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The 60th Report on

**F O O D   P R O D U C T S**

And the 48th Report on

**D R U G   P R O D U C T S ,   1 9 5 5**

Bulletin 609

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**H. J. FISHER**  
Chief Chemist

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION  
NEW HAVEN

## CONTENTS AND SUMMARY

### CHARLES WILLIAM SODERBERG

Charles Soderberg was born in what was then the town of Birmingham (now Derby) in 1886. He started work in the grinding room of the Analytical Chemistry Department in 1935, subsequent to the death of Frank C. Sheldon. It is an interesting fact that for the 46 years before Mr. Soderberg took the job only two other persons had been responsible for the sample preparation upon which the accuracy of all the analytical work of the Station ultimately depended: Hugo Lange (1889-1918) and Frank Sheldon (1918-1934).

Mr. Soderberg shortly proved that as much trust could be placed in the meticulous accuracy of his work as in that of his predecessors, and he soon came to be depended on not only for preparing samples and bulk reagents but as a "fixer" of equipment that had gone wrong. After his asthma compelled him to abandon the grinding room and he moved upstairs into the laboratory, our chemists learned that they could always rely on him both to keep their glassware spotless and to put his finger instantly on a wanted piece of apparatus whose very existence everyone else had forgotten.

Mr. Soderberg's death on January 27, 1955 after an absence from work of only three days was a shock to all members of the department, and he is still missed.

Material	Page	From		Total	Adulterated, misbranded, or otherwise questionable
		Food and Drug Commission	Other sources		
<b>Foods</b>					
Alimentary pastes.....	6	14	2	16	13
Beverages, carbonated, etc:					
Alcoholic beverages.....	9	26	7	33	25
Beverages suspected of containing saponin.....	9	5	6	11	6
Ginger ale.....	10	1	..	1	1
Grape drinks.....	10	18	..	18	14
Other fruit drinks.....	10	5	..	5	4
Bread, cookies and rolls.....	10	7	2	9	4
Cocoa and chocolate.....	19	..	10	10	7
Confectionery.....	19	23	7	30	14
Contaminated or decomposed foods.....	24	65	29	94	40
Dairy products:					
Butter.....	27	5	..	5	2
Cheese.....	27	3	6	9	1
Cream.....	27	..	4	4	..
Evaporated milk.....	27	1	..	1	..
Unfortified fluid milks.....	28	..	5	5	..
Vitamin D milk.....	28	..	212	212	22
Deceptively packed foods.....	28	12	..	12	6
Eggs and egg products.....	29	3	..	3	3
Extracts and flavors.....	29	19	..	19	11
Flour.....	35	20	..	20	1
Fresh fruit.....	36	..	135	135	..
Fruit juices.....	38	15	2	17	..
Jellies and preserves.....	39	4	..	4	..
Meat and meat products:					
Frankforts.....	40	14	1	15	13
Hamburg.....	40	65	5	70	15
Meat loaf.....	41	1	..	1	1
Pork sausage.....	41	57	..	57	24
Sheep heart and muscle.....	41	..	32	32	..
Nuts.....	41	2	..	2	2
Oils and fats, vegetable:					
Blended oils.....	44	27	4	31	26
Cottonseed, linseed and sesame oils....	48	1	2	3	1
Oleomargarine.....	48	2	1	3	1
Olive oil.....	49	9	2	11	4
Preservatives.....	50	1	..	1	..
Sea food.....	50	3	..	3	..
Soups.....	50	9	..	9	..
Spices.....	52	5	1	6	2
Spray residues.....	53	..	34	34	20
Syrups.....	54	11	1	12	7
Vegetable products.....	55	9	41	50	4
Vinegar.....	57	6	1	7	3

CONTENTS AND SUMMARY—Concluded

Material	Page	From		Total	Adulterated, misbranded or otherwise questionable
		Food and Drug Commission	Other sources		
Water .....	58	3	24	27	10
Miscellaneous .....	60	9	78	87	27
Totals .....		480	654	1,134	334
<b>Drugs</b>					
Barbiturates .....	66	4	..	4	2
Narcotics .....	67	..	20	20	11
Para amino salicylic acid .....	68	1	2	3	2
Prescriptions .....	69	3	3	6	4
Vitamin preparations .....	70	6	2	8	2
Miscellaneous drugs .....	71	13	9	22	9
Totals .....		27	36	63	30
Cosmetics .....	74	12	7	19	8
Collaborative .....	76	..	317	317	..
Total for all .....		519	1,014	1,533	372
Babcock glassware, etc. ....	77	..	3,427	3,427	11

The Sixtieth Report on  
FOOD PRODUCTS

and the Forty-Eighth Report on  
DRUG PRODUCTS

1955

H. J. Fisher

In 1895 the Connecticut General Assembly passed "An Act regulating the Manufacture and Sale of Food Products" which antedated by eleven years the famous Wiley Pure Food Law of 1906. This law, which went into effect on August 1, 1895, made it unlawful "for any person, persons, or corporation within this state to manufacture for sale, offer, or expose for sale, have in his or their possession for sale, or to sell, any article of food which is adulterated or misbranded". "Food" was defined to include "every article used for food or drink by man, horses or cattle". (By bringing in horses and cattle, the General Assembly inadvertently passed the first state feed law.) Administration of this law was entrusted to The Connecticut Agricultural Experiment Station, which thus became the first agricultural experiment station in the country charged with enforcement of a pure food law (Kentucky followed in 1898). A section of the law which is still in force (G.S. 3901) directed the Station to "make an annual report to the governor upon adulterated food products . . . which shall not exceed one hundred and fifty pages". Pursuant to this directive, the first annual report of this Station on food products was transmitted to Governor Coffin by Director Johnson on July 15, 1896; reports have appeared annually thereafter, of which this is the sixtieth.

The present report summarizes examination of foods, drugs, cosmetics and miscellaneous materials submitted by the Food and Drug Commissioner and the Commissioner of Agriculture during the calendar year 1955, as well as like materials analyzed for the State Department of Health, the State Supervisor of Purchases, State Police, local health departments, police and others. The numbers of samples of all kinds analyzed for Federal, State, and Station departments and not reported in other bulletins are also listed.

Twelve hundred and sixteen samples of foods, drugs, cosmetics and miscellaneous materials were examined during the year. This is 79 fewer samples than were tested in 1954, but the number of official samples received from the Food and Drug Commission was greater by 34 (519 in 1955 as against 485 in 1954).

As usual, dairy products led the list of foods analyzed with 236 samples, of which 212 were vitamin D milks assayed for the State Department of Agriculture. Second in number were 175 samples of meat and meat products, including 70 samples of hamburg, 57 of pork sausage and 15 of frankforts. Third place went to 135 samples of apples analyzed in connection with research studies of other Station departments, while the fourth most numerous class of foods were the 94 samples suspected of insect or rodent infestation or contamination with foreign materials.

Miss Lillian Goffi, who had been on an extended leave of absence due to illness since March 22, 1954, resigned as of April 1, 1955. On March 21 William Knapp was employed to carry on the duties of Charles Soderberg, whose death is noted at the beginning of this bulletin.

The writer wishes to express his gratitude to all the members of the staff for their loyal and efficient work. All of our scientific staff had some part in the analyses listed in this bulletin, and if a few are singled out for special mention it is only because a greater proportion of their work has lain in the fields of food, drug and cosmetic analysis rather than in those of feed, fertilizer and pesticide analysis whose results are reported elsewhere. In general most of the food analyses were made by Messrs. Wickroski and Squires, while the drugs and cosmetics were handled by Mr. Merwin. Dr. Hankin (ably supported by Mr. George Smith and other members of his staff) was responsible for the vitamin D milk and other vitamin assays. Miss Shepard made all of our microscopic examinations and did most of the testing listed under "Contaminated or Decomposed Foods". Many individual element determinations were made on the spectrograph and flame photometer by Mr. Mathis and his assistant Miss Agostini, and Mr. Mathis was responsible for all infrared analyses.

In assigning credit, the work of Miss Caputo in typing and reading proof on this bulletin should not be overlooked. Attention should also be called to the fact that responsibility for obtaining the official samples here reported, and for taking legal action in cases where adulteration or misbranding was found, rested with Agriculture Commissioners Christensen and Gill, Food and Drug Commissioners Richard and Frassinelli, Division Chiefs Goslee, Clark and Plank, and their inspectors. Except insofar as the Station possesses joint authority with the Food and Drug Commission in the promulgation of regulations, it has no actual part in enforcement of the Food, Drug and Cosmetic Act; its functions under that law are only to arrive by analysis or other means at conclusions as to whether a particular sample does or does not violate the law, and to report its findings to the appropriate Commissioner.

## FOODS

### Alimentary Pastes

Five samples of egg noodles, one of "egg cavatelli", five of macaroni, and three of spaghetti were examined for the Commissioner, and one sample each of macaroni and spaghetti was analyzed for the State Supervisor of Purchases. Three samples were passed and 13 were misbranded.

Federal regulations require that any alimentary paste product sold as "noodles" or labelled as containing dried egg yolks or whole eggs shall contain not less than 87 per cent total solids and (on the dry basis) not less than 5.5 per cent of the solids of whole egg or egg yolk as the case may be. Analyses of the five egg noodle and one "egg cavatelli" samples are given in Table 1; all six samples were substandard because of deficiencies in egg or egg yolk solids.

The six macaroni and four spaghetti samples were the following:

TABLE 1. EGG NOODLES

No.	Manufacturer or distributor and brand	Total solids, per cent	Lipoids, per cent	Lipoid $F_2O_6$ (dry basis) per cent	Egg solids (dry basis) per cent	Artificial color	Remarks
K.F.-1481	Capo Ravioli Co., Waterbury, Conn. <i>Capo's Egg Cavatelli</i> .....	87.50	2.00	0.069	1.55	.....	Deficient in egg solids; misbranded
K.F.-1307	DeMartini Macaroni Co., Inc., Brooklyn, N. Y. <i>Martini Pure Egg Noodles</i> .....	89.90	4.74	0.101	4.25	absent	Deficient in egg solids; misbranded
K.F.-1306	Grotto Restaurant, Waterbury, Conn. <i>Egg Noodles</i> .....	90.90	4.72	0.099	4.07	absent	Deficient in egg solids; misbranded
K.F.-1310	National Macaroni Mfg. Co., Garfield, N. J. <i>La Perla Brand Enriched Egg Noodles</i> .....	89.55	4.84	0.087	3.08	absent	Deficient in egg solids; misbranded
K.F.-1495	Prince Macaroni Co., New York, N. Y. <i>Prince's Golden Egg Noodles</i> .....	91.70	4.84	0.127	6.34	absent	Protein: Declared, 13 per cent; found, 14.93 per cent. Sample would have been passed if "eggs" instead of "egg yolks" had been declared; since egg yolk solids content was only 4.87 per cent, sample was misbranded
W.M.-775	Prince Macaroni Co., New York, N. Y. <i>Prince Now! High Protein Low Calorie Golden Egg Rings No. 85</i> .....	89.26	4.68	0.112	5.05	absent	"Egg yolks" declared; only 3.96 per cent egg yolk solids present; misbranded

*K.F.-1442. Buitoni 3 for 2 Special.* Buitoni Foods Corp., New York, N. Y. This sample consisted of packages of the following three products wrapped together: "Spinach Ribbons No. 15", "Spaghettini No. 2" and "Spaghetti No. 3". Declared net weight of each package was 8 oz.; average net weight found was 7.93 oz. Average fill of container was 67 per cent. The "Spaghetti No. 3" was labelled "20% Protein"; protein content found was 19.55 per cent. Slack filled.

*K.F.-1446. Buitoni 20% Protein Bavette No. 9 (Medium Macaroni Ribbons).* Buitoni Foods Corp., New York, N. Y. Protein: Declared; 20 per cent; found, 18.81 per cent. Net weight: Declared, 8 oz.; found (average of three packages), 7.95 oz. Average fill of container, 76 per cent. Deficient in protein.

*K.F.-1444. Buitoni 20% Protein Macaroni with Spinach Added Tagliatelli Verdi No. 5 (Medium Ribbons).* Buitoni Foods Corp., New York, N. Y. Protein: Declared, 20 per cent; found, 18.24 per cent. Net weight: Declared, 8 oz.; found (average of three packages), 7.87 oz. Average fill of container, 81 per cent. Deficient in protein.

*K.F.-1443. Buitoni 20% Protein Perciatelli No. 5 (Thin Macaroni).* Buitoni Foods Corp., New York, N. Y. Protein: Declared, 20 per cent; found, 18.01 per cent. Net weight: Declared, 8 oz.; found (average of three packages), 8.24 oz. Average fill of container, 88 per cent. Deficient in protein.

*K.F.-1445. Buitoni 20% Protein Spaghettini No. 2 (Thin Spaghetti—Quick Cooking).* Buitoni Foods Corp., New York, N. Y. Protein: Declared, 20 per cent; found, 19.72 per cent. Net weight: Declared, 8 oz.; found (average of three packages), 7.73 oz. Average fill of container, 76 per cent. Passed.

*K.F.-1447. Buitoni 20% Protein Spaghetti No. 3.* Buitoni Foods Corp., New York, N. Y. Protein: Declared, 20 per cent; found, 20.86 per cent. Net weight: Declared, 8 oz.; found (average of three packages), 7.85 oz. Average fill of container, 74 per cent. Passed.

*2235. Elbow Macaroni.* H. Bresky & Son, Bridgeport, Conn. Supplied to the State Prison at Wethersfield on specifications calling for not less than 12.2 per cent protein and not more than 12.0 per cent moisture. Analysis showed: Protein, 11.74, and moisture, 7.85, per cent; no coal tar dye. Slightly deficient in protein.

*J.B.-41. Macaroni Sublime Quality Lima Brand.* S.A.P.E.C.A., Torre Annunziata, Italy. Labelled: "One pound net when packed." Average net weight found (six packages), 15.02 oz. Short weight.

*K.F.-1396. Martini Brand Enriched Macaroni.* DeMartini Macaroni Co., Brooklyn, N. Y. Federal regulations require enriched macaroni to contain between 1.7 and 2.2 milligrams of riboflavin, and between 27 and 34 mg. of niacin, per pound. Assay showed 0.75 mg./lb. of riboflavin and 30.6 mg./lb. of niacin. Low in riboflavin.

*2234. Spaghetti.* H. Bresky & Son, Bridgeport, Conn. Supplied to the State Prison on the same protein and moisture specifications as 2235. Analysis showed: Protein, 12.43, and moisture, 8.88, per cent; no coal tar dye. Passed.

## Beverages, Carbonated, Etc.

### Alcoholic Beverages

Net contents of one sample of ale, 20 of beer and five of "malt liquor" were checked for the Commissioner, and the alcoholic contents of three highballs, two samples of dilute alcohol and one sample each of beer and whiskey, were determined for local police departments. Eight samples were passed and 25 were misbranded or otherwise illegal.

Results on the official malt beverage samples are given in Table 2; eight samples were passed and 18 (69 per cent) were significantly short volume. This survey was a repetition of one in 1953, which showed 24 out of 37 samples, or 65 per cent, to be deficient.<sup>1</sup> Apparently the improvement noted after that survey was short-lived.

The unofficial samples were the following:

*4028. Beer.* New Haven Police Dept. Alcohol, 4.26 per cent by volume.

*5318 and 5319. Diluted Alcohol.* New Haven Police Dept. Average alcohol content, 46.80 per cent by volume.

*5287 to 5289. Highballs.* Colony Grille, New Haven, Conn. Average alcohol content, 7.70 per cent by volume.

*2588. Seagram's 7 Crown Whiskey.* Hamden Police Dept. Alcohol, 46.30 per cent by volume.

### Beverages Suspected of Containing Saponin

In 1952 the Food and Drug Commissioner submitted 61 samples of carbonated beverages and beverage bases to be tested for the presence of saponin, and the report for that year<sup>2</sup> contains an extended discussion of the reasons why the use of saponins as foam-producing agents in beverages was considered objectionable. Two such beverage samples were tested in 1953<sup>3</sup> and 51 in 1954<sup>4</sup>. This year five official root beer samples, and six samples of birch beer submitted by an attorney, were examined for saponin with the following results:

*2452 to 2457. Otterstedt Birch Beer.* John Otterstedt, Park Ridge, N. J. All six samples gave positive tests for saponin, and were consequently adulterated.

*W.M.-874 and 1010. Mason's Old Fashioned Root Beer.* Lynbrook Beverages, Inc., New Haven, Conn. Saponin absent; passed.

*J.D.-168. Poles Tip Top Old Fashioned Root Beer.* Poles Products & Preserving Co., Hartford, Conn. Test for saponin doubtful; passed.

*K.C.-676. Root Beer.* Stratford Bottling Works, Inc., Stratford, Conn. Saponin absent; passed.

*W.M.-992. Whistle Root Beer.* American Bottling Co., New Haven, Conn. Saponin absent; passed.

<sup>1</sup>Conn. Agr. Expt. Sta. Bul. 596, 7—10 (1955)

<sup>3</sup>Conn. Agr. Expt. Sta. Bul. 596, 10 (1955)

<sup>2</sup>Conn. Agr. Expt. Sta. Bul. 585, 11—18 (1954)

<sup>4</sup>Conn. Agr. Expt. Sta. Bul. 602, 9—11 (1956)

TABLE 2. MALT BEVERAGES

No.	Manufacturer and brand	Average Net Contents, Fl. Oz.		No. of cans	Remarks
		Declared	Found		
E.C.-725	Anheuser-Busch, Inc., Newark, N. J. <i>Budweiser Lager Beer</i> . . . . .	12	11.82	6	Short volume
W.M.-929	Anheuser-Busch, Inc., Newark, N. J. <i>Budweiser Lager Beer</i> . . . . .	12	11.84	6	Short volume
E.C.-722	P. Ballantine & Sons, Newark, N. J. <i>Ballantine Extra Fine Beer</i> . . . . .	12	11.86	6	Short volume
W.M.-932	P. Ballantine & Sons, Newark, N. J. <i>Ballantine Extra Fine Beer</i> . . . . .	12	11.87	6	Short volume
W.M.-946	P. Ballantine & Sons, Newark, N. J. <i>Ballantine Extra Fine Beer</i> . . . . .	12	11.94	6	Slightly short volume, but passed
J.B.-36	Fuhrmann & Schmidt Brewing Co., Shamokin, Pa. <i>F &amp; S Pilsner Beer</i> . . . . .	12	11.68	6	Short volume
J.B.-46	Fuhrmann & Schmidt Brewing Co., Shamokin, Pa. <i>F &amp; S Pilsner Beer</i> . . . . .	12	11.80	6	Short volume
K.F.-1499	Fuhrmann & Schmidt Brewing Co., Shamokin, Pa. <i>F &amp; S Premium Beer</i> . . . . .	12	11.96	6	Slightly short volume, but passed
K.F.-1500	Fuhrmann & Schmidt Brewing Co., Shamokin, Pa. <i>F &amp; S Premium Beer</i> . . . . .	12	12.00	6	O.K.
E.C.-726	Haffenreffer & Co., Boston, Mass. <i>Haffenreffer Private Stock Malt Liquor</i> . . . . .	12	11.76	6	Short volume
E.C.-741	Haffenreffer & Co., Boston, Mass. <i>Haffenreffer Private Stock Malt Liquor</i> . . . . .	12	11.75	6	Short volume
E.C.-742	Haffenreffer & Co., Boston, Mass. <i>Haffenreffer Private Stock Malt Liquor</i> . . . . .	12	11.93	6	Slightly short volume, but passed
K.C.-704	Haffenreffer & Co., Boston, Mass. <i>Haffenreffer Private Stock Malt Liquor</i> . . . . .	12	11.75	6	Short volume
F.P.-225	Haffenreffer & Co., Boston, Mass. <i>Haffenreffer Private Stock Malt Liquor</i> . . . . .	12	11.89	6	Short volume
J.B. 43	Harvard Brewing Co., Lowell, Mass. <i>Harvard Brewing Co. Export Beer Green Label</i> . . . . .	12	11.91	6	Slightly short volume, but passed
A.F. 177	Lebanon Valley Brewing Co., Lebanon, Pa. <i>Pennsylvania Dutch Old German Brand Beer</i> . . . . .	12	11.91	6	Slightly short volume, but passed

K.F.-1407	Lebanon Valley Brewing Co., Lebanon, Pa. <i>Pennsylvania Dutch Old German Brand Beer</i> . . . . .	12	11.71	5	Short volume
K.F.-1435	Lebanon Valley Brewing Co., Lebanon, Pa. <i>Pennsylvania Dutch Old German Brand Beer</i> . . . . .	12	11.79	6	Short volume
K.F.-1436	Lebanon Valley Brewing Co., Lebanon, Pa. <i>Pennsylvania Dutch Old German Brand Beer</i> . . . . .	12	11.78	6	Short volume
W.M.-945	Liebmann Breweries, Inc., New York, N. Y. <i>Rheingold Ale</i> . . . . .	12	11.72	6	Short volume
E.C.-724	Liebmann Breweries, Inc., New York, N. Y. <i>Rheingold Extra Dry Lager Beer</i> . . . . .	12	11.94	6	Slightly short volume, but passed
W.M.-950	Narragansett Brewing Co., Cranston, R. I. <i>Narragansett Famous Ale</i> . . . . .	12	12.00	6	O.K.
E.C.-723	F & M Schaefer Brewing Co., New York, N.Y. <i>Schaefer Fine Beer</i> . . . . .	12	11.89	6	Short volume
W.M.-930	F & M Schaefer Brewing Co., New York, N.Y. <i>Schaefer Fine Beer</i> . . . . .	12	11.64	6	Short volume
W.M.-947	F & M Schaefer Brewing Co., New York, N.Y. <i>Schaefer Fine Beer</i> . . . . .	12	11.64	6	Short volume
W.M.-952	F & M Schaefer Brewing Co., New York, N.Y. <i>Schaefer Fine Beer</i> . . . . .	16	15.84	6	Short volume

**Ginger Ale**

*W.M.-894, Cott Extra Dry Ginger Ale*, manufactured by Cott Bottling Co., Inc., Manchester, N. H., was examined for net contents only. The six cans comprising this sample averaged 11.75 fluid ounces, as against 12 fl. oz. declared. Sample was therefore short volume.

**Grape Drinks**

Sixteen official samples of grape sodas and two of uncarbonated grape-flavored drinks were analyzed with results as shown in Table 3; four samples were passed and 14 were misbranded.

In connection with the all-too-prevalent practice of labelling beverages containing synthetic or other artificial flavors as "true fruit", it might be well to quote the following resolution recently adopted by the Mid-Continental Association of Food and Drug Officials:<sup>5</sup>

"BE IT FURTHER RESOLVED, that the Association go on record as opposing the use of the terms 'true fruit' and 'pure fruit' on any food or flavoring material except when all the flavor in the food or flavoring is derived from the fruit or fruits indicated in the name of the product"

**Other Fruit Drinks**

Four official samples of orange drinks and one of a lemonade concentrate were analyzed as follows; one was passed and four were misbranded:

*W.M.-990. Pal Orange.* Pal Bottling Co., Waterbury, Conn. Labelled: "Water, Orange Juice, Sugar, Flavor, Citric Acid, Certif. Color." Analysis showed: Ash, 0.056 gm./100 cc.; K<sub>2</sub>O, 21 mg./100 cc.; estimated per cent orange juice, 9. Failed to meet minimum requirement of 15 per cent juice.<sup>6</sup>

*A.L.-255. Sunkist California Concentrate for Lemonade.* Sunkist Growers Products Dept., Ontario, Calif. Labelled: "Contains sugar, pure lemon juice, lemon juice concentrate, and flavoring oil from lemons." Directions called for diluting with four parts of water. Analysis showed: Ash, 0.19 gm./100 cc.; K<sub>2</sub>O, 109 mg./100 cc.; estimated per cent lemon juice, 68. Passed.

*E.C.-699 and 727 and W.M.-829. Tru Ade Not Carbonated Orange Drink.* Tru Ade, Inc., Elgin, Ill. Labelled: "Ingredients: Water, orange juice, sugar, flavor, citric acid and artificial coloring." Each of these samples consisted of six 12-fl. oz. cans; average net contents per can found for the three samples were 11.81 fl. oz. Analysis of *W.M.-829* showed 24 mg./100 cc. of K<sub>2</sub>O, indicating 9 per cent orange juice. Contained insufficient orange juice and short volume.

