
The 63rd Report on

FOOD PRODUCTS

And the 51st Report on

DRUG PRODUCTS, 1958

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THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
NEW HAVEN

WADDY THOMPSON MATHIS

Waddy Mathis died in his sleep on August 20, 1958 while on a camping trip at Gorham, New Hampshire. He was 57 years old.

Mathis was born in Camden, South Carolina, on December 4, 1900, and attended schools in that city before coming to New Haven and working in the laboratory of the Winchester Repeating Arms Company. He joined the Station staff as assistant chemist in 1923. During World War II he obtained a leave of absence and opened a private laboratory for the analysis of die-casting metals that was equipped with a spectrograph. In 1945 he returned to the Station to run the spectrograph we had just purchased, and remained as spectrographer for the rest of his life.

Mathis pioneered in the use of the emission spectrograph for quantitative analysis of agricultural products for major as well as minor elements, and his article on "Spectrochemical Analysis of Plant Material Using Spark Excitation" [*Analytical Chemistry*, **25**, 943 (1953)] is still the primary source of information in this field. He was the first Referee on Emission Spectrographic Methods of the Association of Official Agricultural Chemists and held this position until his death.

Waddy Mathis had a keen and original mind, and he was self-taught in those fields in which he excelled. It was possibly for this reason that he approached problems with a fresh outlook that enabled him to find solutions that evaded those with more conventional training. One example may be cited: When farmers of the State were unable to grow potatoes in some of their best fields because previous treatment of those fields with benzene hexachloride had caused flavor defects that made the potatoes unmarketable, it was Mathis who suggested that applications of carbon black might tie up the benzene hexachloride and keep it from being absorbed by the potato plants; this treatment worked, and the potato farmers were in business again.

He was also a successful inventor. A series of laboratory marking inks that he devised is still on the market, and at one time ingenious toys of his manufacture were on sale in the department stores.

He is survived by his wife and four children.

CONTENTS AND SUMMARY

OWEN LEVI NOLAN

Owen Nolan died on December 19, 1958 after an illness of six months. He was 70 years old, and had been a member of the Station staff for over 51 years.

Owen was born in the "West Woods" section of Hamden on April 20, 1888, the son of Patrick and Ellen Warner Nolan. His father was an active and successful farmer who served several terms on the Board of Selectmen of Hamden, and Owen lived in that town all his life. He attended the one-room West Woods School and later went to Hillhouse High School in New Haven, where he graduated in 1906 with high honors in mathematics and chemistry.

Being eager to get into chemical work, Nolan approached Dr. Thomas B. Osborne who was then in the midst of the protein studies which were to make him famous, and on May 13, 1907 was taken on as Osborne's laboratory assistant. During the ensuing 13 years he prepared protein hydrolysates and ran many analyses of proteins and amino acids. He worked with D. D. Van Slyke of later fame on determination of the amino acid composition of gelatine, and it was his analytical work on the amide nitrogen of gliadin that led to the joint paper of Osborne and himself [J. Biol. Chem., **43**, 311 (1920)] which first produced evidence of the presence of amido groups in this protein.

On April 1, 1920 Owen moved upstairs to join the Analytical Laboratory as assistant chemist, and thereafter most of his work lay in the fields of feed and fertilizer analysis—fields on which this Station was founded. He became an outstanding expert on Kjeldahl nitrogen determinations, and in 1927 won the American Oil Chemists' Society award for having the most accurate results of all the chemists in the 65 laboratories that participated in the analysis of a check series of cottonseed meal samples; the certificate states that his percentage accuracy for the series was 99.996. In the days before the analysis of dairy products was transferred to the State Department of Health he also ran hundreds of butterfat determinations on milk and ice cream every year, and it was he who gave their laboratory examinations to all applicants for a Connecticut milk-tester's license.

On May 13, 1957 the Station Board of Control presented him with a gold pin with diamond in honor of his having been the first member of the staff to complete 50 years of service.

In his private life Owen was a serious stamp collector; he frequently exhibited at philatelic shows and served several years as president of the New Haven Stamp Club.

He is survived by his wife Teresa Nolan, a son and a daughter. He was both a completely trustworthy analyst and a good man, and we miss him.

Material	Page	From		Total	Adulterated, misbranded or otherwise objectionable
		Food and Drug Commission	Other sources		
Foods					
Alimentary pastes	8	22	1	23	16
Baked products	10	10	....	10	9
Beverages, carbonated, etc.:					
Alcoholic beverages	13	7	9	16	14
Sodas	13	66	....	66	30
Uncarbonated fruit drinks	15	8	....	8	4
Cacao products	17	1	3	4	....
Coffee and tea	17	3	....	3	....
Confectionery	18	8	....	8	4
Contaminated or decomposed foods	19	82	41	123	65
Dairy products:					
Butter	22	1	....	1	....
Cheese	22	8	....	8	5
Chocolate milk drink	22	1	....	1	....
Unfortified whole and skim milk	24	....	7	7	3
Vitamin D milk	24	....	232	232	13
Vitamin-mineral fortified milk	24	....	14	14	2
Vitamins A and D skimmed milk	24	....	5	5	4
Deceptively packed foods	24	17	....	17	15
Eggs and egg products	29	14	....	14	1
Extracts and flavors	29	37	2	39	21
Fish	32	3	....	3	....
Fruit and fruit juice:					
Fresh fruit	33	1	35	36	1
Fruit juice concentrates	33	2	....	2	1
Fruit juices	33	74	23	97	29
Preserved fruit	41	19	....	19	13
Jams and jellies	41	7	....	7	5
Meat and meat products:					
Bologna	43	9	....	9	4
Frankforts	43	35	....	35	27
Hamburg	43	31	6	37	17
Pork sausage	43	15	....	15	6
Other meat products	47	4	....	4	1
Nuts	48	3	....	3	3
Oils, vegetable	48	24	1	25	19
Pickles	49	7	....	7	....
Popcorn	49	25	....	25	22
Preservative	52	1	....	1	1
Pudding mixes	53	....	4	4	3
Spices and condiments	53	8	....	8	3
Spray residues	54	2	754	756	195
Syrups	58	7	2	9	3

CONTENTS AND SUMMARY (Concluded)

Material	Page	From		Total	Adulterated, misbranded or otherwise questionable
		Food and Drug Commission	Other sources		
Vegetables	60	14	13	27	10
Vinegar:					
Cider and distilled vinegar	61	9	1	10	6
Wine vinegar	63	11	....	11	10
Water	63	....	49	49	6
Miscellaneous:					
Cat and dog foods	64	6	....	6	1
Potato chips	64	9	....	9	6
Other miscellaneous products	65	15	38	53	28
Totals		616	1,240	1,856	626
Drugs					
Barbiturates	70	6	....	6	....
Cigarettes	71	2	1	3	....
Vitamin preparations	71	25	5	30	20
Miscellaneous drugs	71	11	15	26	16
Totals		44	21	65	36
Cosmetics	77	2	5	7	1
Collaborative	78	....	275	275	....
Total for all		662	1,541	2,203	663
Babcock glassware, etc.	78	....	1,722	1,722	32

The Sixty-Third Report on FOOD PRODUCTS and the Fifty-First Report on DRUG PRODUCTS 1958

H. J. Fisher

This report summarizes examinations of foods, drugs, cosmetics and miscellaneous materials submitted by the Food and Drug Commissioner and the Commissioner of Agriculture during the calendar year 1958, as well as like materials analyzed for the U. S. Geological Survey, the State Highway Department, the State Police, the State Supervisor of Purchases, 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.

Nineteen hundred and twenty-eight samples of foods, drugs, cosmetics and miscellaneous materials were examined during the year. This was an increase of 327 over the number of samples analyzed in 1957, and exceeded by 163 the all-time record of 1,765 samples set in 1952.

Chiefly due to a survey of the Connecticut milk shed for the presence of DDT conducted by the State Department of Agriculture, the number of food samples examined for spray residues exceeded the number of samples in any individual class of food that was tested for other forms of adulteration or misbranding; the total number of spray residue samples was 756. Other classes of foods of which 100 or more samples were analyzed were: Dairy products (268 samples, of which 232 were vitamin D milk); fruit and fruit juice (154); contaminated or decomposed foods (123); and meat and meat products (100). Of the 65 drug samples 30 were vitamin preparations.

Two members of the department staff died during 1958; obituaries of Waddy Mathis and Owen Nolan appear on the first pages of this bulletin. The resignation of Miss Mary Lucibello was received on April 21, and on May 12 Mr. Werner Mueller (M.S., University of Vermont) took her place as feed and fertilizer analyst.

The writer wishes to express his gratitude to all the members of the staff for their loyal and efficient work. All had some part in making the examinations reported 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, together with Mr. George Smith, Miss Barbara Johnson, and other members of his staff, were responsible for the vitamin D milk and other vitamin assays. Miss Shepard made all of the microscopic examinations and did most of the testing listed under "Contaminated or Decomposed Foods." Mr. Keirstead ran all of the spray residue determinations except for the help in testing milk for DDT received from Mr. Squires and Mr. Hoaglund of the Mitchell Dairy Division of the Borden Company that is noted on page 55. Mr. Mathis handled all spectrographic and infrared analyses until his death on August 20, after which his assistant Miss Agostini carried on with the spectrography in addition to running the flame photometric sodium and potassium determinations.

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 listed herein, and for taking legal action where necessary, rested with Agriculture Commissioner Gill and Food and Drug Commissioner Frassinelli, Division Chiefs Parry, Clark and Plank, and their inspectors. Except insofar as this 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

Eight samples of egg noodles, five of "egg pastina", four of macaroni, three of spaghetti and two of "soup nuts" were examined for the Commissioner, and one sample of spaghetti was analyzed for a manufacturer. Seven samples were passed and 15 were misbranded:

K.F.-1975. Buitoni 20% Protein Enriched Thin Spaghetti No. 2 Spaghetti. Buitoni Food Corp., New York, N. Y. Labelled: "Lowest in starch—Highest in protein." Analysis showed: Water, 7.51, ash, 1.54, protein, 20.46, fiber, 0.18, available carbohydrate, 69.47, and fat, 0.84, per cent; calories/100 gm., 367; riboflavin, 1.3, and niacin, 17.6, mg./lb. Low in riboflavin and niacin; percentages of fat and available carbohydrate and calorie content per helping not declared. Misbranded.

K.C.-960, 1014, 1015 and 1068. Columbia Enriched Egg Pastina. A. Zerega's Sons, Inc., Fair Lawn, N. J. The contents of *K.C.-960* and *1014* were green, and analysis showed them to contain no egg; they were obviously a spinach macaroni product that had been mislabelled, and were consequently misbranded. Average analysis of *K.C.-1015* and *1068* (which were pale yellow) was: Water, 9.75, lipoids, 0.109, and egg yolk solids (dry basis), 4.50, per cent; riboflavin, 2.4, and niacin, 35.9, mg./lb. These two samples were passed.

K.C.-1011 and 1012. Columbia Pure Egg Noodle Products. A. Zerega's Sons, Inc., Fair Lawn, N. J. Water, 10.45, lipoids, 4.57, lipoid P_2O_5 , 0.120, and whole egg solids (dry basis), 7.01, per cent. Passed.

K.F.-1899, 2060 and 2134. Goodman's Pure Egg Noodles Unsalted. A. Goodman & Sons, Inc., New York, N. Y. Labelled: "Made of Finest Flour and Selected Eggs—For Low Sodium Diets—Each 100 gms. of Goodman's uncooked noodles contains approximately 4.8 mgs. of sodium, or less than 1.4 mgs. per ounce.—An average serving of cooked noodles ($3\frac{1}{2}$ oz.) contains less than 1.4 mgs. of sodium and approximately 110 calories." Average analysis showed: Water, 10.58, ash, 0.81, lipoids, 4.57, lipoid P_2O_5 , 0.099, total P_2O_5 , 0.52, calcium oxide, 0.049, magnesium oxide, 0.081, and whole egg solids (dry basis), 4.29, per cent; chloride, trace; sodium, 10 mg./100 gm. These samples were "unsalted" as labelled, but they were misbranded because the sodium content was over twice as great as was declared.

K.C.-1025. Horowitz Margareten Kosher Golden Puff Soup Nuts Garlic Flavored Pareve. Julius Schine, Rosenbaum & Co., Inc., Stratford, Conn. Misbranded because it bore no manufacturer's name or address.

K.C.-1026. Horowitz Margareten Kosher Golden Puff Soup Nuts Onion Flavored Pareve. Julius Schine, Rosenbaum & Co., Inc., Stratford, Conn. Misbranded because it bore no manufacturer's name or address.

K.C.-1016. LaRosa Grade A Enriched Egg Pastina. V. LaRosa & Sons, Inc., Brooklyn, N. Y. Water, 10.25, lipoids, 5.46, lipoid P_2O_5 , 0.130, and egg yolk solids (dry basis), 6.05, per cent; riboflavin, 2.5, and niacin, 39.7, mg./lb. Passed.

K.F.-1976. Pasta Raffinata Extra Buitoni, 121 Millerighi. S.P.A. Gio & Figlii Buitoni, Sansepolcro, Italy. Labelled: "Finest Italian Macaroni Buitoni—Made in Italy—Fabbricata Con Pura Semola Di Grano Duro Tipo O." Misbranded because the statement with regard to composition was not given in English as well as Italian.

K.F.-1968. Pasta Raffinata Extra Buitoni No. 129 Dente di Cavallo. S.P.A. Gio & Figlii Buitoni, Sansepolcro, Italy. Misbranded for same reason as *K.F.-1976* above.

K.F.-2118. Prince Contains 13% Protein Egg Bonnets Noodles, Defatted Wheat Germ Added, Salt Free. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled in part: "SALT FREE:—For persons on low-sodium diets Prince Enriched Spaghetti and Macaroni products are virtually salt free. Each 100 grams ($3\frac{1}{2}$ oz.) uncooked contains about 1.6 milligrams of sodium. An average serving ($3\frac{1}{2}$ oz.) after cooking contains only one-half of a milligram of sodium." Analysis showed: Water, 9.04, protein, 13.17, lipoids, 5.52, lipoid P_2O_5 , 0.10, and egg yolk solids (dry basis), 3.83, per cent; sodium, 11 mg./100 gm. Deficient in egg yolk solids and contained nearly seven times as much sodium as declared; misbranded.

K.F.-2110. Prince Egg Noodles. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled: "Contains 13% Protein—Defatted Wheat Germ Added—Salt Free—Enriched." The same sodium claim was made as for *K.F.-2118* above. Analysis showed: Water, 10.04, protein, 13.28, lipoids, 4.72, lipoid P_2O_5 , 0.10, chloride, 0.18, and egg yolk solids (dry basis), 3.89, per cent; sodium, 14 mg./100 gm. Deficient in egg yolk solids and contained almost nine times as much sodium as declared; misbranded.

K.F.-1894. Prince Now! High Protein Starch Reduced Veta-Roni Low in Calories Linguini Macaroni. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled: "All Prince Products Are Salt-Free." Analysis showed: Water, 9.27, ash, 1.29, protein, 14.59, fiber, 0.25, available carbohydrate, 73.69, and fat, 0.91, per cent; calories/100 gm., 361; sodium, 7 mg./100 gm. Misbranded because not low calorie and because the number of milligrams per 100 grams and per portion were not declared.

K.F.-1895. Prince Now! High Protein Starch Reduced Veta-Roni Low in Calories Shells Macaroni. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled: "All Prince Products Are Salt-Free." Analysis showed: Water, 11.27, ash, 1.94, protein, 13.22, fiber, 0.27, available carbohydrate, 71.34, and fat, 1.96, per cent; calories/100 gm., 356; sodium, 4 mg./100 gm. Slightly low in protein; not low calorie; sodium content not declared. Misbranded.

K.F.-1893. Prince Now! High Protein Starch Reduced Veta-Roni Low in Calories Spaghetti. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled "All Prince Products Are Salt-Free." Analysis showed: Water, 10.37, ash, 1.22, protein, 14.14, fiber, 0.26, available carbohydrate, 72.97, and fat, 1.04, per cent; calories/100 gm., 358; sodium, 6 mg./100 gm. Not low calorie; sodium content not declared; misbranded.

K.F.-1883. Ronzoni Enriched Durum Wheat High Protein Semolina Linguine 17 Flat Spaghetti, Vitamin Enriched. Ronzoni Macaroni Co., Inc., Long Island City, N. Y. Labelled "NO SALT ADDED." Analysis showed: Water, 10.51, ash, 1.07, protein, 12.54, fiber, 0.20, available carbohydrate, 75.14, and fat, 0.54, per cent; riboflavin, 1.1, and niacin, 14.2, mg./lb.; sodium, 5 mg./100 gm. Low in riboflavin and niacin; sodium content not declared; misbranded.

K.F.-2026. San Giorgio Brand Slow-Cured for Firmer Texture & Finer Flavor Pure Folded Egg Noodles, Wide. San Giorgio Macaroni, Inc., Lebanon, Pa. Labelled "Made from durum wheat flour and egg yolks." Analysis showed: Water, 8.95, lipoids, 4.80, lipid P₂O₅, 0.11; and egg yolk solids (dry basis) 5.89, per cent. Passed.

3805. *Spaghetti Containing Five Vegetables.* Genoa Ravioli Co., New Haven, Conn. Water, 26.96; ash, 0.75; salt, 0.012; total P₂O₅, 0.34; calcium oxide, 0.056, and magnesium oxide, 0.059, per cent. Passed.

Baked Products

Six samples of bread, two of pretzels and one each of *Matzos* and toast were submitted by the Commissioner; one sample was passed and nine were misbranded:

K.F.-1974. Arnold Slender Key Extra Protein Light Bread. Arnold Bakers, Inc., Port Chester, N. Y. Labelled: "High Protein is the Key to Appetite Control—47 calories per slice." This sample was not marked "Enriched", but the label did carry a claim that one-half pound would supply various percentages of the minimum daily requirements of thiamine, riboflavin and niacin. Analysis showed: Water, 39.12, ash, 2.85, protein, 17.28, fiber, 0.41, available carbohydrate, 38.74, and fat, 1.87, per cent; calories/100 gm., 225; calories/slice, 45.

Sample met its high protein and calories-per-slice claims, but was misbranded because such a special dietary food should list the percentages of protein, fat and available carbohydrate.

K.C.-1065 and A.L.-436. Dugan's Butter Bread, Thin Sliced Enriched White. Dugan Bros., Inc., Newark, N. J. Labelled: "Made with unbleached flour, water, cane sugar, creamery butter, whole milk, salt, yeast and yeast nutrients.—Dykon, Sodium Diacetate Added To Retard Spoilage As Accepted By Good Housekeeping." Calculated compositions from the analyses were as follows:

	K.C.-1065, per cent	A.L.-436, per cent
Total fat	2.25	4.08
Butter fat in total fat	87	14
Butter fat in sample	2.0	0.6

Most if not all of the fat in *K.C.-1065* was butter fat, so the ingredient declaration was probably correct for this sample (but not for *A.L.-436*). However, *K.C.-1065* was short weight 0.76 oz., and (because at the Federal hearings on bread standardization¹ even the American Bakers' Association did not propose a butter fat content of less than four per cent for butter bread) in our opinion neither sample was entitled to be called "butter bread" and both were misbranded for this reason.

K.F.-1998. Enriched Quinlan's Old Fashioned Pretzels. Quinlan Pretzel Co., Reading, Pa. Analysis showed: Riboflavin, 0.3, and niacin, 4.0, mg./lb. There is no specific standard for enriched pretzels, but Federal Regulation 17.2(a) requires enriched bread, rolls and buns to contain 0.7-1.6 mg./lb. of riboflavin and 10-15 mg./lb. of niacin. Misbranded.

K.F.-2059. Goodman's Round Tea Matzos Unsalted. A. Goodman & Sons, Long Island City, N. Y. Labelled: "Each tea matzo contains approximately 70 calories and not more than .4 mgms. of sodium, or 1.8 mgms. of sodium per 100 gms." Analysis showed 0.8 mg./100 gm. of sodium; passed.

