Mich. Labelled "For such common conditions as minor throat irritations, coughs, hoarseness, huskiness and dryness, when these are due to common colds".

Dilute Hydrochloric Acid

The U.S.P. requires that each 100 cc. of diluted hydrochloric acid contain not less than 9.5 nor more than 10.5 grams of hydrogen chloride (HCl). Twenty-three samples were examined, of which 20 were passed. Results are given in Table 9.

TABLE 9. DILUTE HYDROCHLORIC ACID

No.	Pharmacy	Hydrochloric acid, gm./100 cc.	Remarks
Hartford			
P.S.-993	Arthur Drug Store	10.77	Pass
P.S.-49	Bliss Pharmacy	8.77	Pass
P.S.-32	Burr Pharmacy	10.12	O. K.
P.S.-990	Fabian Drug Co.	11.15	Pass
P.S.-62	Gourson Drug Store	12.42	Too strong
P.S.-35	Griswold's Pharmacy	9.68	O. K.
P.S.-53	Harris Pharmacy	10.18	O. K.
P.S.-28	Ideal Drug Co.	3.26	Too weak
P.S.-57	Jack's Pharmacy	10.47	O. K.
P.S.-52	Madsen's Pharmacy	9.21	Pass
P.S.-36	Mandell's Pharmacy	10.07	O. K.
P.S.-66	Maxwell Drug Store	11.12	Pass
P.S.-10	Midtown Drug Co., Inc.	9.26	Pass
P.S.-55	Modern Drug	9.12	Pass
P.S.-63	Rays Pharmacy	10.87	Pass
P.S.-46	Roosevelt Drug Co.	9.91	O. K.
P.S.-69	Sage-Allen & Co., Inc.	9.91	O. K.
P.S.-23	Sisson Drug Co.	9.67	O. K.
P.S.-7	Whelan Drug Store	11.65	Too strong
P.S.-15	Williams Pharmacy	9.95	O. K.
P.S.-70	Wise-Smith & Co., Inc.	9.00	Pass
P.S.-33	Zito's Pharmacy	11.31	Pass
Wallingford			
P.S.-999	Stimpson's Pharmacy	10.36	O. K.

Thiamine Tablets

Thiamine hydrochloride or vitamin B₁ tablets are required to contain between 95 and 120 per cent of the labelled amounts of thiamine hydrochloride. Seventeen official samples were examined; the declared dosages varied from 1 to 100 milligrams. Only one sample was deficient in thiamine, but the dosage in one other sample was stated in terms of the U.S.P. unit of 3

TABLE 10. THIAMINE TABLETS

No.	Manufacturer and brand	Thiamine hydrochloride, mgm./tablet		Remarks
		Declared	Found	
P.S.-51	Abbott Laboratories, North Chicago, Ill.	5	5.75	O.K.
P.S.-994	Abbott Laboratories, North Chicago, Ill.	6	6.30	O.K.
P.S.-31	American Druggists Syndicate, New York, N. Y. <i>A.D.S.</i>	3.3	3.47	O.K.
P.S.-65	Columbia Medical Co., New York, N. Y.	5	5.00	O.K.
P.S.-19	International Vitamin Div., American Home Products Corp., New York, N. Y. <i>I.V.C.</i>	3.3	3.23	O.K.
P.S.-27	International Vitamin Div., American Home Products Corp., New York, N. Y. <i>I.V.C.</i>	3.3	3.30	O.K.
P.S.-2	Eli Lilly & Co., Indianapolis, Ind.	3	3.15	O.K.
P.S.-48	Eli Lilly & Co., Indianapolis, Ind. <i>Betain S.</i>	10	10.00	O.K.
J.C.-205	Premo Pharmaceutical Laboratories, New York, N. Y. <i>Premo Beatine</i>	100	95.00	O.K.
J.C.-206	Premo Pharmaceutical Laboratories, New York, N. Y. <i>Premo Beatine</i>	10	10.25	O.K.
P.S.-30	Premo Pharmaceutical Laboratories, New York, N. Y.	5	3.38	Below standard
P.S.-17	Royal Mfg. Co. of Duquesne, Duquesne, Pa. <i>Saron's</i>	10	11.50	O.K.
P.S.-59	Special Sale Products Co., Boston, Mass.	5	5.25	O.K.
P.S.-61	Frederick Stearns & Co., Detroit, Mich.	3,330 units	11.50	Improperly labelled
P.S.-38	Valentine Laboratories, Inc., Chicago, Ill.	1	1.13	O.K.
P.S.-54	Valentine Laboratories, Inc., Chicago, Ill.	3	2.94	O.K.
P.S.-8	Whelco Drug Co., Inc., New York, N. Y.	5	4.88	O.K.

micrograms that has not been official since November 1, 1942. Results are given in Table 10.