**Bread, Cookies and Rolls**

Six official and one unofficial samples of bread, one official sample of cookies, and one unofficial sample of rolls, were analyzed; five samples were passed and four were misbranded:

<sup>5</sup>Association of Food and Drug Officials of the United States, Quarterly Bulletin, XIX, 159 (1955)

<sup>6</sup>Rules and Regulations relating to the Food and Drug Law of Connecticut, Revision of April 6, 1938, Regulation 36 Revised

TABLE 3. GRAPE DRINKS

No.	Manufacturer or distributor and brand	Total solids, gm./100 cc.	Total sugars, gm./100 cc.	Non-sugar solids, gm./100 cc.	Ash, gm./100 cc.	Total acidity as tartaric acid, gm./100 cc.	K <sub>2</sub> O, mg./100 cc.	P <sub>2</sub> O <sub>5</sub> , mg./100 cc.	Methyl anthra-nilate, mg./100 cc.	Ratio K <sub>2</sub> O to Me anthra-nilate	Esti-mated per cent grape juice	Remarks
K.F.-1421	Bacon Bottling Co., Hartford, Conn. <i>Light Rock Grape Punch Soda</i> .....	15.85	14.92	0.93	0.020	0.13	1.8	0.22	0.89	8	3	Imitation grape not so labelled
J.D.-158	Bacon Bottling Co., Hartford, Conn. <i>Light Rock Grape Soda</i>	13.08	12.50	0.58	0.019	0.16	2.9	1.33	0.20	15	4	Coal tar dye present not declared
K.F.-1484	Clicquot Club Co., Millis, Mass. <i>Clicquot Club Vineyard Soda</i>	14.15	13.53	0.62	0.014	0.1	2.1	0.06	0.41	5	2	Imitation grape not so labelled
W.M.-1029	Cott Beverage Corp., New Haven, Conn. <i>Cott Grape Soda</i>	.....	.....	.....	0.049	.....	4.0	.....	0.20	20	3	Passed
W.M.-1035	Cott Beverage Corp., New Haven, Conn. <i>Cott Low Calorie Dietary Beverage—True Fruit Grape Flavor</i> .....	.....	0.15	.....	0.108	.....	2.2	.....	0.18	12	2	Not true fruit grape
F.P.-239	Cott Beverage Corp., Hartford, Conn. <i>Cott Low Calorie Dietary Beverage—True Fruit Grape Flavor</i> .....	.....	0.17	.....	0.109	.....	2.4	.....	0.16	15	2	Not true fruit grape

TABLE 3. GRAPE DRINKS—Continued

No.	Manufacturer or distributor and brand	Total solids, gm./100 cc.	Total sugars, gm./100 cc.	Non-sugar solids, gm./100 cc.	Ash, gm./100 cc.	Total acidity as tartaric acid, gm./100 cc.	K <sub>2</sub> O, mg./100 cc.	P <sub>2</sub> O <sub>5</sub> , mg./100 cc.	Methyl anthranilate, mg./100 cc.	Ratio K <sub>2</sub> O to Me anthranilate	Estimated percent grape juice	Remarks
K.F.-1492	Cott Bottling Co., Inc., Manchester, N. H. <i>Cott Quality Concord Delite</i> .....	14.34	13.62	0.72	0.032	0.14	2.9	0.31	0.41	7	2	"Grape wine" declared but not present (no alcohol); imitation grape not so labelled
W.M.-1027	Cott Beverage Corp., New Haven, Conn. <i>Cott Quality Concord Delite</i> .....	.....	.....	.....	0.035	.....	2.4	.....	0.16	15	2	Passed
F.P.-238	Cott Beverage Corp., Hartford, Conn. <i>Cott Quality Concord Delite</i> .....	.....	.....	.....	0.031	.....	3.1	.....	0.14	22	2	Passed
K.F.-1426	Cott Beverage Corp., New Haven, Conn. <i>Cott Quality Dietary Beverage Sugar-Free Concord Delite</i> .....	2.37	0.13	2.24	0.090	0.15	9.9	0.25	0.54	18	8	"Grape wine" declared but not present (no alcohol); not "Sugar-Free".
K.F.-1427	Cott Beverage Corp., New Haven, Conn. <i>Cott Quality Sparkling Delite Soda</i> .....	14.50	13.40	1.10	0.021	0.22	10.9	0.25	0.52	21	9	"Grape wine" declared but not present (no alcohol)
K.F.-1534	Cott Beverage Corp., New Haven, Conn. <i>Cott Quality True Fruit Grape Soda</i> .....	14.92	13.56	1.36	0.036	.....	2.8	1.01	0.29	10	2	Not true fruit grape
W.M.-1025	Cott Beverage Corp., New Haven, Conn. <i>Cott Quality True Fruit Grape Soda</i> .....	.....	.....	.....	0.036	.....	3.2	.....	0.20	16	3	Not true fruit grape
F.P.-237	Cott Beverage Corp., Hartford, Conn. <i>Cott Quality True Fruit Grape Soda</i> .....	.....	.....	.....	0.040	.....	3.6	.....	0.16	22	3	Not true fruit grape
K.F.-1491	Fresh-A Juice Co., Lawrence, Mass. <i>Fresha's Grape Drink Vitamin C Enriched</i> .....	7.53	6.56	0.97	0.160	0.42	79.3	7.38	0.21	378	39	Ascorbic acid, mg./half gallon: Declared, 110; found, 418. Misbranded because label does not declare proportion of minimum daily requirement of vitamin C supplied by a stated quantity of the beverage.



TABLE 3. GRAPE DRINKS—Concluded

No.	Manufacturer or distributor and brand	Total solids, gm./100 cc.	Total sugars, gm./100 cc.	Non-sugar solids, gm./100 cc.	Ash, gm./100 cc.	Total acidity as tartaric acid, gm./100 cc.	K <sub>2</sub> O, mg./100 cc.	P <sub>2</sub> O <sub>5</sub> , mg./100 cc.	Methyl anthra-nilate, mg./100 cc.	Ratio K <sub>2</sub> O to Me-anthra-nilate	Esti-mated per cent grape juice	Remarks
K.F.-1422	Lynbrook Bever-ages, New Haven, Conn. <i>Lo-Cal Sugar Free Low Calorie Dielelic Beverage Bor-deaux Grape</i> . . .	0.66	0.14	0.52	0.130	0.130	8.4	0.19	1.00	8	0.6	Imitation grape not so label- led; not "Sugar Free"
K.C.-608	Pal Bottling Co., Waterbury, Conn. <i>Pal Ade Grape</i> . . . . .	17.37	0.013	0.013	0.013	0.013	1.0	1.00	1.00	1	0.8	Imitation grape not so label- led; crystals of potassium acid tartrate (cream of tar- tar) deposited in necks of bottles
K.C.-627	White Rock Corp., New York, N. Y.; <i>White Rock Sparkling Grape Beverage</i> . . . . .	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	No coal tar dye; passed

*K.C.-660. Borck & Stevens Low Calorie Hi-Protein Bread.* Borck & Stevens, Bridgeport, Conn. Labelled statements were the same as on *K.C.-659* below. Analysis was as follows: Water, 37.55, ash, 2.12, protein, 10.54, fiber, 0.26, available carbohydrate, 47.98, and fat, 1.55, per cent; calories per 100 grams, 248; calories per slice, 51; weight per slice, 20.39 grams; net weight, 16.54 ounces (16 oz. declared).

Sample was misbranded because it was not "low calorie" (the average calorie content of bread per 100 grams is 259), contained 1.7 times as many calories per slice as claimed, and carried misleading statements with regard to the U. S. Government (see *K.C.-659* below).

*K.C.-659. Borck & Stevens Low Calorie Thin Protein Bread.* Borck & Stevens, Bridgeport, Conn. Labelled: "U. S. Government figures show comparative amounts of protein in the equal weight of the following: Milk solids, soy flour and wheat germ are equal to three times protein value of whole wheat flakes. Egg yolk is equal to four times the protein value of milk. Dieticians recommend this bread as a source of important complete proteins. Proteins must be acquired from food to build new tissue and repair worn tissue. Low protein intake may alter the body functions by altering enzyme levels. This loaf contains the following grams: Non-fat milk solids 23, wheat germ & flour protein 37, soya flour 17, egg yolks 9, for reducing diets order Borck & Stevens Thin Hi-Protein Bread. Only 29 calories per slice." Analysis was as follows: Water, 35.64, ash, 2.28, protein, 10.73, fiber 0.35, available carbohydrate, 49.50, and fat, 1.50, per cent; calories per 100 grams, 255; calories per slice, 41; weight per slice, 15.92 grams; net weight, 14.6 ounces (16 oz. declared).

Sample was misbranded because it was short weight, not "low calorie", and contained 1.4 times as many calories per slice as the label declared. The reference to the "U. S. Government" also violated a provision of the law forbidding any "statement. . . indirectly implying that the product is recommended or endorsed by (an) agency of the federal . . . government."

*2037. De-Luxe Bread, Enriched Sliced.* Richelsof's, Bridgeport, Conn. This "Kosher" bread was submitted by the State Police to check on the accuracy of the baker's claim that it contained no dry skim milk. Analysis showed 4.55 per cent of lactose, corresponding to 8.83 per cent of dry skim milk; the claim, therefore, was false.

*K.C.-682. Dugan's Lite Diet Brand Thinly Sliced Special Formula Bread.* Dugan Bros., Inc., Queens, N. Y. Labelled: "No Shortening Used—Approx. 45 Calories Per Slice (17 Gm.)—Ingredients: Wheat flour, defatted milk solids, defatted soya flour, honey, egg yolks, compressed yeast, high protein brewers primary yeast, yeast nutrients, salt, high protein cottonseed derivatives, dehydrated cheddar cheese, artificial flavor, sesame seed, mono and diglycerides—6 ozs. of this baked product will supply not less than the following amounts or percentages of the minimum daily requirements for these essential food substances: Thiamine (vitamin B<sup>1</sup>), 41%; riboflavin (vitamin B<sup>2</sup>), 13.5%; iron, 30%; niacin (a vitamin of the B complex), 3.75 mgms." Analysis was as follows: Water, 37.43, ash, 2.13, protein, 11.06, fiber, 0.23, available carbohydrate, 47.75, and fat, 1.40, per cent; calories per 100 grams, 248; calories per slice, 46; weight per slice, 18.65 grams; net weight, 14.14 ounces (14 oz. declared).

Sample was passed, although the weight per slice should have been listed as 19 instead of 17 grams, and "cottonseed derivatives" should have been declared as "cottonseed flour".

*K.C.-667. Educator Rum and Butter Flavored Oval Creams.* Megowen-Educator Food Co., Lowell, Mass. Labelled: "Ingredients: Flour, Sugar, Shortening, Milk Solids, Eggs, Certified Color, Imitation Flavor, Salt, and Leavening." Analysis showed: Fat, 23.00 per cent; butyro refraction of fat, 48.4; Reichert-Meissl value of fat, 0.92; Polenske value of fat, 0.36; net weight, 8.2 ounces (8 oz. declared).

Sample contained no more than a trace if any of butter and no rum; it should have been labelled "Imitation Rum and Butter Flavored Oval Creams".

*K.C.-681 and 696. 14½% Protein Arnold Thinly Sliced Low-Starch Loaf, Enriched.* Arnold Bakers, Inc., Port Chester, N. Y. Labelled: "Milk proteins added for better nutrition—Calcium propionate added to retard spoilage. —Whole wheat flour, gluten flour, unbleached white flour, whole rye flour, water, non-fat dry milk solids, yeast, salt, whole dry milk solids, egg yolks, milk protein—45 calories per slice."

*K.C.-681* had dried out before it could be analyzed; analysis of *K.C.-696* was as follows: Water, 39.71, protein, 14.75, ash, 2.29, fat, 1.57, fiber, 0.87, starch, 27.67, and other carbohydrates, 13.14, per cent; calories per 100 grams, 236; calories per slice, 47. Average weight per slice was 19.77 grams, and the net weight was 11.85 ounces as against 12 oz. declared. Passed.

*K.F.-1496. Reymond's Hollywood Special Formula Light Bread.* Reymond Baking Co., Waterbury, Conn. Labelled: "About 46 Calories per 18 gram slice—No Fats Added—Made with wheat flour, dry milk, compressed yeast, salt, white honey, inactive dry yeast, sesame seed, yeast food, white rye flour, oat flour, soya flour, gluten flour, barley flour, plus dehydrated vegetable flours made from carrots, spinach, kelp, lettuce, pumpkin, cabbage, celery, parsley—Formula contains by weight: Proteins 10.16%, fats 1.7%, carbohydrates 47.96%, mineral residue 2.55%." Our analysis, as compared with that on the label, was as follows:

	Declared	Found
Water, per cent.....	.....	35.58
Protein, per cent.....	10.16	10.03
Ash, per cent.....	2.55	2.47
Fat, per cent.....	1.70	0.91
Fiber, per cent.....	.....	0.30
Available carbohydrate, per cent.....	47.96	50.71
Calories per 100 grams.....	.....	251
Calories per slice.....	46	52
Weight per slice, grams.....	18	20.79
Net weight, ounces.....	15	15.40

The declared analysis was quite close to the facts, the chief errors being that the weight per slice was nearly 21 instead of 18 grams and the fat content only 54 per cent of claim. The main objection to the labelling, however, was not anything that was stated but the false implication that this was a low-calorie bread. The sample was nevertheless passed.

Other analyses of this bread were made in 1950 and 1951.<sup>7</sup>

<sup>7</sup>Conn. Agr. Expt. Sta. Bul. 558, 13 (1952); 574, 6 (1953)

*2144. Rolls.* Food and Drug Commission. These rolls had a yellow color, but no coal tar dye was present. Passed.

### Cocoa and Chocolate

Seven samples of cocoa and three of semi-sweet chocolate bits were submitted by the State Supervisor of Purchases to be examined for compliance with purchasing specifications. The specification for "breakfast cocoa (high fat)" called for not less than 22 per cent of cacao fat. Federal food standards define "semisweet chocolate" as a synonym for "bitter-sweet chocolate", which is stated to be "sweet chocolate which contains not less than 35 per cent by weight of chocolate liquor"; since the formula directed to be used in calculating percentage of chocolate liquor is based on an average fat content of 54.55 per cent, the standard in effect sets a minimum fat limit of 19.10 per cent for semisweet chocolate.

In addition, the old Connecticut food standards<sup>8</sup> required that no plain chocolate or cocoa should contain (on a moisture- and fat-free basis) more than 8 per cent of total ash, 0.4 per cent of acid-insoluble ash and 7 per cent of crude fiber.

Analyses of all 10 samples are given in Table 4; three samples were passed and seven were adulterated or misbranded.

### Confectionery

Twenty-three candy samples (mostly chocolates) were submitted by the Commissioner, and seven special dietary products were analyzed for sodium at the request of the manufacturer. Sixteen samples were passed and 14 were adulterated or misbranded.

*K.C.-723. Anco Licorice Wathes* (sic). Lico Co., Copenhagen, Denmark. The "WATHES" was a misspelling for "Watches"; this sample consisted of a large box of novelty candy watches, whose ingredients were declared to be "Sugar, Molasses, Flour, Glucose, Licorice, Fatstuff, Gelatine, Anise and Orange Flavour." The "watches" proper were squares of white candy to which were pasted squares of gilt paper bearing blue clock faces; the "wristbands" were thin, brittle bands of black candy.

Since spectrographic analysis showed that the gilding on the watch faces was actually aluminum foil, which was harmless, this sample was passed.

*K.C.-692. Caranuts Carmel Corn with Cocomat and Peanuts.* Milko Candy Co., Chicago, Ill. Labelled: "Ingredients: Brown Sugar, Pop Corn, Corn Syrup, Fresh Creamery Butter, Vegetable Oil, Cocomat, Peanuts, Salt, Baking Soda, Artificial Flavor, Lecithin." Analysis showed 3.55 per cent of fat, whose constants were: Butyro refraction, 25°C., 59.5; Reichert-Meissl value, 5.50; Polenske value, 1.37. A test for peanut oil was positive; no mineral oil was present. Net contents were 7.94 ounces, as against 8 oz. declared.

The above analysis indicated that this sample could have contained as much as 0.83 per cent of butter, so it was passed.

<sup>8</sup>Rules and Regulations relating to the Food and Drug Law of Connecticut, Revision of July 1, 1937, p. 104

TABLE 4. COCOA AND CHOCOLATE

No.	Moisture, per cent	Fat, per cent	Fiber per cent (moisture- and fat-free basis)	Total ash, per cent	Acid-insoluble ash, per cent	Remarks
<i>High Fat Breakfast Cocoa</i>						
2447	4.86	17.08	3.68	6.46	0.09	Not a high-fat cocoa; contaminated with a fragment of plant stem.
2448	4.42	18.78	4.06	6.43	0.08	Not a high-fat cocoa; contained trace of sand.
2449	4.52	15.53	4.22	7.83	0.03	Not a high-fat cocoa; contained trace of sand.
2450	6.02	11.25	3.84	6.82	0.05	Not a high-fat cocoa; contaminated with fragments of thread and unidentified plant material.
2451	6.62	10.43	7.68	9.40	0.14	Substandard cocoa containing excessive shell and ash, thread fragments and unidentified plant material.
3587	....	23.16	....	....	....	Passed.
3676	....	19.48	....	....	....	Not a high-fat cocoa.
<i>Semi-Sweet Chocolate Bits</i>						
3588	....	29.51	....	....	....	Passed.
3589	....	33.05	....	....	....	Passed.
3590	....	18.20	....	....	....	Substandard.

*W.M.-941. Chocolate Coating.* Van Laer Chocolate Corp., Jersey City, N. J. This sample bore no labelling. Because analysis<sup>9</sup> showed 0.57 per cent of "Sucaryl" (sodium cyclohexylsulfamate), and non-nutritive synthetic sweeteners are not permitted in confectionery, sample was adulterated.

*W.M.-860. Dia-Mel Dietetic Candy Mint Pattie.* Dietetic Food Co., Inc., Brooklyn, N. Y. Labelled: "A DELICIOUS DIETETIC LOW CALORIE CANDY—Sorbitol 5 gms. Mannitol 1 gm. Protein 4.5 gms. Lactose 2.5 gms. Fat 7.5 gms.—One half of this pattie contains approximately 62 calories. Ingredients: Sorbitol, Milk Powder, Chocolate Liquor, Cocoa Butter, Mannitol, Calcium Carbonate, Pectin, Vegetable Oil, Kaolin, and Mint Flavor. Mannitol and sorbitol are used as sweetening and dietary adjuncts. They are utilized as carbohydrates, but more slowly." Analysis showed: Total ash, 13.61, acid-insoluble ash, 0.04, and calcium carbonate, 12.36, per cent.

The law does not permit the use of non-nutritive substances in confectionery, but since the above analysis indicated that the percentage of kaolin did not exceed 0.04 per cent, sample was passed. (Another sample of this candy was analyzed in 1950.<sup>10</sup>)

*W.M.-937C. Dietetic Brazils.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis showed: Water, 1.29, ash, 3.14, protein, 14.44, fiber, 2.86, sucrose, 1.34, dextrose, 0.99, other carbohydrates, 23.84, fat, 52.10, and salt (NaCl), 0.30, per cent; calories per 100 grams, 631. Adulterated because a non-nutritive sweetener, calcium sucaryl, was present.

*W.M.-937A. Dietetic Cashews.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis showed: Water, 1.23, ash, 2.61, protein, 14.00, fiber, 0.93, sucrose, 2.30, dextrose, 0.61, other carbohydrates, 36.14, fat, 42.18, and salt (NaCl), 0.36, per cent; calories per 100 grams, 592. Adulterated because a non-nutritive sweetener, calcium sucaryl, was present.

*W.M.-937B. Dietetic Chocolates.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis showed: Water, 0.72, ash, 2.48, protein, 10.75, fiber, 0.86, sucrose, 1.59, dextrose, 0.87, other carbohydrates, 35.47, fat, 47.26, and salt (NaCl), 0.42, per cent; calories per 100 grams, 620. Adulterated because calcium sucaryl was present.

*W.M.-938B. Dietetic Low Calorie Sugar Free Salt Free Slimettes Chocolates Assorted Chocolates.*

*W.M.-938A. Dietetic Low Calorie Sugar Free Salt Free Slimettes Chocolates Dietetic Assorted Nuts.*

*W.M.-938C. Dietetic Low Calorie Sugar Free Salt Free Slimettes Chocolates Dietetic Truffles.*

All three of these samples, manufactured by Casanova Chocolate Co., Inc., Milford, Conn. were labelled: "Sugar free! That's for me! —Ingredients: Chocolate liquor, assorted nuts, skim and whole milk, sorbitol, manitol (sic), veg. and cocoa butter, lecithin, vanillin (an art. flavor),

<sup>9</sup>J. Assoc. Official Agr. Chem., 35, 465 (1952)

<sup>10</sup>Conn. Agr. Expt. Sta. Bul. 558, 24 (1952)

natural flavors and calcium sucaryl.—Contains sucaryl calcium, a non-nutritive artificial sweetener, which should be used only by persons who must restrict their intake of ordinary sweets.—Approximate analysis: Moisture 0.96%; Protein 11.78%; Fat 42.27%; Ash 2.90%; Sodium as Na 0.14%; Calcium sucaryl 0.056%; Carbohydrates by diff. (including crude fiber) 41.89%.” Our analyses, as compared with labelled claims, were as follows:

	Claimed	Found		
		W.M.-938A	W.M.-938B	W.M.-938C
Moisture, per cent. ....	0.96	1.59	1.20	1.12
Ash, per cent. ....	2.90	2.67	2.44	2.49
Protein, per cent. ....	11.78	13.94	12.75	11.06
Fiber, per cent. ....	...	1.32	1.19	0.86
Sucrose, per cent. ....	...	0.96	1.45	0.78
Dextrose, per cent. ....	...	0.56	0.55	0.56
Other carbohydrates, per cent. ....	...	32.69	32.27	36.42
Total carbohydrates, per cent. ....	41.89	35.53	35.44	38.62
Fat, per cent. ....	42.27	46.27	48.15	46.71
Sodium, per cent. ....	0.14	0.12	0.14	0.14
Calories per 100 grams. ....	...	609	621	616

The declared “approximate analysis” was fairly close to reality for the most part, although the average total carbohydrate content was 5.36 per cent less than claimed and the average fat content was 4.77 per cent above claim. Nevertheless these samples were adulterated because they contained calcium sucaryl, a non-nutritive sweetener which is not permitted in confectionery, and misbranded because they contained 1.62 per cent of actual sugars and 0.34 per cent of salt on the average and were therefore not “sugar free” or “salt free”.

*W.M.-969. Dietetic Slimettes Assorted Chocolates.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis was as follows: Moisture, 1.30, ash, 2.53, protein, 12.31, fiber, 0.84, available carbohydrate, 35.58, and fat, 47.44, per cent; calories per 100 grams, 619; calories per box, 834; net weight, 4.76 oz. This was an investigational sample, and therefore passed.

*W.M.-971. Dietetic Slimettes Assorted Nuts.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis showed: Moisture, 1.34, ash, 2.63, protein, 12.44, fiber, 0.75, available carbohydrate, 35.08, and fat, 47.76, per cent; calories per 100 grams, 620; calories per box, 756; net weight, 4.30 oz. Investigational sample; passed.

*5657 to 5659. Dietetic Slimettes Chocolates Miniatures.* Casanova Chocolate Co., Inc., Milford, Conn. Average sodium content, 0.092 per cent. Passed.

*5653. Dietetic Slimettes Coconut Bar.* Casanova Chocolate Co., Inc., Milford, Conn. Sodium, 0.127 per cent. Passed.

*5656 and W.M.-967. Dietetic Slimettes Dietetic Bar.* Casanova Chocolate Co., Inc., Milford, Conn. Sample 5656 was analyzed only for sodium, and 0.137 per cent found. Analysis of *W.M.-967* was as follows: Moisture, 0.78, ash, 2.55, protein, 11.13, fiber, 0.46, available carbohydrate, 45.25, and fat, 39.83, per cent; calories per 100 grams, 584; calories per 2.889 gm. square, 17. Passed.

*W.M.-970. Dietetic Slimettes Dietetic Truffles.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis was as follows: Moisture, 0.62, ash, 2.46, protein, 12.13, fiber, 0.73, available carbohydrate, 38.37, and fat, 45.69, per cent; calories per 100 grams, 613; calories per box, 834. Passed.

*5654 and W.M.-968. Dietetic Slimettes Nut Bar.* Casanova Chocolate Co., Inc., Milford, Conn. *5654* was analyzed only for sodium; 0.120 per cent was found. Analysis of *W.M.-968* showed: Moisture, 0.80, ash, 2.53, protein, 11.94, fiber, 0.50, available carbohydrate, 42.81, and fat, 41.32, per cent; calories per 100 grams, 591; calories per 3.328 gm. square, 20. Passed.

*5655 and W.M.-966. Dietetic Slimettes Truffle Bar.* Casanova Chocolate Co., Inc., Milford, Conn. *5655* was analyzed only for sodium; 0.113 per cent was found. Analysis of *W.M.-966* showed: Moisture, 0.63, ash, 2.50, protein, 11.19, fiber, 0.85, available carbohydrate, 38.27, and fat, 46.56, per cent; calories per 100 grams, 617; calories per 3.244 gm. square, 20. Passed.

*W.M.-937D. Dietetic Truffles.* Casanova Chocolate Co., Inc., Milford, Conn. Analysis showed: Water, 0.76, ash, 2.32, protein, 10.44, fiber, 0.71, sucrose, 1.45, dextrose, 0.52, other carbohydrates, 33.37, fat, 50.43, and salt (NaCl), 0.38, per cent; calories per 100 grams, 637. Adulterated because calcium sucaryl was present.

*W.M.-1008. Drake's Sugarless Milk Type Chocolate Flavored Bar with Non-Fat Milk Solids.* Amurol Products Co., Chicago, Ill. Labelled: “Ingredients—Chocolate liquor, cocoa, hydrogenated vegetable oils, pre-cooked soy bean oil meal, non-fat milk solids, lecithin, vanillin, sorbitol and 0.5% sucaryl calcium (non-nutritive artificial sweetener to be used by persons who must restrict their intake of ordinary sweets). Sorbitol is utilized as a carbohydrate but more slowly.” Presence of sucaryl confirmed; adulterated.

*W.M.-1007. Drake's Sugarless Milk-Type Chocolate Flavored Bar with Roasted Almonds.* Amurol Products Co., Chicago, Ill. Ingredient statement was the same as on *W.M.-1008* above. Presence of sucaryl confirmed; adulterated.

*K.C.-673. H. K. Hart Chocolate Flavored Candy.* H. K. Hart Confectioners, Inc., Union City, N. J. This sample consisted of two boxes, each containing a large candy rabbit and several small disk-shaped candies, labelled: “Ingredients: Sugar, Corn Syrup, Cocoa, Egg White, Salt, Natural & Artificial Flavor & Glaze.” Misbranded because the coatings of the small candies contained undeclared red, green and orange coal tar dyes.