K.F.-1912. Loeb Dietetic Foods Salt-Free Gluten Toast. Loeb Dietetic Food Co., Inc., New York, N. Y. Labelled: "For STARCH RESTRICTED and SUGAR RESTRICTED DIETS—Delicious, low-calorie Loeb Toast helps keep me slim! This package contains fine toast MADE WITHOUT SALT . . . Compared with ordinary white toast ounce for ounce, LOEB DIETETIC TOAST contains LESS THAN HALF the carbohydrates . . . MORE THAN TWICE the protein! . . . almost ONE-THIRD less calories! . . . OUNCE FOR OUNCE! —AVERAGE ANALYSIS: Fat 6.3%, Protein 40%, Carbohydrates 44%, 396 Calories per 100 grams, 45 Calories per slice. SODIUM CONTENT: 12.6 mgs. of sodium per 100 grams. Approx. 11½ mgs. of sodium per slice—INGREDIENTS: Gluten, soy and wheat flour, leavening, calcium carbonate and water. MADE WITHOUT SALT." Analysis, as compared with claims, was as follows:

	Declared	Found
Water, per cent .....	.....	12.31
Ash, per cent .....	.....	3.70
Protein, per cent	40.	35.68
Fiber, per cent .....	.....	0.53
Available carbohydrate, per cent	44.	44.78
Fat, per cent	6.3	3.00
Calories/100 gm.	396.	349.
Calories/12 gm. slice	45.	42.
Sodium, mg./100 gm.	12.6	26.
Sodium, mg./slice	1.5	3.1

¹Federal Register, 15, 5108-5109, findings 60-63 (1950).

On the whole the guaranteed analysis corresponded pretty closely to the facts, but the sodium content was twice as high as claimed, and comparison with the average composition of ordinary toast² showed that this sample contained about three-fourths instead of "less than half" as much carbohydrates and somewhat more rather than "one-third less" calories (the protein content was three times normal). It was therefore misbranded.

A.F.-300. New! Koster's Low Calorie Heidelberg Rye Bread. Koster Bakeries, Inc., Brooklyn, N. Y. Analysis showed: Water, 44.76, ash, 1.97, protein, 7.84, fiber, 0.70, available carbohydrate, 43.24, and fat, 1.49, per cent; calories/100 gm., 218; calories/slice, 52.

Since the average calorie content per 100 grams of Jewish rye bread is 254², the "Low Calorie" claim was justified. However, sample was misbranded because its label did not declare the percentages of protein, fat and available carbohydrate as is required for special dietary foods such as this.

K.C.-1020. Quinlan's Enriched The Original Extra Thin Pretzel Sticks. Quinlan Pretzel Co., Reading, Pa. Riboflavin, 0.3, and niacin, 4.9, mg./lb. Not enriched; misbranded.

K.F.-1911. Stop & Shop Diet Bread, Thinly Sliced. Stop & Shop, Boston, Mass. Labelled: "Calcium Carbonate Added to Retard Spoilage—No Fats of Any Kind Added—Made with wheat, whole wheat, cracked wheat and crushed wheat flours, honey, molasses, yeast, salt, caramel, yeast food, with an addition of soy, barley, oat flours, gluten flours, celery, pumpkin, carrots, parsley, spinach, cabbage, lettuce, sea kelp.—Follow Diet Be Slender with Stop & Shop Diet Bread." Analysis showed: Water, 38.49, ash, 2.23, protein, 9.55, fiber, 0.84, available carbohydrate, 47.60, and fat, 1.29, per cent; calories/100 gm., 240; calories/20 gm. slice, 48; sodium, 601 mg./100 gm.

The sodium content was high, but this was not sold as a "salt-free" bread; in fact salt was listed as one of the ingredients. Neither did the label say anywhere that this bread was low in calories, although the words "Diet Bread" and "Follow Diet Be Slender" carried this implication. The phrase "Diet Bread" was however enough to make it a special dietary food, and it was therefore misbranded because the percentages of protein, fat and available carbohydrate were not declared.

K.F.-2037. Stop & Shop Superior Quality Soft 'N' Rich All-Butter White Sliced Enriched Bread. Stop & Shop, Boston, Mass. Labelled: "PURE CREAMERY BUTTER the only shortening used—IT'S THE BUTTER that makes it better—Calcium Propionate added to retard spoilage as approved by Good Housekeeping Institute.—One half pound of this bread supplies you with at least the following amounts or percentages of your minimum daily requirements for these essential food substances: thiamine (vitamin B-1) 55%; riboflavin (vitamin B-2) 17.5%; niacin (another 'B' vitamin) 5 mgs.; iron 40%." There was also a picture of a quarter-pound pat of butter. Analysis showed: Total fat, 2.90 per cent; butyro refraction of fat, 40°C, 52.5; Reichert-Meissl value of fat, 19.4; Polenske value of fat, 3.0; estimated per cent butter fat in total fat, 66; estimated per cent butter fat in the bread, 1.9. This analysis indicated that at least the major portion of the shortening was butter as claimed. Sample was nevertheless misbranded because not enough butter was present to justify calling this a butter bread (see under *K.C.-1065* and *A.L.-436* above).

²Conn. Agr. Expt. Sta. Bul. 373, 539 (1935).

Beverages, Carbonated, Etc.

Alcoholic Beverages

Seven samples of beer were examined for the Commissioner, and four samples of wine, three of whiskey and one each of gin and an orange drink were analyzed for the New Britain health department, the New Haven police and private citizens. The unofficial samples were mostly tested for alcohol in connection with illegal sales, and are not of general interest. The official beer samples were all submitted to check their net contents; one was passed and six were misbranded:

K.C.-1000. Ballantine Extra Fine Beer. P. Ballantine & Sons, Newark, N. J. Average net volume of six 12-fl. oz. cans was 11.72 fl. oz. Short volume 0.28 fl. oz.; misbranded.

E.C.-1040. Fitzgerald Burgomaster Beer. Fitzgerald Bros. Brewing Co., Troy, N. Y. Average net volume of 24 12-fl. oz. cans was 11.80 fl. oz. Short volume 0.20 fl. oz.; misbranded.

F.M.-44 and 50 and F.P.-340 to 342. Pennsylvania Dutch Old German Brand Beer. Lebanon Valley Brewing Co., Lebanon, Pa. Average net volume of the 42 12-fl. oz. cans comprising *F.M.-44* and *F.P.-340-342* was 11.70 fl. oz.; these samples therefore averaged 0.30 fl. oz. short volume and were misbranded. Average net volume of the 12 cans in *F.M.-50* was 12.15 fl. oz., so this sample was passed.

Sodas

Fifty-four samples of root beer, four of cherry soda, three of strawberry soda, two of grape soda and one each of black raspberry, "cream" and lemon-and-lime sodas were submitted by the Commissioner; 36 samples were passed and 30 were adulterated or misbranded.

All except one of the root beers were tested only for the presence of saponin or other hemolytic foaming agents. Of these 53 samples, 31 gave negative tests and were passed, while 11 contained saponin and 11 non-saponin hemolytic agents and were consequently adulterated. The adulterated samples were the following:

J.B.-323 and 324. Avery's Gold Coin Beverages Root Beer. S. F. Avery, New Britain, Conn. Non-saponin hemolytic agent present.

F.M.-71. Cott Root Beer. Cott Beverage Corp., New Haven, Conn. Trace of non-saponin hemolytic agent present.

F.P.-384. Finast Root Beer. First National Stores, East Hartford, Conn. Non-saponin hemolytic agent present.

P.R.-210. Fo-Me Root Beer. Polar Ginger Ale Co., Worcester, Mass. Saponin present.

J.B.-292. Frostie Old Fashion Root Beer. The Frostie Co., Baltimore, Md. Saponin present.

F.M.-75, 87 and 88. Imperial Club Root Beer. J. Scarpace Bottling Works, New Haven, Conn. Saponin present.

E.C.-1044. Jed's Old Fashioned Root Beer. Red Fox Ginger Ale Co., Providence, R. I. Non-saponin hemolytic agent present.

J. B.-305. Mission Root Beer. Mission Beverages, New Britain, Conn. Saponin present.

F.P.-381 and 386. Nesbitt's Root Beer. Nesbitt Bottling Co., East Hartford, Conn. Saponin present.

E.C.-1045 and 1046 and P.R.-216 and 257. Polar Root Beer. Polar Ginger Ale Co., Worcester, Mass. Saponin present in *P.R.-216*; non-saponin hemolytic agent in the others.

E.C.-1030. Red Fox Creamy Rich Root Beer. Red Fox Ginger Ale Co., Providence, R. I. Saponin present.

F.M.-83. Root Beer. F. A. Mosca Bottling Works, New Haven, Conn. Saponin present.

E.C.-994 and 1029. Smitty's Creamy Root Beer. Red Fox Ginger Ale Co., Providence, R. I. Non-saponin hemolytic agent present.

E.C.-1047. Thames Club Root Beer. Thames Club Beverage Co., Norwich, Conn. Non-saponin hemolytic agent present.

The other root beer sample, the cream soda and the 11 fruit-flavored sodas were as follows:

E.C.-1000. Canada Dry Cherry Soda. Canada Dry Bottling Co. of New London, Conn. Ash, 27, and K_2O , 1.7, mg./100 cc.; odor and flavor, benzaldehyde. Imitation cherry soda not so labelled; misbranded.

K.C.-1071. Cott Club Special Grape Soda. American Bottling Co., Bridgeport, Conn. Ash, 32, K_2O , 2.8, and methyl anthranilate, 0.1, mg./100 cc. Passed.

K.C.-1072. Cott Low Calorie Dietary Beverage Non-Fattening Cream Flavor. Cott Beverage Corp., New Haven, Conn. Labelled: "Cott 1/2 QUART LOW-CALORIE WITHOUT SUGAR—Contains less than 1/4 of 1% cyclamate calcium, Abbott (Sucaryl ®) a non-nutritive artificial sweetener, which should be used only by persons who must restrict their intake of ordinary sweets. No fat, no protein, (1.037% available carbohydrates) less than 7 1/2 calories per serving—Ingredients: carbonated water, citric acid, artificial flavor, caramel color, calcium cyclamate, preserved with less than 1/10 of 1% benzoate of soda, sorbitol." Analysis showed no more than a trace of sugar; passed.

F.M.-37. Cott Quality Black Cherry Soda Made From Natural Fruit Flavors. Cott Beverage Corp., New Haven, Conn. Ash, 30, and K_2O , 2.1, mg./100 cc.; flavor natural. Not true fruit cherry; misbranded.

F.P.-346. Country Club Choice Blend Simulated Strawberry Soda. Country Club Soda Co., Inc., Springfield, Mass. Ash, 20, and K_2O , 4.0, mg./100 cc.; flavor artificial. Misbranded because not labelled "Imitation".

F.P.-347. Country Club Grape Soda. Country Club Soda Co., Inc., Springfield, Mass. Ash, 20, K_2O , 2.1, and methyl anthranilate, 1.7, mg./100 cc. Synthetic methyl anthranilate present; imitation grape soda not so labelled; misbranded.

E.S.-42 and 43. Finast Black Cherry Soda. First National Stores, Inc., East Hartford, Conn. Analysis of *E.S.-42* showed: Ash, 34, and K_2O , 4.0 mg./100 cc.; odor and flavor, benzaldehyde. This sample was therefore misbranded because not labelled "Imitation Cherry Soda." The flavor of *E.S.-43* was satisfactory, and this sample was passed.

P.S.-200. Hartford Club Dietary Beverage Root Beer. Hartford Club Beverage Co., Hartford, Conn. Labelled: "SUGAR FREE—NO CALORIES—For persons who must restrict their calorie intake, less than 1/2 of 1% calcium cyclamate. A non-nutritive artificial sweetener has been added." Analysis showed only 0.10 per cent total sugars, and tests for saponin were negative. Passed.

E.C.-999. Hosmer Mountain Spring Beverages Strawberry Soda. Hosmer Mountain Beverage Co., Willimantic, Conn. Labelled: "Artificial Flavor & Color." Ash, 9, and K_2O , 0.6, mg./100 cc.; flavor, artificial. Misbranded because not labelled "Imitation".

F.P.-351. It's Ma's for Mixing Lemon-Lime. R&J Bottling Co., Troy, N. Y. Labelled: "Contains carbonated water, sugar, citric acid, natural and artificial flavor and color." Ash, 12.8, K_2O , 4.6, and P_2O_5 , 0.5, mg./100 cc.; estimated per cent lemon juice, 3; flavor, terebinthinate. Passed.

P.R.-208. Stafford Springs Beverages Black Raspberry Soda. Stafford Ginger Ale Co., Stafford Springs, Conn. Ash, 18.0, and K_2O , 5.0, mg./100 cc.; flavor, synthetic. Misbranded because not labelled "Imitation".

E.C.-998. Strawberry Soda. Mathieu Beverages, Taftville, Conn. Labelled: "Artificial Flavor & Color." Ash, 9, and K_2O , 0.9, mg./100 cc.; flavor, artificial. Misbranded because not labelled "Imitation".

Uncarbonated Fruit Drinks

There were eight official samples of fruit-juice-flavored uncarbonated beverages: Three orange, two grape, one cranberry, one pineapple-orange and one multi-fruit-flavored. Four were passed and four were misbranded:

F.P.-359. Fresha's Grape Drink, Vitamin C Enriched. Connecticut Fruit Juice Co., East Hartford, Conn. Labelled: "Made from choice Concord grapes, picked at height of season, making a delicious flavored grape juice. Ingredients: water, Concord grape juice, pure cane sugar, genuine grape extract, edible acid, 110 mg. vitamin C, to insure freshness 1/10 of 1% benzoate of soda. THIS PRODUCT DOES NOT CONTAIN ANY ARTIFICIAL COLOR OR FLAVOR." Analysis was as follows: Total solids, 11.15, invert sugar, 11.68, and total acidity (as tartaric acid), 0.29, gm./100 cc.; ash, 56.8, K_2O , 25.0, P_2O_5 , 2.8, methyl anthranilate, 0.1, and ascorbic acid, 11, mg./100 cc., estimated per cent grape juice, 20.

This sample did not appear to contain any artificial flavor, and the vitamin C content per 64 fl. oz. bottle was 208 milligrams as against 110 mg. declared. It was nevertheless misbranded because the statement "making a delicious flavored grape juice" was false as applied to a product containing only 20 per cent juice. A preparation of the same brand name put out by another bottler has been analyzed twice previously.³

³Conn. Agr. Expt. Sta. Bul. 574, 10 (1953); 609, 15 (1957).

K.C.-1083. Ocean Spray Dietetic Cranberry Juice Cocktail. National Cranberry Association, Hanson, Mass. Labelled: "Recommended for those who must restrict their intake of sugar. Prepared with Cranberry Juice and Water, 0.33% Sucaryl Calcium (a non-sugar sweetener) added." The label also bore a quantitative analysis, which compared with our findings as follows:

	Declared	Found
Water, per cent	95.9	97.10
Total acidity (as citric acid), per cent	0.80	0.87
Fat, per cent	0.15	0.02
Protein, per cent	0.11	0.19
Invert sugar, per cent	2.89	1.36
Other carbohydrates (by difference), per cent		0.27
Ash, per cent		0.19
K ₂ O, mg./100 gm.		33.2
P ₂ O ₅ , mg./100 gm.		2.7
Sodium, mg./100 gm.	0.7	1.4
Sodium, mg./4 oz.	0.8	1.6
Calories/100 gm.	16.4	10.9
Estimated per cent juice		34.

The sodium content was twice as high as claimed, but because the labelling was otherwise so nearly correct, sample was passed.

S.O.-442. Ivey's King Sun Brand Chilled Tropical Punch. Osceola Fruit Distributors, Kissimmee, Fla. Labelled: "Made with water, sugar, juices of orange, pineapple, raspberry, grape, lemon, lime, passion fruit, strawberry, apricot, guavas, papaya, natural fruit flavors, citric acid, U. S. certified color." Ash, 110, and K₂O, 47, mg./100 cc.; estimated per cent juice, 18. Passed.

A.L.-485. Orange Sunnywink. Sunnywink Fruit Juices, Inc., Danvers, Mass. This half-gallon jug was labelled: "To the concentrated Orange Juice containing oils and minerals of tree-ripened Valencia oranges there has been added, water, fresh orange juice and pure granulated sugar. This product has been enriched with a minimum of 200 U.S.P. units of Vitamin C." Analysis showed: Citric acid, 0.51, invert sugar, 1.77, sucrose, 7.84, and total sugars, 9.61, gm./100 cc.; ash, 128, and K₂O, 66, mg./100 cc.; estimated per cent orange juice, 26.

Misbranded because the label failed to bear the name of the State (Massachusetts), and because the declaration of vitamin C in terms of a U.S.P. unit that has been obsolete since April 1, 1947 was misleading. (Two hundred U.S.P. XIII units of vitamin C corresponded to only 10 milligrams of ascorbic acid, and since 6 fluid ounces of orange juice contains 94 mg. of ascorbic acid the claimed enrichment represented barely more than one-tenth of the vitamin C found in straight orange juice.)

A.L.-465. Round the Clock Blend Made with Real Fruit Juice Pineapple & Orange, Vitamin C Enriched. Kay Packing Co., Baltimore, Md. Labelled: "Contains water, concentrated pineapple juice, sugar, concentrated orange juice, citric acid, orange oil emulsion, vitamin C—VITAMIN ENRICHED—Each six-ounce serving contains 30 milligrams or 100% of the minimum adult daily requirement of vitamin C." Analysis showed: Invert sugar, 7.16, sucrose, 5.25, and total sugars, 12.41, gm./100 cc.; ash, 172, K₂O, 78, P₂O₅, 12, and ascorbic

acid, 26, mg./100 cc.; estimated per cent juice, 40. Since this sample contained 46 milligrams of ascorbic acid in each six fluid ounces as against 30 mg. declared, the vitamin C guaranty was met. However, it was misbranded because the emphasis on "PINEAPPLE & ORANGE" and "Made with Real Fruit Juice" were such as to give the impression that this was a straight juice product.

K.F.-1874. Sunkist Orange Juice Drink. Waterbury Cooperative Dairy, Inc., Waterbury, Conn. Labelled: "Contents: Water, Orange Juice, Sugar, and Citric Acid." Ash, 134, and K₂O, 76, mg./100 cc.; benzoate absent, estimated per cent orange juice, 30. Passed.

K.F.-1873. Waterbury Cooperative Dairy Inc. Orange Drink. Prospect Dairy, Prospect, Conn. Labelled: "Water, Orange Concentrate, Sugar, Citric Acid and Oil of Orange, U. S. Certified Artificial Color, Flavor and 1/10 of 1% benzoate of soda." Ash, 69, and K₂O, 18.6 mg./100 cc.; benzoate absent; estimated per cent orange juice, 7. Since an orange drink should contain at least 15 per cent of juice this sample was misbranded.

K.F.-2004. Welchade Grape Drink, Vitamin Enriched. Welch Grape Juice Co., Inc., Westfield, N. Y. This quart can was tested only for its net contents, which were found to be 31.94 fl. oz. Passed.

Cacao Products

One sample of milk chocolate coating was examined for the Food and Drug Commissioner, two samples of cocoa were analyzed for the State Supervisor of Purchases, and the constants of one sample of cocoa butter were determined for comparison purposes. All samples were passed:

5027. Cocoa. Manufacturer unknown. Water, 5.30; fat, 11.20, total ash, 5.75, soluble ash, 2.02, and insoluble ash, 3.73, per cent; alkalinity of soluble ash equivalent to 2.13 cc of N/10 acid.

4256. Cocoa Butter. Joseph Soybel, New Haven, Conn. Butyro refraction, 40°C., 46.4; critical temperature of dissolution, 93.6°C.

5026. Favorite Brand Dutch Process Cocoa. Favorite Food Products, New York, N. Y. Water, 6.95, fat 9.80, total ash, 6.13, soluble ash, 2.88, and insoluble ash, 3.25, per cent; alkalinity of soluble ash equivalent to 2.83 cc. of N/10 acid.

A.L.-440. Van Kampen Milk Coating. Van Leer Chocolate Corp., Jersey City, N. J. Labelled: "Van Kampen Milk Coating with Vanillin (an Artificial Flavor) and Emulsifier Added." Fat, 31.14 per cent; butyro refraction of fat, 40°C., 46.4; critical temperature of dissolution of fat, 90.7°C. These constants were consistent with the fat's being pure cocoa butter. However, since the manufacturer insisted that a substantial portion of whole milk powder had been added, and insufficient material remained for further analysis, sample was passed.

Coffee and Tea

Two samples of "instant" coffee and one of "instant" tea were examined for the Commissioner; all were passed:

K.F.-1877. Early Morn Brand 100% Pure Instant Coffee. Grand Union Co., East Paterson, N. J. Moisture, 1.65; ash, 9.66; protein, 12.44; fiber, 0.10;

dextrose, 1.52; maltose, 8.38; dextrans, galactan, pentosans and tannins, 62.17; fat, 0.18, and caffeine, 3.90, per cent.