Whiskey

K.F.-157, Old Harvey Brand Blended Whiskey, The Great Atlantic and Pacific Tea Co., New York, N. Y., was labelled "86 proof 30% straight whiskey 70% neutral spirits". Analysis showed alcohol 42.12 per cent by volume, total solids 0.435 per cent, and no methyl alcohol, acetone, isopropyl alcohol, phenols nor diethyl phthalate.

The alcohol content of two other samples was determined for the New Haven police.

Miscellaneous Drugs

Nineteen official and eight unofficial samples were examined. Four samples were adulterated or misbranded and 17 were passed. The following samples are of interest:

H.P.-110. Arthritis Remedy. This sample had been compounded for a patient by a physician since deceased; the patient wished to have it analyzed so that she could have the prescription duplicated. Analysis showed sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) 35.24 and alcohol 3.53 per cent plus unidentified plant extractives.

4723. Capsules Ephedrine Sulfate $\frac{3}{8}$ grain U.S.P. West-Ward Drug Co., New York, N. Y. Analysis showed 0.379 grain/capsule of ephedrine sulphate.

P.S.-964. Father John's Medicine. Father John's Medicine Co., Lowell, Mass. This sample was labelled "Active ingredients: Cod liver oil of high vitamin A and D content, gum arabic and glycerin. These active ingredients are scientifically compounded with sugar, licorice and flavoring oils". It was recommended "as a tonic for convalescents and children who lack sufficient vitamins A and D, as it contains a rich supply of these vitamins", and also "for the correction of deficiencies in vitamins A and D". Dosage directions were "For adults, one tablespoonful three or four times a day. Children between the ages of one and twelve, two teaspoonfuls three times a day. Infants under one year, two teaspoonfuls twice a day".

A vitamin D assay showed that the sample had a vitamin D potency of about 40 units per gram. The total oil content was 31.45 per cent; the potency of the oil was therefore about 127 units per gram, which meets the U.S.P. requirement of not less than 85 units per gram. The average daily dose of cod liver oil given in the U.S.P. XIII is "Infants and adults 8 cc.", which is about two teaspoonfuls. The recommended daily dosages of "Father John's Medicine" range from four teaspoonfuls for infants to as much as 12 teaspoonfuls for adults. The claims for "Father John's Medicine" are therefore correct, but attention is not called to the fact that it is necessary to take twice as much of this preparation as of cod liver oil to get the same effect.

A sample of "Father John's Medicine" examined in 1911¹ was found to be a 36.98 per cent emulsion of cod liver oil, and therefore differed little from the present sample.

¹ *Conn. Agr. Expt. Sta. Report, 1911, Part II, p. 169.*

H.P.-119. Franklin Calcium Gluconate, Calcium d-Saccharate and Dextrose Solution. O. M. Franklin Serum Co., Amarillo, Tex. Analysis, as compared with the declared composition, was as follows:

	Declared per cent	Found per cent
Dextrose	25	23.31
Calcium gluconate	11	11.06
Calcium saccharate	1	.....
Boric acid	0.4	1.05
Thymol	0.05	present

This sample contained less dextrose than claimed and about $2\frac{1}{2}$ times as much boric acid.

2420, 2421 and P.S.-986. Jeculin. Upjohn Co., Kalamazoo, Mich. Two of these samples (2420 and 2421) were obtained from two different drug-stores on prescriptions calling for "Jeculin", and one (*P.S.-986*) was an original unopened bottle. There was a question as to whether there had been substitution of some other preparation for "Jeculin" in one of the prescriptions. Declared ingredients of "Jeculin" per fluid ounce are "Liver (as aqueous concentrate) 2.66 oz., orange juice (as orange concentrate) 1.35 fl. oz., extract red bone marrow, glycerinated 10.0 minims, iron and ammonium citrates 8.0 grains, malt extract, nondiastatic, q.s." It was also stated to contain 17 per cent of alcohol. All of these ingredients except the alcohol and iron are materials of indefinite composition, so it was impossible to determine by analysis whether any of the samples had a quantitative composition corresponding to the declared formula. Since iron and ammonium citrates contain 16.5-18.5 per cent of iron and about 9 per cent of ammonia (NH_3), 8 grains per fluid ounce of iron and ammonium citrates is equivalent to 0.289-0.324 per cent of iron and about 0.16 per cent of ammonia.