*W.M.-1009. Loeb Low Calorie Coffee Gems, Cherry Drops and Cool Mints.* Leob Dietetic Food Co., Inc., New York, N. Y. Labelled: “Gum arabic, natural and/or artificial flavors, citric acid (in fruit flavors), glycerine, sorbitol and 0.11% sucaryl calcium (Abbott) and saccharin calcium non-nutritive artificial sweeteners for those who must restrict their intake of ordinary sweets.” Presence of sucaryl confirmed; adulterated.

*A.L.-300. Sante Milk Chocolate.* Van Laer Chocolate Corp., Jersey City, N. J. Labeled: "Contains—Mannitol, whole and defatted milk solids, cocoa butter, chocolate liquor, Lecithin (an emulsifier), Vanillin (an artificial flavor), and up to 0.5% Cyclamate Calcium, Abbott (Sucaryl 'R')." Presence of sucaryl confirmed; adulterated.

*K.F.-1451. Sperry's Chocolate Covered Fruit Filled Cream Eggs.* Sperry Candy Co., Milwaukee, Wis. This sample consisted of a large display carton containing 20 "eggs" individually wrapped in tinfoil. Five were labelled "Sperry's Raspberry Cream Egg", four "Sperry's Modified Cherry Cream Egg", three each "Sperry's Grape Cream Egg", "Sperry's Pineapple Cream Egg" and "Sperry's Strawberry Cream Egg", and two "Sperry's Peach Cream Egg." Each bore (in almost undecipherable small silver letters on a brightly-colored metallic background) an ingredient statement, of which the "raspberry egg" one was as follows: "Egg albumen, glycerine, sodium tartrate, lecithin, invertase, raspberry flavored pineapple cubes, U. S. Certified food color added, bittersweet chocolate." Examination showed that the "strawberry eggs" did contain strawberries, but sample was misbranded because the "eggs" were not fruit-filled and because the ingredient statements were almost unreadable.

### Contaminated or Decomposed Foods

Sixty-five samples of foods were submitted by the Commissioner because of suspected insect or rodent infestation or contamination with foreign materials, or because of complaints that they had made people ill. Included were: Ten samples of dried milk; nine of dry skim milk; seven of sodas; five of tuna fish; four of "Shredded Wheat"; three of shrimp; two each of beer, bread, dried whole egg, egg noodles, peppers and sausage; and one each of beef and gravy, blueberry pie filling, a cookie, dried lima beans, ice cream, kale, peanut butter, pickled onions, potato salad, roast beef, salad mix, salmon, sugar, sweet pickles and tea. Thirty-eight samples were passed and 27 were adulterated. The adulterated samples were the following:

*A.F.-175. Ballantine Extra Fine Beer.* P. Ballantine & Sons, Newark, N. J. Trace of gasoline odor present.

*K.C.-657. Bond's DeLuxe Tiny Sweet Pickles.* Bond Pickle Co., Oconto, Wis. Wings of a beetle present.

*E.C.-743. Budweiser Beer.* Anheuser-Busch, Inc., Newark, N. J. Contaminated with mold.

*J.B.-39. Cookie.* State Highway Dept. This cookie had a cigarette butt baked into it.

*F.H.-172. Cott Quality Old Fashioned Sarsaparilla.* Cott Beverage Corp., New Haven, Conn. Sand present.

*T.C.-254 and 255. Dried Whole Egg.* State Training School, Mansfield Depot, Conn. These eggs were stale.

*T.C.-278 to 280. Dry Milk Solids.* Windham High School, Willimantic, Conn. Cans were rusty and the milk solids had caked into a solid mass.

*J.D.-143. Federal Brands Blueberry Pie Filling.* DePasquale Bakery, Hartford, Conn. This filling was decomposed and a few brown flakes of unidentified material containing silicon and iron were present; the zinc content was high (100 parts per million).

*W.M.-989. Family Brand Kale.* A. D. Foote, Baltimore, Md. One large grasshopper (*Schistocerca americana*) present.

*F.P.-217. Ginger Ale, Pale Dry.* Manchester Bottling Co., Manchester, Conn. Trace of dirt present.

*J.B.-40. Ice Cream.* Anita Oliveiro, Wallingford, Conn. Colored stone present.

*W.M.-942. Jane Parker Bread.* Jane Parker Bakers, New York, N. Y. A few caraway seeds were present, and one slice contained a spot of brown coloring material which turned pink when treated with ether.

*K.F.-1525 and 1526. La Rosa Egg Noodles.* V. La Rosa & Sons, Brooklyn, N. Y. Infested with live adult and larval saw-toothed grain beetles (*Oryzaephilus surinamensis*).

*F.P.-218 and 219. Lime Rickey.* Manchester Bottling Co., Manchester, Conn. Sand and dirt present.

*T.C.-256 to 258. Non-Fat Dry Milk Solids.* State Training School, Mansfield Depot, Conn. Stale.

*J.D.-116. Pepsi-Cola.* Andy's Market, Hartford, Conn. Bottle contained a small piece of glass.

*W.M.-953. Potato Salad.* Victory Market, Newington, Conn. Small piece of glass present.

*K.C.-668. Purity Brand Sweet Onions.* Purity Food, Bridgeport, Conn. Several of these onions had patches of green coal-tar dye on their surfaces.

*F.P.-216. Tesorco Brand Imported Salad Bowl.* Geisler's Market, Warehouse Point, Conn. Portion of tomato fruit worm (*Heliothis armigera*) present.

*A.L.-277. Tri-Test White Meat Solid Pack Fancy Albacore Tuna.* Franzan & Co., Inc., New York, N. Y. An earwig in this fish proved to be of a non-native species, and was submitted to the Entomology Research Branch of the U. S. Department of Agriculture in Beltsville, Maryland, for identification. Dr. A. B. Gurney of the Plant Industry Station reported that it was "*Anisolabis marginalis* (Dohrn), family Labiduridae", which he said was "widely distributed in east Asia, from Japan and Korea to Formosa and Java", and "a fairly common species in Japan". This obviously proved that the earwig must have been canned in Japan with the fish, and could not have been added to the can after opening.

Twenty-nine samples were submitted by State and local health departments, physicians and private citizens; of these 16 were passed and 13 were found to be contaminated or decomposed. Included were: Three samples each of sodas and strained bananas; two each of beer, bread, candy, "cream powder" and milk; and one each of a banana, cheese, coffee,

ensilage corn, noodle soup, pistachio nuts, "Quaker Oats", raw meat, a sandwich, a sanitary belt, sherry, tobacco and vermouthe.

One sample which was passed is worthy of note: 3985, *Danish cheese*, submitted by the Bureau of Laboratories of the State Department of Health, contained crystals dispersed through it that were identified as disodium phosphate ( $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$ ).

The adulterated samples were the following:

3675. *Ballantine Extra Fine Beer*. P. Ballantine & Sons, Newark, N. J. This bottle contained a cigar butt; analysis of the beer showed 0.012 per cent of nicotine.

3970. *Banana*. George Smith, The Connecticut Agricultural Experiment Station. A blue-green deposit on the skin of this banana proved to be clay containing some coloring material.

1672. *Birch Beer*. Paramount Beverage Co., West Haven, Conn. Traces of mold, dirt and sand and 0.06 per cent methyl salicylate present.

4285. *Bread*. Mohican Market, Norwich, Conn. A few fragments of dark-colored fibrous material and a trace of dirt were present.

3345. "*Cream Powder*". Arthur J. DeLucia, East Haven, Conn. Sample had a disagreeable odor when moistened; the contaminant was steam-distillable but not extractible by petroleum ether; it was not rancid fat but was not otherwise identified. Declared ingredients were "corn starch, defatted milk powder, salt, vanillin, U. S. Certified color", but no vanillin could be found.

4879. *Milk*. Edwin Connelly, Orange, Conn. A deposit on the bottle proved to be a mixture of dirt and butter fat.

2542. *Noodle Soup*. A. Arnold Weinstein, New Haven, Conn. This soup contained one dead adult confused flour beetle (*Tribolium confusum*), some seed coat fragments of an unidentified plant, and 12 parts per million of copper.

2272A. *Pabst Blue Ribbon Beer*. Pabst Brewing Co., Newark, N. J. Three dead adult saw-toothed grain beetles (*Oryzaephilus surinamensis*), a little dirt and a trace of unidentified plant material present.

4336. *Paramount Extra Dry Pale Ginger Ale*. Spiegel Bottling Co., West Haven, Conn. This bottle contained a broken-up whole cigar; analysis of the ginger ale showed 0.008 per cent nicotine.

1778. *Quick Quaker Oats*. Quaker Oats Co., Chicago, Ill. Traces of sand and dirt present.

5290. *Raw Meat*. Food Basket Market, West Haven, Conn. This meat contained a buckshot.

5511. *Tobacco*. Otto Willner, M.D., New Haven, Conn. Analysis showed: Lead, 20, and arsenic, 6, parts per million.

4465. *Welch's Junior Mints*. Howard Jacobs & Sons, New Haven, Conn. This candy contained two Indian meal moth larvae (*Plodia interpunctella*), one of which was alive.

## Dairy Products

### Butter

Five samples sold as butter were submitted by the Commissioner; three were passed and two were adulterated:

W.M.-997. *Creamery Butter*. White Elephant Restaurant, New Haven, Conn. Constants of fat: Butyro refraction, 40°C., 42.6; Reichert-Meissl value, 31.31; Polenske value, 2.44. Passed.

J.D.-140. *Luncheon Spread Yellow Quarters Vegetable Oleomargarine*. Bar B.Q., Hartford, Conn. Constants of fat: Butyro refraction, 40°C., 51.7; Reichert-Meissl value, 0.78; Polenske value, 0.24. This was oleomargarine as labelled, but was adulterated because it was being sold as butter.

J.D.-145. *Sunlight Butter*. Mrs. Jane Sperry, Hartford, Conn. Constants of fat: Butyro refraction, 40°C., 41.4; Reichert-Meissl value, 28.4; Polenske value, 2.5. Passed.

W.M.-1002. *Sweet Butter*. Cohen's Bakery, New Haven, Conn. Fat, 85.13 per cent. Constants of fat: Butyro refraction, 40°C., 42.6; Reichert-Meissl value, 27.90; Polenske value, 1.78. Passed.

J.D.-141. *Yellow Admiral 4 Quarters Oleomargarine*. Jesse's Coffee Shop, Hartford, Conn. Constants of fat: Butyro refraction, 40°C., 52.2; Reichert-Meissl value, 0.78; Polenske value, 0.24. Oleomargarine as labelled, but adulterated because sold as butter.

### Cheese

Three official samples of grated cheese and six unofficial samples of Mozzarella cheese were analyzed; eight samples were passed and one was misbranded. Analyses are given in Table 5.

Other samples of Mozzarella cheese were analyzed in 1953<sup>11</sup> and 1954<sup>12</sup>.

### Cream

Four samples of cream analyzed for Beaumont Farm, Wallingford, Conn., averaged 40.0 per cent butter fat.

### Evaporated Milk

W.M.-954, *Ace High Brand Homogenized—Vitamin D Increased Evaporated Milk*, distributed by Pepe-Maisano Co., New Haven, Conn., was submitted by the Commissioner. This sample was labelled: "The Vitamin D content of this evaporated milk has been increased to 400 U.S.P. units per reconstituted quart, by the addition of Vitamin D<sub>3</sub> concentrate (Irradiated 7-Dehydrocholesterol).—By adding one part of water to one part of the contents of this can, a resulting milk product will be obtained which will not be below the legal standard for milk.—This product is cow's milk reduced to its present consistency by evaporation. It is sterilized and will keep indefinitely in any climate while sealed. Treat same as fresh milk after opening."

<sup>11</sup>Conn. Agr. Expt. Sta. Bul. 596, 16, 18 (1955)

<sup>12</sup>Conn. Agr. Expt. Sta. Bul. 602, 20—21 (1956)

TABLE 5. CHEESE

No.	Manufacturer or distributor and brand	Water, per cent	Casein, per cent	Fat, per cent	Lactose, per cent	Ash, per cent	Dry skim milk, per cent	Remarks
<i>Grated Cheese</i>								
K.F. 1403	Borden Co., New York, N. Y. <i>Borden's Grated American Cheese Product</i>	9.89	34.32	30.27	12.03	8.59	19.78	Misbranded*
K.F. 1406	Continental Cheese Co., Trenton, N. J. <i>Roma Italian Style Grated Cheese</i>	11.58	39.24	37.60	0.00	8.78	0.00	Passed
K.F. 1419	Sweet Life Brands, Brooklyn, N. Y. <i>Sweet Life Quality Foods Vacuum Packed Italian Style Grated Cheese</i>	30.25	38.28	15.28	1.18	12.43	0.00	Passed
<i>Mozzarella Cheese</i>								
1856	C & F Cheese Distributors, East Haven, Conn. <i>Speciale</i>	61.04	29.22	5.87	.....	3.58	.....	Passed
2179	C & F Cheese Distributors, East Haven, Conn. <i>Speciale</i>	61.78	28.08	4.95	.....	2.82	.....	Passed
2180	Frigo Bros. Cheese Corp., Lena, Wis. <i>Frijo</i>	49.15	37.61	22.51	.....	3.13	.....	Passed
1857	P. Gambardella & Son, Inc., New Haven, Conn. <i>Gambardella Grade</i>	61.50	24.05	9.51	.....	2.36	.....	Passed
2181	P. Gambardella & Son, Inc., New Haven, Conn. <i>Gambardella</i>	60.97	26.92	6.98	.....	2.62	.....	Passed
2135	Vermont Cheese Products, Inc., Newark, N. J. <i>Fine Quality Tomascio Pasteurized Grade A</i>	.....	.....	18.25	.....	.....	.....	Passed

\*K.F.-1403 was labelled: "American Cheddar cheese, aged at least 60 days and then dried, grated and carefully combined with non-fat dry milk solids, salt, sodium citrate and vegetable coloring." Misbranded because not labelled "Process Cheese Food" nor "Artificially Colored", and because the optional ingredients did not immediately precede or follow the brand name.

Analysis showed: Total solids, 25.56, fat, 6.66, and solids-not-fat, 18.90, per cent; claim for vitamin D satisfactory on basis of rat assay. Sample was passed, although the claim of "400 U.S.P. units (of vitamin D) per reconstituted quart" was somewhat misleading, since the directed one to one dilution with water produced not a full quart but 26 fluid ounces (the can held—and declared—only 13 fl. oz.).

#### Unfortified Fluid Milks

Butter fat contents of four samples of cow's milk and one of goat's milk were determined for dairymen. The cows' milks averaged 3.75 per cent fat, while the fat content of the goat's milk (3917, from Mrs. Joseph Jaffe, West Haven, Conn.) was 3.50 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 contents 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; by the Department of Farms and Markets for the following six years; and by the State Department of Agriculture since July 1, 1953.

In 1955, 211 samples were examined—one more than in 1954. Results of the assays are shown in Table 6; 22 samples were definitely below the unitage claimed. The percentage of samples fully or substantially meeting guaranties was 90—the same percentage found in 1954.

In the 21-year period 1935-1955 inclusive, 2,776 samples were tested; 92 per cent contained the required 400 units of vitamin D per quart or were sufficiently close thereto to be passed.

Besides the official vitamin D milk samples whose assays are reported in Table 6, one unofficial sample was analyzed for butter fat:

5161. *Homogenized Vitamin D Milk*. Maytime Farm, Wallingford, Conn. Fat, 3.60 per cent.

#### Deceptively Packed Foods

One of the provisions of the Food, Drug and Cosmetic Act [Section 3940(d)] states that a food "shall be deemed to be misbranded . . . if its container shall be so made, formed or filled as to be misleading". The plain English meaning of this section is that it is illegal to pack foods in opaque containers that are larger than necessary, and so mislead the customer into thinking that he (or more usually she) is getting more than he is. In 1955 12 samples were submitted by the Commissioner because of suspected slack fill; six samples were passed and six were misbranded. The deceptively packed samples were the following:

K.C.-643. *Buitoni 20% Protein Macaroni. Ditalini No. 39*. Buitoni Foods Corp., New York, N. Y. Net weight: Declared, 8 oz.; found, 7.62 oz. Fill of container, 49 per cent.

K.C.-693. *Geronimo Candy and Toy*. All Star Candy Co., Brooklyn, N. Y. Net weight: Declared, 3/8 oz.; found (average of two boxes), 0.4 oz. Fill of container, 50 per cent.

TABLE 6. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Baltic	Sunrise Farm Dairy (John Ozga).....	2	2	..	..
Berlin	Johnson's Dairy.....	1	1	..	..
	Lower Lane.....	1	1	..	..
	Ventres Dairy.....	1	1	..	..
Bloomfield	Peter V. Boysen & Son.....	2	2	..	..
	Maple Hill Farms.....	2	2	..	..
	Chris Nielsen & Sons.....	2	2	..	..
	Valley View Farm (H. E. Holcomb).....	1	1	..	..
	A. J. Wade Dairy Farms.....	2	1	1	..
Bozrah	Taylor's Dairy.....	2	2	..	..
Bridgeport	Beechmont Dairy.....	2	2	..	..
	Borden's Mitchell Dairy Division.....	2	2	..	..
	Clover Farms, Inc.....	1	1	..	..
	Dewhurst Dairy.....	1	1	..	..
Bristol	E. H. Elton.....	1	1	..	..
	Peplau's Dairy.....	1	1	..	..
	Roberge Dairy, Inc.....	1	1	..	..
Clinton	Burr Dairy, Inc.....	1	1	..	..
Cromwell	Ellsworth Dairy.....	1	1	..	..
	McAllister Dairy.....	1	1	..	..
Danbury	Marcus Dairy.....	1	1	..	..
	Rider's Dairy.....	1	1	..	..
East Haddam	Sprecher Dairy.....	1	1	..	..
East Hampton	Wall's Dairy Farm.....	2	1	1	..
East Hartford	Bergren's Dairy Farms.....	1	1	..	..
East Lyme	Drabik Farm Dairy.....	1	1	..	..
East Norwalk	Devine's Dairy.....	1	1	..	..
Easton	Marsh Dairy.....	2	2	..	..
	Snow's Milk Farm.....	2	2	..	..
Ellington	Cordtsen Dairy.....	1	..	1	..
Fairfield	Lobdell's Dairy.....	2	2	..	..
	Supreme Dairy.....	2	2	..	..
	Wade's Dairy.....	2	2	..	..
Farmington	Ridgeview Farm.....	1	1	..	..
Greenwich	Round Hill Farms Dairy.....	2	2	..	..
Guilford	Maple Shade Farm.....	1	1	..	..
Hamden	Brock-Hall Dairy Co.....	1	1	..	..
Hartford	Bayer's Milk.....	1	1	..	..
	Bryant & Chapman.....	1	1	..	..
	Cloverdale Dairy.....	1	1	..	..
	Farmers' Co-operative, Inc.....	1	..	1	..
	Hilltop Dairy (G. L. Pinckney).....	1	1	..	..
	H. P. Hood & Son.....	1	1	..	..
	Lincoln Dairy.....	1	1	..	..
Jewett City	Norman's Dairy.....	1	1	..	..
Kensington	Ferndale Dairy, Inc.....	2	1	..	1
	Rockland Dairy Farm.....	1	1	..	..
Lebanon	Redwood Dairy.....	3	2	..	1
Lisbon	Stanley Wildowsky.....	2	..	2	..
Litchfield	Toll Gate Farms.....	2	2	..	..
Manchester	Dart's Dairy.....	2	2	..	..
	A. R. Wilkie.....	2	2	..	..

TABLE 6. VITAMIN D MILK—(Continued)

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Meriden	Countryside Dairy.....	2	2	..	..
	Chas. Greenbacker & Sons, Inc.....	2	2	..	..
	E. J. Kaemmer & Son.....	2	2	..	..
	W. F. Knapp.....	2	2	..	..
	Muenchow Dairy.....	2	1	..	1
	Schwink's Dairy, Inc.....	2	1	..	1
	Sievert's Dairy.....	2	1	1	..
	Triple Springs Farm.....	2	2	..	..
	Wayside Dairy.....	2	2	..	..
Middletown	Brookfield Dairy.....	1	..	..	1
	Daniels Farm.....	2	2	..	..
	Hillside Dairy.....	2	1	..	1
	Pleasant View Dairy.....	2	1	..	1
	Sunshine Dairy.....	2	2	..	..
Milford	Clover Dairy.....	1	1	..	..
	McDermott Dairy.....	2	1	..	1
	A. J. Platt & Sons.....	1	1	..	..
Milldale	Riverside Dairy.....	1	..	1	..
Montville	J. A. Coggeshall.....	1	1	..	..
New Britain	Guida-Seibert Dairy.....	1	1	..	..
	Heslin Dairy Co.....	1	1	..	..
	A. J. Spring & Sons.....	1	1	..	..
New Canaan	Miller's Farm Dairy.....	2	2	..	..
New Haven	General Ice Cream Corp.....	1	1	..	..
	H. P. Hood & Sons.....	2	2	..	..
Newington	Eddy Dairy.....	1	..	1	..
	J. Wm. Holt & Son Farm Dairy	1	1	..	..
	Mortensen Dairy.....	2	2	..	..
	J. A. Moylan & Son Dairy.....	1	1	..	..
	Spring Brook Farm Dairy.....	1	1	..	..
New London	Michael's Dairy.....	1	1	..	..
	New London & Mohegan Dairies.....	2	1	..	1
	Radway's Dairy.....	1	1	..	..
New Milford	Conn's Dairy.....	2	2	..	..
Northfield	Far View Farm.....	1	1	..	..
North Haven	Knudsen Bros.....	1	1	..	..
North Stonington	Meadow Lake Farm Dairy (Gilbert Hescocks).....	1	1	..	..
Norwalk	Clover Farms Dairy.....	1	1	..	..
Norwichtown	Beebe's Dairy.....	2	2	..	..
Oxford	Great Oak Farm, Inc.....	2	1	..	..
Plainville	Peterson's Dairy.....	1	1	..	1
Preston	Broad Brook Dairy (Niewarowski & Sons).....	3	1	..	2
Plainville	Peterson's Dairy.....	1	1	..	..
Putnam	Fisher Bros. Dairy.....	2	2	..	..
Redding	Burritt's Dairy.....	1	1	..	..
Rocky Hill	Charles B. Gilbert.....	2	1	1	..
	Sunny Crest Farm.....	2	..	1	..
Salisbury	Salisbury Farms, Inc.....	2	2	..	..
Seymour	Ajello Bros. Dairy.....	2	1	1	..
	Bomba Bros. Dairy.....	2	1	1	..
Simsbury	Pharos Farm Dairy.....	1	1	..	..
	Wood Ford Farm (Bryant & Chapman).....	1	1	..	..



TABLE 6. VITAMIN D MILK—(Concluded)

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Southbridge, Mass.	W. W. Sherman & Sons.....	2	..	..	2
South Kent	Newton Dairy.....	1	1	..	..
South Norwalk	Harrick's Dairy.....	1	1	..	..
Springdale	Sheffield Farms, Maplehurst Division.....	1	1	..	..
Terryville	E. E. Freimuth.....	1	1	..	..
	High Farm Dairy.....	2	2	..	..
Thomaston	Fred J. Wood Dairy.....	1	1	..	..
Thompsonville	Enfield Dairy.....	3	1	..	2
	H. S. Reid, Inc.....	1	1	..	..
	Riverview Dairy.....	2	2	..	..
	Skipton Dairy Co., Inc.....	1	1	..	..
	Smyth Farm Dairy.....	2	2	..	..
Torrington	Clover Dairy.....	2	1	..	1
	Co-Operative Dairy.....	1	1	..	..
	Greenwood's Dairy.....	1	1	..	..
	Torrington Creamery, Inc.....	1	..	..	1
Trumbull	Parker's Dairy.....	1	1	..	..
Vernon	Welles Farm.....	1	1	..	..
Wallingford	Beaumont Farm.....	1	1	..	..
	J. H. Daly.....	1	1	..	..
	Fairview Dairy.....	1	1	..	..
	J. P. Novak.....	1	1	..	..
Warehouse Point	Bassdale Farm Dairy.....	1	1	..	..
Washington	Marsh Dairy Farm.....	2	1	1	..
Waterbury	Brookside Dairies, Inc.....	2	2	..	..
	Cashin's Dairy Products, Inc.....	1	1	..	..
	McElligott—R. F. Worden & Sons.....	1	1	..	..
	Tranquility Farm Dairy.....	1	1	..	..
	Waterbury Cooperative Dairy, Inc.....	1	1	..	..
Wauregan	Wauregan Dairy Farm.....	2	1	..	1
Webster, Mass.	Choinière's Dairy.....	2	2	..	..
	Deary Bros.....	2	1	1	..
West Hartford	A. C. Petersen.....	1	1	..	..
West Haven	Clark Dairy.....	2	2	..	..
Westport	Ferris Dairy.....	1	1	..	..
Wilton	Orem's Dairy.....	2	1	..	1
Winsted	J. O. Johnson & Son.....	1	1	..	..
Wolcott	Willow Brook Dairy, Inc.....	2	1	..	1
Woodbridge	Rosehurst Dairy.....	2	2	..	..
Yantic	Driscoll Dairy.....	1	1	..	..
Total.....		211	174	15	22

*K.F.-1453. Instant Server Federal Chocolate Flavored Drink.* Federal Tea Co., Springfield, Mass. Net weight: Declared, 9 oz.; found, 8.82 oz. Fill of container, 56 per cent.