K.F.-1845. Nestlé Nestea Instant Tea. Nestlé Co., White Plains, N. Y. Labelled: "Instant Tea With Added Dextrans, Maltose and Dextrose—NESTEA is composed of equal parts of freshly brewed tea and added carbohydrates (dextrans, maltose and dextrose) solely to protect the really fine tea flavor." Analysis showed: Moisture, 3.45; ash, 6.76; protein, 6.38; fiber, 0.13; dextrose, 4.06; maltose, 36.67; dextrans, etc., 39.93; fat, 0.21, and caffeine, 2.41, per cent.

K.C.-783. Tip Top Real Instant Coffee. Tip Top Super Market, Bridgeport, Conn. Labelled: "100% Pure Coffee". Analysis showed: Moisture, 1.68; ash, 10.16; protein, 13.44; fiber, 0.11; dextrose, trace; maltose, 9.41; dextrans, galactan, pentosans and tannins, 61.73; fat, 0.28, and caffeine, 3.19, per cent.

Confectionery

Eight miscellaneous official samples of confectionery were examined; four were passed and four were misbranded:

K.F.-1972 and 1973. Baby Binks. R. M. Palmer Co., Reading, Pa. Both samples were candies in the shape of rabbits. *K.F.-1972* was pale yellow and its label declared the following ingredients: "Cocoa Butter, Milk Solids, Sugar, Vanillin, Albumen, And U. S. Certified Coloring." *K.F.-1973* was dark brown; listed ingredients were "Chocolate, Sugar, Certified Coloring." Analyses were as follows:

	<i>K.F.-1972</i>	<i>K.F.-1973</i>
Fat, per cent	38.24	36.82
Butyro refraction of fat, 40°C	46.4	46.4
Critical temperature of dissolution of fat	93.6°C	94.2°C

The fat in both samples appeared to be solely cacao fat. *K.F.-1973* was misbranded because it was sweet chocolate and not so labelled; *K.F.-1972* was passed.

K.F.-2138. Brach's "Brox" Christmas Candy. E. J. Brach & Sons, Chicago, Ill. Declared ingredients were "non fat milk, corn syrup, coconut oil, sugar, milk, egg white, salt, natural and artificial flavor." Net weight: Declared, 8¼ oz.; found, 9.20 oz. Coal-tar dye absent. Passed.

J.B.-316. Casanova Chocolates, Miss Milford Milk Chocolates. Casanova Chocolate Co., Inc., Milford, Conn. Misbranded because the ingredient statement was so inconspicuous as to be almost unnoticeable.

K.C.-1061. Cotton Pickin' Candy. E & E Candy Co., New York, N. Y. Declared ingredients were "Sugar, U. S. Certified Colors and Artificial Flavors." Analysis showed: Water, 1.00; ash, protein and starch, 0.00; sucrose, 98.99; dextrose, trace, and undetermined, 0.01, per cent. Passed.

A.L.-460. Gold-Bo Fancy Glacé Cherries. de Redon Food Products Corp., New London, Conn. Red coal-tar dye present. Misbranded because it bore no list of ingredients and because artificial color was not declared.

A.F.-317. Terry's Butter Cream Candy Corn. Terry Candy Co., Elizabeth, N. J. Declared ingredients were "Sugar, Corn Syrup, Invert Sugar, Salt, Gelatin, Confectioners Glaze, Art. Flavoring, Art. Coloring, Chocolate And Cocoa

When Used." Analysis showed only 0.05 per cent of fat whose butyro refraction at 40°C was 55.0. Misbranded because it contained no more than a trace (if any) of butter.

K.F.-1971. Terry Tulip Pure Milk Flavored. R. M. Palmer Co., Reading, Pa. This sample consisted of a pale yellow candy rabbit pushing a cart. Declared ingredients were "Cocoa Butter, Sugar, Milk Solids, Vanillin and U. S. Cert. Coloring." Total fat, 36.24 per cent; butyro refraction of fat, 46.4 at 40°C.; critical temperature of dissolution of fat, 97.9°C. These constants indicated that the fat was all cacao fat. Passed.

Contaminated or Decomposed Foods

Eighty-two samples of foods were submitted by the Commissioner because of suspected insect or rodent infestation, contamination with foreign materials or decomposition, or because of complaints they had made people ill. Included were: Twenty-two samples of sodas; eight of popcorn; five of candy; four of bread; three each of canned corn, cookies and soup; two each of coffee, "Dextrin-Maltose", dog food, evaporated milk, fish, hamburger, pork and string beans; and one each of banana flakes, beef pie, beer, blueberry pie, cheese, chewing gum, coconut, cup-cakes, dough, dried apricots, frozen corn, milk chocolate, an orange-apricot drink, oranges, rolls, round steak, tomato paste, wax beans and wine. Thirty-seven samples were passed and 44 were adulterated. The adulterated samples were the following:

E.S.-46. Aunt Mary Homestyle Chocolates. Aunt Mary Chocolates, Boston, Mass. An *Ephestia* moth and insect webbing present; candy was old.

F.M.-99. Baker's Coconut, Gem, Macaroon. Franklin Baker Co. of the Philippines, Manila, Philippines. Infested with live and dead adult saw-toothed grain beetles (*Oryzaephilus surinamensis*).

J.B.-342. Betty Alden Sliced Enriched Bread. First National Stores, Somerville, Mass. Contaminated with grease.

E.S.-39. Bond Raisin Bread with Cinnamon. General Baking Co., Boston, Mass. Moldy.

P.R.-204. Boned Round. United Meat Provisions, New Britain, Conn. Odor stale and slightly ammoniacal.

F.P.-343. Breakstone's Pot Cheese. Breakstone Foods Division, National Dairy Products Corp., New York, N. Y. Old and spoiled.

E.C.-1031. Canada Dry Pale Dry Ginger Ale. Canada Dry Bottling Co., New London, Conn. Wad of pink tissue paper and some blue pigment present.

E.S.-86. Chewing Gum. Atty. John J. Daly, Hartford, Conn. Contained two pieces of dental filling (mercury-tin-silver alloy).

E.C.-1012. Coca-Cola. Coca-Cola Bottling Co., New London, Conn. Plaster and nail polish present.

A.F.-291. Coca-Cola. A. Gallucci & Sons Market, Hartford, Conn. Moldy.

S.O.-427. Coca-Cola. New York Bottling Co., Inc., Stamford, Conn. Portion of book of matches, sand and dirt present.

K.C.-1050. *Coco Rico*. Calman Beverage Co., Philadelphia, Pa. Piece of thread and trace of charred material present.

F.M.-141. *Cott Quality Extra Dry Ginger Ale (less sweet)*. Cott Beverage Corp., New Haven, Conn. Corn meal present.

J.B.-346. *Cott Quality King Size Grape Soda*. Cott Beverage Corp., New Haven, Conn. Sand, dirt and fragments of wood fiber present.

A.J.-69. *Cotton Carnival Candy*. Playland Candy Corp., Valley Stream, N. Y. This salmon-colored candy was discolored with streaks of cocoa (or chocolate) and a mixture of blue-green and red water-soluble dyes.

K.C.-1086. *Dough*. Black Rock Apizza, Bridgeport, Conn. Infested with dead adult confused flour beetles (*Tribolium confusum*).

A.J.-43. *Finast Pale Dry Ginger Ale*. First National Store, Newington, Conn. Moldy.

A.J.-50. *Golden Sweet Corn, Cream Style*. Great Atlantic & Pacific Tea Co., New York, N. Y. Sour.

P.S.-169. *Grade A Fancy Stop & Shop Superior Quality Cut Wax Beans*. Stop & Shop, Boston, Mass. Several pieces of iron (or steel) present, mostly small, but two one-fourth inch square and one one-eighth inch square.

P.R.-203. *Ground Hamburg*. United Meat Provisions, New Britain, Conn. Odor stale and slightly ammoniacal.

A.L.-484. *Home-Made Red Wine*. James Zangari, Meriden, Conn. This wine had a strong odor of hydrogen sulphide, probably resulting from reduction by fermentation of sulphur on the grapes.

E.C.-1058. *KFS Cero-Meto Dog Food Meal*. Kennel Food Supply, Fairfield, Conn. Infested with live Indian meal moth larvae (*Plodia interpunctella*).

E.C.-1057. *KFS Cero-Meto Kibbled Biscuits Dog Food*. Kennel Food Supply, Fairfield, Conn. Infested with dead Indian meal moth larvae.

A.J.-40 and 41. *Pepsi-Cola*. Pepsi Cola Bottling Co., Agawam, Mass. Sand and mold present.

F.P.-379. *Pepsi-Cola*. Pepsi-Cola Bottling Co., Central Village, Conn. Cooked meat present.

E.S.-88. *Pepsi-Cola*. Health Dept., Meriden, Conn. Moldy.

F.M.-41. *Premier Homogenized Unsweetened Evaporated Milk, Vitamin D Content Increased*. Francis H. Leggett Co., New York, N. Y. This sample consisted of two cans, of which one was unopened and appeared normal while the other had been opened and was badly soured.

F.M.-126. *G. Rinaldi Italian Tomato Paste with Basil Leaf*. Rinaldi Bros., New York, N. Y. The 10 cans comprising this sample were all badly swelled and had streaks of black tar or paint on them; the odor of the contents was however normal.

F.M.-54. *Rolls*. Kramer's Bakery, New Haven, Conn. Black grease present inside the rolls.

A.L.-486. *Schaefer, America's Oldest Lager Beer*. F&M Schaefer Brewing Co., New York, N. Y. Few small pieces of charcoal present.

F.M.-147. *Sunshine Golden Fruit*. Sunshine Biscuits, Inc., New York, N. Y. These raisin cookies contained two broken-up beetles of unidentified species, insect webbing and many insect eggs.

E.S.-78. *Sunshine Nobility Assortment Cookies*. Sunshine Biscuits, Inc., New York, N. Y. Infested with many adult saw-toothed grain beetles and two cast pupal skins.

F.M.-103 and 106 to 111. *Weaver's Hi Brid Pop, Indiana's Finest Popcorn, Hybrid Large Yellow*. Weaver Popcorn Co., Huntington, Ind. Infested with Mediterranean flour moth (*Ephestia kubniella*) larvae, empty pupal cases and webbing.

K.C.-1006. *White Bread*. Bamby Bread Co., Bridgeport, Conn. This slice of bread was part of an egg sandwich made up at the "Pickle Barrel", Westport, Conn. Insect excreta were present embedded in the bread.

P.R.-171. *White Rock Ginger Ale, Extra Pale Dry Select*. White Rock Corp., Boston, Mass. Portion of smoked cigarette present.

K.C.-1140. *"Yor" Garden Frozen Fresh Whole Kernel Corn*. First National Store, Westport, Conn. Moldy and sour.

E.C.-1003. *Yukon Club Pale Dry Ginger Ale*. Gra-Rock Ginger Ale Co., Wethersfield, Conn. Piece of apple or pear skin present.

Forty-one samples were submitted by the Hamden and Hartford health departments, the Cheshire school cafeteria system, the New Haven police, attorneys, a physician, an insurance company and private citizens. Included were: Four samples of sodas; three samples each of meat and tuna fish products; two of alcoholic beverages, bread, cake toppings, candy, canned fruit, coffee, cookies, milk and pie; and one each of an apricot drink, apricot pie filling, cake, canned corn, canned peas, cheese, a doughnut, maple syrup, *matzos*, oranges, peanut butter, a pineapple sundae and raisins. Twenty samples were passed and 21 were adulterated. The adulterated samples were the following:

4440. *Apricot Pie Filling*. Mrs. L. Shanok, New Haven, Conn. One Pharaoh's ant (*Monomorium pharaonis*) present.

4517. *Beechmont Dairy Milk*. Mrs. Emily Loucony, Trumbull, Conn. "Oxidized" flavor.

3472. *Bread*. Health Dept., Hartford, Conn. Streak of soybean meal present.

4950. *Bread*. Boston Model Bakery, New Haven, Conn. Rat feces present.

4026. *Chunky Milk Chocolate*. W. T. Grant Co., New Haven, Conn. Fragments of Angoumis grain moths, eggs and insect webbing present.

5223. *Coco-Cola*. Great Atlantic & Pacific Tea Co., West Haven, Conn. Clump of unidentified fungous material present.

5628. *Colonna Italian Kitchen Imported Parmesan and Hard Grating Grated Cheese*. J. Colonna Bros., North Bergen, N. J. Clumps of human hair, some light and some dark, present.

4005. *Doughnut*. Thomas Raucci, New Haven, Conn. Broom-straw fragment present.

5365. *Green Giant Brand Golden Del Maiz Sweet Corn, Cream Style*. Green Giant Co., LeSueur, Minn. Adult sap beetle (*Glischrochillus fasciatus*) present.

4128. *Instant Maxwell House Coffee*. Maxwell House Division, General Foods Corp., Hoboken, N. J. Petroleum distillate odor.

4088. *Krasdale Fruit Cocktail in Heavy Syrup*. Krasdale Foods, Inc., New York, N. Y. Piece of fatty meat present.

5933. *Krasdale Orange Apricot Drink*. Krasdale Foods, Inc., New York, N. Y. Gray hair net present.

3995. *Pie*. Frisbie Pie Co. Copper, 8, and tin, 50, parts per million.

4534. *Pie*. Chester Perrotti, New Haven, Conn. Stone present.

6095. *Pineapple Sundae*. Chapel Drug Store, New Haven, Conn. Sand, dirt and unidentified plant material present.

5206. *Pork "Chopettes"*. High School Cafeteria, Cheshire, Conn. Cooked in decomposed fat.

3769. *Raisin Cookies*. S. S. Kresge Co., New Haven, Conn. Adult saw-toothed grain beetle (*Oryzaephilus surinamensis*) and insect eggs present.

5798. *Raisins*. John DeAngelis, North Haven, Conn. Two adult saw-toothed grain beetles present.

6193. *"Skippy" Creamy Peanut Butter*. Skippy Peanut Butter Division, Best Foods, Inc., Portsmouth, Va. Fly present.

4265. *Sparkling Pepsi-Cola*. Pepsi-Cola Bottling Co., Santa Ana, Calif. Penicillium mold present.

4622. *Sparkling Pepsi-Cola*. Pepsi-Cola Co., New York, N. Y. Piece of apple skin present.

Dairy Products

Butter

A.J.-33, *Butter from Pleasure Beach, Bridgeport*, was submitted by the Commissioner at the request of the Bridgeport Health Department. Analysis of the fat showed: Butyro refraction, 40°C., 42.5; Reichert-Meissl value, 30.5; Polenske value, 2.5; odor and flavor, good. Passed.

Cheese

Eight samples of grated cheese were examined for the Commissioner; three were passed and five were misbranded. Analyses are given in Table 1.

Chocolate Milk Drink

K.F.-2098, *The Chocolate Cow*, manufactured by Threemor Sales Co., Brooklyn, N. Y., was submitted by the Commissioner to see if it contained cream as claimed. Declared ingredients were "Skim Milk, Fresh Sweet Cream, Sugar, Cocoa, Vegetable Stabilizer, Vanilla and Vanillin." Because there was no way to distinguish by analysis between ordinary milk and a mixture of skim milk and cream, sample was passed.

Food Products

TABLE 1. GRATED 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	Starch	Remarks
K.F.-2052	The Borden Co., New York, N. Y. <i>Borden's Grated Parmesan and Romano</i>	10.40	43.38	36.70	0.00	8.52	0.00	absent	Passed.
K.F.-1984	C & F Cheese Distributors, East Haven, Conn. <i>Italian Style</i> ...	25.92	39.17	19.00	0.00	13.20	0.00	.....	Passed.
K.F.-1989	Colonna Bros., North Bergen, N. J. <i>Colonna Imported Parmesan and Hard Grating</i>	30.82	36.62	23.00	0.00	8.68	0.00	.....	Misbranded because the "IMPORTED PARMESAN" was overemphasized.
K.F.-1967	P. Gambardella & Sons Cheese Corp., New Haven, Conn. <i>Gambardella Old Italian Recipe Imported Romano and Blended Hard Grating</i> .....	.....	.....	.....	.....	.....	.....	.....	Misbranded because "IMPORTED ROMANO" overemphasized.
K.F.-1988	D. J. Introvigne & Son, West Springfield, Mass. <i>Introvigne's Imported Parmesan and hard grating</i>	34.56	37.77	13.05	0.00	11.68	0.00	.....	Misbranded for same reason as K.F.-1989 above.
K.F.-1990	Jason Dairy Products Co., Inc., Brooklyn, N.Y. <i>Jason "Cheeses that Please" Imported Parmesan</i>	13.90	46.32	28.50	0.00	8.82	0.00	.....	Skim milk cheese; passed.
K.F.-2002	Land O'Lakes Creamery, Inc., Minneapolis, Minn. <i>Land O'Lakes Imported Parmesan and Other Hard Grating</i> .....	.....	.....	.....	.....	.....	.....	.....	Misbranded for same reason as K.F.-1989 above.
K.F.-2051	V. LaRosa & Sons, Brooklyn, N. Y. <i>LaRosa Imported Parmesan and Romano</i>	22.90	38.41	30.20	0.00	7.08	0.00	absent	Passed.

Unfortified Whole and Skim Milk

The fat contents of six samples of whole milk and one of skim milk were determined for dairymen. The whole milk samples ranged between 2.5 and 3.9 per cent fat, and averaged 3.5 per cent; three fell below the legal minimum of 3.25 per cent. The skim milk, 3834, contained only 0.11 per cent fat.

Besides these samples, 730 samples of milk were tested for the presence of DDT; results of these tests will be found under "Spray Residues" on page 54.

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 1958, 232 samples were examined. Results of the assays are shown in Table 2; 13 samples were definitely below the unitage claimed. The percentage of samples fully or substantially meeting guaranties was 94—five percentage points higher than the year before.

In the 24-year period 1935-1958 inclusive, 3,500 samples have been tested; 91 per cent contained the required 400 units of vitamin D per quart or were sufficiently close thereto to be passed.

Vitamin-Mineral Fortified Milk

Each quart of Vitamin Mineral Fortified Milk is required to contain not less than the following quantities of vitamins and minerals: Vitamin A, 4,000 and vitamin D, 400, U.S.P. units; and thiamine, 1, riboflavin, 2, niacin, 10, iron, 10, and iodine, 0.1, milligrams. Fourteen samples of such milk were submitted by the Commissioner of Agriculture; 12 samples were passed and two were substandard. Analyses are given in Table 3.

Vitamins A and D Skimmed Milk

Each quart of Vitamins A and D Skimmed Milk is required to contain 2,000 U.S.P. units of vitamin A, 400 U.S.P. units of vitamin D, and not more than 0.5 per cent of butter fat. Five samples submitted by the Commissioner of Agriculture were tested only for vitamin A; all except one were substandard. Results are given in Table 4.

Deceptively Packed Foods

Section 19-222(d) of the General Statutes states that a food "shall be deemed to be misbranded . . . if the container shall be so made, formed or filled as to be misleading." In effect this means that it is illegal to pack foods in opaque containers that are larger than necessary, because this may mislead the purchaser into thinking he is getting more for his money than he is. In 1958, 17 samples were submitted by the Commissioner because of suspected slack fill; two samples were passed and 15 were misbranded. The deceptively packed samples were the following:

F.M.-85. Ann Dale Rodeo Cookies. Ann Dale Products, Inc., Fall River, Mass. Fill of container 65 per cent.