The two prescription samples did not differ appreciably in odor and appearance, while *P.S.-986* was lighter colored and had a pronounced orange odor. Analyses were as follows:

	2420 per cent	2421 per cent	P.S.-986 per cent
Total solids	62.53	62.32	64.63
Ash	2.62	2.61	2.18
Total acidity as citric acid	3.48	3.95	3.28
Ascorbic acid	0.10	0.12	0.09
Total nitrogen (N)	1.19	1.23	1.19
Ammonia (NH_3)	0.10	0.03	0.15
Total sugars as invert sugar	16.86	17.06	22.50
Iron (Fe)	0.26	0.32	0.31

The two prescription samples appeared to be essentially identical; *P.S.-986* contained more sugar and less ash and had a different color and odor. Correspondence with the manufacturer, however, revealed that the differences in odor and appearance were due to changes taking place in the ageing of "Jeculin", and that the differences in solid content were due to variations in composition of such ingredients as liver and malt extracts and orange juice concentrate.

P.S.-3. Mineral Oil. Jaivin's Drug Store, Hartford, Conn. This oil had a specific gravity of 0.8798 at 25°C. and a kinematic viscosity of 74.6 at

37.8° C., was neutral, passed U.S.P. tests for readily carbonizable substances, solid paraffin and sulphur compounds, and had no odor nor taste. It was passed.

H.P.-104. Prescription No. 100364. East Side Pharmacy, Derby, Conn. The prescription called for 0.30 gram of pilocarpine hydrochloride in 30 cc. of distilled water. The sample was submitted by the patient because it expanded the pupils of his eyes instead of contracting them as it should have if it had contained pilocarpine. Three microcrystalline tests (with chloroplatinic acid, Wagner's and Wormley's reagents) and a color reaction (the Vitali test), as compared with known solutions of atropine and pilocarpine, proved that atropine had been substituted for pilocarpine. This was confirmed by tests on rabbits' eyes by Dr. W. T. Salter of the Pharmacology Department of the Yale University School of Medicine, as well as by the fact that the sample contained sulphate but no chloride. Quantitative analysis showed 0.627 gm./100 cc. of atropine sulphate.

H.P.-122. Prescription No. 213508. Corner Drug Store, Litchfield, Conn. This prescription called for a mixture of 15 grams each of resorcin and "Adestrin". "Adestrin Ointment" is an oxycholesterinated fish oil ointment made by George A. Breon & Co., Kansas City, Mo.; a sample, *J.C.-219*, was obtained for comparison. Examination showed that *H.P.-122* apparently was a mixture of resorcin and "Adestrin Ointment" as it was supposed to be, but the resorcin content was only 28.57 per cent.

3797. Prescription No. 530479. Taft Pharmacy, New Haven, Conn. This prescription called for 15 cc. of a 1.5 per cent solution of "Carcholin" in 1:3,000 "Zephiran". "Carcholin" is the brand name of carbamyl choline chloride made by Merck & Co., and "Zephiran" is the brand name of a quaternary ammonium chloride preparation made by Winthrop Chemical Co. Analysis of this sample showed it to contain 1.86 gm./100 cc. of carbamyl choline chloride.

P.S.-984. Ratner's Healing Salve. Glassman Drug Co., Hartford, Conn. This salve was declared to contain 70 units of vitamin D per gram; feeding tests on rats showed only about 53 units per gram, but the sample was passed.

H.P.-111. Rexall Carbolic Salve. United Drug Co., Boston, Mass. This was labelled "Contains carbolic acid, petrolatum"; the concentration of phenol (carbolic acid) was not declared. Analysis showed 0.97 per cent phenol, which is half the strength of U.S.P. phenol ointment.

H.P.-121. Slumber Bath. G. I. Stanford Corp., Southport, Conn. This preparation was supposed to promote sleep when it was added to bath water. Declared ingredients were "Sodium tetraphosphate, sodium sesquicarbonate, alkyl aryl sodium sulfonates, essential oils". It is therefore essentially a perfumed water softening agent.

2461. Solution of Calcium Chloride, Dextrose, Magnesium Chloride, Sodium Chloride, Formaldehyde. Analysis showed sodium chloride (NaCl), 0.86; calcium chloride (CaCl₂), 17.81; magnesium chloride (MgCl₂), 4.89; reducing sugars, 4.32, and sucrose, 4.08 per cent. Formaldehyde was present; the pH was 4.10.