*K.F.-1457. Kiddie Kookies with Arrowroot.* Ripon Foods, Inc., Ripon, Wis. Net weight: Declared, 2 oz. or over; found, 1.87 oz. Fill of container, 63 per cent.

*K.C.-669. La Rosa Grade A Egg Noodles, Home Style.* V. La Rosa & Sons, Brooklyn, N. Y. Net weight: Declared, 8 oz.; found, 8.25 oz. Fill of container, 49 per cent.

*K.F.-1408. Smokey Bear Animal Cookies.* Federal Sweets Biscuit Co. Clifton, N. J. Net weight: Declared, 2½ oz.; found, 2.80 oz. Fill of container, 59 per cent. This sample bore the "Smokey Bear" insignia of the U. S. Forest Service, and thereby would have also violated the provision of the law (Section 1586C) forbidding "A statement on the label or labeling either directly or indirectly implying that the product is recommended or endorsed by any agency of the federal or state government", were it not for the labelled statement: "By license U.S. Dept. of Agriculture in Coöperation with state foresters and Advertising Council, Inc." The good judgment of the U. S. Department of Agriculture in permitting use of its insignia by manufacturers of whose probity it could have no knowledge—just to obtain a little free publicity against forest fires—may be questioned.

### Eggs and Egg Products

Three samples of materials sold or purchased as dried egg yolks were submitted by the Commissioner; all three were adulterated or misbranded:

*K.F.-1521. Eggstex.* Bakers, Inc., Waterbury, Conn. Received in an unlabelled paper bag. Analysis showed: Moisture, 7.95, ash, 3.06, lipoids, 18.75, and lipid P<sub>2</sub>O<sub>5</sub>, 0.27, per cent; estimated per cent egg yolk solids, 16. Non-egg fatty material present; misbranded for failure to declare ingredients.

*K.F.-1527. Egg Yolks Powdered.* Stanley's Bakery, Waterbury, Conn. Analysis showed: Moisture, 3.53, ash, 2.58, lipoids, 32.55, and lipid P<sub>2</sub>O<sub>5</sub>, 0.17, per cent; estimated per cent egg yolk solids, 10; foreign fatty material present. Adulterated.

*K.F.-1512. Stanegg Fresh Egg Yolks in Powdered Form.* Standard Milling Co., Kansas City, Mo. Labelled: "Ingredients egg yolks, hydrogenated vegetable shortening, non fat milk solids, sugar." Analysis showed: Moisture, 2.39, lipoids, 65.25, lipid P<sub>2</sub>O<sub>5</sub>, 0.33, lactose, 11.72, dextrose, 0.60, and sucrose, 5.29, per cent. Calculated composition from the analysis was: Dried egg yolks, 23, dry skim milk, 22, sucrose, 5, and "vegetable shortening", 50, per cent. Misbranded because not "fresh egg yolks in powdered form".

### Extracts and Flavors

Seven official samples of foaming agents, six of imitation vanilla flavors, three of imitation grape-flavored beverage bases, two of root beer beverage bases, and one of an imitation maple extract, were analyzed; eight samples were passed and 11 were adulterated:

*K.C.-632. Baker's Indian Root Beer Beverage Base.* Baker Extract Co., Springfield, Mass. Labelled: "Ingredients Water, Vegetable Gum, Flavoring, Carmel Color." Saponin absent; passed.

*K.C.-638. Big C Imitation Vanilla Flavoring.* Clyde Collins, Inc. Memphis, Tenn. Labelled: "Contains coumarin, vanillin, caramel color and water." Analysis showed 0.16 per cent of coumarin. Because coumarin was shown to be an injurious compound, its use in foods was recently

forbidden by the U. S. Food and Drug Administration. Sample was therefore adulterated.

*K.F.-1423. Boston Imitation Vanilla Flavor.* Stickney & Poor Spice Co., Boston, Mass. Declared ingredients were "Vanillin and/or ethyl vanillin, coumarin, alcohol, sugar and water, colored with caramel." Analysis showed 0.04 per cent of coumarin; adulterated.

*K.C.-631. Federal Imitation Maple.* Federal Tea Co., Springfield, Mass. Labelled: "Ingredients: Coffee, Vanilla, Vanillin, Coumarin, Foenugreek, Vegetable Extractives, Alcohol, Water, Caramel Color." Because no coumarin could be detected, this sample was passed.

*K.C.-629 and K.F.-1401. Frothee, the Original Creamy Head.* House of Frothee, Inc., New York, N. Y. Ingredients declared on *K.C.-629* were "Propylene glycol, sorbitan monolaurate, sorbol, citric acid, natural fruit flavor, 1/10% benzoate of soda", while those on *K.F.-1401* were: "Propylene glycol, root extraction, citric acid, natural fruit flavor, 1/10% benzoate of soda". Both samples gave positive tests for saponin and were consequently adulterated, but *K.C.-629* contained much less of this ingredient than *K.F.-1401*.

*K.C.-628. Gold Medal Imitation Vanilla Flavor.* Fred Fear & Co., Brooklyn, N. Y. Labelled "Composed of vanillin, ethyl vanillin, coumarin, alcohol, caramel and water". Analysis showed 0.10 per cent of coumarin; adulterated.

*W.M.-1023. Grape with Other Natural Flavors.* Polak & Schwartz, New York, N. Y. Labelled: "Contains—Grape flavoring extractives, essential oils, veg. tinctures, alcohol and water." Analysis showed: Ash, 2.30 gm./100 cc.; K<sub>2</sub>O, 572, and methyl anthranilate, 18, mg./100 cc.; ratio K<sub>2</sub>O to Me anthranilate, 32. Some of the methyl anthranilate probably came from a non-grape source, but sample was passed.

*A.L.-256. Gumpert's Venetian Creme Base.* S. Gumpert Co., Jersey City, N. J. Labelled: "This product contains a blend of starches, powdered whole milk, non-fat dry milk solids, gelatine, salt, butter, sugar, egg yolk, pure vanilla extract, fortified with synthetic vanillin and coumarin and U. S. certified color." Coumarin not detected; passed.

*J.D.-144. Heads for Cocktails.* Castle Products Co., Irvington, N. J. Labelled: "Contains—water, paraffine alcohols, vegetable extractives, citric acid and 1/10 of 1% benzoate of soda." Trace of saponin present; adulterated.

*W.M.-923. Heads for Cocktails.* Castle Products Co., Irvington, N. J. Labelled: "Contains—water, sorbitan monolaurate, sorbitol, citric acid, caramel color, 1/10 of 1% benzoate of soda". Saponin absent; passed.

*W.M.-877. Mason & Mason Root Beer Extract.* Mason & Mason, Inc., Chicago, Ill. Labelled: "Contains Water, Gum Arabic, Sugar, Vanillin, Methyl Salicylate, other Flavoring Oils, Caramel Color, Sodium Benzoate." Saponin present; adulterated.

*E.C.-738 and W.M.-875. Mason's Special Foaming Agent.* Mason & Mason, Inc., Chicago, Ill. Labelled only: "Add contents of this bottle to syrup made from 1 unit (5 gals.) of Mason's root beer base." *E.C.-738* contained a trace of saponin and was adulterated; *W.M.-875* gave negative tests for saponin and was passed.

*K.C.-571. Non-Fattening Cal-Lac for Dietary Purposes Imitation Grape Beverage Base.* Presto Beverage Corp., Brooklyn, N. Y. Labelled: "Without Sugar Contains (SUCARYL) Cyclamate—Abbott A non-nutritive artificial sweetener. —CONTAINS: 16.9% Cyclamate Sodium, a non-nutritive artificial sweetener which should be used only by persons who must restrict their intake of ordinary sweets. —INGREDIENTS: Water, Cyclamate Sodium, Citric Acid, Artificial Flavor, Artificial Color. —CAL-LAC mixed with water as per directions contains in each 8 ozs.: no protein—no fat—no available carbohydrate—1.5 calories." Analysis showed 17.52 per cent of sodium cyclohexylsulfamate ("Cyclamate Sodium").

Since this product was properly labelled as a special dietary food, and was not confectionery, it was passed.

*A.L.-257. Serv-Agen Imitation Vanilla Flavor.* Serv-Agen Corp., Philadelphia, Pa. Labelled: "Contains water, vanillin (or ethyl vanillin) coumarin and caramel color." Analysis showed 0.08 per cent of coumarin; adulterated.

*K.C.-637. Thompson's Best Imitation Vanilla Flavor.* Thompson Foods, Rochester, N. Y. Labelled: "A heat treated blend of vanillin, coumarin, caramel color and water." Analysis showed 0.08 per cent of coumarin; adulterated.

*J.D.-169. Vegetable Foam.* United Flavors, New York, N. Y. Saponin present; adulterated.

*K.C.-697. Virginia Dare Vin-Vie The Improved Imitation Grape Extract.* Virginia Dare Extract Co., Inc., Brooklyn, N. Y. Labelled: "Prepared from real Grape Wine Flavor, Esters, Aldehydes, and U. S. Certified Color." Analysis showed: K<sub>2</sub>O, 116, and methyl anthranilate, 384, mg./100 cc.; ratio K<sub>2</sub>O to Me anthranilate, 0.3. While this preparation may have contained some grape concentrate or extract, it undoubtedly contained also a considerable proportion of synthetic methyl anthranilate. Because it was labelled "Imitation Grape Extract" it was nevertheless passed.

## Flour

Because flour millers had claimed that weight deficiencies found in bags of flour on the retail market were caused by losses of water after shipment, in 1954 and 1955 the U. S. Department of Commerce asked the food law enforcement agencies of several States to collaborate in an investigation of the validity of this assertion by picking up samples of flour in grocery stores in their respective States and determining the moisture contents and net weights of these samples. As a part of this study the Food and Drug Commissioner submitted 20 samples of flour to this Station during 1955; these were weighed and analyzed for moisture with results as shown in Table 7.

TABLE 7. FLOUR

No.	Manufacturer or distributor and brand	Water, per cent	Net Weight		Shortage, ounces	Remarks
			Declared	Found		
W.M.-888	A & P Tea Co., New York, N. Y. <i>Sunnyfield Family</i>	12.20	5 lb.	.....	.....	Passed
W.M.-889	A & P Tea Co., New York, N. Y. <i>Sunnyfield Family</i>	11.90	5 lb.	.....	.....	Passed
W.M.-904	A & P Tea Co., New York, N. Y. <i>Sunnyfield Family</i>	13.50	5 lb.	4 lb. 15.8 oz.	0.2	Passed
W.M.-905	A & P Tea Co., New York, N. Y. <i>Sunnyfield Family</i>	13.40	5 lb.	5 lb. 1.0 oz.	none	Passed
W.M.-890	First National Stores, Inc., Somerville, Mass. <i>Finast Enriched Family</i>	9.85	5 lb.	.....	.....	Passed
W.M.-891	First National Stores, Inc., Somerville, Mass. <i>Finast Enriched Family</i>	10.90	5 lb.	.....	.....	Passed
W.M.-906	First National Stores, Inc., Somerville, Mass. <i>Finast Enriched Family</i>	10.85	5 lb.	5 lb. 1.2 oz.	none	Passed
W.M.-907	First National Stores, Inc., Somerville, Mass. <i>Finast Enriched Family</i>	11.90	5 lb.	4 lb. 13.6 oz.	2.4	Short weight
W.M.-884	General Mills, Inc., Minneapolis, Minn., <i>Gold Medal Enriched</i>	11.10	5 lb.	.....	.....	Passed
W.M.-885	General Mills, Inc., Minneapolis, Minn., <i>Gold Medal Enriched</i>	12.20	5 lb.	.....	.....	Passed
W.M.-900	General Mills, Inc., Minneapolis, Minn., <i>Gold Medal Enriched</i>	13.15	5 lb.	4 lb. 15.6 oz.	0.4	Passed
W.M.-901	General Mills, Inc., Minneapolis, Minn., <i>Gold Medal Enriched</i>	13.50	5 lb.	5 lb. 1.0 oz.	none	Passed
W.M.-886	Pillsbury Mills, Inc., Minneapolis, Minn., <i>Pillsbury's Best</i>	10.90	5 lb.	.....	.....	Passed
W.M.-887	Pillsbury Mills, Inc., Minneapolis, Minn., <i>Pillsbury's Best</i>	10.85	5 lb.	.....	.....	Passed
W.M.-902	Pillsbury Mills, Inc., Minneapolis, Minn., <i>Pillsbury's Best</i>	13.00	5 lb.	4 lb. 14.5 oz.	1.5	Passed
W.M.-903	Pillsbury Mills, Inc., Minneapolis, Minn., <i>Pillsbury's Best</i>	12.60	5 lb.	4 lb. 14.9 oz.	1.1	Passed
W.M.-892	Sands, Taylor & Woods Co., Boston, Mass. <i>King Arthur</i>	10.15	5 lb.	.....	.....	Passed
W.M.-893	Sands, Taylor & Woods Co., Boston, Mass. <i>King Arthur</i>	10.80	5 lb.	.....	.....	Passed
W.M.-908	Sands, Taylor & Woods Co., Boston, Mass. <i>King Arthur Unbleached-Enriched</i>	12.60	5 lb.	4 lb. 15.4 oz.	0.6	Passed
W.M.-909	Sands, Taylor & Woods Co., Boston, Mass. <i>King Arthur Unbleached-Enriched</i>	12.50	5 lb.	4 lb. 15.1 oz.	0.9	Passed

Nineteen samples were passed and one was found to be short weight in excess of the 1.6 oz. tolerance. The average moisture content was 11.89 per cent.

In addition to these official samples, one unofficial sample of enriched flour was assayed for vitamins and another sample was tested for artificial color; both samples were passed:

2143. *Flour*. Food and Drug Commission. No coal tar dye; passed.

3278. *Gold Medal Enriched Flour, All Purpose Bleached*. General Mills, Inc., Minneapolis, Minn. Federal Regulation 15.10(a) requires enriched flour to contain between 1.2 and 1.5 milligrams of riboflavin, and between 16 and 20 milligrams of niacin (or niacinamide), per pound. Assay of this sample showed 1.27 mg./lb. of riboflavin and 19.1 mg./lb. of niacin. Passed.

### Fresh Fruit

One hundred and twenty-two samples of apple flesh and seven of whole apples were submitted by Dr. Philip Garman of our Entomology Department, and six samples of dried apple flesh by Dr. Patrick Miller of the Plant Pathology Department, in connection with studies on the relation of spray treatments to quality of apples. These samples (which were gathered between April and October and were consequently not all ripe) were analyzed chemically for solids and ash and spectrographically for 10 different elements; nitrogen was also determined on 57 of them. Results on the 122 undried apple flesh samples were as follows:

	Maximum	Minimum	Average
Total nitrogen, per cent	0.088	0.032	0.060
Total solids, per cent	20.50	13.15	16.47
Ash, per cent	0.53	0.16	0.35
Potassium, parts per million	2,800.	350.	1,155.
Calcium, parts per million	94.	23.	48.
Magnesium, parts per million	118.	48.	78.
Phosphorus, parts per million	340.	66.	195.
Manganese, parts per million	4.3	0.3	0.6
Iron, parts per million	100.0	2.0	13.1
Aluminum, parts per million	13.4	0.8	1.6
Zinc, parts per million	24.0	1.8	2.8
Copper, parts per million	16.5	4.6	8.3
Boron, parts per million	6.9	1.5	3.8

Similar values for the seven whole apple samples, all of which came from Orchard 4 of the University of Connecticut at Storrs, were as follows:

	Maximum	Minimum	Average
Total solids, per cent	17.80	16.22	17.24
Potassium, p.p.m.	1,300.	1,150.	1,208.
Calcium, p.p.m.	40.	36.	38.
Magnesium, p.p.m.	76.	68.	73.
Phosphorus, p.p.m.	111.	96.	92.
Manganese, p.p.m.	0.6	0.5	0.6
Iron, p.p.m.	7.6	4.4	6.3
Aluminum, p.p.m.	1.6	1.2	1.4
Zinc, p.p.m.	5.0	3.4	4.2
Copper, p.p.m.	17.0	9.4	13.3
Boron, p.p.m.	3.5	2.5	3.2

Average analysis of 2182 to 2187, *Dried Apple Flesh*, was: Potassium, 1,690, calcium, 39, magnesium, 66, phosphorus, 220, manganese, 0.5, iron, 17, aluminum, 9, zinc, 4.8, copper, 8.3, and boron, 2.5, parts per million.

### Fruit Juices

Thirteen samples of orange juice and two of lemon juice were examined for the Commissioner, and one apple juice sample each was analyzed for Dr. Philip Garman of our Entomology Department and a manufacturer. Results were as follows; all samples were passed:

2543. *Apple Juice*. Entomology Dept., The Connecticut Agricultural Experiment Station. Acidity as malic acid, 0.35 gm./100 cc.

K.F.-1503. *Birds Eye Brand Frosted Foods Quick Frozen Concentrated Orange Juice*. Birds Eye Division, General Foods Corp., New York, N. Y. Analysis showed: Ash, 1.81 gm./100 cc.; K<sub>2</sub>O, 1,000, and ascorbic acid, 200, mg./100 cc. These figures indicated concentration to 24 per cent of the original volume, which was consistent with the labelled directions to dilute with three parts of water. When the sample was so diluted and allowed to stand in the refrigerator the ascorbic acid concentration of the reconstituted juice dropped from 49.9 to 38.4 mg./100 cc. in 12 days—a loss of 1.0 mg./100 cc. per day. Passed.

K.F.-1504. *Fresh Florida Oranges*. Universal Food Store, Hamden, Conn. Analysis of the freshly squeezed juice prepared from these oranges in the laboratory showed: Ash, 0.508 gm./100 cc.; K<sub>2</sub>O, 281, and ascorbic acid, 34, mg./100 cc. On standing in a refrigerator for 12 days the ascorbic acid content dropped to 29.6 mg./100 cc.—a loss of 0.4 mg./100 cc. per day. The fact that the rate of loss of this vitamin was only two-fifths as great in this fresh juice as in the "Birds Eye" reconstituted juice confirms the similar results found in 1954.<sup>13</sup>

F.H.-9515. *Fresh Orange Juice*. Florida Juice, Inc., Miami, Fla. Analysis showed: Ash, 0.36 gm./100 cc.; K<sub>2</sub>O, 210, and ascorbic acid, 52, mg./100 cc.; no benzoate; estimated per cent orange juice, 82. Passed.

F.H.-9514. *Fresh Orange Juice*. Golden Gift, Inc., Deland, Fla. Analysis showed: Ash, 0.33 gm./100 cc.; K<sub>2</sub>O, 206, and ascorbic acid, 51 mg./100 cc.; no benzoate; estimated per cent juice, 80. Passed.

E.S.-6789. *Orange Blossom Brand Fresh Orange Juice*. Florida Juice, Inc., Miami, Fla. Labelled "100% Pure Natural, Fresh Orange Juice". Analysis showed: Ash, 0.43 gm./100 cc.; K<sub>2</sub>O, 249, and ascorbic acid, 57, mg./100 cc.; estimated per cent juice, 97. Passed.

K.F.-1501. *Pasco Brand Pure Unsweetened Quick Frozen Concentrated Orange Juice*. Pasco Packing Co., Dade City, Fla. Analysis showed: Ash, 1.89 gm./100 cc.; K<sub>2</sub>O, 1,032, and ascorbic acid, 215, mg./100 cc. These figures indicate concentration to 23 per cent of the original volume. When diluted with three parts of water as directed, analysis of the freshly reconstituted juice showed 53.8 mg./100 cc. of ascorbic acid, which declined to 43.3 mg./100 cc. on standing in the refrigerator for 12 days—a loss of 0.9 mg./100 cc. per day. Passed.

F.P.-212 and 213. *Sunkist California Lemon Juice (Reconstituted) Natural Strength*. Sunkist Growers Products Dept., Ontario, Calif. F.P.-212 consisted of three one-pint cans, and F.P.-213 of four half-pint

and seven one-pint cans, labelled: "Sunkist California Lemon Juice (Reconstituted), Natural Strength, is prepared from pure concentrated California Lemon Juice, reconstituted to natural strength with purified water for convenience in use; with vegetable stabilizer added, and preserved with sulfur dioxide and less than 1/10 of 1% sodium benzoate. No artificial cloud, color or flavor added." Analyzed only for ascorbic acid; average content of this vitamin was 39 mg./100 cc. for both samples. Passed.

5166. *Tenedine's Pasteurized Apple Juice*. V. Tenedine & Sons, Inc., North Haven, Conn. Analyzed for compliance with the old Connecticut standards for apple juice<sup>14</sup>, as follows:

	Found	Standard calls for
Specific gravity, 20°C	1.047	1.0415—1.0690
Invert sugar, gm./100 cc.	7.98	.....
Sucrose, gm./100 cc.	2.08	.....
Total sugars, gm./100 cc.	10.06	6—20
Ash, gm./100 c.c.	0.23	0.20—0.24
Potassium carbonate in ash, per cent	55.	not less than 50
Alcohol, per cent by volume	0.40	not more than 0.50
Caramel color	absent	.....
Coal tar dye	absent	.....

Passed.

K.F.-1502. *Thames Valley Pure Concentrated Fresh Frozen Orange Juice, No Sugar Added*. Universal Food Stores, Inc., Norwich, Conn. Analysis showed: Ash, 1.85 gm./100 cc.; K<sub>2</sub>O, 1,032, and ascorbic acid, 215, mg./100 cc. This analysis indicated a concentration to 23 per cent of the original volume. When diluted with three parts of water the freshly reconstituted juice contained 53.8 mg./100 cc. of ascorbic acid; this decreased to 41.9 mg./100 cc. on standing 12 days in the refrigerator—a loss of 1.0 mg./100 cc. per day. Passed.

F.H.-9475 and 9554 and E.S.-6583, 6672 and 6781. *Tropicana 100% Pure Orange Juice*. Fruit Industries, Inc., Bradenton, Fla. Average analysis was: Ash, 0.46 gm./100 cc.; K<sub>2</sub>O, 271, and ascorbic acid 52, mg./100 cc.; no benzoate; estimated per cent juice, 106. Probably partially concentrated, but passed.

K.C.-678. *Turnbull Fresh Orange Juice*. Ready Foods Co., Inc., Tampa, Fla. Analysis showed: Ash, 0.43 mg./100 cc.; K<sub>2</sub>O, 263, and ascorbic acid, 18, mg./100 cc.; no benzoate; estimated per cent juice, 103. Passed.

### Jellies and Preserves

Three official samples of jelly and one of strawberry preserves were passed:

K.F.-1523. *Karlson Pure Strawberry Preserves*. H. Karlin & Sons, Newark, N. Y. Analysis showed: Total solids, 77.08, soluble solids, 76.66, insoluble solids, 0.42, ash, 0.32, sucrose, 44.50, invert sugar, 29.44, total sugars, 73.94, and non-sugar solids, 3.14, per cent; K<sub>2</sub>O, 120, and P<sub>2</sub>O<sub>5</sub>, 43 mg./100 gm.; no artificial color.

<sup>13</sup>Conn. Agr. Expt. Sta. Bul. 602, 30 (1956)

<sup>14</sup>Rules and Regulations relating to the Food and Drug Law of Connecticut, Revision of April 6, 1938, Regulation 36 Revised

*E.C.-701 and K.F.-1420. 100% Pure Apple Raspberry Jelly.* Lincoln Foods, Inc., Lawrence, Mass. Average analysis showed: Total solids, 72.00, total sugars, 64.75, non-sugar solids, 7.25, ash, 0.20, and total acidity (as malic acid), 0.78, per cent; K<sub>2</sub>O, 103, and P<sub>2</sub>O<sub>5</sub>, 15.7, mg./100 gm.; estimated juice content, 64 per cent.

*E.C.-700. 100% Pure Lincoln Concord Grape Jelly.* Lincoln Foods, Inc., Lawrence, Mass. Analysis showed: Total solids, 69.41, total sugars, 61.44, non-sugar solids, 7.97, ash, 0.20, and total acidity (as malic acid), 0.46, per cent; K<sub>2</sub>O, 91, and P<sub>2</sub>O<sub>5</sub>, 10.6, mg./100 gm.; estimated juice content, 50 per cent.

**Meat and Meat Products**

**Frankforts**

State regulations require that Frankfort and other types of sausage contain no more than a total of 3.5 per cent of fillers such as dry skim milk, flour and soy flour; they also set limits of 10 per cent for added water and 200 parts per million for the curing agent sodium nitrite. In 1955 the Commissioner submitted 14 samples of frankforts for testing for compliance with these specifications, and one sample was received from the Hartford Health Department; two samples were passed and 13 were found to contain excessive quantities of one or more of these optional ingredients or to be otherwise misbranded. Results are given in Table 8.

**Hamburg**

State regulations set a fat limit of 30 per cent on "Hamburg, Hamburger", which is defined as "comminuted fresh beef, with or without addition of suet". Hamburg may legally contain no other meat than beef, and the Connecticut standards (unlike the Federal ones) do not permit the addition of seasoning. Sixty-five samples of hamburg were submitted by the Commissioner to check on their fat contents; 54 samples were passed and 11 contained excessive fat. Analyses of the misbranded samples are given in Table 9. It is interesting that five out of the eleven stores listed in this table (Rusyenas Market of Jewett City, L & L Food Stores of New Britain, Moro & Son Market of New Haven and United Fruit Stores and Universal Food Stores of Norwich) were "repeaters", who had been found to be selling high-fat hamburg in 1954<sup>15</sup> as well as 1955.