TABLE 2. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Bakersville	Meadow Brook Farm	1	1	....	....
Baltic	Sunrise Farm Dairy (John Ozga)	2	2	....	....
Berlin	Johnson's Dairy	1	1	....	....
	Lower Lane Dairy	1	1	....	....
	Ventres Dairy	2	2	....	....
Bloomfield	Chris Nielsen & Sons	1	1	....	....
	Maple Hill Farms (William E. Miller & Son)	1	1	....	....
	Talcott View Farm (E. C. Wadhams & Sons)	2	2	....	....
	A. J. Wade Dairy Farms	2	2	....	....
Bolton	Bolton Dairy, Inc.	2	2	....	....
Bridgeport	Beechmont Dairy	3	3	....	....
	Dewhurst Dairy	3	3	....	....
	Mitchell Dairy Div., The Borden Co.	2	2	....	....
Bristol	E. H. Elton	1	1	....	....
	Roberge Dairy, Inc.	1	1	....	....
Clinton	Burr Dairy	1	1	....	....
Cromwell	McAllister Dairy	1	1	....	....
Danbury	Marcus Dairy	2	2	....	....
	Rider Dairy Co.	2	2	....	....
Derby	Kinney's Dairy	1	1	....	....
East Haddam	Sprecher Dairy	1	1	....	....
East Hampton	Wall's Dairy Farm	1	1	....	....
East Hartford	Bergren's Dairy Farms	2	2	....	....
	Homestead Farm Dairy	1	1	....	....
East Lyme	Drabik Farms	2	2	....	....
East Norwalk	Devine's Dairy	2	2	....	....
Easton	Center Farm Dairy	1	1	....	....
	Marsh Dairy	2	2	....	....
	Snow's Milk Farm	2	2	....	....
East Windsor	Bassdale Farm Dairy	1	1	....	....
Ellington	Cordtsen Dairy	2	2	....	....
Fairfield	Lobdell's Dairy	2	2	....	....
	Wade's Dairy	2	2	....	....
Farmington	Ridgeview Farm	1	1	....	....
Forestville	R. H. Gifford Dairy	1	1	....	....
Greenwich	Round Hill Farms	2	2	....	....
Guilford	Maple Shade Dairy	1	1	....	....
Hamden	Brock-Hall Dairy Co.	2	2	....	....
Hartford	Bayer's Milk	2	2	....	....
	Farmers' Co-Operative, Inc.	3	1	1	1
	Hilltop Dairy (L. G. Pinckney) ..	2	2	....	....
	H. P. Hood & Sons	2	2	....	....
	National Dairy Products Corp.	2	2	....	....
Jewett City	Norman's Dairy	2	2	....	....
Kensington	Ferndale Dairy, Inc.	2	2	....	....
	Rockland Dairy Farms	1	1	....	....
Lisbon	Stanley Wildowsky	2	2	....	....
Litchfield	Toll Gate Farms, Inc.	2	1	....	1
Manchester	Dari-Maid Milk Co.	1	1	....	....
	Dart's Dairy	1	1	....	....
	Wilkie Dairy	1	1	....	....

TABLE 2. VITAMIN D MILK (Continued)

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below claimed unitage
Meriden	Countryside Dairy (C. Barillaro)	2	2	....	....
	Charles Greenbacker & Sons, Inc.	2	2	....	....
	E. J. Kaemmer & Son	2	2	....	....
	William F. Knapp	1	1	....	....
	Meadowbrook Dairy (A. Marcelino)	1	1	....	....
	Schwink's Dairy, Inc.	2	2	....	....
	Sievert's Dairy	1	1	....	....
	Triple Springs Farm	1	1	....	....
	Wayside Dairy	2	1	....	1
	Daniels Farm	1	1	....	....
Middletown	Hillside Dairy	1	....	1	....
	Pleasant View Dairy	1	1	....	....
	Sunshine Dairy	1	1	....	....
	Clover Dairy	2	2	....	....
Milford	A. J. Platt & Sons	1	1	....	....
	Riverside Dairy	1	1	....	....
Milldale	Guida-Seibert Dairy Co.	2	2	....	....
	Heslin Dairy Co.	1	1	....	....
New Britain	Kenwood Farms	1	1	....	....
	J. J. Shapiro & Sons	1	1	....	....
New Canaan	A. J. Spring & Sons	1	1	....	....
	Miller's Farm Dairy	2	2	....	....
New Hartford	Millstream Farms	1	1	....	....
	H. P. Hood & Sons	2	1	....	1
Newington	Eddy Dairy	2	2	....	....
	J. William Holt & Sons Farm Dairy	1	1	....	....
New London	Mortensen Dairy Farms	2	1	....	1
	J. A. Moylan & Son Dairy	2	2	....	....
	Spring Brook Farm Dairy	2	2	....	....
	Michael's Dairy	2	2	....	....
	New London and Mohegan Dairies	2	2	....	....
New Milford	Radway's Dairy	2	2	....	....
	Conn's Dairy	2	2	....	....
North Haven	Knudsen Bros.	1	1	....	....
	Clover Farms Dairy	2	2	....	....
Norwalk	Beebe's Dairy	2	2	....	....
	McDermott Dairy	2	2	....	....
Norwichtown	Great Oak Farm, Inc.	1	1	....	....
	Petersen's Dairy	1	1	....	....
Orange	E. E. Freimuth	2	1	....	1
	High Farm Dairy (Joseph Kozikowski)	2	2	....	....
Plymouth	Broad Brook Dairy	3	2	....	1
	Preston Dairy	2	2	....	....
Putnam	Fisher Bros. Dairy	2	2	....	....
	Charles B. Gilbert	2	1	....	1
Rocky Hill	Krol's Dairy	2	2	....	....
	Sunny Crest Farm	2	2	....	....
Seymour	Sun Valley Farms	2	2	....	....
	Ajello Bros.	2	2	....	....
Simsbury	Bomba Bros.	2	2	....	....
	Chatfield Dairy	2	2	....	....
Southbridge, Mass.	Pharos Farm	2	2	....	....
	W. W. Sherman & Sons	2	2	....	....
South Kent	Newton Dairy	2	2	....	....
	Diamond Hill Dairy (J. W. Ives)	2	2	....	....

TABLE 2. VITAMIN D MILK (Concluded)

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below claimed unitage
South Norwalk	Harrick's Dairy	2	2	....	....
	Springdale	Sheffield Farms Co., Maplehurst Div.	2	2
Suffield	Stony Brook Farm	1	1	....	....
	Thompsonville	Fred J. Wood Dairy	2	2
Thomaston	Enfield Dairy (Cimino Bros.)	2	2	....	....
	Riverview Dairy (Marshall A. Smith)	2	2	....	....
Torrington	Snyth Farm Dairy	2	2	....	....
	Clover Dairy	1	1	....	....
Trumbull	Co-operative Dairy Co.	1	1	....	....
	Vernon	Greenwood's Dairy	1	1
Wallingford	Torrington Creamery	3	1	....	2
	Parker's Dairy	2	2	....	....
Warehouse Point	Welles Farms	2	2	....	....
	Washington	Beaumont Farm	1	....	....	1
Waterbury	J. H. Daly Co.	1	1	....	....
	Fairview Dairy	1
Wauregan	J. P. Novak	1	1	....	....
	Barsdale Farm Dairy	1	1	....	....
Webster, Mass.	Marsh Dairy Farm	2	1	....	1
	Deary Bros.	2	2	....	....
Westfield	Brookfield Dairy	1	1	....	....
	Lincoln Dairy	1	1	....	....
West Hartford	A. C. Petersen Farms	1	1	....	....
	Clark Dairy, Inc.	2	2	....	....
West Haven	Ferris Dairy	2	2	....	....
	Burrill's Dairy	3	3	....	....
Westport	Kenwood Farms	1	1	....	....
	Orem's Dairy	1	1	....	....
West Redding	J. Noga & Son	1	1	....	....
	J. O. Johnson & Son	1	1	....	....
Wethersfield	Rose Hurst Farm	2	2	....	....
	Driscoll's Dairy	2	2	....	....
Windsor	Total	232	216	3	13
	Winsted				
Woodbridge					
	Yantic				

A.L.-442. *Borden's Extra Fluffy Instant Whipped Potatoes.* The Borden Co., New York, N. Y. Fill of container 63 per cent.

F.M.-101. *Candy Cigarettes.* World Candies, Inc., Brooklyn, N. Y. Fill of container 50 per cent.

F.M.-80. *Greyhound Animal Crackers.* Dairy State Foods, Inc., Milwaukee, Wis. Fill of container 60 per cent.

E.C.-1081 and K.F.-1983. *Hey Kids Candy Cigarettes.* World Candies, Inc., Brooklyn, N. Y. Average fill of container 55 per cent.

F.M.-127. *Hot-Rod Candy Chews and Surprise!* Leader Candies, Inc., Brooklyn, N. Y. Fill of container 45 per cent.

TABLE 3. VITAMIN-MINERAL FORTIFIED MILK

No.	City or town	Dairy	Vitamin A, units per quart	Vitamin D, units per quart	Riboflavin, milligrams per quart	Niacin, milligrams per quart	Remarks
C.C.-17838	Bridgeport	Mitchell Dairy Div., The Borden Co.	3,252 satisfactory	.....	2.1	8.9	Low in vitamin A and niacin.
W.R.-21188		Same	satisfactory	.....	2.2	12.5	Passed.
W.R.-21189		Same	satisfactory	.....	2.3	12.3	Passed.
C.C.-17845	Hamden	Brock-Hall Dairy	4,078 satisfactory	.....	2.9	13.3	Passed.
C.J.-14418		Same	satisfactory	.....	2.7	13.6	Passed.
C.C.-17841	Kensington	Ferndale Dairy, Inc.	5,203 satisfactory	.....	4.2	11.8	Too high in vitamin A, but passed.
C.J.-14414		Same	satisfactory	.....	4.0	13.2	Passed.
C.C.-17843	Meriden	Charles Greenbacker & Sons	5,322 satisfactory	.....	4.7	13.2	Too high in vitamin A, but passed.
C.J.-14415		Same	satisfactory	.....	3.9	11.6	Passed.
C.C.-17842		Schwink's Dairy, Inc.	4,257 satisfactory	.....	3.9	11.0	Passed.
C.J.-14416		Same	satisfactory	.....	3.7	13.4	Passed.
C.C.-17840	New Britain	Guida-Seibert Dairy Co.	4,021 satisfactory	.....	2.5	12.3	Passed.
C.J.-14417		Same	satisfactory	.....	2.6	12.8	Passed.
E.B.-5077	Torrington	Clover Dairy	..... satisfactory	satisfactory	3.5	9.0	Low in niacin.

TABLE 4. VITAMINS A AND D SKIMMED MILK

No.	City or town	Dairy	Vitamin A, units per quart	Remarks
C.J.-4939	East Hartford	Bergren's Dairy	2,351	Passed.
C.J.-4940	Hartford	National Dairy Products (Sealtest)	1,885	Low in vitamin A.
C.J.-4943	Kensington	Ferndale Dairy	0	No vitamin A.
C.J.-4942	Newington	Springbrook Dairy	0	No vitamin A.
C.J.-4941	West Haven	Clark Dairy	1,514	Low in vitamin A.

E.C.-1070. *Lucky Flip-Top Box Candy Cigarettes, King Size.* Sylvan Sweets Co., Easton, Pa. Fill of container (average of 24 boxes) 54 per cent.

K.F.-2142. *Merry Christmas Flip Top Packs King Size Candy Cigarettes.* Smiley Candy Co., Easton, Pa. Fill of container 49 per cent.

E.C.-1071 and 1075. *Merry Christmas King Size Candy Cigarettes.* Sylvan Sweets Co., Easton, Pa. Fill of container (average of 20 packs) 60 per cent.

F.M.-57. *Mickey Mouse Tiny Theater Candy and Toy.* Super Novelty Candy Co., Inc., Newark, N. J. Fill of container 52 per cent.

J.B.-348. *Old Fashioned Molasses Rings by Golden.* Golden Cookie Co., Watertown, Mass. Fill of container 65 per cent.

K.F.-2111 and 2112. *World's Finest Candy Cigarettes.* World Candies, Inc., Brooklyn, N. Y. Fill of container 42 per cent.

Eggs and Egg Products

Eight samples of frozen whole eggs, five of frozen sugared egg yolks and one of a dried egg yolk product were submitted by the Commissioner; 13 samples were passed and one was adulterated. Analyses of the frozen products are given in Table 5.

A.L.-471, *Bril-Eg*, manufactured by H. C. Brill Co., Inc., Newark, N. J., was labelled: "A dry product high in yolk solids. Contains egg yolks, lecithin, salt, vegetable protein, dextrose." Analysis showed: Water, 6.74, lipoids, 27.95, lipid P_2O_5 , 0.61, and egg yolk solids (dry basis), 38.5, per cent; coal-tar dye absent. Passed.

Extracts and Flavors

Twenty-five official samples of root beer bases, nine of foaming agents and three of miscellaneous flavoring agents were examined for the Commissioner, and one unofficial sample each of a foaming agent and a "smoke" fluid was analyzed for the Commissioner and a manufacturer. Eighteen samples were passed and 21 were adulterated:

J.B.-322. *Atlas Flavors N507 Creamy Root Beer Soda Water Flavor.* H. Kohnstamm & Co., Inc., New York, N. Y. Non-saponin hemolytic agent present; adulterated.

J.B.-318. Blue Seal Root Beer Concentrate. Lafayette Bottling Co., New Britain, Conn. Saponin absent; passed.

P.S.-161. Cramore's Crystals Instant Lemon Flavor. Cramore Fruit Products, Inc., Point Pleasant, N. J. Non-saponin hemolytic agent present; adulterated.

K.C.-1084. Crane's Old Fashioned Cocktail Mix, Non-Alcoholic. Deal Products Corp., East Orange, N. J. Non-saponin hemolytic agent present; adulterated.

F.M.-82, 89 and 95. Fine Fruit Flavors Soda Water Flavor, Root Beer. Green & Green, Houston, Texas. Saponin was present in *F.M.-82* and *89*, which were consequently adulterated. *F.M.-95* contained no saponin or other hemolytic agent and was passed.

E.S.-70. Foaming Agent. Samuel Azonic, Hartford, Conn. Non-saponin hemolytic agent present; adulterated.

J.B.-284, 291 and 293. Frostie Old Fashion Root Beer Beverage Base. The Frostie Co., Baltimore, Md. *J.B.-284* and *291* contained saponin and were consequently adulterated. *J.B.-293* contained no saponin or other hemolytic agent and was passed.

4910 and A.F.-305 and 306 and P.S.-158 and 159. Frothee "The Original Creamy Head." House of Frothee, Inc., New York, N. Y. *A.F.-305* and *306* definitely contained saponin and were adulterated. Extracts of the other three samples slowly hemolyzed defibrinated rat blood both in the presence and absence of cholesterol, but because of evidence supplied by the manufacturer (Atlas Powder Co., Wilmington, Del.) of the foaming agent used (polyoxyethylene sorbitan monostearate) that it was non-toxic, these samples were passed.

K.F.-1950. Hires Root Beer Extract. Charles E. Hires Co., Philadelphia, Pa. Saponin absent; passed.

J.B.-321 and 339. Creamy Root Beer Soda Water Flavor. H. Kohnstamm & Co., Inc., New York, N. Y. *J.B.-321* contained saponin and was adulterated; *J.B.-339* was passed.

K.F.-2087. Lamco Imitation Vanilla. Lamco Products, Fall River, Mass. Test for coumarin negative; passed.

K.F.-1985. L-1739 Foam Blender. H. Kohnstamm & Co., Inc., New York, N. Y. Labelled: "Contains licorice extractives physiologically tested and non-toxic derivative of sorbitol laurate and water." Tests for hemolytic agents doubtful; methyl cellulose probably present; passed.

K.F.-1986. L-1740. Foam Blender. H. Kohnstamm & Co., Inc., New York, N. Y. Labelled: "Contains physiologically tested and non-toxic methyl cellulose and derivative of sorbitol laurate, water." Tests for hemolytic agents doubtful; passed.

K.F.-2040. Mission Root Beer Concentrate No. 444. Mission of California, Inc., New Haven, Conn. Saponin absent; passed.

J.B.-304 and K.F.-2038. Mission Root Beer Concentrate No. 454. Mission of California, Inc., New Haven, Conn. Saponin present; adulterated.

K.F.-2039. Mission Root Beer Concentrate No. 454C. Mission of California, Inc., New Haven, Conn. Saponin absent; passed.

TABLE 5. FROZEN WHOLE EGGS AND EGG YOLKS

No.	Manufacturer and brand	Total solids per cent	Lipoids, per cent	Lipoid P ₂ O ₅ , per cent	Salt, per cent	Dextrose, per cent	Sucrose, per cent	Egg yolks, per cent	Added ingredient declared	Remarks
Whole Eggs										
P.S.-145	Armour & Co., Chicago, Ill.	26.22	11.92	0.32	0.84	0.45	0.00	...	...	Passed.
K.C.-1028	Armour's Creameries, Chicago, Ill.	26.36	13.48	0.38	0.31	0.25	0.00	...	...	Passed.
K.F.-1999	Armour's Cloverbloom	25.68	12.20	0.33	0.62	0.00	0.00	...	...	Passed.
K.C.-1029	Grown Poultry, Hamden, Conn.	23.78	11.84	0.32	0.30	0.25	0.00	...	...	Passed.
K.F.-1965	Iowa Food Corp., Gutenberg, Iowa ..	25.92	12.82	0.38	0.36	0.30	0.00	...	...	Passed.
P.S.-144	M.F.A. Poultry & Egg Division, Columbia, Mo. M.F.A.	26.66	12.77	0.35	0.76	trace	0.00	...	...	Passed.
P.S.-146	Louis Orenstein, Hartford, Conn.	26.77	13.02	0.35	0.96	trace	0.00	...	...	Ammonia nitrogen 2.4 mg./100 gm. Passed.
K.C.-1050	Swift & Co., Chicago, Ill. Swift's Brookfield	26.92	13.59	0.37	0.32	0.27	0.00	...	...	Passed.
Egg Yolks										
W.M.-2434	Fairmont Food Co., Omaha, Nebr.	49.07	27.94	0.74	0.37	0.57	10.87	76	10% sugar	Passed.
W.M.-2432	Kraft Food Co., Chicago, Ill.	49.54	28.30	0.74	0.35	0.62	10.08	76	App. 10% sugar	Passed.
W.M.-2433	Nebraska Egg & Poultry Co., Inc., David City, Nebr.	48.62	28.54	0.44	0.34	0.62	10.52	45	10% sugar	Not all yolk; adulterated.
F.H.-2267	Rock Island Produce Co., Rock Island, Ill.	50.51	30.59	0.71	0.33	0.74	7.61	73	App. 10% sugar	Passed.
W.M.-2532	Seymour Foods, Inc., Topeka, Kansas Consort	49.01	27.60	0.72	0.33	0.62	10.57	74	App. 10% sugar	Passed.

A.J.-44 and F.P.-395. Nesbitt Bottlers' Soda Water Beverage Base—Root Beer Flavor #6413. Nesbitt Fruit Products, Inc., Los Angeles, Calif. *A.J.-44* contained saponin and was adulterated; *F.P.-395* was passed.

F.M.-72 and 84 and E.S.-85. No. 1270 Creamy Root Beer Beverage Base. Flavorex Co., Inc., Baltimore, Md. *F.M.-72* and *84* contained saponin and were adulterated; *E.S.-85* was passed.

E.C.-1027. N-1298 Foam Blender. H. Kohnstamm & Co., Inc., New York, N. Y. Non-saponin hemolytic agent present; adulterated.

F.M.-90. No. 2238 Creamy Root Beer Beverage Base. Flavorex Co., Inc., Baltimore, Md. Saponin absent; passed.

E.C.-1026. No. 5144 Root Beer Beverage Base. Liquid Carbonic Corp., Chicago, Ill. Saponin present; adulterated.

E.C.-1028. No. 20192 Root Beer Emulsion Code 9105M-7. Liquid Carbonic Corp., Chicago, Ill. Non-saponin hemolytic agent present; adulterated.

F.M.-69. Root Beer Concentrate. Cott Beverage Corp., New Haven, Conn. Non-saponin hemolytic agent present; adulterated.

P.R.-222. Root Beer Flavor. La France Beverage Co., Central Village, Conn. Saponin absent; passed.

6131. Wholly Smoke Fluid. Grant-Murray, Inc., Hartford, Conn. This preparation was claimed to be a mixture of one and one-half parts of acetamide with five parts of water. Its intended use was not as a flavor but as a smoke-former in window displays; upon warming to 90°C. with an electrically-heated coil of wire it turned into "smoke". (The obvious principle behind this was that the acetamide was hydrolyzed to gaseous ammonia and acetic acid, which then condensed to a "smoke" of solid ammonium acetate.) The sample was submitted by the Commissioner for an opinion on whether there was any health hazard in its use; we replied that under the conditions outlined we did not believe that there was.

K.F.-2041. Yucca Extractive. T. Ritter, Los Angeles, Calif. Saponin present; adulterated.

Fish

Three samples of canned fish were examined for the Commissioner; all were passed.

K.F.-1964. Chiquita Brand Bonito Flakes. Robert B. Adelman, New York, N. Y. Net weight: Declared, 6 oz.; found (average of six cans), 6.18 oz.

P.S.-173. Tunny Fish in Pure Olive Oil, Salt Added. Manuel J. Pineiro, Virgo Grove, Spain. The question raised with regard to this sample was whether "Tunny Fish" was a proper and sufficient name. The sample was referred to the Division of Microbiology of the U. S. Food and Drug Administration; they reported that the contents were white meat albacore tuna (*Thunnus germon*) of good quality, and that "The term 'tunny fish' has been used and accepted for many years for albacore packed in olive oil and is recognized under the standards of identity for tuna."