P.S.-985. Turpentine. Hoffman's Paints, Hartford, Conn. Analysis was as follows: Specific gravity, 15.5° C., 0.8660; refractive index, 20° C., 1.472; unpolymerized residue, 2.0 per cent; initial boiling point, 155° C.; per cent distilling below 170° C., 93.5. The sample was passed.

H.P.-120. Veterinary Sterile Solution Calgludex with Magnesium. S. E. Massengill Co., Veterinary Division, Bristol, Tenn.-Va. Analysis, as compared with the declared composition, was as follows:

	Declared per cent	Found per cent
Calcium gluconate	20	16.94
Dextrose	20	15.17
Magnesium chloride (MgCl ₂)	2	0.76
Boric acid (H ₃ BO ₃)	4	3.07
Formaldehyde (HCHO)	present	present

Magnesium chloride calculated to the hexahydrate is 1.63 per cent, which explains part of the apparent deficiency in this ingredient. If results are calculated to grams per 100 cc. of the hydrates instead of to percentages of the anhydrous compounds, they become: Calcium gluconate monohydrate, 20.39; dextrose monohydrate, 19.27; magnesium chloride hexahydrate, 1.88, and boric acid, 3.54. This is probably what the manufacturer had in mind, but grams per 100 cc is not "per cent".

COSMETICS

Three official and two unofficial samples of cosmetics were examined; all were passed:

J.C.-204. Coffelts Hair Coloring. Coffelt Chemical Co., New York, N. Y. Analysis showed sulphur, 9.99, and lead acetate, 1.24, grams per 100 cc.; alcohol, 29.57 per cent; and glycerine present.

H.P.-116. Eska Noheet Permanent Wave Solution. Turner Hall Corp., New York, N. Y. Analysis showed ammonium thioglycollate, 8.35, and free ammonia (NH₃), 1.16 per cent.

1190. Hand Cream. This sample contained 14.82 per cent of ammonium oleate and about 4 per cent of turpentine; the balance was water.

3578. Perfumed Deodorant. Charles of the Ritz, New York, N. Y. This was a perfumed 0.80 per cent solution of formaldehyde containing a trace of borax.

H.P.-117. Tussy Rich Cream. Lehn & Fink Products Corp., Bloomfield, N. J. Analysis showed lanolin, 98.82; titanium dioxide, 0.47; and water and perfume, 0.71 per cent.

COLLABORATION WITH OTHER DEPARTMENTS

Eight hundred and one samples, not included in other reports from this laboratory, were analyzed for other Federal, State and Station departments. Distribution was as follows:

	<i>Samples</i>
U. S. Geological Survey (water)	75
State Board of Fisheries and Game	8
State Department of Health (narcotics)	16
State Police	9
Station departments:	
Biochemistry	19
Botany	50
Entomology	262
Forestry	23
Genetics	17
Soils	246
Tobacco Laboratory	76
	801

BABCOCK GLASSWARE, ETC.

As required by Sections 3191 and 3240 of the General Statutes, milk and cream test bottles and milk pipettes, and check thermometers used in milk pasteurizing plants, have been examined as follows:

	<i>Pieces</i>	<i>Incomplete or inaccurate</i>
Babcock glassware	2,358	0
Thermometers	56	8
	2,414	8

INDEX

	<i>Page</i>
Acid, hydrochloric, diluted	44
"Adestrin Ointment"	48
Apple jelly	21
Apple juice	20
Apples, canned	19
Apricots, canned	19
Arthritis remedy	46
Ascorbic acid tablets	41
Atropine, substitution for pilocarpine in prescription	48
Bailey, E. M., obituary	3
Baked products	8
Bacon, smoked	23
Basil, lemon, jelly	21
Bath, Slumber	48
Beans, string, canned	12
Beef, chopped, Kosher	22
Beef, dried	21
Beef loaf, dried	22
Beefsteak pie	22
Beverages, carbonated	8
Blueberries, canned	18
Borax in sugar	12
Bread	8, 12
Butter	14
Butter, maple	40
Cabbage	12
Calcium chloride solution	48
Calcium gluconate solution	47, 49
"Calgludex with Magnesium"	49
Candy	9, 12
Carbolic Salve, Rexall	48
Cereals	12
Cheese	9
Cheese, grated	10
Cherries, canned	12
Chewing gum	11
Chicken pie	22
Chocolate, white	11
Cod liver oil	41
Coffee	9
Coffee syrup	29
"Coffelts Hair Coloring"	49
Collaboration with other departments	49
Coloring, hair	49
Confectionery	9, 12
Contaminated or decomposed foods	11
Contents and summary	5
Corn meal	12
Cosmetics	49
Cough drops	41
Crabapples, canned	19
Cream, hand	49
Cream, plastic	14
Cyanide in silver polish	39
Deceptive packing	12
Decomposed foods	11
Deodorant	49
Desserts, gelatine	20