In addition to the Food and Drug Commission samples listed above, five samples were submitted by the State Police to see if they had been prepared in compliance with orthodox Jewish dietary laws. Because "Kosher" hamburg is treated with salt, its salt content is much higher than that of ordinary ground beef, which contains only 0.25 per cent of this compound on the dry basis. Analyses of the five "Kosher" hamburg samples are given in Table 10; one sample was passed as "Kosher", while the other four obviously were not. One of these non-"Kosher" samples came from a market (the Sunshine Meat Market in Bridgeport) whose product was considered doubtful in 1953.<sup>16</sup>

<sup>15</sup>Conn. Agr. Expt. Sta. Bul. 602, 36 (1956)

<sup>16</sup>Conn. Agr. Expt. Sta. Bul. 596, 32 (1955)

**TABLE 8. FRANKFORTS**

No.	Manufacturer or distributor and brand	Water per cent	Protein per cent	Dextrose, per cent	Lactose, per cent	Starch, per cent	Soy flour	Dry skim milk, per cent	Added water, per cent	Remarks
JB.-80	A.Y.O. Packing Co., New Britain, Conn. A.Y.O. <i>Skimless</i> .....	46.87	15.50	1.76	2.32	2.70	absent	4.43	0.00	Total fillers 7.13 per cent; misbranded
J.B.-81	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	48.91	13.50	1.30	2.40	2.30	absent	4.59	0.00	Total fillers 6.89 per cent; misbranded
J.B.-86	A.Y.O. Packing Co., New Britain, Conn. A.Y.O. <i>Skimless</i> .....	..	..	1.55	2.13	2.90	..	4.14	..	Total fillers 7.04 per cent; misbranded
J.B.-87	A.Y.O. Packing Co., New Britain, Conn. A.Y.O. <i>Skimless</i> .....	..	..	1.50	1.96	2.94	..	3.81	..	Total fillers 6.75 per cent; misbranded
J.B.-88	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	..	..	1.90	1.98	2.66	..	3.85	..	Total fillers 6.51 per cent; misbranded
J.B.-89	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	..	..	1.47	1.99	2.94	..	3.86	..	Total fillers 6.80 per cent; misbranded
J.B.-90	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	..	..	1.53	2.04	2.83	..	3.96	..	Total fillers 6.79 per cent; misbranded
J.B.-91	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	..	..	1.31	2.12	2.63	..	4.12	..	Total fillers 6.75 per cent; misbranded
A.F.-192	A.Y.O. Packing Co., New Britain, Conn. A.Y.O.....	49.34	14.56	1.84	2.16	2.20	absent	4.20	0.00	Total fillers 6.40 per cent; misbranded
4196	Board of Health, Hartford, Conn.....	..	..	..	present	absent	absent	present	..	Only information on type of filler used was requested; passed

TABLE 8. FRANKFORTS—Concluded

No.	Manufacturer or distributor and brand	Water per cent	Protein per cent	Dextrose, per cent	Lactose, per cent	Starch, per cent	Soy flour	Dry skim milk, per cent	Added water, per cent	Remarks
W.M.-998	Grote & Weigel, Hartford, Conn. <i>Grote &amp; Weigel</i>	52.00	14.75	....	0.00	0.00	absent	0.00	0.00	Passed
E.C.-705	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	58.00	15.44	0.92	2.11	0.00	..	4.10	0.00	Excessive dry skim milk; misbranded
K.C.-671	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	..	..	..	..	..	..	..	..	Coal tar dye in skins not declared; misbranded
K.C.-672	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	..	..	..	..	..	..	..	..	Coal tar dye in skins not declared; misbranded
F.P.-229	Superior Food Store, West Hartford, Conn. <i>Grote &amp; Weigel</i>	48.70	16.19	1.21	2.58	2.23	absent	5.01	0.00	Total fillers 7.24 per cent; misbranded*

\*F.P.-229. While these frankforts were being sold under the Grote & Weigel brand, comparative analysis with an authentic sample (W.M.-998) indicated fraudulent use of this brand name by the grocer.

TABLE 9. HAMBURG CONTAINING EXCESSIVE FAT

City or town	No.	Market or restaurant	Fat, per cent
Bridgeport	K.C.-653	Farmer's Market	41.83
Danielson	T.C.-242	First National Store	31.28
Jewett City	T.C.-250	Eddie's Market	31.19
	T.C.-270	Rusynas Market	30.77
New Britain	J.B.-30	L & L Food Stores	32.63
	J.B.-84	Stop & Save Market	30.05
New Haven	W.M.-898	Elm City Market	31.47
	W.M.-872	Moro & Son Market	31.10
Norwich	E.C.-709	United Fruit Stores	39.01
	E.C.-713	Universal Food Stores, Inc.	31.23
Waterbury	K.F.-1475	Waterbury Beef Co.	30.56

TABLE 10. HAMBURG SOLD AS "KOSHER"

City	No.	Market	Sodium chloride per cent (dry basis)	Remarks
Bridgeport	4424	Sunshine Meat Market	0.28	Not "Kosher"
Waterbury	4346	Hi-Grade Market	0.25	Not "Kosher"
	4347	State Meat Market	0.25	Not "Kosher"
	3280	Weisman Meat Market	0.32	Not "Kosher"
	4348	Weisman Meat Market	2.17	Probably "Kosher" as claimed.

**Meat Loaf**

A.L.-284, *Sliced Prestam Loaf, Roessler's Yellow Tag*, manufactured by Roessler Packing Co., Inc., New Haven, Conn., was labelled: "Ingredients: Pork, Beef, Water, Salt, Sugar, Spice, Sodium Nitrate, Sodium Nitrite." It was considered misbranded because the name "Prestam" was obviously intended to suggest "Pressed Ham" and was misleading as applied to a product containing no ham.

**Pork Sausage**

State regulations require that pork sausage contain not more than 50 per cent of fat. Of 57 official samples of pork sausage and sausage meat examined in 1955, 33 met this fat limit and 24 did not. Analyses of the misbranded samples are given in Table 11.

The method used for determining fat in such products was devised by Mr. Alphonse Wickroski of this laboratory, and was as follows:

A two to five gram sample is weighed into a beaker, mixed with a teaspoonful of "Celite 545", and dried in an oven at 100°C. for 5 to 6 hours. The contents of the beaker are then brushed into a mortar and thoroughly ground together, after which they are wrapped in an 18.5 cm. No. 2 Whatman filter paper, transferred to the stainless steel container of a "Goldfisch" fat extraction apparatus, and extracted with ether over night at low heat. The next morning the ether is evaporated off and the fat dried ½ - ¾ hr. at 100°C., cooled and weighed.

TABLE 11. PORK SAUSAGE CONTAINING EXCESSIVE FAT

No.	Manufacturer or dealer and brand	Fat, per cent
W.M.-931	A & P Tea Co., New York, N. Y. <i>Super-Right</i>	53.36
W.M.-956	A & P Tea Co., New York, N. Y. <i>Super-Right</i>	51.90
K.F.-1493	Armour & Co., Chicago, Ill. <i>Armour's</i>	53.47
K.F.-1494	Armour & Co., Chicago, Ill. <i>Armour's</i>	55.13
E.C.-708	Beit Bros. Super Markets, Norwich, Conn. <i>Bulk</i>	55.16
W.M.-926	Cudahy Packing Co., Omaha, Nebr. <i>Cudahy's</i>	54.24
W.M.-911	Deerfoot Farms Co., Southborough, Mass. <i>Deerfoot</i>	50.99
W.M.-928	First National Stores, Inc., Somerville, Mass. <i>Finest Country Style</i>	55.79
W.M.-912	Poster Beef Co., Manchester, N. H. <i>Foster's Mellogold</i>	55.85
K.F.-1480	George A. Hormel, Austin, Minn. <i>Hormel Country Style</i>	52.31
W.M.-927	Hummel Bros. Meat Products, New Haven, Conn. <i>Hummel's</i>	56.24
K.F.-1414	M. M. Mados Co., Inc., Somerville, Mass. <i>Triple MMM</i>	56.98
W.M.-934	Rascati Market, New Haven, Conn. (Sausage meat)	61.79
W.M.-924	Rath Packing Co., Waterloo, Iowa. <i>Rath's</i>	53.88
K.C.-680	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	54.69
K.F.-1489	Roessler Packing Co., New Haven, Conn.	52.63
W.M.-915	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	56.48
W.M.-988	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	52.51
T.C.-269	Rusyenas Market, Jewett City, Conn.	56.44
T.C.-252	Rusyenas Market, Jewett City, Conn. (Sausage meat)	60.77
W.M.-914	Sperry & Barnes Co., New Haven, Conn. <i>Sperry &amp; Barnes Old Homestead</i>	56.38
J.D.-133	Swift & Co., Chicago, Ill. <i>Swift's Brookfield</i>	55.94
W.M.-913	Swift & Co., Chicago, Ill. <i>Swift's Brookfield</i>	56.36
W.M.-925	Wilson & Co., Chicago, Ill. <i>Wilson's Certified</i>	52.11

## Sheep Heart and Muscle

Dried heart and muscle tissues of 16 sheep were analyzed for Prof. H. D. Eaton of the University of Connecticut at Storrs; ingredients determined were moisture, ash, calcium, magnesium and phosphorus. These analyses were made to supply information needed for his studies in animal nutrition, but are summarized herewith to supplement published data from other sources on the calcium, magnesium and phosphorus contents of meat:

	Dried Sheep Heart			Dried Sheep Muscle		
	Maximum, per cent	Minimum, per cent	Average, per cent	Maximum, per cent	Minimum, per cent	Average, per cent
Moisture.....	6.06	2.69	4.42	7.55	3.05	5.00
Ash.....	5.07	4.59	4.89	4.42	3.78	4.15
Calcium.....	0.094	0.019	0.038	0.079	0.017	0.034
Magnesium.....	0.123	0.091	0.106	0.116	0.079	0.093
Phosphorus.....	1.93	0.92	1.10	1.75	0.69	0.89

## Nuts

One sample of pistachio nuts and one of pumpkin seeds were submitted by the Commissioner; both were misbranded:

*W.M.-868. Ann Dale Pistachio Nuts.* Ann Dale Products, Inc., Fall River, Mass. This sample bore no ingredient declaration beyond the "Pistachio Nuts"; these nuts were colored with undeclared coal tar dye.

*W.M.-995. E & E Finest Salted Nuts.* E & E Distributing Co., New Haven, Conn. The only ingredient statement was "Nuts-Salt". Examination showed that the contents of this 6 oz. package were artificially colored and salted pumpkin seeds, which are not nuts.

## Oils and Fats, Vegetable

## Blended Oils

Twenty-seven official and four unofficial samples of blended oils were examined; five samples were passed and 26 were adulterated or misbranded:

*E.C.-703, 711, 712, 719, 720, 728 and 729; K.F.-1448; and W.M.-867 and 895. Balbo Salad Oil (Homogenized).* Balbo Oil Corp., Brooklyn, N. Y. Labelled: "90% Choice Corn and Peanut Oils Enriched with 10% Pure Imported Olive Oil." Average analysis was: Butyro refraction, 25°C., 69.4; cottonseed and mineral oils, absent; peanut oil, trace or none; squalene, 48 mg./100 gm.; estimated per cent olive oil, 7; no artificial color; flavor doubtful. Of these 10 samples, six were gallon cans (whose net contents averaged 128.6 fl. oz.), three were quart cans (averaging 31.8 fl. oz.) and one was a sample of about 6 fl. oz. not received in the original container. All samples were adulterated and misbranded because they contained essentially no peanut oil, and one (*E.C.-720*, a quart can) was short volume 0.7 fl. oz.

*K.F.-1438, A.L.-291, and W.M.-869 and 897. Belmonte Brand Oil.* Castelcarini Packing Co., Brooklyn, N. Y. Labelled: "75% Peanut and Corn Oil 25% Pure Imported Olive Oil". Average analysis was: Butyro refraction, 25°C., 66.0; cottonseed oil, present in one sample (*W.M.-897*) and absent in the others; mineral oil, none; peanut oil, 5 per cent or less

in two samples and trace or none in the others (*K.F.-1438* and *W.M.-869*); squalene, 56 mg./100 gm.; estimated per cent olive oil, 11; artificial color, none or doubtful; artificial flavor doubtful. Of these four samples one (*W.M.-869*) was a 7 fl. oz. sample not in the original container and the others were gallon cans, whose net contents averaged 129.4 fl. oz. *W.M.-897* was definitely adulterated with cottonseed oil; *K.F.-1438* and *W.M.-869* were adulterated and misbranded because they contained essentially no peanut oil; all samples were misbranded because they contained less than 25 per cent of olive oil.

*W.M.-994. Carmela Mia Brand Oil.* Carmela Mia Packing Co., Brooklyn, N. Y. Labelled "A delicious blend of 90% Corn and Peanut Oil and 10% pure imported Olive Oil." Analysis showed: Butyro refraction, 25°C., 69.6; cottonseed, peanut and mineral oils, absent; squalene, 35 mg./100 gm.; estimated per cent olive oil, 2; artificial flavor and color, doubtful; net contents, 128.0 fl. oz. Adulterated and misbranded because no peanut or olive oil was present.

*E.C.-702. Cosmos Choice Vegetable Oil.* Catania-Spagna Corp., Cambridge, Mass. Labelled "80% Corn, Peanut and 20% Virgin Olive Oil." Analysis showed: Butyro refraction, 25°C., 68.4; cottonseed, peanut and mineral oils, absent; squalene, 106 mg./100 gm.; estimated per cent olive oil, 26; artificial flavor and color present; net contents, 125.7 fl. oz. Adulterated and misbranded because of absence of peanut oil and presence of undeclared artificial flavor and color; short volume 2.3 fl. oz.

*W.M.-896. Gem Oil DeLuxe.* Gem Packing Corp., Brooklyn, N. Y. Labelled "A blend of 90% Choice Corn, Peanut Oil and 10% Pure Olive Oil." Analysis showed: Butyro refraction, 25°C., 68.8; cottonseed oil, trace; peanut oil, about 5 per cent; no mineral oil; squalene, 48 mg./100 gm.; estimated per cent olive oil, 6; artificial flavor, doubtful; artificial color absent; net contents, 31.2 fl. oz. (one quart declared). Short volume.

*K.C.-666. La Palina Brand Oil.* Venice Importing Co., Brooklyn, N. Y. Labelled "78% Peanut or Corn Oil 22% Imported Olive Oil." Analysis showed: Butyro refraction, 25°C., 67.8; cottonseed and mineral oils, absent; peanut oil, small proportion; squalene, 94 mg./100 gm.; estimated per cent olive oil, 22; artificial flavor and color absent. Passed.

*J.D.-151. La Spagnole New England Famous Cooking Oil.* American Vegetable Oil Co., Boston, Mass. Labelled "95% Corn and Peanut Oil 5% Virgin Oil." No doubt the intent was to declare virgin olive oil, but the "Olive" was omitted from the label. Analysis showed: Butyro refraction, 25°C., 69.7; no cottonseed, peanut or mineral oil; squalene, 62 mg./100 gm.; estimated per cent olive oil, 11; artificial flavor doubtful; no coal tar dye. Adulterated and misbranded because of absence of peanut oil.

*K.F.-1497. Lucky Star Blend Corn Oil Pure Olive Oil.* Olivola Co., Waterbury, Conn. Analysis showed: Butyro refraction, 25°C., 68.0; no cottonseed, peanut or mineral oil; squalene, 88 mg./100 gm.; estimated per cent olive oil, 20; artificial flavor and color absent; net contents 125.6 fl. oz. Short volume 2.4 fl. oz.

*K.C.-679 and W.M.-919. Paradise Brand Oil.* Domestic Oil Co., Brooklyn, N. Y. Labelled "75% Peanut or Corn Oil 25% Pure Olive Oil." Average analysis was: Butyro refraction, 25°C., 69.2; cottonseed oil, present in *K.C.-679* and absent in *W.M.-919*; peanut oil between 5 and 10 per cent; no mineral oil; squalene, 41 mg./100 gm. in *K.C.-679* and 12 mg./100 gm. in *W.M.-919*; estimated per cent olive oil, 10 in *K.C.-679* and 0 in *W.M.-919*; artificial flavor and color present. *K.C.-679* was a gallon can whose net contents were 123.6 fl. oz.; *W.M.-919* was a 7-fl. oz. sample not in the original container. Both samples were misbranded because they contained undeclared artificial flavor and color and were not labelled "Imitation Olive Oil"; in addition, *K.C.-679* was adulterated with cottonseed oil and short volume 4.4 fl. oz., and *W.M.-919* was adulterated and misbranded because it contained no olive oil.

*K.C.-703. Prosperity Brand Salad Oil.* J. Ossola Co., New York, N. Y. Labelled "A specially blended oil consisting of 78% corn and peanut oil, 22% pure olive oil." Analysis showed: Butyro refraction, 25°C., 67.5; no cottonseed, peanut or mineral oil; squalene, 76 mg./100 gm.; estimated per cent olive oil, 16; artificial flavor, doubtful; artificial color absent. This sample had a rancid odor, but the Kreis test for rancidity was negative. Adulterated because of absence of peanut oil.

*W.M.-916 and 993. Santuzza Brand Olive Oil Blend.* Carmela Mia Packing Co., Inc., Brooklyn, N. Y. Labelled "75% Corn and Peanut Oils 25% Pure Olive Oil." Average analysis was: Butyro refraction, 25°C., 69.3; cottonseed oil, small proportion in *W.M.-916* and none in *W.M.-993*; peanut oil, trace or none; mineral oil absent; squalene, 72 mg./100 gm.; estimated per cent olive oil, 15; artificial flavor and color, doubtful. *W.M.-993* was a gallon can whose net contents were 127.2 fl. oz., while *W.M.-916* was a 5 fl. oz. sample not received in the original container. Both samples adulterated and misbranded because of essential absence of peanut oil; *W.M.-916* also adulterated with cottonseed oil.

*K.F.-1441. Sanzeri Oil.* Sanzeri, Inc., Brooklyn, N. Y. Labelled "75% Corn Peanut Oil 25% Pure Imported Olive Oil." Analysis showed: Butyro refraction, 25°C., 69.1; cottonseed oil, small proportion; peanut oil, trace or none; mineral oil absent; squalene, 53 mg./100 gm.; estimated per cent olive oil, 8; artificial flavor and color present; net contents, 128.0 fl. oz. Adulterated with cottonseed oil; adulterated and misbranded because no peanut oil was present, olive oil content was less than 25 per cent, sample was not labelled "Imitation Olive Oil", and artificial flavor and color were not declared.

*K.C.-699. Sasso Blended Oil.* Lucci Sales Co., Brooklyn, N. Y. Labelled "Composed of 80% Peanut and Corn Oils, 20% Pure Imported Olive Oil." Analysis showed: Butyro refraction, 25°C., 68.6; cottonseed oil present; no peanut or mineral oil; squalene 58 mg./100 gm.; estimated per cent olive oil, 16; no artificial flavor or color; net contents 129.1 fl. oz. Adulterated because of substitution of cottonseed oil for peanut oil.

*3387. Special Blend Oil.* Pepe-Maisano Co., New Haven, Conn. Butyro refraction, 25°C., 67.2; cottonseed oil absent; peanut oil about 10 per cent; no mineral oil; squalene, 71 mg./100 gm.; estimated per cent olive oil, 14; no artificial flavor or color. This was a mixture containing



about 76 per cent corn or soy oil, 14 per cent olive oil and 10 per cent peanut oil. Passed.

2644 to 2646. *Vegetable Oils Nos. 1, 3 and 7.* Pepe-Maisano Co., New Haven, Conn. Tests for cottonseed and mineral oil and artificial flavor and color were negative on all three samples; 2644 contained between 5 and 10 per cent of peanut oil, and the other two samples about 5 per cent. Other figures were as follows:

	2644	2645	2646
Butyro refraction, 25°C. . . . .	66.7	67.9	67.9
Squalene, mg./100 gm. . . . .	116	95	78
Estimated per cent olive oil . . .	29	19	17

These analyses indicated that all three oils were blends of corn or soy oil with about 5 per cent of peanut oil and varying percentages of olive oil (29, 19 and 17 per cent, respectively). Passed.

### Cottonseed, Linseed and Sesame Oils

One sample of linseed oil was examined for the Commissioner, one sample of cottonseed oil was analyzed for the State Supervisor of Purchases, and one sample of material sold for sesame oil was tested for a member of the Psychology Department of Yale University; two samples were passed and one was adulterated:

J.S.-362. *Linseed Oil.* Clark Paint Factory, Hartford, Conn. Analysis, as compared with normal values for raw linseed oil, was as follows:

	Found	Normal for raw linseed oil
Specific gravity, 15.5°C. . . . .	0.933	0.938—0.932
Refractive index, 25°C. . . . .	1.4774	1.4805—1.4790
Iodine number . . . . .	179	180(minimum)
Test for mineral oil . . . . .	negative	

Passed.

3717. *Plantation Brand Pure Cottonseed Salad Oil.* E. F. Drew & Co., Inc., New York, N. Y. Butyro refraction, 25°C., 67.3; specific gravity, 25°C., 0.9168; peanut and mineral oils and artificial flavor and color absent. Net contents: Declared, 1 pint; found, 17.0 fl. oz. Passed.

4996. *Sesame Oil U.S.P.* Magnus, Mabee & Reynard, Inc., New York, N. Y. This oil had a refractive index of 1.5525 at 25°C., as compared with 1.5543 found on an authentic sample of oil of anise; it had a strong anise odor, and its infrared pattern was identical with that of authentic oil of anise. Oil of anise had obviously been substituted for sesame oil; adulterated.

### Oleomargarine

Two official and one unofficial samples of oleomargarine (other than those sold as butter listed on page 27) were examined; two samples were passed and one was misbranded:

J.B.-44. *Cudahy Gold Coin Golden Yellow Oleomargarine.* Cudahy Packing Co., Omaha, Nebr. Average net weight of the six one-pound pats comprising this sample was 15.63 ounces. Short weight.

K.F.-1402. *Happy Boy Margarine.* Hotel Bar Foods, Inc., New York, N. Y. Fat, 81.30 per cent; passed.

3718. *Yellow Oleo.* Shedd-Bartusch Foods, Inc., Detroit, Mich. Labelled: "Made from hardened soybean and cottonseed oils, water, dried skim milk, salt, vegetable lecithin, 1/10% sodium benzoate added as a preservative, 15,000 units of Vit. A added per pound, artificial flavor and color added. 2 oz. supplies 47% of adults min. daily Vit. A requirement." Analysis showed: Water, 15.66, casein, 0.87, salt, 3.15 and fat, 80.32 per cent. Passed.

### Olive Oil

Nine samples of oils sold as pure olive oil were submitted by the Commissioner, and two other samples were examined for a dealer; seven samples were passed and four were adulterated or misbranded:

J.D.-139. *Bon Olive Oil, Pure Virgin Imported.* Bonoil Packing Corp. Brooklyn, N. Y. Butyro refraction, 25°C., 62.3; no cottonseed, peanut or mineral oil or artificial flavor or color. Net contents: Declared, 16 fl. oz.; found, 16.2 fl. oz. Passed.

K.F.-1439. *Castelcarini La Gran Marca 100% Pure Imported Olive Oil* Castelcarini Packing Co., Brooklyn, N. Y. Butyro refraction, 25°C., 62.5; no cottonseed, peanut or mineral oil or artificial flavor or color. Net contents: Declared, one gallon; found, 126.4 fl. oz. Short volume 1.6 fl. oz.

K.C.-702. *Enrico Caruso Brand 100% Pure Imported Olive Oil.* Caruso Products Distributing Corp., New York, N. Y. Butyro refraction, 25°C., 62.2; no cottonseed, peanut or mineral oil or artificial flavor or color; squalene, 323 mg./100 gm. Passed.

K.F.-1437. *Grande Italia Brand 100% Pure Olive Oil Extra Sublime.* J. Ossola Co., New York, N. Y. Butyro refraction, 25°C., 62.3; no cottonseed, peanut or mineral oil. Net contents: Declared, one gallon, found, 125.2 fl. oz. Short volume 2.8 fl. oz.

K.F.-1513. *Mama Mia 100% Pure Olive Oil Imported Product Sublime Quality.* Carmela Mia Packing Co., Brooklyn, N. Y. Butyro refraction, 25°C., 61.8; cottonseed oil present; no peanut or mineral oil or artificial flavor or color. Net contents: Declared, one gallon; found, 128.3 fl. oz. Adulterated with cottonseed oil.

2928. *100% Pure Olive Oil.* Pepe-Maisano Co., New Haven, Conn. Butyro refraction, 25°C., 70.0; no cottonseed oil; peanut oil less than 5 per cent; no mineral oil; artificial flavor and color present. Mostly corn or soy oil artificially flavored and colored, probably containing no olive oil. Adulterated. (Note: This sample was submitted by the above company for testing; it was not sold by them.)

3386. *100% Pure Olive Oil.* Pepe-Maisano Co., New Haven, Conn. Butyro refraction, 25°C., 62.0; no artificial flavor or color. Passed.

K.F.-1440. *Saica Brand Castelvetrano Guaranteed Pure Virgin Olive Oil* S.A.I.C.A. S/A, Castelvetrano, Sicily. Butyro refraction, 25°C., 62.3; no cottonseed, peanut or mineral oil or artificial flavor or color. Net contents 128.8 fl. oz. Passed.

*W.M.-866. Specialty 100% Pure Crisafulli Brand Imported Pure Olive Oil.* Beatrice Sales Corp., Brooklyn, N. Y. Butyro refraction, 25°C., 62.0; no cottonseed, peanut or mineral oil or artificial flavor or color; squalene, 460 mg./100 gm. Passed.

*K.F.-1416. Sweet Life Pure Imported Olive Oil.* Sweet Life Brands, Inc., Brooklyn, N. Y. Butyro refraction, 25°C., 62.0; no cottonseed, peanut or mineral oil or artificial flavor or color. Passed.