A.J.-59. Whitney's Salmon Seasoned with Salt. Whitney & Co., Seattle, Wash. This sample was submitted to the Division of Microbiology of the U. S.

Food and Drug Administration for identification of the variety. They reported that it was a normal pack of chum salmon, which is the cheapest of the five varieties of Northwestern salmon (chinook, silver, red, pink and chum). They also stated that it was the usual commercial practice to label chum salmon as "salmon" unqualified.

Fruit and Fruit Juice

Fresh Fruit

One sample of tangerines was examined for the Commissioner, and solids and pectin was determined on 35 samples of apples for Dr. Philip Garman of our Entomology Department. The tangerines were misbranded:

K.C.-1023. Florida Citrus Killarney Rose Tangerines. Killarney Fruit Co., Killarney, Fla. These tangerines were coated with an undeclared resinous material whose infrared pattern was similar to that of rosin.

Results on the apples were as follows:

	Green Apples			Ripe Apples		
	Max.	Min.	Ave.	Max.	Min.	Ave.
Total solids, per cent	14.29	12.08	12.76	18.03	12.60	15.52
Pectic acid, per cent	0.63	0.38	0.43	0.69	0.43	0.55

Fruit Juice Concentrates

Two orange juice concentrates were submitted by the dealer to check on whether the degrees of concentration were as claimed:

6610. 42° Brix Concentrate. Juice Corporation of America, Glendale, L. I., N. Y. Citric acid, 2.80, invert sugar, 15.75, sucrose, 17.36, total sugars, 33.11, ash, 1.49, K₂O, 0.87, and P₂O₅, 0.14, per cent; Brix gravity, 42.4. The gravity was as claimed, but the concentration was not 4 to 1 as it was supposed to be but 3.4 to 1.

6611. 58° Brix Concentrate. Juice Corporation of America, Glendale, L. I., N. Y. Citric acid, 3.91, invert sugar, 22.76, sucrose, 24.52, total sugars, 47.28, ash, 1.94, K₂O, 1.07, and P₂O₅, 0.18, per cent; Brix gravity, 51.8. Not 58° Brix as claimed; concentration not 5 to 1 but 4.2 to 1.

Fruit Juices

Three official and 23 unofficial samples of apple juice (cider) and 71 official samples of orange juice were examined; 68 samples were passed and 29 were adulterated or misbranded.

All except two of the unofficial cider samples were submitted by Dr. Philip Garman of our Entomology Department for the purpose of comparing the composition of commercial bottled and canned apple juices with that of the Connecticut product. These 21 samples were obtained through the courtesy of Dana G. Dalrymple, extension economist on fruit and vegetable marketing of the University of Connecticut at Storrs; they included 10 domestic brands and 11 brands imported from Australia, Canada, Denmark, Holland and Switzerland. Analyses of these samples (together with two analyzed for a manufacturer and the three official samples) are given in Table 6. All samples were passed.

Of the 71 orange juice samples 42 were passed and 29 were adulterated or misbranded. Because of the space that would be required to reproduce the

TABLE 6. CIDER

No.	Manufacturer or distributor and brand	pH	Malic acid, gm./100 cc.	Total solids, gm./100 cc.	Ash gm./100 cc.	Invert sugar, gm./100 cc.	Sucrose, gm./100 cc.
5544	S. Allen Ltd., Havelock-Norwich, Canada <i>Allen's Clear Vitaminized</i>	3.31	0.67	13.17	0.28	10.55	0.80
5547	B. C. Fruit Processors, Ltd., Kelowna, B. C. <i>Sun Rype Applecot Nectar Vitamin C Added</i> ¹	3.49	0.72	16.26	0.31	9.92	4.07
5548	B. C. Fruit Processors, Ltd., Kelowna B. C. <i>Sun Rype Applelime Juice</i> ²	3.42	0.57	12.86	0.30	9.94	1.24
5536	Berks-Lehigh Fruit Growers, Fleetwood, Fla. <i>Red Cheek</i>	3.73	0.35	16.11	0.26	11.91	2.14
5540	Bib Corp., Lakeland, Fla. <i>Bib with Acerola Juice</i> ³	3.63	0.38	14.82	0.27	10.47	2.51
5530	J. N. Bishop, Cheshire, Conn. <i>Frozen Whole Juice</i> ⁴	3.65	0.31	12.99	0.24	9.00	2.24
5534	Duffy-Mott Co., Inc., New York, N. Y. <i>Mott's</i>	3.52	0.46	14.91	0.28	9.85	2.79
5537	Edgewater Cannery, Ltd., Northport, Ont. <i>Sun Rype Vitaminized</i>	3.71	0.42	11.76	0.26	10.12	0.13
5539	Emmentalische Obstweingensenschaft, Wädenswil, Switzerland <i>Ramseier</i>	3.58	0.57	11.70	0.29	9.80	0.00
5641	Fruit Industries, Inc., Bradenton, Fla. <i>Tropicana Fresh</i>	3.82	0.33	14.73	0.27	10.39	2.95
W.M.-2407	Fruit Industries, Inc., Bradenton, Fla. <i>Tropicana Fresh</i> ⁵ .....	.....	.....	.....	0.25	.....	.....
K.F.-2140	Hilltop Orchard, Branford, Conn. <i>Hilltop Orchard</i> ⁶ .....	.....	.....	.....	.....	.....	.....
5543	Koningkluke Mij. De-Betuwe N. V., Tiel, Holland. <i>Rijno</i>	3.31	0.65	12.89	0.27	10.25	0.52
5546	Mac's Cyder Pty., Ltd., Hartwell, Melbourne, Australia. <i>Mac's Purap</i>	3.71	0.37	13.38	0.24	10.38	0.93

¹Zinc, 3.9 p.p.m.³Zinc, 3.0 p.p.m.⁵Alcohol, 0.20%²Zinc, 3.1 p.p.m.⁴Alcohol, 0.10%⁶Benzoate absent

TABLE 6. CIDER

Total sugars, gm./100 cc.	Tannin, gm./100 cc.	Potassium, gm./100 cc.	Calcium, p.p.m.	Magnesium, p.p.m.	Phosphorus, p.p.m.	Manganese, p.p.m.	Iron, p.p.m.	Aluminum, p.p.m.	Copper, p.p.m.	Boron, p.p.m.
11.35	0.094	0.120	32	56	80	0.2	3.3	0.5	5.9	2.0
13.99	0.110	0.111	46	56	93	0.4	6.1	0.9	5.9	2.4
11.18	0.058	0.111	31	49	60	0.3	4.1	0.6	4.3	3.2
14.05	0.050	0.104	29	47	84	0.3	3.6	0.6	7.6	1.9
12.98	0.095	0.094	26	47	55	0.4	4.3	1.3	4.8	1.4
11.24	0.090	0.066	21	44	122	0.3	3.3	6.8	7.8	2.0
12.64	0.029	0.103	36	62	74	0.5	9.4	0.8	5.6	1.7
10.25	0.104	0.090	20	39	58	0.3	5.2	0.5	6.2	1.2
9.80	0.066	0.134	56	46	45	0.3	2.1	0.6	4.8	2.0
13.34	0.064	0.110	40	60	61	0.3	3.3	3.1	5.5	0.8
13.93	.....	0.151	.....	.....	.....	.....	.....	.....	.....	.....
.....
10.77	0.076	0.099	72	61	66	0.5	8.1	1.6	6.3	1.7
11.31	0.064	0.113	21	42	60	0.3	8.0	0.7	5.6	1.8

TABLE 6. CIDER (Concluded)

No.	Manufacturer or distributor and brand	pH	Malic acid, gm./100 cc.	Total solids, gm./100 cc.	Ash gm./100 cc.	Invert sugar, gm./100 cc.	Sucrose, gm./100 cc.
5532	Manufacturer unknown. <i>Eastern Concentrate 6-1⁴</i>	3.38	0.50	14.18	0.28	9.07	3.12
5531	Manufacturer unknown. <i>Western Concentrate 3-1⁴</i>	3.59	0.41	13.82	0.30	9.83	2.17
5534	S. Martinelli, Inc., Watsonville, Calif. ⁴	3.41	0.51	14.70	0.28	10.80	1.87
5541	Mosterei Cidrerie de Kiesen, Kiesen, Switzerland. <i>Gravensteiner</i>	3.41	0.62	11.49	0.27	9.24	0.56
5533	New England Apple Products Co., Littleton, Mass. <i>Veryfine</i> ..	3.98	0.21	12.55	0.24	10.43	0.52
5549	S. & W. Fine Food, Inc., Redwood City, Calif. <i>S and W Liquid Apple</i>	3.48	0.56	13.61	0.27	10.43	1.10
4132	V. Tenedine & Sons, Inc., North Haven, Conn. <i>Hard Cider</i> ⁷ ..	.....	.....	.....	.....	.....	.....
4284	V. Tenedine & Sons, Inc., North Haven, Conn. <i>Tenedine's Fancy Pasteurized</i> ....	.....	0.27	.....	.....	.....	.....
5545	A/S Vald Olsens Fabrikker, Damso, Denmark. <i>Tollose</i>	3.30	0.77	11.80	0.28	8.72	1.23
E.C.-992	Wallstone Orchards, Norwich, Conn. ⁸ .....	.....	.....	.....	0.15	.....	.....
5542	"Zuribieter" Obst-und Weinbaugenossenschaft, Wädenswil, Switzerland. <i>Wädenswiler Theilersbirnen</i>	4.05	0.36	15.67	0.38	11.52	0.89
5538	A. Zwaneburg & Co. N.V., Zwijndrecht, Holland, <i>Azet</i>	3.27	0.81	12.73	0.30	10.10	0.66

⁴Alcohol, 0.10%⁸Alcohol, 0.54%⁷Alcohol, 5.55%; acetic acid, 1.08 gm./100 cc.

TABLE 6. CIDER (Concluded)

Total sugars, gm./100 cc.	Tannin, gm./100 cc.	Potassium, gm./100 cc.	Calcium, p.p.m.	Magnesium, p.p.m.	Phosphorus, p.p.m.	Manganese, p.p.m.	Iron, p.p.m.	Aluminum, p.p.m.	Copper, p.p.m.	Boron, p.p.m.
12.19	0.054	0.065	48	55	110	0.7	7.1	0.4	8.0	2.0
12.00	0.032	0.066	33	60	91	0.3	3.5	0.8	7.8	2.3
12.67	0.132	0.071	32	58	80	0.4	2.6	0.9	7.7	1.7
9.80	0.068	0.109	58	47	74	0.3	2.9	0.5	8.6	1.8
10.95	0.054	0.086	25	41	70	0.3	7.2	2.9	5.9	1.5
11.53	0.158	0.114	17	43	102	0.2	2.3	0.9	6.5	2.9
.....
.....
9.95	0.114	0.109	49	50	58	0.8	7.2	over 25	5.4	1.6
.....	.....	0.085	.....	.....	.....	.....	.....	.....	.....	.....
12.41	0.060	0.163	56	83	183	0.4	3.7	0.4	12.1	2.0
10.76	0.103	0.102	95	61	96	1.6	7.0	3.0	9.9	2.4

TABLE 7. ADULTERATED OR MISBRANDED ORANGE JUICE

No.	Manufacturer or distributor and brand	Invert sugar, gm./100 cc.	Sucrose, gm./100 cc.	Total sugars, gm./100 cc.	Citric acid, gm./100 cc.	Ash, mg./100 cc.	K ₂ O, mg./100 cc.	P ₂ O ₅ , mg./100 cc.	Ascorbic acid, mg./100 cc.	Brix per cent gravity, orange juice	Estimated Net Contents, fl. oz.	Remarks	
E.S.-72	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	348	173	35.0	35	.....	77	46.19	Adulterated with water
E.S.-73	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	292	136	32.4	22	.....	62	46.22	Adulterated with water
E.S.-74	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	337	171	33.2	36	.....	76	18.22	Adulterated with water
E.S.-75	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	338	173	35.8	36	.....	77	18.47	Adulterated with water
E.S.-76	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	310	147	28.8	34	.....	65	46.25	Adulterated with water
E.S.-77	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	310	143	31.2	33	.....	63	46.31	Adulterated with water
E.S.-80	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	6.88	4.39	11.27	.....	335	164	32.0	20	.....	73	46.31	Adulterated with sugar and water
A.L.-441	First National Stores, Inc., Somerville, Mass. "Yor" Garden California Unsweetened	.....	.....	.....	.....	298	149	31.8	23	.....	66	45.97	Adulterated with water

TABLE 7. ADULTERATED OR MISBRANDED ORANGE JUICE (Continued)

No.	Manufacturer or distributor and brand	Invert sugar, gm./100 cc.	Sucrose, gm./100 cc.	Total sugars, gm./100 cc.	Citric acid, gm./100 cc.	Ash, mg./100 cc.	K ₂ O, mg./100 cc.	P ₂ O ₅ , mg./100 cc.	Ascorbic acid, mg./100 cc.	Brix per cent gravity, orange juice	Estimated Net Contents, fl. oz.	Remarks	
K.C.-1131	Imperial Juice Co., Lakeland, Fla. Imperial Florida, Fancy Dairy Pak	4.39	5.61	10.00	0.85	338	200	34.0	32	11.5	78	31.78	Adulterated with sugar and water
K.C.-1132	Imperial Juice Co., Lakeland, Fla. Imperial Florida, Fancy Dairy Pak	4.32	5.54	9.86	0.84	351	194	34.0	29	11.5	76	32.12	Adulterated with sugar and water
F.H.-2891	Imperial Juice Co., Lakeland, Fla. Imperial Florida	2.31	7.89	10.20	0.84	211	118	.....	.....	10.9	46	32.12	Adulterated with sugar and water Misbranded; short volume 0.90 fl. oz.
F.H.-2256	Juice Corporation of America, Glendale, N. Y. Pure Maid	.....	.....	.....	.....	392	223	.....	33	.....	87	31.10	Misbranded; short volume 0.20 fl. oz.
F.H.-2266	Juice Corporation of America, Glendale, N. Y. Pure Maid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31.80	Misbranded; short volume 0.56 fl. oz.
W.M.-2384	Juice Corporation of America, Glendale, N. Y. Pure Maid	.....	.....	.....	.....	367	213	.....	50	.....	83	31.44	Misbranded; short volume 0.73 fl. oz.
F.H.-2910	National Dairy Products Co., New York, N. Y. Sealtest Reconstituted	.....	.....	.....	0.87	414	237	.....	44	11.4	93	31.27	Misbranded; short volume 0.56 fl. oz.
F.H.-2961	National Dairy Products Co., New York, N. Y. Sealtest Reconstituted	.....	.....	.....	.....	411	241	.....	.....	.....	94	31.44	Misbranded; short volume 0.56 fl. oz.
K.N.-3680	National Dairy Products Corp., Brooksville, Fla. Sealtest Chilled Florida	.....	.....	.....	.....	432	226	.....	32	.....	88	31.44	Misbranded; short volume 0.56 fl. oz.
K.F.-2103	Oscola Fruit Distributors, Kissimmee, Fla. Ivey's King Sun	.....	.....	.....	.....	254	143	.....	21	.....	56	31.78	Adulterated with water
F.H.-2888	Oscola Fruit Distributors, Kissimmee, Fla. Ivey's King Sun	.....	.....	.....	0.85	334	185	.....	.....	11.8	72	32.12	Adulterated with water

TABLE 7. ADULTERATED OR MISBRANDED ORANGE JUICE (Concluded)

No.	Manufacturer or distributor and brand	Invert sugar, gm./100 cc.	Sucrose, gm./100 cc.	Total sugars, gm./100 cc.	Citric acid, gm./100 cc.	Ash, mg./100 cc.	K ₂ O, mg./100 cc.	P ₂ O ₅ , mg./100 cc.	Ascorbic acid, mg./100 cc.	Brix per cent gravity, orange juice	Estimated Net Contents, fl. oz.	Remarks	
A.J.-51	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.12	Adulterated with sugar and water
A.J.-52	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.12	Adulterated with sugar and water
A.J.-53	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.12	Adulterated with sugar and water
A.J.-54	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.02	Adulterated with sugar and water
A.J.-55	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.12	Adulterated with sugar and water
A.J.-56	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	3.84	6.68	10.52	.....	354	192	.....	37	.....	75	32.12	Adulterated with sugar and water
K.N.-3910	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i> .....	.....	.....	.....	.....	216	120	.....	21	.....	47	31.78	Adulterated with water
K.N.-3918	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	2.55	8.46	11.01	.....	233	121	.....	24	.....	48	32.22	Adulterated with water
K.N.-3919	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun Reconstituted</i>	2.93	7.77	10.70	.....	260	138	.....	27	.....	54	32.15	Adulterated with water
S.O.-441	Osceola Fruit Distributors, Kissimmee, Fla. <i>Ivey's King Sun</i> .....	.....	.....	.....	.....	302	156	.....	.....	.....	61	31.78	Adulterated with water

analyses of all these samples, only those found deficient are listed in Table 7. These juices were in refrigerated quart paper cartons except for the "Yor' Garden" brand juice, which was in 18-and 46-fl. oz. cans.

Preserved Fruit

Nineteen samples of "Maraschino" cherries were submitted by the Commissioner to be examined for the presence of undeclared sulphur dioxide; six samples were passed and 13 were adulterated or misbranded:

F.M.-153. Castanet Carnival of Flavor Fancy Maraschino Cherries. Benedict Packing Corp., New York, N. Y. Sulphur dioxide, 444 parts per million; misbranded.

F.M.-76. Freshpak Brand Grand Union Food Markets Maraschino Cherries. Grand Union Co., East Paterson, N. J. Sulphur dioxide, 6 p.p.m.; passed.

K.F.-2005. Granadaise Maraschino Cherries in Sugar Syrup, Artificially Flavored and Colored. Granadaise Foods, Inc., New York, N. Y. Labelled: "Contains Sulfur Dioxide". Sulphur dioxide found, 494 p.p.m. Passed.

K.C.-1013 and F.M.-36. Grandee Maraschino Cherries in Sugar Syrup. Mawer-Gulden-Annis, Inc., Brooklyn, N. Y. Average sulphur dioxide content, 80 p.p.m.; misbranded.

K.C.1017 and F.M.-60 and 61. Paradise Brand Maraschino Cherries. Paradise Packing Co., Brooklyn, N. Y. Average sulphur dioxide content, 155 p.p.m.; misbranded.

A.L.-437 and 438 and F.M.-96. Premier Maraschino Cherries in Sugar Syrup. Francis H. Leggett & Co., New York, N. Y. Average sulphur dioxide content, 3 p.p.m.; passed.

K.F.-2056, 2084 and 2085. Table Joy Maraschino Cherries in Sugar Syrup. L. & S. Packing Co., New York, N. Y. *K.F.-2085* contained 334 p.p.m. of undeclared sulphur dioxide and was misbranded. *K.F.-2056* and *2084* averaged 1,404 p.p.m. sulphur dioxide, and in these samples the gas could actually be smelled and tasted; they were therefore both adulterated and misbranded.

F.M.-62. Three Star Brand Maraschino Cherries in Sugar Syrup. Paradise Packing Co., Brooklyn, N. Y. Sulphur dioxide, 27 p.p.m.; misbranded.

K.F.-2071 and 2072 and A.L.-463 and 464. Topping Time Cherries Sundae Topping. Sea Snack Co., Philadelphia, Pa. *K.F.-2071* contained only 4 p.p.m. of sulphur dioxide and was passed. The other three samples averaged 541 p.p.m. of sulphur dioxide and were misbranded.

Jams and Jellies

Two samples of jellies and five of preserves were examined for the Commissioner; two samples were passed and five were misbranded:

K.F.-1864. Freshpak Brand Apple-Mint Jelly, Mint Flavor and Artificial Color Added. Grand Union Co., East Paterson, N. J. Total solids, 65.74, total sugars, 65.68, malic acid, 0.46, and ash, 0.114, per cent; K₂O, 42.2, and P₂O₅, 6.6, mg./100 gm.; estimated per cent apple juice, 27. This corresponds to 24 parts of juice to 55 parts of sugar, as against the minimum of 45 parts of juice

to 55 parts of sugar set by Federal Regulation 29.5(a). Misbranded for this reason and because not labelled "Mint-Flavored Apple Jelly".