INDEX—Continued

	<i>Page</i>
Desserts, tapioca	13
Diluted hydrochloric acid	44
Dog food	39
Doughnut flour	18
Doughnuts	8, 12
Dressing, Thousand Island	28
Dried beef	21
Drugs	41
Egg noodles	12
Eggs	13
Ephedrine capsules	46
Extracts, flavoring	13, 14
“Father John’s Medicine”	46
Fats and oils	14
Fish	18
Flavoring extracts	13, 14
Floor oil	39
Flour	12, 18
Flour, doughnut	18
Frankforts	22
French dressing	26
Fruit, canned	18
Fruit cocktail, canned	18
Fruit juices	12, 19
Gelatine desserts	20
Glass in canned peas	12
Glassware, Babcock	50
Grape jelly	21
Grape jelly, minted	21
Grapes	12
Gum, chewing	11
Hair dye	49
Ham, canned	22
Hamburg	22
Hand cream	49
Herb jellies	21
Honey	20
Hydrochloric acid, diluted	44
Ice cream	23
Ice cream mix	39
Jam	20
“Jeculin”	47
Jelly	20
Kernel pastes	12
“Klenz”	39
Lemon extract	13
Lemon juice	12
Lollipops	11
Macaroni, spinach	28
Maple butter	40
Maple syrup	29
Marjoram jelly	21

INDEX—Continued

	<i>Page</i>
Marmalade, cherry flavored orange	21
Marshmallow topping	12
Mayonnaise	26
Meat	21
Milk	12, 23
Milk, vitamin D	23
Mincemeat	22
Mineral oil	47
Mixes, pudding	13
Molasses	29
Nectar, grape	8
Noodles, egg	12
Oil, cod liver	41
Oil, floor	39
Oil, mineral	47
Oil, olive	16
Oils and fats	14
Oleomargarine	16
Olive oil	16
Olives, crushed	40
Orange, extract	13
Orange juice	20
Orange marmalade, cherry flavored	21
Peaches, canned	19
Peanuts	12
Pears, canned	19
Peas, canned	12, 33
Peas, canned, glass in	12
Pepper	28
Pepper, imitation	12
Permanent wave solution	49
Pickles	12, 23
Pie, beefsteak	22
Pie, chicken	22
Pilocarpine in prescription	48
Pineapple, canned	19
Pineapple drink	8
Plastic cream	14
Polishes, silver	39
Popcorn	12, 23
Potatoes	40
Prescriptions	48
Preservatives	26
“Protam”	40
Pudding mixes	13
Raisins	12
Raspberry jam	21
“Ratner’s Healing Salve”	48
Resorcin in prescription	48
“Rexall Carbolic Salve”	48
Rolls	8
Rose geranium jelly	21
Rosemary jelly	21
Rye meal	12
Salad dressing	26
Salve, Carbolic, Rexall	48

INDEX—Concluded

	<i>Page</i>
Sardines	18
Sauce, spaghetti	28
Sauce, tartar	26
Sauerkraut	12
Silver polishes	39
"Slumber Bath"	48
Soap	39
Sodas	8
Solanine in potatoes	40
Soup bases	39
Spaghetti	28
Spaghetti sauce	28
Spices	28
Spray residues	29
Squash, bitter glucoside in	40
String beans, canned	12
Sugar	12, 40
"Sweet Apple"	40
Syrups	29
Tapioca desserts	13
Tartar sauce	26
Tea	13
Thermometers	50
Thiamine tablets	44
Thousand Island Dressing	28
Tomato juice	19
Tomato paste	33
Tomato purée	33
Tuna fish	18
Turpentine	49
Vanilla extracts and flavors	13, 14
"Veterinary Sterile Solution Calgludex with Magnesium"	49
Vichy water	8
Vitamin B ₁ tablets	44
Vitamin C tablets	41
Vitamin D in "Father John's Medicine"	46
Vitamin D milk	23
Water, Vichy	8
Wave solution, permanent	49
Wax coating for fruit	39
Whiskey	46
"Zip-Freeze"	40