*K.F.-1498. Venetian Queen 100% Pure Imported Olive Oil.* Olivola Co., Waterbury, Conn. Butyro refraction, 25°C., 62.0; no cottonseed, peanut or mineral oil or artificial flavor or color; squalene, 419 mg./100 gm. Net contents: Declared, one gallon; found, 127.8 fl. oz. Passed.

### Preservatives

In 1955 only one sample in this class was received: *W.M.-784, Todd's Butchers Friend*, made by Butchers Friend Co., Des Moines, Iowa. This product was labelled "Contains—Salt, Sugar (Dextrose & Sucrose) and Sodium Benzoate"; an accompanying circular stated that "BUTCHERS FRIEND is a combination of effective ingredients for use in processing, preserving and treating all kinds of ground meats, link-sausage, meat loaves, kraut, dill pickles, and other foods". Tests showed that sample was free of sulphite but did contain sodium benzoate. The sample itself had to be passed but the presence of sodium benzoate would have made its use in treating "ground meats" (i.e., hamburg) illegal because Regulation 186-27.10 under the Food, Drug and Cosmetic Act defines "Hamburg" as "comminuted fresh beef" and Regulation 186-27.13(d) states that "No preservative may be used in meat or meat products sold as, or required by definition to be, fresh meat".

### Sea Food

One sample each of deep sea scallops, shelled clams and shelled oysters, all from Wilson's Fish Market, New Haven, Conn., were submitted by the Commissioner to check on a claim that deep sea scallops contained less salt than other shellfish. Our results were as follows:

No.	Material	Total Solids, per cent	Salt (NaCl), per cent	
			As Received	Dry Basis
W.M. 857	Deep sea scallops	24.15	0.41	1.69
W.M. 858	Shelled clams	12.12	0.13	1.10
W.M. 859	Shelled oysters	10.09	0.10	1.00

For these samples at least the claim proved to be the reverse of the truth: The scallops contained *more* salt than either the clams or the oysters.

### Soups

Nine samples of canned condensed soups were submitted by the State Supervisor of Purchases for flavor comparison. These samples included three brands each of the following three types of soup: Chicken with rice, tomato, and vegetable. They were analyzed for total solids in order to compare the relative proportions of water and more expensive ingredients, but in rating the different brands reliance was chiefly placed on organoleptic examination—that is, side-by-side comparisons of the flavors of the

soups prepared by diluting the concentrates with equal volumes of water and warming. Results are given in Table 12; in summary, the "Campbell" chicken with rice and tomato soups were considered the best of these flavors, while of the vegetable soups "Campbell's" and "Plee-Zing" tied for first place (from a flavor standpoint; the "Campbell's" had a higher solids content).

Similar comparisons of canned soups were made in 1950<sup>17</sup> and 1953.<sup>18</sup> For the most part these earlier samples were of different brands or flavors and the only direct comparison that can be made with the 1955 results is in the case of tomato and vegetable soups: In 1950 the "Campbell" vegetable soup was also rated the best, but "Gibbs Condensed Tomato Soup", manufactured by Gibbs & Co., Inc., Baltimore, Md., was classed as superior in flavor to the "Campbell" variety, and exceeded it in solids content.

### Spices

Five official and one unofficial samples of spices were examined; four samples were passed and two were adulterated:

*K.C.-626. Arrow Horse Radish.* Arrow Horse Radish Co., New York, N. Y. Labelled "Made from pure horse radish roots, vinegar, salt, sulphur dioxide, and flavoring." Microscopic examination indicated that this sample was mostly if not wholly horseradish as labelled, so it was passed.

*2436. Curry Powder.* State Supervisor of Purchases. "Curry powder" is a mixture of spices in which turmeric predominates, but including cayenne pepper and other pungent spices. Microscopic examination of this sample showed that celery was the predominant ingredient; there was relatively little turmeric and only a trace of black pepper. Adulterated.

*K.C.-689. P.G.A. Parsley Flakes.* John Bozzuto & Sons, Inc., Waterbury, Conn. Coal tar dye absent; passed.

*K.F.-1405. Safe Owl Pure Black Pepper.* Safe Owl Products, Inc., Brooklyn, N. Y. Microscopic examination showed no foreign material; passed.

*K.F.-1404. Safe Owl Rosemary Leaves.* Safe Owl Products, Inc., Brooklyn, N. Y. Contained excessive stems and some sand and dirt; adulterated.

*K.F.-1466. Seasoning for Ground Meat Without Benzoate of Soda.* Whitaker Seasonings, Tulsa, Oklahoma. Labelled: "Ingredients: Salt, sugar, paprika, capsicum and monosodium glutamate." The directions called for adding one 4 oz. jar of this product to 25 lb. of ground meat, and cautioned that the mixture should be labelled "Seasoning Added".

The sample itself had to be passed, but while its use in hamburg would have been permitted under Federal regulations (see page 40) it could not have been legally so used in this State, where the definition of "Hamburg" excludes seasonings.

<sup>17</sup>Conn. Agr. Expt. Sta. Bul. 558, 47-49 (1952)

<sup>18</sup>Conn. Agr. Expt. Sta. Bul. 596, 36-37 (1955)

TABLE 12. SOUPS

No.	Manufacturer and brand	Code No.	Total solids, per cent	Remarks
2236	Campbell Soup Co., Camden, N. J. <i>Campbell's Condensed Chicken with Rice</i> .....	P 8—9A205	9.94	About same quantity of meat as other brands; less rice than 2239; flavor best of three, but not much superior to 2242
2237	Campbell Soup Co., Camden, N. J. <i>Campbell's Condensed Tomato</i> .....	CSEEC—8M301	18.01	Flavor best of three (more "soupy" and less purée flavor), but all were acceptable
2238	Campbell Soup Co., Camden, N. J. <i>Campbell's Condensed Vegetable, Made with Beef Stock</i> .....	ESTA—CN402	16.36	This sample and 2241 equally good flavor; 2244 inferior
2242	Sweet Life Brands, Inc., Brooklyn, N. Y. <i>Sweet Life "Quality Foods" Condensed Chicken with Rice</i> .....	P 864—08513	9.37	Highest fat content and saltier; less rice than 2239; flavor almost as good as 2236
2243	Sweet Life Brands, Inc., Brooklyn, N. Y. <i>Sweet Life "Quality Foods" Condensed Tomato</i> .....	235—6	15.59	Flavor acceptable but more purée-like; not quite so good as that of 2237
2244	Sweet Life Brands, Inc., Brooklyn, N. Y. <i>Sweet Life "Quality Foods" Condensed Vegetable</i> .....	26510	15.74	Flavor of this sample inferior to those of other two
2239	Venice Maid Co., Inc., Vineland, N. J. <i>Plee-Zing Concentrated Chicken with Rice</i> .....	P-864—084S7	11.13	Considerably more rice than other two; odor unpleasant but taste acceptable; least desirable of three
2240	Venice Maid Co., Inc., Vineland, N. J. <i>Plee-Zing Concentrated Tomato</i> .....	23510	16.30	Flavor equal to 2243 but slightly inferior to 2237 (more purée-like)
2241	Venice Maid Co., Inc., Vineland, N. J. <i>Plee-Zing Concentrated Vegetable</i> .....	25457	15.37	Flavor equal to 2238, superior to 2244

## Spray Residues

In past years (from 1931 on) regular official inspections of the products of Connecticut apple orchards were made to see whether they contained more arsenate of lead spray residues than were represented by the official tolerances of 0.050 grain/lb. of lead and 0.025 grain/lb. of arsenic trioxide. As late as 1946 this laboratory examined 136 such samples, but from then on the attention paid by the Dairy and Food Commission and its successor the Food and Drug Commission to this type of food inspection declined, reaching a low point in 1954 when only two samples were submitted. In 1955 no spray residue sample was received from the Commissioner.

Thirty-four miscellaneous materials suspected of containing spray residues were, however, received from members of the Station staff and private citizens. Nothing was found on 14 of these, while analysis of the following 20 did show residues as indicated:

4982. *Baldwin Apples*. Henry Engelhardt, The Connecticut Agricultural Experiment Station. DDT, 0.9 part per million.

4296. *Branch from Arbor Vitae Tree*. Frances Meyer, The Connecticut Agricultural Experiment Station. Arsenic trioxide, 10.0 p.p.m.

2604. *Brine in Which Lobsters were Kept*. City Fish Market, Hartford, Conn. Lindane, 45 parts per billion.

3577. *Cabbage Leaf*. J. J. Regula, New Britain, Conn. Lead, 7 p.p.m.

2136. *Chicken Leg and Fat*. Paul Graybill, New Haven, Conn. DDT and DDE, 0.2 p.p.m. each.

5104. *Cucumber Seed*. Associated Seed Growers, New Haven, Conn. Mercury, about 25 p.p.m.

4646. *Grass from Golf Course*. J. H. Lockwood, Milford, Conn. Mercury present, probably as a phenylmercury compound.

4440. *Hydrangea Leaves*. Mrs. M. Volosevich, West Haven, Conn. Salt (NaCl), 7.60 per cent.

4412. *Leaves*. Henry W. Zuwalick, Branford, Conn. Arsenic trioxide, 105 p.p.m.; lead, at least 35 p.p.m.

4438. *Material Found Around Hedges*. Vincent Tisi, Shelton, Conn. Identified as "CMU" (3-parachlorophenyl-1,1-dimethylurea), a weed-killer, probably applied maliciously.

4602, 4603 and 4605. *Peaches*. Dr. Philip Garman, The Connecticut Agricultural Experiment Station. Parathion less than 0.1 p.p.m.

3283. *Rose*. Ernest Stoddard, The Connecticut Agricultural Experiment Station. Mercury, 0.6 p.p.m.

1655 and 1656. *Rose Leaves*. Spaulding Gardens, Suffield, Conn. Mercury, 3.3 and 0.07 p.p.m. respectively.

1653 and 1654. *Roses*. Spaulding Gardens, Suffield, Conn. Mercury, 1.3 and 0.2 p.p.m. respectively.

4261. *Strawberries*. Rudolf Braun, M.D., Bridgeport, Conn. Arsenic trioxide, 3.2, lead, 2, and copper, 15, p.p.m.

4297. *Turf*. Miss Cecelia Slayton, New Haven, Conn. This turf had a heavy deposit of lead arsenate.

### Syrups

Four samples of fruit beverage base syrups, three of apple syrup, two of pancake syrup and one each of imitation vanilla and root beer syrups were submitted by the Commissioner, and one sample of table syrup was received from the State Supervisor of Purchases. Five samples were passed and seven were misbranded:

*A.L.-282. Apple Dapple Apple Dapple Syrup*. Fruit Processors, Inc., Southington, Conn. Labelled: "Cold-Concentrated Apple Juice from Fresh Apples; Sugar Added." Total solids, 58.08, and ash, 0.16, gm./100 cc.; K<sub>2</sub>O, 117 mg./100 cc.; estimated per cent apple juice, 70. Since this product was intended as a waffle and pancake syrup, its solids content should have met the minimum of 65 per cent set for maple and sugar syrups.<sup>19</sup>

*A.L.-283. Apple Dapple Apple Sparkle*. Fruit Processors, Inc., Southington, Conn. Labelled: "Cold-Concentrated Apple Juice (from Fresh Apples); Sugar Added—Less than 1/10 of 1% benzoate of soda added for users protection. To make a delicious drink, add four parts of water to one part of concentrate." Analysis showed: Total solids, 39.82, and ash, 0.39, gm./100 cc.; K<sub>2</sub>O, 266, mg./100 cc. Passed.

*A.L.-281. Apple Sparkle Syrup*. Fruit Processors, Inc., Southington, Conn. Labelled: "'Cold' Concentrated Apple Juice From Fresh Apples; Sugar Added. Delicious undiluted on waffles, pancakes and hot biscuits." Analysis showed: Total solids, 59.76, and ash, 0.15 gm./100 cc.; K<sub>2</sub>O, 109 mg./100 cc.; estimated per cent apple juice, 66. Deficient in solids for a pancake syrup.

*K.C.-636. Mrs. Filbert's Natural & Artificial Grape Flavor Beverage Syrup, No Sugar Needed*. J. H. Filbert Inc., Baltimore, Md. Labelled "Contains a blend of water, sugar, citric acid, natural fruit flavor and artificial fruit flavor and color." Analysis showed: Total solids, 81.84, and ash, 0.064, gm./100 cc.; K<sub>2</sub>O, 19, P<sub>2</sub>O<sub>5</sub>, 0.47, and methyl anthranilate, 5.1, mg./100 cc.; ratio K<sub>2</sub>O to Me anthranilate, 4; estimated per cent grape juice, 15. Misbranded because not labelled "Imitation Grape Flavor Beverage Syrup" and because declarations of artificial flavor and color were extremely inconspicuous.

*K.F.-1522. Mrs. Simms Pancake Syrup*. Castle Products Co., Newark, N. J. Labelled "Contains cane sugar syrup, imitation maple flavor." Total solids, 76.35 per cent; Winton lead no., 0. Misbranded because not labelled "Imitation Maple Syrup".

*K.C.-658. Premier Pancake Syrup*. Francis H. Leggett & Co., New York, N. Y. Labelled "A mixture of 85% pure cane sugar and 15% pure maple syrup." Analysis showed: Water, 31.47, and ash, 0.09, per cent;

Winton lead no., 0.16. Probably not over 11 per cent of maple syrup, but passed.

*W.M.-980. Red Heart Brand Root Beer Syrup*. New York Syrup Co., Bronx, N. Y. Labelled "Contains Cane Sugar, Water, Flavoring Material, Caramel Color, Artificial Color, 1/10 of 1% Benzoate of Soda." Tests for saponin negative; passed.

*W.M.-979. Red Heart Brand Vanilla Syrup Imitation*. New York Syrup Co., Bronx, N. Y. Labelled "Contains Pure Cane Sugar, Water, Imitation Vanilla Flavor, Vanillin, 1/10 of 1% Benzoate of Soda." No coumarin detected; passed.

*K.C.-690. Snow Crest Concentrated Pure Pink Lemon Flavored Syrup*. Snow Crest Beverages, Inc., Salem, Mass. Labelled: "Contents: Contains sugar, water, citric acid, oils of lemon, vegetable gum, 1/10 of 1% benzoate of soda, and caramel color. Makes one quart." Analysis showed: Total solids, 52.07, and ash, 0.090, gm./100 cc.; K<sub>2</sub>O, 25, and P<sub>2</sub>O<sub>5</sub>, 2.8 mg./100 cc.; estimated per cent lemon juice, 16; color, pale yellow. Misbranded because not colored pink.

*E.C.-739 and K.C.-691. Snow Crest Concentrated Pure Raspberry Flavored Syrup*. Snow Crest Beverages, Inc., Salem, Mass. Labelled: "Contents: Contains sugar, water, pure raspberry juice, raspberry flavor with other natural flavors, citric acid, caramel, 1/10 of 1% benzoate of soda, and U. S. Certified color. Makes one quart." Average analysis was: Total solids, 44.96, and ash, 0.13, gm./100 cc., K<sub>2</sub>O, 42, and P<sub>2</sub>O<sub>5</sub>, 3.7 mg./100 cc., estimated per cent raspberry juice, 22. Misbranded because not plainly labelled "Artificially Colored".

*4598. Union Brand Golden Table Syrup*. Union Starch & Refining Co., Columbus, Ind. This sample, submitted by the State Supervisor of Purchases, had been supplied to the Fairfield State Hospital on a bid calling for Federal Purchasing Specification JJJ-S-351b "Sirup, Type III—Sirup, blended, corn and refiners". This specification stated that: "Type III sirup shall consist of not less than 10 nor more than 20 per cent of fancy grade filtered refiners' sirup (solids basis) blended with corn sirup. The product shall contain not less than 72 per cent Brix solids and not more than 1.0 per cent of ash. Baumé test (Bureau of Standards Baumé solids scale for sugar solutions) shall be not less than 38.51 degrees at 20°C." Analysis showed: Total solids, 75.21, ash, 1.01, sucrose, 30.00, invert sugar, 7.13, and total sugars, 37.13, per cent; degrees Brix, 72.0; flavor, pronounced molasses. Passed.

### Vegetable Products

Nine miscellaneous samples of vegetable products were submitted by the Commissioner; six samples were passed and three were adulterated or misbranded:

*W.M.-921. Birds Eye Quick Frozen Broccoli Spears*. Birds Eye Division, General Foods Corp., New York, N. Y. This and the two following samples were submitted to see if they contained undeclared added salt. Analysis of *W.M.-921* showed only 0.023 per cent salt (sodium chloride). Passed.

<sup>19</sup>Rules and Regulations relating to the Food and Drug Law of Connecticut—Revision of July 1, 1937, p. 86

*W.M.-920. Birds Eye Quick Frozen Green Cut Beans.* Birds Eye Division, General Foods Corp., New York, N. Y. Salt, 0.016 per cent. Passed.

*W.M.-922. Birds Eye Quick Frozen Whole Asparagus Spears.* Birds Eye Division, General Foods Corp., New York, N. Y. Salt, 0.064 per cent. Passed.

*W.M.-1062. Drippin Honey Carolina Yams.* D. Carbonella & Sons, Inc., New Haven, Conn. Skins were colored red with coal tar dye; adulterated.

*W.M.-983. Family Brand Chick Peas.* D. F. Foote & Co., Inc., Baltimore, Md. Misbranded because the individual cans were completely unlabelled.

*K.C.-698. Krasdale Southern Yams (Sweet Potatoes) In Heavy Syrup.* Krasdale Foods Inc., New York, N. Y. Water, 70.31, sucrose, 15.06, invert sugar, 4.99, and total sugars, 20.05, per cent. Passed.

*K.C.-625. Old Recipe Home Style Cherry Peppers.* Roberts Food Corp., Brooklyn, N. Y. Labelled: "Ingredients: Cherry Peppers, Distilled Vinegar, and Salt." Test for benzoate negative; passed.

*K.F.-1487. Sweet Potatoes.* First National Stores, Waterbury, Conn. Skins not artificially colored; passed.

*K.F.-1488. Yams.* Capitol Importing Co., Waterbury, Conn. Skins colored red with coal tar dye; adulterated.

In addition to the official samples, 18 samples of dried beets were analyzed spectrographically for nine elements at the request of Mr. H. G. M. Jacobson of our Soils Department, and the same analyses plus nitrogen determinations were made on 18 dried carrot samples for Dr. C. L. W. Swanson of the same department. These analyses are summarized as follows:

#### Dried Beets

	Maximum	Minimum	Average
Potassium, per cent. . . . .	3.20	1.61	2.43
Calcium, per cent. . . . .	0.84	0.44	0.59
Magnesium, per cent. . . . .	0.30	0.19	0.24
Phosphorus, per cent. . . . .	0.34	0.26	0.29
Manganese, per cent. . . . .	0.007	0.003	0.004
Iron, per cent. . . . .	0.054	0.024	0.033
Aluminum, per cent. . . . .	0.100	0.027	0.054
Copper, parts per million. . . .	200.	10.	30.
Boron, parts per million. . . . .	47.	26.	36.

#### Dried Carrots

	Maximum	Minimum	Average
Total nitrogen, per cent. . . . .	1.77	0.94	1.30
Potassium, per cent. . . . .	3.62	2.44	3.01
Calcium, per cent. . . . .	0.69	0.40	0.54
Magnesium, per cent. . . . .	0.25	0.17	0.21
Phosphorus, per cent. . . . .	0.41	0.27	0.34
Manganese, per cent. . . . .	0.008	0.003	0.005
Iron, per cent. . . . .	0.161	0.070	0.099
Aluminum, per cent. . . . .	0.27	0.11	0.19
Copper, parts per million. . . .	19.	14.	16.
Boron, parts per million. . . . .	61.	36.	47.

Four samples of tomato paste were analyzed for a sauce manufacturer and a wholesaler, and one sample of potatoes was examined for a private citizen; four samples were passed and one was adulterated:

*3441. Potatoes.* Food Basket, West Haven, Conn. The skins of these potatoes were dyed red with a coal tar dye, which appeared to be either Amaranth (F.D. & C. Red No. 2), Palatine Scarlet or Crystal Ponceau. Adulterated.

*2134 and 2477. San Bonito Fancy Tomato Paste Made from Whole Ripe Tomatoes.* Hollister Canning Co., Hollister, Calif. Federal Standard 53.30(a) requires tomato paste to contain not less than 25.00 per cent of salt-free solids. Analysis of these two samples showed an average total solids content of 25.07 per cent. Passed.

*5630 and 5631. Tomato Pastes Nos. 1 and 2.* Pepe-Maisano Co., New Haven, Conn. Average total solids content, 26.28 per cent. Passed.

#### Vinegar

Five samples of wine vinegar and one of cider vinegar were examined for the Commissioner, and one sample of honey vinegar was analyzed for a private citizen; four samples were passed and three were adulterated or misbranded:

*1957. Honey Vinegar.* William M. Bradley, New Haven, Conn. Total acidity as acetic acid, 2.15 per cent. Since the General Statutes (G.S. 3896) require a minimum acidity of four per cent for all vinegars, this sample was substandard.

*K.C.-640. Lily of the Valley Pure Cider Vinegar.* Lily of the Valley Food Corp., Newport, R. I. Labelled "Full Strength 5% Acidity." Analysis showed: Total solids, 1.67, ash, 0.24, and total acidity (as acetic acid), 5.15, gm./100 cc.; caramel absent. Passed.

*K.C.-634. Minervini Brand Pure Wine Vinegar.* John Minervini, Hoboken, N. J. Labelled "Reduced with water to 5% acetic strength." Analysis showed: Total solids, 1.63, ash, 0.11, total acidity (as acetic acid), 5.01, and tartaric acid, 0.007, gm./100 cc.; no coal tar dye. Adulterated with distilled vinegar or acetic acid and water.

*J.D.-146 and 147. Testa Brand Pure California Wine Vinegar.* Eugenio Testa, Inc., Boston, Mass. Labelled "Reduced with water to 4% acetic strength." Average analysis was: Total solids, 1.22, ash, 0.19, total acidity (as acetic acid), 4.20, and tartaric acid, 0.075, gm./100 cc.; no coal tar dye. Passed.

*A.L.-266. Torino Pure Wine Vinegar.* J. Ossola Co., New York, N. Y. Labelled "Reduced with water to 5% acetic strength." Analysis showed: Total solids, 1.80, ash, 0.16, total acidity (as acetic acid), 5.12, and tartaric acid, 0.061, gm./100 cc.; no coal-tar dye. Passed.

*K.C.-633. Twin Trees Pure Wine Vinegar.* Twin Trees Gardens, Inc., Lynbrook, N. Y. Labelled in almost microscopic type: "Reduced with water to 5% acetic strength." Analysis showed: Total solids, 1.41, ash, 0.17, total acidity (as acetic acid), 5.14, and tartaric acid, 0.07, gm./100 cc.; no coal-tar dye. Misbranded because of inconspicuous labelling.

**Water**

This Station has never made sanitary analyses of drinking water; the only State laboratory equipped and qualified for analyses in this field is the Laboratory Services Section of the State Department of Health in Hartford. Occasionally we have determined the elemental composition of mineral waters and trade wastes and checked the acidities of well waters to see if they were likely to cause corrosion of copper plumbing. During 1955 three water samples were analyzed for the Food and Drug Commissioner, and 24 miscellaneous samples of well water, etc., were tested for the New Haven Health Department, a telephone company and private citizens—chiefly for pH and hardness. The three official samples were the following:

*A.L.-249. Diamond Sparkling Health Water.* Diamond Ginger Ale Inc., Waterbury, Conn. Labelled "Salt Free, Scientifically Treated and Carbonated—For Table use or as a Perfect Mixer." Analysis showed 4.8 parts per million of sodium and 6.3 p.p.m. of chloride, corresponding to 12.4 p.p.m. of salt (sodium chloride). By comparison, New Haven city water contained 12.2 p.p.m. of salt. The "scientific" treatment had not therefore removed any salt, and sample was misbranded.

*J.S.-346. Water.* City Fish Market, Hartford, Conn. This water was from the same lobster pound as 2604 reported on page 53, but was taken after thorough cleaning and repainting of the tank. No lindane could be detected, indicating that decontamination had been successful.

*J.S.-347. Water.* Lobster Pound, Hartford, Conn. No lindane detected; passed.

Our results on most of the 24 unofficial samples were not of sufficient general interest to justify publication, but the following samples may be noted:

*3741 to 3744. Quinnipiac River Waters.* New Haven Health Dept. These waters were submitted to check the amount of admixture with sea water; results were as follows:

No.	Taken At	Chloride, p.p.m.
3741	Fournier St. culvert near dog pound	26
3742	Orange St. bridge	9
3743	Willow St. bridge	1,663
3744	State St. bridge above tide gates	6,070

Sea water had evidently reached the last two locations.

*4332 to 4334. Water from Hartford Central Office Vault and Manhole.* Southern New England Telephone Co., Hartford, Conn. These samples were submitted in connection with a corrosion problem; results were as follows:

	4332, Water from East End of Trumbull St. Swamp Under Ducts to Pearl St. Vault	4333, Water from Trumbull St. Swamp Trough at West End of Duct Banks	4334, Water Influx at Lower North Duct Entrance
pH.....	9.8	11.7	8.1
Total solids, p.p.m.....	2,228	1,936	490
Non-volatile solids, p.p.m.....	2,148	1,876	370
Volatile solids, p.p.m.....	80	60	120
Total alkalinity as CaCO <sub>3</sub> , p.p.m.....	1,135	1,064	216
Phenolphthalein alkalinity as CaCO <sub>3</sub> , p.p.m.....	190	671	14
Hydroxide, p.p.m.....	.....	95	.....
Carbonate, p.p.m.....	463	472	17
Bicarbonate, p.p.m.....	453	.....	229

Qualitative spectrographic analysis showed appreciable quantities of sodium, lead, calcium and magnesium in all three samples. A portion of 4334 was submitted to the Bureau of Laboratories of the State Department of Health for sanitary analysis to settle the question of sewage contamination; they reported that "The nitrogen constituents . . . are sufficiently low to rule out sewage as a classification for this liquid".