A.L.-424. Lincoln Dietetic-Sugar Free Grape Spread. Lincoln Foods, Inc., Lawrence, Mass. Labelled: "Made Without Sugar—4 calories per teaspoonful—Keep cold after opening—Contains more fruit juice or fruit than regular preserves or jellies, special pectin, 0.5% sucaryl calcium, sorbitol, citric acid, no preservative or artificial color, contains only natural fruit sugars—Nutritional information: Carbohydrate 12 to 15%. Traces protein and fat. Sucaryl is a modern non nutritive, artificial sweetener to be used only by those who must restrict their intake of sugar." Analysis showed: Total solids, 42.50, soluble solids, 41.70, invert sugar, 8.80, sucrose, 0.40, total sugars, 9.20, protein, 0.79, ether extract, 0.17, fiber, 0.11, ash, 0.44, and available carbohydrate, 41.43 (claimed 12 to 15), per cent; K_2O , 162, and P_2O_5 , 16.9, mg./100 gm.; calories/100 gm., 170; calories/teaspoonful (5 gm.), 8.5 (claimed 4); estimated per cent grape juice, 55. This sample probably contained no added sugar, but the 9.20 per cent sugar contributed by the grape juice was far too much to justify the "Sugar Free" claim. Misbranded for this reason and because the available carbohydrate was almost three times as high as claimed.

A.L.-423. Lincoln Dietetic-Sugar Free Strawberry Spread. Lincoln Foods, Inc., Lawrence, Mass. Label claims were identical with *A.L.-424* above. Analysis showed: Total solids, 42.33, soluble solids, 41.53, invert sugar, 11.59, sucrose, 4.93, total sugars, 16.52, protein, 0.41, ether extract, 0.07, fiber, 0.11, ash, 0.37, and available carbohydrate, 41.37 (claimed 12 to 15), per cent; K_2O , 94.4, and P_2O_5 , 14.4, mg./100 gm.; calories/100 gm., 168; calories/teaspoonful (5 gm.), 8.4 (claimed 4); estimated per cent strawberry juice, 39; estimated per cent added sugar, 14. Misbranded for the same reasons as *A.L.-424*, and also because the "Made Without Sugar" claim was definitely false.

K.F.-1418. Lincoln 100% Pure Orange Marmalade. Lincoln Foods, Inc., Lawrence, Mass. Soluble solids, 69.29, citric acid, 0.35, total sugars, 64.56, and ash, 0.139, per cent; K_2O , 47.6, and P_2O_5 , 8.6 mg./100 gm.; estimated per cent orange juice, 29. This analysis indicated a ratio of 26 parts of juice to 55 parts of sugar, as against the 45:55 ratio set by Federal Regulation 29.0(a). Misbranded.

K.F.-1417. Lincoln Royal Fruit Preserve. Lincoln Foods, Inc., Lawrence, Mass. Labelled: "Blueberries Oranges Lemons." Analysis showed: Soluble solids, 70.53, citric acid, 0.40, total sugars, 64.92, and ash, 0.150, per cent; K_2O , 54.0, and P_2O_5 , 14.7, mg./100 gm.; estimated per cent juice, 50. This analysis indicated a ratio of 44 parts of juice to 55 parts of sugar; passed.

K.F.-2062. Mirabel Pure Orange Marmalade. First National Stores, Somerville, Mass. This sample was submitted because it bore no ingredient declaration. Since the dictionary defines "marmalade" as "A preserve or confection made of the pulp of fruit, as the orange, quince (originally), pear, apple, etc., boiled with sugar, and brought to a consistence like jam", in our opinion this product came under Federal Regulation 29.0(f)(1) as a preserve, and therefore as a standardized food was not required to list its ingredients. Passed. (No analysis was made.)

A.L.-427. Tropical Palm Table Delicacies Mint Jelly. Tropical Palm Products Co., New York, N. Y. Labelled: "Contains citrus base, sugar, mint flavor, pectin, citric acid, and color added." Analysis showed: Total solids,

60.45, sucrose, 14.98, invert sugar, 45.66, total sugars, 60.64, and ash, 0.052, per cent; K_2O , 1.6, and P_2O_5 , 3.2, mg./100 gm. No more than a trace if any of fruit juice present; imitation jelly not so labelled; misbranded.

Meat and Meat Products

Bologna

Nine samples of bologna were analyzed for the Commissioner; five were passed and four were misbranded. Analyses are given in Table 8.

Frankforts

Thirty-five official samples of frankforts were analyzed; eight were passed and 27 were misbranded. The percentage of satisfactory samples was 23, as against 36 in 1957 and 33 in 1956. Analyses of the misbranded samples are given in Table 9.

Hamburg

Thirty-one samples of hamburg submitted by the Commissioner were analyzed to see if they complied with the regulation requiring no more than 30 per cent of fat, and tested for the presence of sulphite, whose use in meat products is illegal. No sulphite was found in any sample, but 16 contained excessive fat; analyses of these samples are given in Table 10.

Five other samples were analyzed for a restaurant, and salt was determined in one *Kosher* hamburg for the State Police. The restaurant hamburgs all met the legal fat standard (but not their 18 per cent purchasing standard); the *Kosher* sample contained much too little salt to have been prepared as orthodox Jewish dietary laws prescribe:

4499 to 4503. *Hamburgs A, B, C, D and X.* McDonald's System Hamburgers No. 64, Hamden, Conn. Average analysis was: Total solids, 40.30, and fat, 21.25, per cent; dry skim milk, starch and sulphite absent.

4304. *Kosher Hamburg.* Martin's Kosher Market, Stamford, Conn. Salt (dry basis), 0.40 per cent, which is barely over the 0.25 per cent normally present in unsalted dried meat.

Pork Sausage

Regulation 186-27.12 states that "Pork sausage and breakfast sausage, whether fresh, smoked or canned, shall not contain more than 50 per cent of fat". Fourteen samples were submitted by the Commissioner for examination for compliance with this regulation. Of these, eight were passed and six were found to contain excessive fat. The substandard samples were the following:

K.F.-1966. Bulk Pork Sausage. Rogger Meat Packing, Philadelphia, Pa. Fat, 50.07 per cent.

K.F.-1953. Morrell Pure Pork Sausage. John Morrell & Co., Chicago, Ill. Fat, 53.49 per cent.

K.F.-1954. Morrell Pure Pork Sausage. John Morrell & Co., Chicago, Ill. Fat, 52.66 per cent.

K.C.-1010 and A.L.-487. Roessler's Yellow Tag Pure Pork Sausage. Roessler Packing Co., New Haven, Conn. Average fat content, 54.28 per cent.

TABLE 8. BOLOGNA

No.	Manufacturer or distributor and brand	Water, per cent	Protein, per cent	Lactose, per cent	Dextrose, per cent	Starch,	Dry skim milk, per cent	Added water, per cent	Sodium nitrite, p.p.m.	Remarks
J.B.-288	Columbia Packing Co., Boston, Mass. <i>Gem</i>	53.46	14.69	5.26	trace	absent	10.21	9.30	43	Excessive dry skim milk; misbranded
J.B.-301	Columbia Packing Co., Boston, Mass. <i>Gem</i>	50.38	12.56	2.30	2.44	absent	4.47	6.54	52	"Corn syrup" declared; passed
J.B.-290	Deerfoot Farms Co., Southborough, Mass. <i>Deerfoot</i>	48.38	13.44	0.00	1.99	absent	0.00	0.00	0	Passed
J.B.-286	Hartford Provision Co., New Britain, Conn. <i>Capitol</i>	57.84	13.31	3.13	trace	absent	6.08	13.28	90	Excessive dry skim milk and added water; misbranded
J.B.-303	Hartford Provision Co., New Britain, Conn. <i>Capitol</i>	58.20	12.44	2.40	0.57	absent	4.66	15.12	60	Excessive dry skim milk and added water; misbranded
K.F.-2030	Hygrade Food Products Corp., Detroit, Mich. <i>Hygrade</i>	55.04	10.69	trace	1.68	absent	0.00	12.28	110	Excessive added water; misbranded
K.F.-2034	New England Provision Co., Boston, Mass. <i>Nepro</i>	58.13	13.88	1.76	trace	absent	3.42	7.49	30	"Nonfat Dry Milk" declared; passed
J.B.-289	Premier Packing Co., Inc., Boston, Mass. <i>Zett</i>	48.10	12.96	1.72	0.20	absent	3.34	2.10	125	"Non Fat Dry Milk" declared; passed
J.B.-299	Stop & Shop Super Market, Middletown, Conn.	53.06	12.81	2.13	2.01	absent	4.14	6.94	45	"Corn syrup" declared; passed

TABLE 9. MISBRANDED FRANKFORTS

No.	Manufacturer or distributor and brand	Water, per cent	Protein, per cent	Lactose, per cent	Dextrose, per cent	Starch, per cent	Dry skim milk, per cent	Added water, per cent	Sodium nitrite, p.p.m.	Remarks
P.R.-200	Bradley Provision Co., Putnam, Conn.	47.59	11.63	2.41	1.86	0.00	4.68	3.75	85	Excessive dry skim milk
J.B.-278	Columbia Packing Co., Boston, Mass. <i>Gem Skimless</i>	54.21	13.06	2.37	trace	0.00	4.60	8.57	85	Excessive dry skim milk
P.R.-198	Columbia Packing Co., Boston, Mass. <i>Skimless</i>	50.06	13.75	3.64	0.31	0.00	7.07	5.18	110	Excessive dry skim milk
J.B.-279	Columbia Packing Co., Boston, Mass. <i>Southampton Skimless</i>	54.64	12.69	2.17	trace	0.00	4.21	9.92	97	Excessive dry skim milk
K.F.-1960	Fulton Markets, Inc., Waterbury, Conn. <i>All Beef</i>	60.98	13.94	1.14	trace	0.00	2.21	8.38	10	Dry skim milk present, not declared
K.F.-1961	Fulton Markets, Inc., Waterbury, Conn. <i>Fulton Market</i>	61.70	13.13	1.62	trace	0.00	3.15	3.66	33	Dry skim milk present, not declared
K.F.-2035	Hartford, Provision Co., New Britain, Conn.	50.87	14.19	2.65	0.53	0.36	5.15	1.37	58	Total fillers 5.31%; excessive dry skim milk and undeclared starch (or flour) present
J.B.-287	Hartford, Provision Co., New Britain, Conn. <i>Skimless</i>	54.84	14.06	3.02	trace	0.00	6.00	7.20	50	Excessive dry skim milk
P.R.-170	Home Pride Provisions, Inc., Stafford Springs, Conn.	56.45	14.75	3.61	0.20	0.00	7.01	7.49	58	Excessive dry skim milk
E.C.-1004	Roessler Packing Co., New Haven, Conn. <i>Roessler's Skimless</i>	49.85	15.13	5.08	0.61	0.00	9.87	3.45	190	Excessive dry skim milk
E.C.-1015	Roessler Packing Co., New Haven, Conn. <i>Roessler's Skimless</i>	55.66	14.38	2.65	1.39	0.00	5.15	5.50	182	Excessive dry skim milk
E.C.-1017	Roessler Packing Co., New Haven, Conn. <i>Roessler's Skimless</i>	53.92	13.69	3.33	trace	trace	6.47	8.40	200	Excessive dry skim milk
E.C.-1016	Roessler Packing Co., New Haven, Conn. <i>Roessler's (Skin On)</i>	56.75	13.44	4.16	trace	0.00	8.08	14.55	182	Excessive dry skim milk and added water
K.C.-1008	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	55.68	13.50	3.13	trace	0.00	6.08	10.36	106	Excessive dry skim milk

TABLE 9. MISBRANDED FRANKFORTS (Concluded)

No.	Manufacturer or distributor and brand	Water, per cent	Protein, per cent	Lactose, per cent	Dextrose, per cent	Starch, per cent	Dry skim milk, per cent	Added water, per cent	Sodium nitrite, p.p.m.	Remarks
F.M.-48	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag</i>	52.66	13.69	2.71	0.00	0.00	5.26	5.42	240	Excessive dry skim milk and sodium nitrite
E.C.-1014	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	57.81	13.63	3.33	0.20	trace	6.47	12.53	148	Excessive dry skim milk and added water
K.C.-1007	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	52.98	13.81	3.13	trace	0.00	6.08	6.42	116	Excessive dry skim milk
K.C.-1009	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	57.37	14.38	2.17	trace	0.00	4.21	5.89	116	Excessive dry skim milk
F.M.-38	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	56.79	13.94	2.00	trace	0.00	3.88	6.59	280	Excessive sodium nitrite
K.C.-1049	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	58.48	14.13	2.33	0.76	0.00	4.53	8.40	110	Excessive dry skim milk
F.M.-46	Roessler Packing Co., New Haven, Conn. <i>Roessler's Yellow Tag Skimless</i>	56.40	15.38	2.20	trace	0.00	4.27	1.00	232	Excessive dry skim milk and sodium nitrite
J.B.-277	Martin Rosol, Inc., New Britain, Conn. <i>Martin Rosol</i>	55.81	16.00	2.47	0.98	1.29	4.80	0.00	110	Total fillers 6.09%; excessive dry skim milk and undeclared starch (or flour) present
J.B.-313	Martin Rosol, Inc., New Britain, Conn. <i>Martin Rosol Gold Bond</i>	54.89	16.56	2.20	0.55	0.00	4.27	0.00	80	Excessive dry skim milk
J.B.-297	Martin Rosol, Inc., New Britain, Conn. <i>Martin Rosol Select</i>	49.87	15.06	3.44	1.53	0.48	6.68	0.00	70	Total fillers 7.16%; excessive dry skim milk and undeclared starch (or flour) present
J.B.-314	Martin Rosol, Inc., New Britain, Conn. <i>Martin Rosol Select</i>	58.59	14.00	2.06	0.48	0.00	4.00	8.31	90	Excessive dry skim milk
A.L.-445	Stange's Market, Meriden, Conn.	64.25	13.13	0.60	trace	0.00	1.17	13.41	72	Excessive added water
J.B.-280	Star Packing Co., New Britain, Conn.	52.14	13.75	2.78	0.25	0.00	5.40	4.86	212	Excessive dry skim milk and sodium nitrite

TABLE 10. HAMBURG CONTAINING EXCESSIVE FAT

No.	City or town	Market	Fat, per cent
F.P.-336	East Hartford	Andy's Food Town	40.13
P.S.-201	Hartford	Cut Price Market	32.97
P.S.-202		Cut Price Market	34.63
P.S.-177		Goodwill Food Market	44.29
P.S.-204		L. & S. Market	35.37
P.S.-205		L. & S. Market	34.84
P.S.-197		Snyder's Super Market	45.22
P.S.-198		Snyder's Super Market	46.27
P.S.-206		A. Wortman & Sons	33.03
P.S.-207		A. Wortman & Sons	33.14
J.B.-327	Middletown	Meat King	32.37
J.B.-356		Meat King	35.16
F.M.-122	Milford	King's Department Store	32.39
J.B.-359	New Britain	L. & L. Markets	30.98
F.M.-161	New Haven	Morro & Sons	43.18
J.B.-334	Newington	Easy Shop Super Market	37.03

K.F.-1956. Swift's Brookfield Skinless Pure Pork Sausage. Swift & Co., Chicago, Ill. Fat, 50.18 per cent.

A more complete analysis was made on another official sample of canned sausage, which was passed:

K.C.-1055. Dubuque Sausage, Dried Skim Milk Added in Vegetable Oil. Dubuque Packing Co., Dubuque, Iowa. Labeled: "Ingredients: Pork, Beef, Pork Stomachs, Beef Tripe, Dried Skim Milk, Water, Salt, Corn Syrup Solids, Flavoring, Sodium Nitrite, Sodium Nitrate, Packed in Vegetable Oil." Analysis of the sausage (freed of oil) showed: Water, 51.49, protein, 15.19, lactose, 1.72, dextrose, 0.27, starch, 0.00, dry skim milk, 3.34, and added water, 0.00, per cent; sodium nitrite absent.

Other Meat Products

One sample each of cooked salami, luncheon loaf, "Pep Stix" and smoked beef sausage was examined for the Commissioner; three were passed and one was misbranded:

K.F.-2031. Cooked Salami, Non Fat Dry Milk Added. Hygrade Food Products Corp., Detroit, Mich. Declared ingredients were "Beef and Pork, Water, Non Fat Dry Milk, Flavoring, Salt, Dextrose, Spice, Sodium Nitrite, Sodium Ascorbate, Sodium Nitrate." Analysis showed: Water, 61.45, protein, 14.38, lactose, 3.06, dextrose, 0.00, starch, 0.00, dry skim milk, 5.94, and added water, 12.41, per cent; sodium nitrite, 58 p.p.m.; no coal-tar dye. Misbranded because of excessive dry skim milk and added water.

K.F.-2029. Hygrade Spiced Luncheon Loaf. Hygrade Food Products Corp., Detroit, Mich. Declared ingredients were the same as *K.F.-2031* above. Analysis showed: Water, 50.61, protein, 12.88, lactose, 8.37, dextrose, 0.23, starch, 0.00, dry skim milk, 16.25, and added water, 22.33, per cent; sodium nitrite, 40 p.p.m.; coal-tar dye absent. This sample contained far more dry skim milk and added water than would be permitted in any sausage, but because no such limits have been set for meat loaf (Regulation 186-27.11 permits the addition of "milk" without limit) it was passed.

K.F.-1957. Slim Jims Smoked Beef Sausage, All Meat. Cherry-Levis Food Products, Philadelphia, Pa. Declared ingredients were "Beef, Salt, Sugar, Dextrose, Monosodium Glutamate, Sodium Nitrate, Sodium Nitrite." Tests for lactose (dry skim milk) and nitrite were negative; passed.

K.F.-1958. Yale Brand Pep Stix. New Haven Pickling Co., New Haven, Conn. Declared ingredients were "Beef, Spices, Flavoring, Sodium Nitrate, Sodium Nitrite." Lactose (dry skim milk) present; starch absent; sodium nitrite, 57 p.p.m. Passed.

Nuts

Two official samples of peanuts and one of pistachio nuts were examined; all were misbranded:

S.O.-448. Valley Fresh Nuts. Valley Fresh Nut Co., Haganan, N. Y. Labelled: "Cooked in Vegetable Oil, Salt Added." These pistachio nuts were colored red with undeclared coal-tar dye.

K.C.-1101 and A. L.-470. Venus Butter Toasted Peanuts. Continental Sales Co., Cymwyd, Pa. Labelled: "Made from nut meats, sugar and 93 score real butter"; the label showed a picture of a pound pat of butter. Total fat, 23.14 per cent; butyro refraction of fat, 25°C., 64.4; Reichert-Meissl value of fat, 1.17; Polenske value of fat, 0.21; estimated per cent butter, 1.1. Label misleading for product containing no more butter than this.

Oils, Vegetable

Fifteen samples of blended oils, eight sold as pure olive oil, and one soy oil, were examined for the Commissioner; one olive oil was analyzed for the New Britain health department. Six samples were passed and 19 were adulterated or misbranded.

The blended oils were the following; one was passed, and 14 were both adulterated and misbranded:

F.M.-157. Angelina Brand Salad Oil. East Coast Enterprises, Boston, Mass. Labelled: "Contents 90% Choice Soy Bean, Corn, Cottonseed, Vegetable Salad Oil, 10% Imported Pure Olive Oil." Butyro refraction, 25°C., 69.2; cottonseed oil, faint trace; peanut oil absent; no artificial flavor or color; squalene, 73 mg./100 gm.; estimated per cent olive oil, 19. Passed.

K.C.-1118 and F.M.-145, 146 and 151. DeVito Brand 80% Corn and Peanut Oil 20% Pure Olive Oil. Imported and Domestic Oil Co., Brooklyn, N. Y. Average analysis was: Butyro refraction, 25°C., 68.3; cottonseed oil, present; no peanut oil; artificial flavor and color present; squalene, 8 mg./100 gm.; estimated per cent olive oil, 0; net contents, 125.0 fl. oz. Cottonseed oil present not declared; no olive oil; short volume 3.0 fl. oz.; adulterated and misbranded.

K.C.-1136 and 1138 and F.M.-156. Paradise Brand 75% Peanut or Corn Oil 25% Pure Olive Oil. Imported and Domestic Oil Co., Brooklyn, N. Y. Average analysis was: Butyro refraction, 25°C., 67.8; cottonseed oil present; no peanut oil; artificial flavor present; artificial color present in *K.C.-1136* only; squalene, 11 mg./100 gm.; estimated per cent olive oil, 0.9; net contents, 124.5 fl. oz. Cottonseed oil and artificial flavor present not declared (artificial color also in *K.C.-1136*); little or no olive oil; short volume 3.5 fl. oz.; adulterated and misbranded.