2025. *Well Water.* H. W. Bontemps, Woodbridge, Conn. Mr. Bontemps complained that something in his well water formed a scum in his toilet bowl; the sample submitted contained white jellylike masses that were identified by Dr. Wilson of our Plant Pathology Dept. as a colony of a non-pathogenic iron-and-sulfur-requiring bacterium.

4152. *Well Water.* Boris M. Shaw, Southbury, Conn. This water was contaminated with a trace of fuel oil or kerosene.

### Miscellaneous

Nine samples of miscellaneous food products were submitted by the Commissioner; one sample was passed and eight were adulterated or misbranded:

J.B.-79. *Derit Concentrated Quick Energy Food.* Nutritional Science Corp., Lynwood, Calif. This sample bore labelling much too long to quote in full, but including the following ingredient statement on the front panel: "5-Day Travel Pak Derit (Concentrated QUICK ENERGY FOOD PURE ORGANIC INGREDIENTS—Ingredients from FARM: Grape Dextrose, Hawaiian Honey, Wheat Germ, Alfalfa, Watercress, Parsley, Almonds, Endive, Mint Leaves SEA PLANTS: NEPTON (An exclusive Concentrate of MACROCYSTIS PYRIFERA), Rodymenia Palmata. Chondrus Chripus PLUS Papaya Plant, Primary Grown Yeast, Natural Chlorophyll and Exclusive Organic Flavor—Contains no drugs, artificial stimulants or preservatives."

The statement on the back panel read in part: "A few words about derit—The field of commercially concentrating certain foods has long been an elusive and mysterious scientific problem. Over fifty years of research, including extensive experience on combat rations, has gone into it. Now a processing method has finally brought reality to this scientific dream. Nutritional Science has finally perfected a highly secret formulation, and is now offered commercially for the first time!—With the development of DERIT, busy people everywhere can add these organic foods to their diet simply through the aid of a delicious crisp little wafer! Adding DERIT to the diet helps make up for the consumption of foods improperly grown, improperly processed, improperly stored, and improperly cooked. Housewives, Children, truck drivers, doctors, nurses, salesmen, executives, machinists, industrialists . . . people in every walk of life . . . find DERIT an excellent source of quick energy to help 'hurdle' their daily chores during normal day or evening 'let down' periods.—Shortly after perfection of the DERIT formula, an additional and extremely valuable advantage for DERIT was discovered, quite by accident, in 'appetite satisfaction'. It has, however, proved to be an especially appealing feature of DERIT to men and women who are on strict reducing diets. Most such diets are based on a low-calorie intake, and as such, are of a low-

energy nature. DERIT Organic Energy Food Wafers are an excellent source of low-calorie quick energy and at the same time are exceptionally effective in helping to satisfy hidden hunger for sweets and between meal snacks. As a result, many DERIT users report that they can easily 'skip' a meal a day by munching a few DERIT wafers between meals."

The bottom panel read: "*Guarantee*—DERIT Organic Energy Food Wafers contain eighteen vital certified ingredients. These include both organic land and deep sea plant factors. DERIT is especially formulated to provide NATURAL quick ENERGY. It is hereby UNCONDITIONALLY GUARANTEED that this product is as herein described or entire purchase price will be cheerfully refunded."

Analysis showed: Water, 6.93, protein, 2.63, fat, 1.61, fiber, 0.54, ash, 1.36, and available carbohydrate, 86.93, per cent; calories per 100 grams, 373; calories per tablet, 6.40. Since 348 of the 373 calories (93 per cent) came from carbohydrates (sugar and starch), this product could not be considered a low-carbohydrate food for diabetics; no doubt it was a "quick energy food", whose effect in satisfying "hidden hunger for sweets and between meal snacks" worked on the same principle as sating the appetite by eating a piece of candy before meals. Sample was considered misbranded because the claim that "DERIT Organic Energy Food Wafers are an excellent source of low calorie quick energy" was false and because it was sold as a special dietary food yet failed to meet the requirements for such foods that the percentages of protein, fat and available carbohydrate and the calorie contents be declared.

A.L.-222. *Pop Quik in Butter Flavored Vegetable Oil.* Joyce Food Products, Paterson, N. J. Labelled "Ing. Popping Corn, Pure Vegetable Oil, Artificial Flavoring." Analysis showed 53.23 per cent of fat whose constants were: Butyro refraction, 25°C., 69.6; Reichert-Meissl value 0.52; Polenske value, 0.18; trace of cottonseed oil; no peanut or mineral oil. Adulterated because no butter present.

K.F.-1536. *Royal Gelatin Dessert, Vitamin C Added, Cherry Flavor.* Standard Brands, Inc., New York, N. Y. Labelled as follows: "Sugar—Dextrose—Gelatin—Fumaric Acid—Sodium Citrate—Natural Cherry Flavor—Artificial Flavor . . . U. S. Certified Color and Vitamin C—WHY VITAMIN C?—Unlike some vitamins, the 'Fresh Fruit' Vitamin—C is not stored in the body and should therefore be taken every day. It is essential for everyone's good health, and is especially important to children of sturdy growth, strong bones and teeth. This is the precious vitamin you now give your family in every serving of Royal Gelatin.—Each Serving (¼ package recipe) provides 37½% of a Child's . . . 25% of an Adult's Daily Minimum Requirement of VITAMIN C—VITAMIN C ADDED." Misbranded because not labelled "Imitation Cherry Flavor".

K.F.-1537. *Royal Gelatin Dessert, Vitamin C Added. Pineapple Flavor.* Standard Brands, Inc., New York, N. Y. Labelled same as K.F.-1536 except for type of flavor. Misbranded because not labelled "Imitation Pineapple Flavor".

K.F.-1538. *Royal Gelatin Dessert Vitamin C Added. Raspberry Flavor.* Standard Brands, Inc., New York, N. Y. Labelled same as K.F.-1536



except for type of flavor. Misbranded because not labelled "Imitation Raspberry Flavor".

*K.F.-1449. S & M Dough Mix.* S & M Quality Foods, Brooklyn, N. Y., Labelled: "Contains wheat flour, corn oil. This product will stabilize all dough and aid in moisture retention. Directions—Replace no more than 2% of your flour with S & M Brand Dough Mix." Analysis showed: Moisture, 4.65, lipoids, 6.90, and lipoid  $P_2O_5$ , 0.10, per cent. Constants of the "fat" were: Butyro refraction,  $25^\circ C.$ , 68.5; iodine no., 79, saponification no., 197; no cottonseed, mineral or sesame oil. No coal tar dye was present, but the product was highly colored with a carotenoid or mixture of carotenoids whose absorption pattern closely resembled that of neo-beta-carotene.<sup>20</sup> The fatty material was definitely not corn oil nor any other normal vegetable oil; it was semi-solid at room temperature and only partially soluble in a mixture of alcohol and ether, but completely soluble in ether alone (the official method for lipoids extracted only 6.90 per cent of ether-plus-alcohol-soluble material, whereas a straight ether extraction yielded 37.40 per cent of "fat"). Most probably the bulk of the ether-soluble matter was a synthetic ester of the general type of the "Tweens" and "Spans", any corn oil present having been added purely as a vehicle for the carotenoid coloring matter. It was suspected but not proved that the intended purpose of the carotenoid was to simulate the presence of egg in baked products to which this preparation was added. In any case sample was misbranded because it was not labelled "Artificially Colored" and because the ingredient declaration was incomplete and misleading.

*K.C.-701. Schap's Instant Carbonated Old Fashioned Root Beer.* Schap's Instant Beverages, Inc., San Francisco, Calif. Labelled: "Ingredients: Sugar, Dextrose, Soda, Citric Acid, Milk Sugar, Caramel, Plant Extractives, and Essential Oils of Wintergreen, Hops, Juniper Berries, Birch Bark, Licorice, Sassafras, Yucca, Ginger, Spikenard, Sarsaparilla, and Vanillin (an Artificial Flavor)." This preparation was not root beer as labelled, but a powder base that was supposed to produce root beer when two teaspoonfuls of it were added to one or two ice cubes in a glass and the glass filled with water; the self-carbonating effect was produced by the reaction between the sodium bicarbonate ("soda") and citric acid that took place when water was added to the powder.

Test for saponin negative; passed.

*K.C.-635. Vacuum Packed Smoked Bacon Flavor Filler's Pop Corn in Oil.* Filler Products, Inc., Atlanta, Ga. Labelled "Popcorn in Animal Oil." Analysis showed 26.67 per cent of fat whose constants were: Butyro refraction,  $25^\circ C.$ , 55.4; iodine no., 73; saponification no., 193; coal tar dye present. Net contents were 8.47 oz. as against 8 oz. declared.

The above fat constants indicated that the "Animal Oil" was probably lard oil; sample was misbranded because it was not labelled "Artificially Colored" and because "Animal Oil" was not a specific name.

*K.F.-1486. Vanilla Cream Filling Powder.* Manufacturer unknown. Labelled "For the filling of Pies, Eclairs, Donuts, Tarts, Cakes and Fancy

<sup>20</sup>Beadle, B. W., and Zscheile, F. P., J. Biol. Chem., 144, 26 (1942)

Pastries." Directions for using were as follows: "Place in a kettle and bring to a boil 2 quarts water, 1 lb. sugar. Place in another bowl 1 lb. Johnson's Vanilla Cream Filling Powder, 8 ozs. sugar, and 3 parts water, and mix well using a wire whip. When the water and sugar have come to a good boil add the cold mixture and cook until thick and smooth.—For best results pour filling into a clean shallow pan and cool quickly.—NOTE. When richer cream filling is desired add the yolks of two eggs and ½ oz. butter. This cream may be used for all types of fancy pastries."

Analysis showed: Water, 9.15, lipoids, 0.74, and lipoid  $P_2O_5$ , 0.024, per cent; coal tar dye present. This analysis indicated that no egg was present, and that therefore baked goods containing fillings made from this product would not have to be kept under refrigeration from April through September. Sample was misbranded, however, because it bore no manufacturer's name or address nor ingredient statement and was not labelled "Artificially Colored".

Seventy-eight unofficial samples of miscellaneous foods and other materials were also examined for the State Supervisor of Purchases, town health departments, physicians, veterinarians, a telephone company, police and private citizens. Fifty-nine samples were passed and 19 were considered misbranded, substandard or otherwise objectionable. Included were four dessert preparations from the State Supervisor of Purchases, 10 samples of paint from cars involved in hit-and-run cases submitted by Clinton, New Britain, Wallingford and West Haven police and an attorney, and 26 samples of soybeans and leaves analyzed spectrographically for iron and manganese for a cigar company. Results on 49 of these samples were of minor interest and are not reported here; the other 29 were the following:

*5689. Blackstrap Molasses.* W. L. Slate, The Connecticut Agricultural Experiment Station. Total ash, 7.50, potassium, 2.40, calcium, 1.05, and magnesium, 0.27, per cent; manganese, 19, iron, 263, aluminum, 38, copper, 25, and boron, 15, parts per million.

*3276. Cheerios, the Oat Cereal Ready to Eat.* General Mills, Inc., Minneapolis, Minn. Labelled: "1 oz. of Cheerios provides these percentages of minimum daily adult requirements: 2% riboflavin (0.038 mg.) niacin (no. min. standards adopted) (0.5 mg.)." Assay showed: Riboflavin, 0.040, and niacin, 0.49, mg./oz. Passed.

*2175. Chocolate Flavor Lovely Pudding.* General Desserts Corp., New York, N. Y. This sample was submitted by the State Supervisor of Purchases for examination for compliance with Federal Purchasing Specification C-D-221a.3.5.1 for Type III Dessert Powder, Chocolate Flavor, Prepared with Starch. This specification called for not more than 30 per cent of starch nor more than 75 per cent of sweetening ingredients, and not less than 14 per cent of cocoa, and also stated that when a mixture of sucrose and dextrose was specified the percentage of dextrose should not exceed 40. Analysis showed: Water, 3.41, gelatin, 1.94, sucrose, 50.05; dextrose, 11.04, starch, 27.08, citric acid, 0.17, salt (NaCl), 1.22, other mineral matter, 0.38, and undetermined, 4.71, per cent. Passed.

*1742. Cloth with Wipings from Kitchen Wall.* Mrs. A. J. Schellbach, Hamden, Conn. This sample was submitted in an attempt to find out why



yellow stains were appearing on the newly painted white wall of a kitchen. The cloth gave a positive test for free sulphuric acid; it was postulated that the yellow stains resulted from reaction between lead in the paint and hydrogen sulphide in the illuminating gas, and that the sulphuric acid had been formed by oxidation of sulphur compounds in the gas when the gas was burned.

4335. *Deposit on Subvault, Central Office.* Southern New England Telephone Co., Hartford, Conn. This sample was submitted with the water samples 4332 to 4334 reported on page 58, as part of the same corrosion investigation. Calculated composition from the analysis was: Calcium carbonate, 92.48, magnesium carbonate, 2.28, sodium carbonate, 0.23, acid-insoluble (silica, etc.), 0.75, chloride, less than 0.01, and water and undetermined (by difference), 4.26, per cent; trace of lead; no sulphate or phosphate.

2174. *Dessert Powder.* Manufacturer unknown. This sample was submitted by the State Supervisor of Purchases for examination for compliance with the specifications for Type III Dessert Powder, Prepared with Starch, which are listed under 2175 above. Analysis showed: Water, 4.08, gelatin, 1.55, sucrose, 41.86, dextrose, 21.72, starch, 24.43, citric acid, 0.13, salt, 0.99, other mineral matter, 0.46, and undetermined, 4.78, per cent. Passed.

2173. *Fruit Flavored Gelatin.* Seaman Bros., Inc., New York, N. Y. This sample was submitted by the State Supervisor of Purchases for examination for compliance with Federal Purchasing Specification C-D-221a. 3.4.1 for Type II Dessert Powder (Flavored), Prepared with Gelatin. This specification called for between 8 and 12.5 per cent of gelatin, between 2.5 and 3.5 per cent of fruit acids, buffering salts to a quantity not exceeding 33 per cent of the fruit acid, and sufficient flavoring and coloring, with the balance being made up of sucrose (or a mixture of sucrose and dextrose if so specified, in which case 80 per cent of the total sugars had to be sucrose). Analysis showed: Water, 2.65, gelatin, 6.72, sucrose, 68.89, dextrose, 17.40, citric acid (anhydrous), 1.62, sodium citrate, 0.57, salt, 0.27, and undetermined, 1.88, per cent. Sample failed to meet the specifications for gelatin and fruit acid.

3277. *GRO-PUP RIBBON Protective Dog Food for Dogs of All Ages.* Kellogg Co., Battle Creek, Mich. Riboflavin, mg./lb.: Declared, 2.5; found, 4.4. Niacin, mg./lb.: Declared, 27.5; found, 31.2. Passed.

5691. *Honey with Comb.* W. L. Slate, The Connecticut Agricultural Experiment Station. Analysis showed: Total ash, 0.20, potassium, 0.06, calcium, 0.01, and magnesium, 0.003 per cent; phosphorus, 81, manganese, 0.6, iron, 8.8, aluminum, 0.7, copper, 0.2, and boron, 3.0, parts per million; no zinc.

4994. *Insects Suspected of being Termites.* Mrs. Harold R. Baker, Mt. Carmel, Conn. These were not termites but large yellow ants.

4153. *Material Collecting in Holding Tube of Short-Time Pasteurizer.* S. A. Washburn, Cheshire, Conn. Identified as a vegetable gum.

1743. *Material Packed with Sugar to Keep It Dry.* John Milone, Ham-

den, Conn. This material was identified as silica gel beads; these beads contained 1.70 per cent of iron and a trace of silver.

3692. *Material Suspected of being Ambergris.* Alex Blackton, Southbury, Conn. Identified as paraffin.

4013. *No. 416 National Snow White Ready Mixed Greenhouse Paint.* National Greenhouse Co., Pana, Ill. Qualitative spectrographic analysis indicated that this paint contained some mercury (percentage unknown).

4014. *No. 422 National Aluminum Paint for Greenhouses.* National Greenhouse Co., Pana, Ill. Mercury absent.

4960. *Oil Collecting in Cellar.* David Youlovsky, Hartford, Conn. The following distillation analysis of this oil indicated that it was No. 2 fuel oil: Initial boiling-point, 356°F.; 10 per cent distilled at 401°F.; 50 per cent distilled at 470°F.; 90 per cent distilled at 595°F.; end point, 608°F.

1657. *Paint.* Spaulding Gardens, Suffield, Conn. Analysis showed 800 parts per million of mercury. This mercury had been added as a mercurial fungicide, claimed to be di-(phenylmercuric) dodeceny succinate. Roses growing in a greenhouse painted with this paint became discolored, and it was eventually proved that the damage had been caused by elemental mercury vapor produced by decomposition of the organic compound.<sup>21</sup>

1844. *Sawdust.* Mrs. Charles R. Higgins, Pomfret Center, Conn. Mrs. Higgins stated that this sawdust was from wood used in making axe handles which had been treated with a preservative whose fumes made the men working on the handles "get dizzy at times and come home at night feeling sort of sick all over". The sample was not analyzed, but inquiry of the manufacturer by Dr. J. Howard Johnston of the Bureau of Industrial Hygiene of the State Department of Health revealed that the preservative used was "Vancide 101", a 40 per cent solution of pentachlorophenol in a mixture of petroleum solvents, diacetone alcohol and higher aromatic compounds. It was also learned that the axe manufacturer had abandoned use of the preservative, which had been employed only on a small special order of axe handles.

5701. *Sawdust for Mixing with Soil.* Johanna Waldemar, M.D., New Haven, Conn. This sample was submitted to find out if it contained a primary irritant; examination showed that it was mixed with sharp steel chips and shavings and contained a little mineral oil. The steel chips could cause small cuts in the skin of a person handling the sawdust incautiously.

2937 and 4300. *Somo's Antipasto.* Anthony Somo, Shelton, Conn. Labeled "Contents Peppers—Eggplant—Onions—Celery—Vinegar—Pure Olive Oil—Seasoning—1/10 of 1% Benzoate of Soda." Analysis showed 0.15 and 0.03 per cent respectively of sodium benzoate; 2937 contained excessive sodium benzoate and 4300 was passed.

5690. *Strained Honey.* W. L. Slate, The Connecticut Agricultural Experiment Station. Analysis showed: Total ash, 0.09, potassium, 0.03, calcium,

<sup>21</sup>Conn. Agr. Expt. Sta. Bul. 595 (1955)

0.008, and magnesium, 0.002, per cent; phosphorus, 80, manganese, 0.3, iron, 3.4, aluminum, 0.5, copper, 0.3, boron, 5.0, zinc, 1.5, and lead, less than 0.5, parts per million.

3490 and 3491. *Tide*. Charles N. Sullivan, M.D., New Britain, Conn. These two washing powder samples were submitted because of a patient's complaint that they caused a skin eruption. Analysis showed that this product was an anionic synthetic detergent of the type of sodium lauryl sulphate, containing no soap or free caustic; the pH of a one per cent solution was 9.80.

4125. *T-Shirt*. Mrs. Frank Garguilo, West Haven, Conn. This shirt had been hanging on a line next door to some trees that had been sprayed with DDT; shortly after the spraying it had rained, and the clothes on the line had become stained. The sample was submitted to settle a dispute as to whether it was the spray or dust from construction work that had discolored the clothes. Analysis showed that the shirt contained seven parts per million of DDT, thus proving that some of the spray had been deposited on the clothes.

3606. *Unknown Insect*. Clarence E. Joyce, Mt. Carmel, Conn. This insect was identified as a hibernating adult elm leaf beetle.

4244. *Uranium Ore*. Dr. Joseph D'Amico, New Haven, Conn. This ore was radioactive, and qualitative chemical analysis proved that uranium was present. The method used was as follows: The ore was fused with sodium carbonate and the fusion product acidified with nitric acid, evaporated to dryness, and the residue extracted with ether.<sup>22</sup> The ether extract was evaporated to dryness, and the residue treated according to Noyes, Brag and Spear<sup>23</sup>, isolating the uranium as the white uranyl ammonium phosphate and confirming its presence by formation of the dark red ferrocyanide. Both of these compounds were shown by a Geiger counter to be radioactive.

2391. *White Mineral*. Raymond Marcaux, Prospect, Conn. This material proved to be diatomaceous earth; analysis showed: Silica, 85.8, other mineral matter, 6.7, and water, 7.5, per cent.

2176. *White Rose Imitation Cherry Flavor Gelatin Dessert*. Seaman Bros., Inc., New York, N. Y. Submitted by the State Supervisor of Purchases for examination for compliance with the specifications for Type II Dessert Powder (Flavored), Prepared with Gelatin, outlined under 2173 above. Analysis showed: Water, 1.98, gelatin, 6.16, sucrose, 76.67, dextrose, 14.62, citric acid (anhydrous), 1.95, sodium citrate, 0.60, salt, 0.23, and undetermined, 3.79, per cent. Sample was deficient in gelatin and fruit acid.

## DRUGS

### Barbiturates

Four official samples of barbiturate preparations were received from the Commissioner; two samples were passed and two were adulterated or misbranded:

<sup>22</sup>M. Allen Northup, *Ind. Eng. Chem., Anal. Ed.*, 17, 667 (1945)

<sup>23</sup>Technology Quarterly, 21, 40—49 (1908)

J.S.-358. *Barbised Richale*, Serial No. 5572550. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Antispasmodic and sedative.—Each tablet contains: Sodium Pentobarbital 1/8 grain, Phenobarbital 1/8 grain, Hyoscyamine Sulfate 0.1037 mg., Atropine Sulfate 0.0194 mg., Hyoscine Hydrobromide 0.0065 mg." This formula is equivalent to 0.239 grain/tablet of total free barbiturates; analysis showed 0.243 grain/tablet. Passed.

J.S.-354. *Bi-Sed Richale Sedative*, Serial No. 5582550. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Each tablet contains: Pentobarbital Sodium 1/8 grain Phenobarbital 1/8 grain." This formula is equivalent to 0.239 grain/tablet of total free barbiturates; analysis showed 0.250 grain/tablet. Passed.

A curious phenomenon was discovered during examination of this sample: When an attempt was made to analyze for the individual barbiturates by infrared spectrophotometry it was discovered that while the infrared patterns of two lots of purified phenobarbital (prepared from material of two different manufacturers) were identical, these patterns differed substantially from those of supposed free phenobarbital prepared from sodium phenobarbital tablets of Merck and Lilly by dissolving in water, acidifying, and extracting with ether. We did not have time to pursue this study any further, and can only speculate that the phenobarbital extracted from the sodium salt may have been in a different tautomeric form.

J.S.-361. *Elixir Uvatal*. Richale Pharmaceutical Co., Hartford, Conn. Analysis, as compared to labelled claims, was as follows:

	Declared	Found
Phenobarbital, gm./100 cc.....	0.86	0.71
Alcohol, per cent by volume.....	37.5	34.20

Sample was passed as to composition but was adulterated because its label failed to state that it was double the strength of U.S.P. XIV Phenobarbital Elixir in both phenobarbital and alcohol.

J.S.-377. *Seconal gr. 3/4*. Mary Woodcock, Hartford, Conn. This sample consisted of a small vial (found in possession of an addict) containing four small orange-red capsules that analysis showed to be 0.58 grain secobarbital sodium capsules, probably manufactured by Eli Lilly & Co. under their trade name of "Seconal Sodium". Deficient in secobarbital sodium.

### Narcotics

Twenty miscellaneous unofficial samples were analyzed for the presence of narcotics at the request of city and town police and an attorney. The police departments involved and the number of samples each submitted were: Bridgeport, eight; New Haven, seven; and Darien, Hamden, Wallingford and Waterbury, one each. Seven samples were found to contain Heroin, three marijuana, and one an unidentified opium alkaloid; the other nine samples were free of narcotics.

### Para Amino Salicylic Acid

Para-aminosalicylic acid is used in combination with streptomycin in the treatment of tuberculosis. In 1950 we analyzed five samples of this compound in an attempt to find the answer to complaints from two State sanatoria that solutions of a certain lot of the acid darkened as soon as prepared, had an abnormal taste and odor, and caused nausea, vomiting and diarrhea.<sup>24</sup> At that time solutions of sodium p-aminosalicylate were being prepared extemporaneously immediately before consumption by two formulas, of which one called for dissolving 40 grams of the acid and 25 grams of sodium bicarbonate in 300 cc. of distilled water, and the other required dissolving 100 grams of the acid and 60 grams of the bicarbonate in 500 cc. of water; the respective doses were 25 cc. and 20 cc., given three times a day.

In recent years the pure sodium salt of p-aminosalicylic acid has appeared on the market, and "New and Non official Remedies" for 1953 gives standards and methods of assay for both the free acid and the sodium salt.<sup>25</sup> These methods were used in testing one sample each of the free acid and the sodium salt submitted by the State Supervisor of Purchases in 1955; an official sample of a solution of the sodium salt was also examined for the Commissioner:

*J.S.-371. Liquid Parasal.* Daniel Raymond, Hartford, Conn. This sample was received with a complaint that it "caused nausea and appears to have a different taste and odor". "Parasal" is the trade name of the Panray Corporation, New York, N. Y., for their brand of p-aminosalicylic acid; whether this solution was made by them we do not know. The sample as received was a dark brown liquid with little odor, contained in an unlabelled plastic vial. The infrared pattern of an ether extract of this solution corresponded essentially to that of p-aminosalicylic acid, but since it was known that solutions of sodium p-aminosalicylate decarboxylated to m-aminophenol on standing, and that m-aminophenol in turn decomposed to brown condensation products,<sup>26</sup> there could be little doubt but what these changes were responsible for the complaints about this sample. Calculated composition of *J.S.-371* from solids, ash and nitrogen determination was: Sodium p-aminosalicylate, 21.13, sodium bicarbonate, 0.68, and undetermined, 0.77, gm./100 cc.

*785. PAS NNR.* Chemo-Pure Mfg. Corp., New York, N. Y. Melting-point 131-134°C; p-aminosalicylic acid, 101.2 (by NNR method), moisture, 0.00, and ash, 0.12, per cent. Passed.

*786. PAS Sodium NNR.* Chemo-Pure Mfg. Corp., New York, N. Y. Sodium p-aminosalicylate dihydrate, 93.58 (by NNR method), and moisture, 17.05, per cent; color, white; pH of 2 per cent solution, 7.3; ratio of absorbancies at 265 and 299 millimicrons, 1.52; arsenic, none. This sample did not quite meet the NNR minima of 97.5 per cent sodium aminosalicylate dihydrate and 12.8 per cent sodium (sodium found was only 10.18 per cent).

<sup>24</sup>Conn. Agr. Expt. Sta. Bul. 558, 65-66 (1952)

<sup>25</sup>Tests and Standards for New and Nonofficial Remedies, 1953, pp. 11-12 and 273-274

<sup>26</sup>Lancet, 254, 191 (1948)

### Prescriptions

Three official samples of drug prescriptions were examined for the Commissioner, and one unofficial sample each was analyzed for the Food and Drug Commission and two pharmacists; two samples were passed and four were found to be adulterated or otherwise objectionable:

*2232. Ointment.* Baldwin Pharmacy, Waterbury, Conn. This ointment was furnished to the pharmacy by a drug supply house on a prescription calling for three ounces of compound tincture of benzoin to one pound of ointment of zinc oxide, and was suspected of containing too little benzoin because of its light color. Such a mixture should contain 17.09 per cent of zinc oxide and at least 11 per cent of volatile material (alcohol plus water). Since analysis showed 24.77 per cent of zinc oxide and only 7.41 per cent of volatile matter the pharmacist's suspicion was verified.

*2017. Potassium Dichromate Tr. Ferric Chloride.* Humphrey Pharmacy, New Haven, Conn. This preparation had been submitted to the pharmacy for duplication, and the pharmacist requested an analysis and opinion of the safety of the mixture. Analysis showed: Potassium dichromate, 3.66, and ferric chloride, 0.61, gm./100 cc. This represented a concentration of 16.7 grains of potassium dichromate per fluid ounce, and in the light of the following comments of the U. S. Dispensatory on potassium dichromate it was reported to the pharmacist that the mixture called for would be a pretty dangerous remedy:

"In overdose it is a violent irritative and corrosive poison, producing severe vomiting, frequent dark hemorrhagic dejections, violent abdominal pains, nephritis, pronounced disturbances of the circulation, coma, heart failure, collapse, etc. Less than an ounce has caused unconsciousness in five minutes, with death thirty-five minutes later."<sup>27</sup>

*J.S.-323. Prescription of Eugene M. Blake, M.D.* Mrs. Victor S. Johnson, New London, Conn. The prescription called for a solution of 0.15 gm. of pilocarpine hydrochloride in 15 cc. of 2 per cent boric acid solution; it had been filled at a drugstore unknown to us. Analysis showed: pH, 5.25; total solids, 0.43 gm./15 cc. (calculated from the prescription, 0.45 gm./15 cc.); alkaloids by titration, 0.0092 gm./15 cc.; infrared pattern not that of pilocarpine, atropine or physostigmine. Adulterated with an unidentified alkaloid.

*J.S.-326. Prescription No. 147538.* Mrs. Peter Dion, Willimantic, Conn. This prescription was filled at a pharmacy unknown to us; it called for 100 five-milligram Stilbestrol tablets, and Mrs. Dion suspected substitution because the last lot of tablets she had received had been red-coated while those she had obtained previously had been white. The sample comprised three each of red and white tablets; analysis showed respectively 5.29 and 5.22 mg./tablet of stilbestrol. Passed.

*J.S.-378. Prescription No. 219-859.* F. & L. Drug Corp., Hartford, Conn. This prescription called for "Rectalgan", which is a preparation manufactured by Mallon Chemical Corporation Division, Doho Chemical Corp., New York, N. Y., described as an "Anesthetic, astringent, anti-

<sup>27</sup>U. S. Dispensatory XXIV, 1556 (1947)

phlogistic and antispasmodic, containing benzocaine 4.5%, carbolic acid 1.75%, menthol 0.5%, ephedrine 0.125%; dissolved in oils (Mallon Process).<sup>28</sup> Analysis showed: Phenol, 1.68, and ethyl p-aminobenzoate (Benzocaine), 4.41, per cent. Passed.

4679. *Prescription No. 271179*. Brattleboro Drug Co., Brattleboro, Vt. This sample was submitted to the Food and Drug Commission by a Miss Mary Lillis of Hartford, who stated that she had paid \$25.00 to have this prescription of a now-deceased physician filled at the above drugstore which is now out of business; she wanted to have the sample analyzed so that she could get the prescription refilled elsewhere. Analysis showed: Zinc oxide, 12.85, boric acid, 5.25, and volatile matter, 0.52, per cent; odor, menthol-eucalyptol. A similar preparation could readily be made at little cost by mixing equal quantities of two official drugs: Zinc Oxide Ointment U.S.P. XV and Boric Acid Ointment N.F.X.

### Vitamin Preparations

Six official and two unofficial samples of vitamin preparations were assayed; six samples were passed and two were adulterated and misbranded:

4250 and J.S.-359. *Cebplex with 5 MCG B<sub>12</sub> Improved Richale*. Richale Pharmaceutical Co., Hartford, Conn. Analyses, as compared with claimed concentrations, were as follows:

	Declared	4250 Found	J.S.-359 Found
Riboflavin, mg./"candle"	5.0	4.26	4.24
Ascorbic acid, mg./"candle"	150.0	118.	.....
Calcium pantothenate, mg./"candle"	3.0	.....	1.92
Nicotinamide, mg./"candle"	30.0	26.3	26.9

Neither sample came within 10 per cent of the claimed concentration of any vitamin that was assayed for, with the one exception of the nicotinamide in J.S.-359; this latter sample contained only 64 per cent of the declared calcium pantothenate. Adulterated and misbranded.

J.S.-350. *Elixir Betwelv Plus*. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Vitamin B<sub>12</sub> with Thiamin HCl Folic Acid and Iron Elixir—Each 5 cc. (approx. 1 teaspoonful) contains: ALCOHOL 10% BY VOLUME—Thiamine HCl (Vit. B-1) 10 mg., Vitamin B-12 25 mcg., Folic Acid 0.5 mg., Ferrous Gluconate 250 mg. (providing 28.95 mg. elemental iron). In a specially prepared, palatable vehicle." Analysis showed 9.21 per cent of alcohol by volume; not further assayed. Passed.

J.S.-369 and 370. *Faratol Improved Multi-Vitamin Formula with Minerals Plus Vitamin B-12 15 mcg.* Faraday Laboratories, Newark, N. J. These samples were from a drugstore in which there had been a fire; because the cartons and bottles were spotless and had no odor of smoke both samples were passed.

J.S.-355. *Multi-Drops Richale Multiple Vitamin Drops, Serial No. 4091193*. Richale Pharmaceutical Co., Hartford, Conn. Labelled as "A dietary supplement for the treatment and prevention of Vitamin

deficiencies, particularly in infants and children." Riboflavin, mg./0.6 cc.: Declared, 0.4; found, 0.35. Niacinamide, mg./0.6 cc.: Declared, 5; found, 5.53. Declared dosage of "Panthenol" (pantothenyl alcohol) was 2 mg./0.6 cc.; when assayed for calcium pantothenate by A.O.A.C. Method 38.52-38.55 sample showed no activity, but this method does not work with pantothenol. Passed.

4262. *Multi Vitamin C.O.A.* State Supervisor of Purchases. Assays, as compared with declared concentrations, were as follows:

	Declared	Found
Vitamin D, U.S.P. units/capsule.....	1,000	Satisfactory
Riboflavin, mg./capsule.....	5	4.47
Niacinamide, mg./capsule.....	150	144.
Ascorbic acid, mg./capsule.....	150	156.

Passed.

J.S.-349. *Precal Plus Richale, Serial No. 5025142*. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Well balanced mineral and vitamin supplement during pregnancy and lactation with Aluminum Hydroxide Gel." Calcium lactate, ferrous sulfate exsiccated and 10 vitamins were declared, besides Aluminum Hydroxide Dried Gel, U.S.P., but only the following three vitamins were tested for:

	Declared	Found
Riboflavin, mg./6 tablets.....	2.5	2.2
Niacin, mg./6 tablets.....	15.0	16.2
Calcium pantothenate, mg./6 tablets..	5.0	4.9

Passed.

### Miscellaneous Drugs

Thirteen official samples of miscellaneous drugs were submitted by the Commissioner, and nine unofficial samples were examined for the Food and Drug Commission, the State Department of Health, the New Haven police, two druggists and a private citizen. Thirteen samples were passed and nine were adulterated, misbranded or otherwise objectionable:

R.W.-385. *Aspirin*. Norwich Police Dept. These tablets were found in the quarters of a derelict who had died of accidental burns while unconscious from consuming paraldehyde; analysis showed that they were aspirin tablets as marked. Passed.

J.S.-336. *Gold Seal Saccharin Soluble*. DeVore Mfg. Co., Inc., New York, N. Y. Sodium saccharin, grains/tablet: Declared, 1/2; found, 0.64. Excess of sodium saccharin over guaranty was 28 per cent instead of the 10 per cent maximum permitted by the U.S.P. XIV; in addition, the tablets had a creosote odor. Adulterated.

J.S.-365. *Metrazol Ampules*. Bilhuber-Knoll Corp., Orange, N. J. Labelled "Each cc. contains 1 1/2 grains (0.1 Gm.) Metrazol in aqueous solution with 0.1 per cent sodium phosphate." Metrazol present; passed.

J.S.-356. *Mixture Pectikal Richale Mixture Kaolin & Pectin, Serial No. 5592550*. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Each tablespoonful (15 cc.) contains: Kaolin 40 grs., Pectin 2 grs. together with glycerin, saccharin, peppermint flavoring, F. D. & C. color

<sup>28</sup>Modern Drug Encyclopedia and Drug Index, 6th Ed., p. 895

and preservative." Total ash was only 32.9 grains/15 cc., so kaolin content was deficient. Adulterated.

*J.S.-367 and 368. Rauserp Tablets.* Fitzgerald Products, Inc., Hartford, Conn. These tablets were labelled as containing respectively 50 and 100 milligrams of *Rauwolfia Serpentina*, a drug used as a tranquilizer and antihypertensive. Because no method of assay for *Rauwolfia* or its alkaloids was then available, both samples were passed.

*J.S.-352. Rubicol Richale.* Richale Pharmaceutical Co., Hartford Conn. Analysis, as compared with the declared composition, was as follows:

	Declared	Found
Alcohol, per cent by volume.....	5	4.69
Desoxyephedrine hydrochloride, mg./5cc.	1	1.02
Sodium citrate, grains/5 cc.....	1	1.01

Passed.

*W.S.-485. Sleepyn.* Florida Utilities, Chemical Division, Miami, Fla. Labelled: "You sleep naturally with Sleepyn relieves insomnia—Relieves Restlessness, Nervous Tension, Irritability—Effective to induce quiet and rest for simple nervous sleeplessness and restlessness from over-stimulation—Contents: 9 tablets—Salicylamide 100 milligrams, Passiflora P.E. 100 milligrams." This sample was submitted to the Connecticut Committee on Foods, Drugs, Cosmetics and Devices for comment; they found no objection to it, so it was passed.

*5430 and 5431. Solutions of Aspirin in Alcohol and Propylene Glycol.* Mike Dworkin, Stamford, Conn. These were experimental preparations designed to determine whether aspirin were more stable in propylene glycol than it was in alcohol; they had stood for eight months when they were submitted to us for analysis. Analyses were as follows:

	5430 (alcoholic solution) gm./100 cc.	5431 (propylene glycol solution) gm./100 cc.
Acetylsalicylic acid.....	1.11	3.39
Free salicylic acid.....	1.00	0.08
Total original aspirin (calc.)	2.41	3.49

These analyses indicated that while 42 per cent of the aspirin originally dissolved in the alcohol had hydrolyzed to salicylic and acetic acids in eight months, only 2 per cent of that dissolved in propylene glycol had undergone a similar decomposition in the same time.

*J.S.-372. Stibacol Syrup.* G. F. Harvey Co. Labelled: "Each fluid-ounce contains: Dihydrocodeinone Bitartrate 1/6 gr. (Warning: May be habit-forming), Chloroform (when bottled) 2 min., Potassium Guaiacol-sulfonate 8 gr., Ammonium Chloride 8 gr., Tartar Emetic 1/8 gr. INDICATED: For prompt relief of upper respiratory tract irritations—tracheal, bronchial, pulmonary." This sample was referred to the Connecticut Committee on Foods, Drugs, Cosmetics and Devices, whose opinion it was that the labelling did not go far enough because it failed to direct consulting a physician if a cough persisted. Misbranded for this reason and for failure to list the manufacturer's address.

*4678. Sulfanilamide.* Thomas L. Riskiewicz, Orange, Conn. This material had been given to Mr. Riskiewicz by the widow of a veterinarian for treating his cattle; he suspected that it was not sulfanilamide as stated because it was water-soluble. Analysis showed that his suspicion was correct; the substance was antimony potassium tartrate (tartar emetic). Adulterated.

Curiously, the identical substitution was found the year before in a tablet received from the University of Connecticut<sup>29</sup>; whether there was any connection between the two cases we do not know.

*J.S.-366. Syringe.* Mrs. Sylvia Tierney, New Britain, Conn. Tests for narcotics negative; passed.

*J.S.-351. Syrup Pedicol Richale Pediatric Cough Syrup, Serial No. 5602550.* Richale Pharmaceutical Co., Hartford, Conn. Sodium citrate dihydrate, grains/fl. oz.: Declared, 60; found, 41.20. Ammonium chloride, grains/fl. oz.: Declared, 8; found, 7.32. Deficient in both ingredients; adulterated.

*5106 and 5107. Tablets.* New Haven Police Dept. These samples were found in possession of a suspected narcotic addict. Analysis showed that both were codeine sulphate tablets; 5107 contained 0.93 grain/tablet of this salt, although the label declared only 0.50 grain/tablet. Adulterated.

*2233. Tablets Cortisone Acetate 25 mg.* Roussel Corp., New York, N. Y. Analysis showed 25.3 mg./tablet of cortisone acetate; infrared comparison confirmed the presence of this compound. Passed.

*W.S.-483. Travlyn Rx.* Florida Utilities, Chemical Division, Miami, Fla. Labelled: "For easy travel—use Travlyn Rx Doctors Formula Motion Sickness Remedy—at sea—on road—on trains—in the air—Effective in relief and prevention AIR, TRAIN, CAR, SEA SICKNESS—Ingredients: 9 tablets, each containing Benzocaine 1/2 gr., Hyoscine Hydrobromide 1/200 gr., Bismuth Subnitrate 1 gr." This sample was referred to the Connecticut Committee on Foods, Drugs, Cosmetics and Devices, whose opinion it was that it should be sold only on prescription.

*998 and 999. Unknown Liquids.* State Dept. of Health. These samples bore labels of Raoul A. Siliciano, M.D., Bristol, Conn. who had dispensed them in a fatal case of pneumonia and poliomyelitis. Analyses were as follows:

*998:* Codeine phosphate, 0.82, and ammonium chloride, 3.18, grains, fl. oz.; red syrup with cherry flavor.

*999:* Phenobarbital, 0.15 gm./100 cc.; alcohol, 8.75 per cent by volume; purplish-red syrup with cherry flavor. This was only about two-fifths the strength of Phenobarbital Elixir U.S.P. XIV, and the flavor was different (cherry instead of orange).

*4680. Unknown Plants.* Herbert Plank, West Haven, Conn. Mr. Plank reported that when his wife touched first these plants and then her eye with her finger the pupil of the eye appeared to enlarge. Examination

<sup>29</sup>Conn. Agr. Expt. Sta. Bul. 602, 61 (1956)

by E. M. Stoddard of our Botany Department showed that while most of the specimens were wild clematis there was one dried *Datura* blossom. *Datura metel* is known to produce a rash on susceptible people, and contains hyoscyne, which is a mydriatic drug.

*W.S.-484. Wakeez.* Florida Utilities, Chemical Division, Miami, Fla. Labelled: "Motorists! Workers! Alcoholics! Fatigued? Weary? Sluggish? Wakeez R (Wake-Ease) Keeps You Awake and Alert! Safe as a cup of tea—Contents Caffeine Alkaloid, Thiamin Chloride. 9 Tablets." This sample was referred to the Connecticut Committee on Foods, Drugs, Cosmetics and Devices, which saw no objection to it. Passed.

### Cosmetics

Twelve official and seven unofficial samples of cosmetics were examined; 11 samples were passed and eight were adulterated or misbranded:

*2929. Camay, the Soap of Beautiful Women.* Procter & Gamble, Cincinnati, Ohio. Labelled: "New! Contains Cold Cream." This sample was submitted by the New Britain Health Department because of a resident's claim that it caused a skin eruption. Analysis showed no free caustic; the soap was very strongly perfumed. It was considered probable that the eruption had been due to hypersensitivity to a perfume ingredient or coconut oil (if present), and the sample was passed.

*3575 and J.S.-363. Dandricide Anti Dandruff Rinse.* King Research Inc., Brooklyn, N. Y. Labelled: "Specifically for Dandruff—Directions for home use: Shampoo hair, rinse and towel dry. Then apply diluted DANDRICIDE solution to scalp, using 3 bottle-capsful to large (8 oz.) glass of water. Massage in thoroughly, then rinse hair with water."

It was our opinion that the flat statement "Specifically for Dandruff" made this product an article "intended for use in the . . . cure, mitigation, treatment or prevention of disease in man", and therefore classified it as a drug under the law; as such, it was misbranded because its label did not declare the active ingredients.

*W.S.-558 and 559. Debutante Bubble Bath.* Daggett & Ramsdell, Inc., Newark, N. J. *W.S.-558* was submitted to the Food and Drug Commission by an attorney whose client had claimed it caused excessive irritation; *W.S.-559* was an unopened one fluid ounce bottle obtained from the distributor for comparison. The colors of these two samples were different, *W.S.-558* being yellowish-orange and *W.S.-559* pink, but their analyses were identical: pH, 5.05; no free caustic; synthetic detergent of type of sodium lauryl sulphate present. Patch tests on the forearms of six members of the laboratory staff showed no irritation from either sample. Passed.

*J.S.-364. Deep Magic Facial Cleansing Lotion.* Toni Co. Division, Gillette Co., Chicago, Ill. This sample (which bore no ingredient statement) was submitted to the Food and Drug Commission by a user who complained that it burned her face. Five members of our staff tried it on their faces with no ill effect, so it was passed.

*J.S.-338. Denture Cleanser.* Dr. I. S. Brownstein, Hartford, Conn. Dr. Brownstein decided to market this product, but wished to be sure

before he did that it contained nothing harmful. The formula was stated to be one part each of sodium bicarbonate and calcium hypochlorite to ten parts of sodium perborate, and the proposed directions were to dissolve a teaspoonful of the mixture in half a glass of water and leave the dentures in this dilution over night. We reported that if the directions were expanded to provide for rinsing the dentures thoroughly with water before replacing them in the mouth no harm could be caused to persons using this preparation.

*4560. Hazel Bishop "Deep Pink" Lipstick.* Hazel Bishop, Inc., New York, N. Y. This sample was received from a man who complained that both his wife and his sister had used this lipstick on two different occasions several weeks apart, with the result each time that their lips became irritated and swollen. Examination showed that the sample was essentially neutral, contained a high concentration of a water-soluble eosine derivative, and had a deep pink color and a rose odor. It is known<sup>30</sup> that eosine in lipsticks has caused dermatitis in some people through its action as a photosensitizer, and the dye concentration was unusually heavy in this sample, which may have helped to cause the symptoms complained of. Since this appeared to be an allergic reaction sample was passed.

*4383. H.L.A.A.* Frederick C. Barrett, M.D., Jewett City, Conn. Dr. Barrett asked for a report on whether this product, stated to be an alcoholic extract of Brazilian herbs, contained anything harmful. Sample was a greenish liquid with a peculiar aromatic odor containing 87.10 per cent of alcohol by volume, only 0.24 gm./100 cc. of total solids, and no ash; traces of chlorophyll and other unidentified organic matter were present, but no alkaloids or salicylic or benzoic acid. It was passed.

*H.P.-191. June Nelson Emollient Cream Formula 21.* June Nelson, Inc., New York, N. Y. This sample was claimed to have caused a rash on the face of a user. Analysis showed no free caustic, and patch tests on five members of our staff yielded no untoward reaction. Passed.

*J.S.-337. June Nelson Hormone Oil.* June Nelson, Inc., New York, N. Y. Because this product was labelled as a "Hormone Oil", and hormones would only be added to produce a medicinal effect, sample was a drug within the meaning of the law, and therefore misbranded because its active ingredients were not declared and it bore no directions for use or warning against unsafe use.

*J.S.-328, 329 and 330. Liquid Prell Radiant Shampoo.* Procter & Gamble, Cincinnati, Ohio. All three samples consisted of apparently identical bright green fluorescent liquids, but the containers differed in size, the net contents being respectively 1.5, 3.5 and 7.0 fluid ounces. The manufacturer's name (but no address) and net contents were given only on the backs of the labels, and consequently could be seen (with difficulty) only by looking through the liquids. Misbranded because "the information required to appear on the label is not prominently placed thereon with such conspicuousness as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use". [G.S. 1591C (c).]

<sup>30</sup>Greenberg, Lester and Haggard, "Handbook of Cosmetic Materials", p. 119 (1954)

5512. *New Super-White Kolynos Toothpaste*. Whitehall Pharmacal Co., New York, N. Y. Lead, one part per million; passed.

3489. *Rapid Shave*. William H. Ryder, M.D., New Haven, Conn. This sample was submitted by Dr. Ryder because a patient had experienced eye and skin irritation after using it. It had a pH of 7.30, and contained no free caustic, but did have a strong odor of methyl salicylate. Sensitivity to methyl salicylate was considered the probable cause of the symptoms; passed.

J.S.-331. *Richard Hudnut New Discovery Pin-Quick Lanolized Pin Curl Permanent with Magic Curl-Control*. Richard Hudnut, New York, N. Y. This sample was submitted because of a complaint by a user that it burned her face and caused the skin to peel off. According to the label the package was supposed to contain a four-ounce bottle of wave lotion, a "Curl Control" and a direction folder, but the "Curl Control" was missing from the sample as received. Analysis of the wave lotion showed: Ammonium thioglycollate, 6.83, free ammonia (NH<sub>3</sub>), 0.89, and lanolin and wetting agent (by difference), 0.72, gm./100 cc.; pH, 9.30.

It was believed possible that the combination of free ammonia with a wetting agent (which would tend to promote penetration of the skin) might have resulted in a primary irritant rather than merely an allergic reaction, but patch tests conducted on the forearms of 30 students of the College of Pharmacy of the University of Connecticut at the request of the Connecticut Committee on Foods, Drugs, Cosmetics and Devices showed no irritation in any case. Sample was therefore passed.

4978. *Soap, Toilet, Liquid, Type 2*. Sisson Drug Co., Hartford, Conn. This sample was submitted by the State Supervisor of Purchases for examination for compliance with State Purchasing Specification 5730-S-40 for concentrated liquid toilet soap. This specification called for "a clear solution of potash soap in water", the soap to be "produced by the saponification of either vegetable oils or distilled vegetable oil fatty acids"; the finished product was to be mildly perfumed and meet the following standards: Minimum anhydrous potassium soap content, 36 per cent; maximum free alkali (as KOH), 0.02 per cent; maximum pH, 8.5. Our analyses<sup>31</sup> showed: Anhydrous soap, 27.44, and free alkali, 0.00, per cent; pH, 10.1. Sample was deficient in soap content and had too high a pH.

W.S.-552. *Stoppette Spray Deodorant*. Jules Montenier, Inc., Chicago, Ill. Misbranded because the only declaration of the manufacturer's name and address and the net contents was on the bottom of the bottle where it would not normally be seen.

## COLLABORATION WITH OTHER DEPARTMENTS

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

	Samples
U. S. Geological Survey (water).....	29
U. S. Treasury Dept. (narcotics).....	1
State Dept. of Health (narcotics).....	95
State Police.....	17
Station departments:	
Biochemistry.....	6
Entomology.....	94
Forestry.....	1
Plant Pathology.....	34
Soils.....	26
Tobacco Laboratory.....	14
	317

## BABCOCK GLASSWARE, ETC.

As required by Sections 3191 and 1340C of the General Statutes, milk and cream test bottles and milk pipettes, and check thermometers used in milk pasteurizing plants, were examined as follows:

	Pieces	Incomplete or inaccurate
Babcock glassware.....	3,396	9
Thermometers.....	31	2

<sup>31</sup>R. C. Griffin, "Technical Methods of Analysis", 2nd Ed., pp. 380-381 (1927)



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