J.B.-357, E.C.-1058 and 1059, K.C.-1127 and 1129 and F.M.-155. Prosperity Brand Extra Fine Quality 78% Corn and or Peanut Oils 22% Pure Virgin Olive Oil. J. Ossola Co., New York, N. Y. Average analysis was: Butyro refraction, 25°C., 67.3; cottonseed oil present; no peanut oil; artificial flavor present in *J.B.-357, E.C.-1059 and 1060 and K.C.-1129*; artificial color present in *E.C.-1059* only; squalene, 72 mg./100 gm.; estimated per cent olive oil, 17; net contents, 122.8 fl. oz. Cottonseed oil present in all samples, and artificial flavor in all except *K.C.-1127*, not declared (artificial color also in *E.C.-1059*); short volume 5.2 fl. oz.; adulterated and misbranded.

F.M.-42. Special Enrico Caruso Brand. Caruso Products Distributing Corp., Pelham Manor, N. Y. Labelled: "A special blend of 75% choice corn oil and pure peanut oil enriched with 25% imported olive oil." Butyro refraction, 25°C., 68.1; cottonseed oil, trace; no peanut oil; no artificial flavor or color; squalene, 106 mg./100 gm.; estimated per cent olive oil, 26; net contents, 123.5 fl. oz. Peanut oil absent; short volume 4.5 fl. oz., adulterated and misbranded.

Analyses of the oils sold as olive oil are given in Table 11; four were passed and five were adulterated or misbranded.

The soy oil sample was passed:

F.M.-51. Roberto Brand Pure Soya Salad Oil. Robert's Food Corp., Brooklyn, N. Y. Butyro refraction, 25°C., 69.7; cottonseed oil, trace; no peanut or mineral oil or artificial flavor or color.

Pickles

Seven miscellaneous samples of pickles were submitted by the Commissioner to check on whether they had been put up in dilute acetic acid instead of distilled vinegar as claimed. All samples were passed, although the permanganate oxidation number of the liquid portion of one of them was somewhat low. Analyses are given in Table 12.

Popcorn

Twenty-five samples of popcorn were submitted by the Commissioner, mostly to see if their coatings were butter as claimed or if they contained undeclared yellow coal-tar dye simulating the presence of butter. Three samples were passed and 22 were adulterated or misbranded:

K.C.-1103. Butter Taste Popcorn. Better Taste Popcorn Co., Anderson, Ind. Declared ingredients were "Popcorn, Refined Creamery Butter, Vegetable Oil, U. S. Certified Color." Total fat, 22.67 per cent; butyro refraction of fat 25°C., 68.6; Reichert-Meissl value of fat, 0.70; Polenske value of fat, 0.43. These constants indicated that no butter at all was present; adulterated and misbranded.

K.F.-2139. Capitol Pow Wow Popcorn, Big Chief Size. Empire State Nut Co., Inc., Albany, N. Y. Coal tar dye present not declared; misbranded.

K.C.-1056, K.F.-2027 and S.O.-430 and 431. Connecticut Fresh Fired Popcorn Processed in Pure Vegetable Oil, Salt. Connecticut Potato Chip Co., Norwalk, Conn. Average net weight (excluding *S.O.-431*): Declared, 4 oz.; found, 3.59 oz. Coal tar color present in all samples not declared. Misbranded.

TABLE 11. OLIVE OIL

No.	Manufacturer or distributor and brand	Butyro refraction, 25°C.	Cottonseed oil	Peanut oil	Artificial flavor and color	Net Contents, fl. oz.		Remarks
						Declared	Found	
F.M.-43	Caruso Products Distributing Corp., Pelham Manor, N. Y. <i>Enrico Carruso</i>	64.3	absent	absent	absent	128	125.0	Squalene, 587 mg./100 gm. Short volume 3.0 fl. oz.; misbranded
F.M.-150	Castelcarini Packing Co., Brooklyn, N. Y. <i>Castelcarini</i>	61.3	absent	trace	absent	128	126.3	Short volume 1.7 fl. oz.; misbranded
K.F.-1977	Castello Packing Corp., Brooklyn, N. Y. <i>Cavalier</i>	61.7	absent	absent	absent	32	35.6	Passed
J.B.-349	Cedarville Packing Co., Hoboken, N. J. <i>Rosetta</i>	62.4	absent	absent	absent	128	124.1	Short volume 3.9 fl. oz.; misbranded
J.B.-358	J. Ossola Co., New York, N. Y. <i>Torino</i>	62.1	absent	absent	absent	128	124.6	Short volume 3.4 fl. oz.; misbranded
K.C.-1142	J. Ossola Co., New York, N. Y. <i>Torino</i>	62.1	absent	absent	absent	12	12.7	Passed
5663	Sclafani Importers, Stamford, Conn.	62.2	absent	absent	absent	.....	.....	Passed
F.M.-129	Tripoli Importing Co., New Haven, Conn. <i>Adriatic Star</i>	62.4	absent	absent	absent	.....	.....	Passed
F.M.-152	Washington Cash Grocery, New Haven, Conn. <i>Premio</i>	67.5	present	absent	present	128	121.4	Squalene, 11 mg./100 gm.; estimated per cent olive oil, 0.9. Essentially straight cottonseed oil artificially flavored and colored; short volume 6.6 fl. oz.; adulterated and misbranded

TABLE 12. PICKLES

No.	Manufacturer or distributor and brand	Analysis of Liquid Portion	
		Acetic Acid, gm./100 cc.	Permanganate oxidation no.
A.L.-433	Goodman Bros., Meriden, Conn. <i>DeLuxe Sweet Gherkin Pickles</i>	1.67	3.4
A.L.-434	Goodman Bros., Meriden, Conn. <i>Goodman's Old Mill Pepper Relish</i>	1.59	2.6
A.L.-461	Goodman Bros., Meriden, Conn. <i>Goodman's Old Mill Pepper Relish</i>	1.42	3.0
A.L.-431	Goodman Bros., Meriden, Conn. <i>Old Mill Brand Fancy Sour Onions</i>	2.36	3.9
A.L.-432	Goodman Bros., Meriden, Conn. <i>Old Mill Brand Fancy Sweet Mixed Pickles</i>	1.88	4.5
A.L.-430	Goodman Bros., Meriden, Conn. <i>Old Mill Brand Sweet Virginia Cantaloupe</i>	1.75	5.1
F.P.-352	Silver Lane Pickle Co., East Hartford, Conn. <i>Silver Lane Pickles, Sweet Mixed</i>	1.36	3.2

K.F.-2050 and F.M.-79. *Fresh! King Size Crispy Golden Energy Pop Corn*. Beverly Popcorn Co., Inc., Beverly, Mass. Coal tar dye present not declared; misbranded.

J.B.-343 and P.S.-175. *Giant Size Pop Corn*. Harbor Sales Co., Boston, Mass. Coal-tar dye present not declared; misbranded.

K.C.-1067, 1074 and 1100 and S.O.-447. *King Korn Butter Flavored Popcorn*. King Kone Corp., New York, N. Y. Labeled: "Made From These Fine Ingredients. Popcorn, Pure Vegetable Oil, Salt, Artificial Flavoring And Color." The bags were also marked "BUTTER FLAVORED" four times in large capitals. Average analysis was: Fat, 22.84 per cent. Constants of fat: Butyro refraction, 40°C., 40.5; Reichert-Meissl value, 6.8; Polenske value, 12.8; Kirschner value, 1.7. These constants indicated that the fat was almost wholly artificially colored coconut oil, no more than 0.3 per cent if any of butter fat being present. Because the presence of butter was not actually declared but only implied, samples were not adulterated but they were misbranded.

K.C.-1024 and 1057. *Looney Links Popcorn*. Looney Links Pop Corn Co., Jamaica Plain, Mass. Labeled: "Has More Food Energy than . . . Most Cooked Meats & Fish—All Vegetables & Fruits—All Breads & Cakes—Most Varieties Of Cheese—Milk & Table Beverages—Authority U. S. Department of Agriculture, Circular No. 579—Ingredients: Pop Corn, Vegetable Oil, Salt Added." Analysis showed: Water, 4.86, ash, 2.51, protein, 9.56, fiber, 1.45, available carbohydrate, 64.74, and fat, 16.88, per cent; calories/100 gm., 449; coal-tar dye present. The "More Food Energy" claim was correct, for the reason that the foods picked for comparison were all ones containing considerably more water and (for the most part) less fat. Samples were nevertheless misbranded because: (1), They contained undeclared yellow coal-tar dye; (2), special dietary claims were made but the percentages of protein, fat and carbohydrate and calorie contents were not declared; and (3), the labels implied "that the product (was) recommended or endorsed by (an) agency of the federal . . . government."

K.F.-2082, 2092 and 2093. Made Rite Cheese Flavored Popcorn. Made Rite Potato Chip Co., Fall River, Mass. Undeclared coal-tar dye present; misbranded.

E.C.-1049. Rex Popcorn. Rex Potato Chip Co., Haverhill, Mass. Coal-tar dye present not declared; misbranded.

K.C.-1063. Schuler's French Fried Pop Corn. Schuler Potato Chip Co., Inc., Rochester, N. Y. Coal-tar dye present not declared; misbranded.

F.M.-73 and 74. Terry's Honey Dew Pop-Corn. Terry's Honey Dew Pop-Corn, West Haven, Conn. Labelled: "Ingredients: Pop-Corn, Sugar, Corn Syrup, Butter, Salt, Imitation Flavoring, Baking Soda." Coal-tar dye absent; 2.85 per cent of fat present, whose constants were as follows: Butyro refraction, 40°C., 51.5; Reichert-Meissl value, 15.7; Polenske value, 1.9. These constants indicated the presence of 1.9 per cent of butter; passed.

K.C.-1062. Toffee Corn. Corn Treats, Inc., McHenry, Ill. Labelled: "Made with CREAMERY BUTTER, sugar, corn syrup, soda, salt, popcorn." Total fat, 7.82 per cent. Constants of fat: Butyro refraction 40°C., 45.5; Reichert-Meissl value, 23.8; Polenske value, 2.0. Estimated per cent butter fat, 6.3. Passed.

K.F.-2108 and 2119. Y&Y Carmel Corn Giant Pak. YY Popcorn Supply, Philadelphia, Pa. Labelled: "MADE WITH CREAMERY BUTTER. Sugar, Corn Syrup, Popcorn, Butter, Salt, Bicarbonate of Soda, Emulsifier, Vegetable Oil." Average analysis showed: Total fat, 3.21 per cent; butyro refraction of fat, 25°C., 61.5; Reichert-Meissl value, 10.0; Polenske value, 6.7; Kirschner value, 5.1. This analysis indicated that only 0.7 per cent of butter was present, most of the fatty matter being coconut oil. Misbranded.

Preservative

E.S.-94. Zanzibar Brand Additive No. 2, (Asconic), manufactured by B. Heller & Co., Chicago, Ill., was labelled only "SAMPLE NOT TO BE SOLD—For Improving The Color Of Fresh Meat Products", followed by directions for use. Accompanying literature read: "keep fresh meat **RED**—Entirely free from preservatives or coloring agents, this patented product develops and fixes the natural bright red color—assuring rich, appetizing sales appeal as long as the meat is fresh—In the development and practice of this invention, the sodium salt of niacin (a vitamin) and ascorbic acid (vitamin C) were used. In combination they have the function of causing fresh meat to develop and hold its natural Red Color. We suggest that when you label products treated with ADDITIVE No. 2 that you include the phrase 'contains sodium salt of niacin, ascorbic acid and dextrose.'" Analysis showed 7.51 per cent of ascorbic acid (vitamin C).

At least one other manufacturer sells a trade-named preparation of sodium ascorbate to be used to make frankfurts look redder; such use has been permitted even though sodium ascorbate is not one of the antioxidants listed in the present Connecticut regulations. The legal definition of "Hamburg", however, does not provide for the presence of *any* ingredient other than fresh beef and suet, and Regulation 186-27.13(a) specifically states that "No preservative may be used in meat or meat products sold as, or required by definition to be, fresh meat." The use of "Zanzibar Brand Additive No. 2" in hamburg would therefore be illegal in this State.

Pudding Mixes

Three gelatin and starch base dessert powders were analyzed for the State Supervisor of Purchases, and one was tested for the New Haven board of education. Three samples were passed and one failed to meet its specifications:

5716 and 6657. Instant Coconut Creme Pudding. Vintage Canning Corp., Boston, Mass. Declared ingredients were "Sugar, Dextrose, Starch, Salt, Stabilizers, Artificial Flavor, Color." These samples were submitted by the State Supervisor of Purchases to see if they met Purchasing Specification 2920-0010-01 for "Dessert Powder, Starch Base, Instant, Coconut Cream", which called for not more than 3.5 per cent of moisture, 30 per cent of starch and 75 per cent of sweetening agents (of which not more than 40 per cent should be dextrose). Average analysis showed: Water, 2.55; ash, 5.09; salt, 1.33; gelatin, 0.57; sucrose, 56.52; dextrose, 15.15, and starch, 1.58, per cent. Passed.

5745. Lime Gel. Vintage Canning Corp., Boston, Mass. Declared ingredients were "Sugar, Dextrose, Gelatin, Salt, Citric Acid, Sodium Citrate, Natural And/Or Artificial Flavors, Certified Colors." Submitted by the State Supervisor of Purchases for examination for compliance with Purchasing Specification C-D-221a.3.4.2. Analysis showed: Moisture, 3.65; ash, 1.58; salt, 1.36; soluble ash, 1.54; insoluble ash, 0.04; citric acid, 2.39; gelatin, 8.33; sucrose, 65.98; dextrose, 14.98, and anhydrous sodium citrate (calculated from alkalinity of soluble ash), 0.62, per cent. Failed to meet specification in that moisture exceeded 2 per cent and salt exceeded 1 per cent.

4786. Royal Gelatin Dessert, Vitamin C Added, Raspberry Flavor. Standard Brands, Inc., New York, N. Y. Labelled: "Each Serving (1/4 package recipe) provides 37 1/2% of a child's . . . 25% of an Adult's Daily Minimum Requirement of VITAMIN C." Analysis showed 52 milligrams of ascorbic acid in the 84.3 gram package, which was equivalent to 13 milligrams in a quarter-package. Since the minimum daily requirements of vitamin C are 10 mg. for infants, 20 mg. for children one to 11 years old, and 30 mg. for children 12 years or older and adults, sample more than met its claim.

Spices and Condiments

Three samples of prepared horseradish, two meat seasonings, two of oregano, and one popcorn salt were examined for the Commissioner; five samples were passed and three were adulterated or misbranded:

E.S.-89 and 90. Glidden Quality Products Durkee's Whole Oregano. Durkee Famous Foods, Bethlehem, Pa. Contaminated with stones and sand; adulterated.

P.S.-195. Griffith's Ready to Use G-4 Hot Italian Sausage Seasoning GH-120. Griffith Laboratories, Inc., Chicago, Ill. Labelled: "Seasoning including Salt.—Use 17 ozs. to 50 pounds of product.—Processed from: Salt, Red Pepper, Fennel, Coriander, Spice Extractives of Red Pepper, with Anti Oxidant G-3 added. U. S. Patent Nos. 2,511,802—2,511,804.—(Propyl Gallate & Citric Acid.)" Sulphite absent; passed.

P.S.-196. Heller's Prize Quality Dixie Lamb Patty Maker. B. Heller & Co., Chicago, Ill. Labelled: "Contains corn flour, salt, dextrose, red pepper, black pepper, bicarbonate of soda, monocalcium phosphate, allspice, ginger, marjoram and nutmeg." Sulphite absent; passed.

K.C.-964. Kitchen Fresh Pure Horse Radish Prepared with Vinegar. Country Fair, Inc., Philadelphia, Pa. Labelled: "If Red—Flavored with Fresh Beets." Sample was *not* red, and microscopic examination showed only horseradish; passed.

J.B.-361. Norman's Pure Horseradish. Norman Products Corp., Willimantic, Conn. Labelled: "Prepared with Grated Horseradish Roots, Vinegar, Flavor and Salt." Microscopic examination showed no adulteration with turnip. The declared "Flavor" implied the addition of volatile oil of mustard (allyl isothiocyanate) (whose use would have put the product in the "imitation" class), but because this could not be proved sample was passed.

K.F.-2061. Parfait Prepared Horseradish. H. E. Whitaker Co., Philadelphia, Pa. Declared ingredients were "Grated Horse Radish, Vinegar, Vegetable Oil, Salt, Flavoring." Total fat, 0.13 per cent; butyro refraction of semi-solid fat, 40°C., 84.0. Suspected of containing volatile oil of mustard, but passed (see *J.B.-361* above).

K.C.-1102. Popcorn Salt. A.B.C. Vending Corp., New Haven, Conn. This material was picked up at the popcorn stand of Anthony Lucia at the Danbury Fair; it was in an unlabelled bag. Examination showed it to be salt colored orange with an oil-soluble coal-tar dye. It was obviously intended to make the popcorn look yellow as if it had been buttered. Misbranded.

Spray Residues

Two samples of apples were submitted by the Commissioner to check on whether the white deposits on their skins represented excessive pesticide residues. Analysis showed that the insecticide residues present were for below the permitted tolerances, and that the visible white spots were clay or some other inert material:

A.L.-466. McIntosh Apples. B. W. Bishop & Sons, Guilford, Conn. TDE, 0.1 part per million (official tolerance is 7 p.p.m.).

A.L.-467. McIntosh Apples. Norbert Kneuer & Sons, Guilford, Conn. TDE, 0.2, and methoxychlor, 0.6, p.p.m. (Respective tolerances are 7 and 14 p.p.m.).

On December 20, 1957 F. K. Killingsworth of the New York District of the U. S. Food and Drug Administration notified Mr. Harold Clark of the Connecticut Food and Drug Commission that a Milton Kessman of Patterson, New York, had sold stalks from sweet corn that had been heavily sprayed with DDT to a number of dairy farmers, who had made silage from these stalks and fed this silage to their producing herds. Because one of these farmers was in Ridgefield, Conn., and the Federal government had no jurisdiction over milk produced and sold within the State, Mr. Killingsworth asked that the Food and Drug Commission take over and check the DDT content of milk from the dairy supplied by the Ridgefield farmer.

In 1947, however, enforcement of the Connecticut Food, Drug and Cosmetic Act as it related to milk had been transferred from the Food and Drug Commission to the then Department of Farms and Markets, later to become the Department of Agriculture. Mr. Clark therefore could not himself take the action requested, but referred the matter to the Dairy Division of the State Department of Agriculture.

Dr. Richard M. Parry, chief of that division, decided that any investigation of the presence of DDT in Connecticut milk should cover the whole supply and not just the output of one dairy. He asked this Station to perform the necessary analyses, and we agreed to do so. A preliminary survey of milks taken from dairies chosen on the basis of the regions from which they drew their supplies showed that milk coming from Massachusetts, Vermont and most of Connecticut was free of DDT, but that some lots originating in Fairfield County, Connecticut, and Dutchess, Putnam and Westchester Counties, New York, contained traces of this pesticide. In all cases where any DDT at all was found its source was traced back first to a particular tank truck route and finally to an individual farmer, whose milk was then removed from the supply.

Seven hundred and thirty samples in all were tested during 1958, and in spite of the fact that most of these samples were taken in the course of locating specific sources of contamination 76 per cent of them were found completely free of DDT. Since the regions from which the contaminated samples came furnished only 30 per cent of the milk supply, the proportion of all Connecticut milk containing DDT could never have exceeded seven per cent, and at the present time it is zero.

It should be noted that milk has always been treated as a special class of food as far as pesticide residues are concerned; because it is the particular food of babies and the sick, the U. S. Food and Drug Administration has insisted that it be completely free of any trace of pesticide, regardless of whether there were any evidence that such traces were toxic. In only one of all the market milks tested in 1958 did the DDT content equal one ten-thousandth of one per cent, and in any other food the quantities found would have been considered insignificant traces that were far below permitted tolerances.

In nearly every case when an individual dairy farmer whose milk had been contaminating the supply was located, it was found that he had been feeding his cows either sweet corn silage or dried apple pomace. No such farmer was thereafter allowed to sell to Connecticut markets until it had been established that his cows were producing DDT-free milk. Because these dairy farmers had erred from ignorance rather than from intent, and because the situation has now been cleared up, there is little point in penalizing them at this late date by revealing their names; for this reason the results on individual samples are not being published in this bulletin.

The sudden need to carry out rather complicated analyses on hundreds of samples as rapidly as possible threw somewhat of a strain on our organization. Because the Food and Drug Commission graciously agreed to relax temporarily the number of other food samples submitted to us we were able to release Mr. Sherman Squires to assist Mr. Keirstead, and the situation was further eased when the Mitchell Dairy Division of the Borden Company (which had no more personal interest in the survey than many other dairies) loaned us the services of their chemist Mr. William Hoaglund. The method used was essentially that of the Association of Official Agricultural Chemists, but Mr. Keirstead was solely responsible for working out its details and establishing its accuracy. Because we have had a number of requests for it, this method is reproduced herewith (of the two alternate procedures for fat separation, the first was employed in earlier analyses and the second—which did not require the use of a No. 3 centrifuge—in all later ones):

METHOD FOR DDT IN MILK

Special Apparatus

- (a). *Centrifuge bottles*—500 ml.
 (b). *Chromatographic tubes*—40 mm. O.D. x 200 mm long [Davidow, J. Assoc. Official Agr. Chem., 33, 130 (1950)]. (Tubes with Teflon stopcocks made to order by Fischer & Porter Co., Hatboro, Pa., are more convenient.)
 (c). *Kuderna—Danish evaporative concentrator*.—Similar to Figure 14-3 on page 231 of Gunther and Blinn's "Analysis of Insecticides and Acaricides", except that receiver is 50 ml Erlenmeyer flask.
 (d). *Nitration tubes*.—100 ml. centrifuge tubes such as Kimball #45190.

Special Reagents

- (a). *Ethyl alcohol*.—U.S.P. 95%.
 (b). *Ethyl ether*.—Redistil Solvent Ether U.S.P.
 (c). *Mixed ethers*.—Mix equal volumes of ethyl ether and petroleum ether (b. pt. 30-60°C.).
 (d). *Benzene*.—Distil until no more water comes over, and discard this distillate. Replace condenser with dry one, continue distillation, and collect balance of distillate.
 (e). *1,1,1-Trichloro-2,2 bis (chlorophenyl) ethane*.—Use highest purity (m. pt. 108-109°) recrystallized p,p' DDT.
 (f). *Celite 545*.—Obtainable from Celite Division, Johns-Mansville Products Corp., 22 East 40th St., New York 16, N. Y.
 (g). *Triton X-45 solution*.—Dilute 10 ml. of Triton X-45 (obtainable from Agricultural and Sanitary Chemicals Dept., Rohm & Haas Co., Washington Square, Philadelphia 6, Pa.) to 100 ml with water.
 (h). *Nitrating mixture*.—Mix equal volumes of H₂SO₄ and fuming HNO₃.
 (i). *Oleic acid solution*.—10 mg./ml. in acetone.
 (j). *Sodium methylate solution*.—Place 75 ml. of absolute methanol in flask provided with reflux condenser, add 5 gm. of clean Mg turnings and 0.5 g. of I₂, warm gently until there is vigorous evolution of H₂, and then reflux until most of Mg has dissolved. Add this mixture to 900 ml. of absolute methanol, reflux 30 min., and distil with exclusion of moisture. Store distillate in tightly-stoppered bottles.
 Place 30 gm. of freshly-cut Na in refluxing flask, add sufficient of the specially-prepared methanol to dissolve, and reflux until solution is complete. Rinse this solution into 500-ml. volumetric flask with the special methanol, cool to room temperature, and make to volume. Chill overnight in refrigerator, centrifuge, and decant clear supernatant solution into dispensing system protected from moisture and CO₂. Prepare new standard DDT curve for each batch of this solution.
 (k). *Potassium hydroxide solution*.—10 gm./100 ml.
 (l). *Potassium oxalate solution*.—10 gm./100 ml.
 (All other chemicals are reagent grade.)

Determination

(a). *Extraction:*

(1). Transfer 200 ml. of the well-mixed milk to 500 ml. centrifuge bottle, add 5 ml. of the K₂C₂O₄ solution, warm to 45° in water-bath, add 20 ml. of the Triton X-45 solution, mix thoroughly, and let stand at 45° 20 minutes or until fat separates. Centrifuge briefly to obtain clear fat layer, add 100 ml. of the mixed ethers, stopper tightly, shake gently, and allow to stand until ether layer separates. Siphon ether layer through plug of cotton into 100 ml. graduate, pipette 25 ml. of filtrate (= 50 ml. milk) into beaker or Erlenmeyer flask, and evaporate ether by placing in warm water bath and blowing gentle jet of air over it. (Measure and save remaining ether extract as reserve supply.)

(2). Transfer 100 ml. of the well-mixed milk to 500 ml. centrifuge bottle, add 5 ml. of the K₂C₂O₄ solution, and mix by shaking. Add 10 ml. of alcohol, shake, then add 100 ml. of the mixed ethers and shake gently. Separate ether layer either by allowing to stand in stoppered bottle over night or by centrifuging. Siphon ether layer through plug of cotton into 100 ml. graduate, pipette 50 ml. of filtrate (= 50 ml. milk) into beaker or Erlenmeyer flask, and evaporate ether by placing in warm water bath and blowing gentle jet of air over it. Measure and save remaining ether extract as reserve supply.)

(b). *Cleanup*. Mix in mortar 30 gm. of Celite 545 and 9 ml. each of ordinary concentrated H₂SO₄ and fuming H₂SO₄ (15-18% SO₃). Add 10 ml. of CCl₄ and transfer to chromatographic tube which has pad of glass wool at bottom and whose exit tube is closed with short piece of rubber tubing and pinch-clamp. Tamp down with glass rod, and add CCl₄ until few cm. remains above surface of Celite 545. Wash residue from (a) into tube with CCl₄, remove rubber tubing from exit, and permit eluate to flow into Kuderna-Danish evaporative concentrator. Wash through with total of 250 ml. CCl₄.

Evaporate to low volume in the concentrator, then wash into nitration tube, add 1 ml. of the oleic acid solution, and take to dryness in hot water bath, using air jet.

(c). *Nitration*.—Chill both residue from (b) and some of the nitrating mixture in beaker containing ice and water. When cold, transfer 5 ml. of the nitrating mixture to residue (still in ice bath) and mix. Transfer beaker containing nitrating tube to steam bath and heat until ice is melted and water is warm (about 20 min.). Then remove nitrating tube from beaker, immerse directly into steam bath for about half its length, and heat 1/2 hr. Remove tube from steam bath and add 25 ml. of ice-cold water. (This stops nitration, and tubes may be left over night at this point.)

(d). *Color development*.—Wash nitrated mixture, (c), into 150 ml. separatory funnel with 25 ml. of water and 50 ml. of the redistilled ethyl ether. Stopper funnel and shake vigorously 1 min. Permit layers to separate, and discard aqueous layer. Wash ether layer with 10 ml. portions of the KOH solution until washings are colorless, and then wash with two 10 ml. portions of saturated NaCl solution, making sure to drain last portion completely.

Insert plug of cotton (which has been soaked in ether over night) in stem of funnel, and filter washed ether layer through this plug into 125 ml. Erlenmeyer flask. Evaporate filtrate to dryness on water-bath, using jet of air. Place flask with residue in 100° oven 10 min., and then store in desiccator until other determinations have been carried to this point.

To each of residues from series of determinations being run at same time now add 2 ml. of the benzene, mix thoroughly, and add 4 ml. of the Na-methylate solution. Transfer mixture to 1 cm. cell and obtain Beckman DU spectrophotometer reading at 600 mμ, with instrument set to show 100% transmission. Solution prepared by carrying 1 ml. of the oleic acid solution through the nitration and shakeout steps. Subtract blank reading obtained on milk known to be free of DDT and read from standard curve, (a), number of micrograms of DDT corresponding to this difference. Micrograms DDT ÷ 50 = p.p.m. DDT.

Note: If final solution is yellow with no red or blue tint, do not read on Beckman but report as zero DDT.

(e). *Preparation of standard curve*.—Dissolve 0.1 gm. of the purified DDT in benzene and dilute to volume in 100 ml. volumetric flask. Dilute 20 ml. of this solution to 200 ml. with benzene to yield solution containing 100 micrograms/ml. of DDT. Pipette 0, 0.25, 0.50, 0.75 and 1.00 ml. of this dilute solution into separate nitration tubes, add 1 ml. of the oleic acid solution to each tube, evaporate to dryness in hot water bath, and nitrate, develop color and read as above. Plot curve of Beckman readings at 600 mμ against micrograms of DDT.

Notes

The colors obtained are red to violet instead of the pure blue yielded by p,p'-DDT. Probably this is partially due to the fact that impurities cause commercial DDT to give a violet color, but another factor is the partial conversion of DDT to DDE (which gives a red color) by metabolism in the animal body.

The purification procedure in the above method is such as to eliminate interferences from methoxychlor, aldrin, dieldrin, and other organic pesticides which are not derivatives of DDT.

References

(1). Paul A. Clifford, "Pesticide Residues in Fresh Milk Survey of 1955-1956". *Food Control Statement No. 80 (December 1956)*, Food and Drug Administration, Dept. of Health, Education and Welfare, Washington 25, D. C.

(2). Roscoe H. Carter, "Report on DDT as Spray Residue on Foods". *J. Assoc. Official Agr. Chem.*, 32, 357 (1949). (Nitration technique.)

In addition to the milk samples, two samples of water were tested for DDT for the Commissioner of Agriculture with negative results.

Fourteen samples of rose leaves and stems were analyzed for mercury for Dr. A. E. Dimond of our Plant Pathology Department, and three samples of apples from experimental plots were analyzed for Guthion for Dr. Philip Garman of our Entomology Department; results were as follows:

3862 to 3864. *Apples*. Guthion, 0.4 to 1.0 parts per million.

6853 to 6866. *Rose Leaves and Stems*. Average analysis showed: Moisture, 6.60 per cent; mercury, 0.16 p.p.m.

Various private citizens submitted one sample each of privet shoots, raspberries and leaves, rose bushes, soil and wine to be tested for spray residues. Results were completely negative except on the following two samples:

5275. *Home-Made Wine*. Gino Merle, West Haven, Conn. Lead, 4 parts per million; no arsenic. Lead below tolerance.

5474. *Raspberries and Leaves*. Mrs. C. E. Marshall, West Hartford, Conn. Arsenic, p.p.m.: Berries, 10, leaves, 50. Lead, p.p.m.: Berries, 50, leaves, 200. Excessive lead arsenate present.

Syrups

Three samples of root beer syrup and one each of cane, orange, "sugar-free" and vanilla syrup were examined for the Commissioner. One sample of chocolate-flavored syrup was analyzed for the State Supervisor of Purchases, and a sample of molasses was tested for a pharmacy. Of the total of nine samples, six were passed and three were misbranded.

P.S.-143. *Alaga Pure Cane, Corn & Sugar Syrup*. Alaga Syrup Co., Montgomery, Ala. Labelled: "Real ribbon cane flavor—Alaga Syrup brings to your table the natural sugars of delicious field-fresh sugar cane. Gives you lasting energy. Rich in iron 'GOOD EVERY DROP'." Analysis showed: Water, 24.56, and ash, 0.85, per cent; flavor, thin molasses. Passed.

P.S.-162. *Concentrated Orange-Flavored Syrup Easy Orange*. Citrus Corporation of America, Boston, Mass. The container of this 6 fl. oz. sample was made of flexible plastic, colored and indented so as to resemble an orange. A paper label attached to the cap read: "Makes 6 full glasses of delicious orange

drink . . . Easy Orange—Also excellent for ice cream topping, cake frosting, milk shakes, and frozen pops—Directions: 2 tablespoons per glass of chilled water. Stir.—Contains: orange juice, natural flavor, cane sugar, fruit acid, less than 1/10th of 1% benzoate of soda and U. S. certified color." Analysis showed: Total solids, 81.50, and total sugars, 81.52, gm./100 cc.; ash, 474, K₂O, 55.5, and P₂O₅, 31.8, mg./100 cc.; ascorbic acid, trace or none; estimated per cent orange juice, 22. Passed.

A.J.-38. *Cott's Home Style Root Beer Syrup*. Cott Pure Fruit Syrup Corp., Manchester, N. H. Tests for saponin negative; passed.

E.C.-1032. *Lincoln Flavored Syrup for Vanilla Milk Shake*. Lincoln Foods, Inc., Lawrence, Mass. Labelled in minute lettering: "Ingredients: Sugar Syrup, Imitation Vanilla Flavor, U. S. Certified Food Color, Not in Excess of 1/10 of 1% Benzoate of Soda." Imitation syrup not so labelled; ingredient statement insufficiently legible; misbranded.

5486. *Molasses*. Taft Pharmaceutical Co., New Haven, Conn. Sucrose, 28.80, invert sugar, 16.64, and total sugars, 45.44, per cent. Tentative Definition T-18 of the Association of America Feed Control Officials requires feeding cane molasses to have a minimum total sugar content (as invert sugar) of 48 per cent. Since the total sugar content of 5486 expressed as invert sugar was only 46.96 per cent, sample was slightly substandard.

6259. *Red Heart Brand Mellow-Sweet Chocolate Flavored Syrup*. New York Syrup Corp., New York, N. Y. Total solids, 67.23; invert sugar, 14.25; sucrose, 48.52; total sugars, 62.77, and fat, 0.69, per cent. State Purchasing Specification 2916-S-91 for "Sirups, Chocolate" calls for between 55 and 62 per cent of total sugars (not less than 65 per cent of which must be sucrose) and not less than 8 per cent of cocoa powder, whose minimum fat content is 10 per cent. Passed.

E.C.-1056. *Rhode Island Brand Root Beer Syrup (Fountain Type)*. Rhode Island Fruit & Syrup Co., North Providence, R. I. Tests for saponin negative; passed.

P.S.-186. *Root Beer Syrup*. Polar Ginger Ale Co., Inc., Hartford, Conn. Tests for saponin and coumarin negative; passed.

A.F.-276. *Special Dietetic Non Sugar Nu-Diet Sugar-Free and Salt-Free Syrup, Delicious Maple-Like Flavor*. Sugar-Free Division, Colfax Mineral Springs Co., Inc., Colfax, Iowa. Labelled: "Contains the famous Colfax Mineral Spring water, citrus pectin, methylcellulose, vegetable gum, fruit juice, sorbic acid, artificial compound maple flavoring, certified food coloring and calcium cyclamate (Sucaryl Abbott), a non-nutritive artificial sweetener for persons who must restrict their intake of ordinary sweets. Average analysis: Protein, .05%; Fat, none; Carbohydrate, 1.9%; Calories, 1.4 per tablespoon—Formula U. S. Patent No. 2691591." Analysis showed: Water, 96.50, ash, 0.51, protein, 0.56 (claimed 0.05), invert sugar, 0.52, other carbohydrate, 1.89, total carbohydrate, 2.41 (claimed 1.90), and fat, 0.016 (claimed 0.00), per cent; calories/100 gm., 12; calories/tablespoonful, 1.8 (claimed 1.4); sodium, 33, and potassium, 6, mg./100 gm.; sucaryl present. Misbranded because not a syrup and because the sodium contents per 100 grams and per serving were not declared.

Vegetables

Twelve samples of sweet potatoes (many sold as "yams") and two of white potatoes were submitted by the Commissioner to see if their skins were artificially colored. Such colored potatoes are considered to be adulterated (even if the color is declared) because the coloring makes them "appear better or of greater value than (they are)" [G. S. 19-221(b)(4)]. Coal-tar dye was found in the skins of 10 samples, which were consequently adulterated; four were passed:

K.C.-1047. Bernie Bee Brand Garden State Finest Quality No. 1 Sweet Potatoes. Charles Molinelli, Vineland, N. J. Labelled: "Jersey Orange—Washed and Waxed." Undeclared coal-tar dye present; adulterated and misbranded.

K.C.-1032 and 1053. Bob-O-Link Supreme Kiln Dried Porto Rican Yams, Washed and Waxed. J. R. Cullifer Potato Co., Bethel, N. C. Undeclared coal-tar dye present; adulterated and misbranded.

P.S.-154 and 155. Dibby Doll Sweet Potatoes, Washed and Waxed. Oswald Stern, Vineland, N. J. No coal-tar dye; passed.

K.C.-1052. Jerseyland Sweet Potatoes. Anthony Merlino, Hammonon, N. J. Undeclared coal-tar dye present; adulterated and misbranded.

K.C.-1054. Miami Beach Red South Florida Washed, Dried, Inspected U. S. No. New Potatoes. Tropical Agriculture Cooperative Associations, Goulds, Fla. Undeclared coal-tar dye present; adulterated and misbranded.

F.M.-159 and 160. O. J. Parker Machine Washed & Graded Yams. O. J. Parker, Salisbury, Md. No coal-tar dye; passed.

K.C.-1045. Porto Rican Yams Sweet Potatoes, Artificially Colored, Washed, Waxed, Graded. D. H. Johnson & Sons, Benson, N. C. Coal-tar dye present but declared; adulterated but not misbranded.

K.C.-1059. Sweet Potatoes. Dionis Super Market, Bridgeport, Conn. Undeclared coal-tar dye present; adulterated and misbranded.

K.C.-1046. U. S. 1A Color Was Added New Florida Sunshine Brand Potatoes. George W. Smith & Sons, Homestead, Fla. Coal-tar dye present but declared; adulterated but not misbranded.

F.M.-158. Webber's Best Brand Yams, U. S. No. 1. J. C. Webber, Williamston, N. C. Undeclared coal-tar dye present; adulterated and misbranded.

K.F.-1987. Yams. James George & Sons, Derby, Conn. Undeclared coal-tar dye present; adulterated.

Eight samples of lettuce plants were analyzed spectrographically for the Lunt Soil Laboratory of Northford, and five samples of spinach were tested for Dr. Saul Rich of our Plant Pathology Department:

3753-3760. Lettuce. Lunt Soil Laboratory, Northford, Conn. Average analysis (air-dry basis) was: Total nitrogen, 3.56, potassium, 6.26, calcium, 1.06, magnesium, 0.82, phosphorus, 0.45, manganese, 0.026, iron, 0.034, aluminum, 0.041, and sodium, 0.27, per cent; copper, 19, and boron, 33, parts per million. Three of these samples averaged 0.011 per cent zinc; the others contained no more than a trace of this element.

5912-5914. Spinach. Dr. Saul Rich, Plant Pathology Dept., Conn. Agr. Expt. Sta. Average analysis of these dried samples was: Ash, 16.82, potassium, 6.57, calcium, 0.60, magnesium, 0.72, phosphorus, 0.61, iron, 0.087, and aluminum, 0.14, per cent; copper, 40, and boron, 36, parts per million. Two samples averaged only 0.006 per cent manganese, while the other contained 0.2 per cent of this element.

6158. Spinach Leaves. Dr. Saul Rich, Plant Pathology Dept., Conn. Agr. Expt. Sta. Aluminum, 0.50 per cent.

6159. Spinach Roots. Dr. Saul Rich, Plant Pathology Dept., Conn. Agr. Expt. Sta. Aluminum, 1.80 per cent.

Vinegar

Cider and Distilled Vinegar

Six samples of cider vinegar were submitted by the Commissioner, and one by the State Supervisor of Purchases. Three samples of distilled vinegar were also examined for the Commissioner. Four samples were passed and six were misbranded:

4939. Cider Vinegar. Randall Vinegar Co., New York, N. Y. This vinegar was supplied to the State on Federal Purchasing Specification 2-V-40 lb for Type 1 cider vinegar, 4 per cent. Analysis showed: Total solids, 1.36, ash, 0.22, and acetic acid, 4.20, gm./100 cc.; permanganate oxidation number, 12.2; caramel not detected; color, clear brownish-yellow; odor normal. Sample passed specifications, but was not labelled "Reduced with water to 4 per cent acidity" as it should have been.

K.C.-1019. Crosse & Blackwell Distilled White Vinegar. Crosse and Blackwell Co., Baltimore, Md. Labelled: "Guaranteed 5% Natural Acetic Acid." Acetic acid, 5.03 gm./100 cc.; permanganate oxidation number, 3.2. Passed.

K.C.-1027 and 1044. Goya Brand Pure Apple Cider Vinegar. Unanue & Sons, Inc., New York, N. Y. Labelled: "Diluted with water to 4% acid strength for table use." Analysis of *K.C.-1027* showed: Total solids, 1.29, ash, 0.24, and acetic acid, 4.25, gm./100 cc.; permanganate oxidation number, 7.1; caramel absent. Composition was as claimed, but misbranded because diluted cider vinegar is not "pure" cider vinegar. Analysis of *K.C.-1044* showed: Total solids, 1.53, ash, 0.19, and acetic acid, 3.95, gm./100 cc.; permanganate oxidation number, 7.8; caramel absent. Misbranded both for the reason indicated above and because the acidity was low.

A.L.-428. 120 Grain Distilled White Vinegar. Goodman Bros., Old Saybrook, Conn. Acetic acid, 11.93 gm./100 cc.; permanganate oxidation number, 6.6. Passed.

A.L.-429. 60 Grain Cider Vinegar. Goodman Bros., Old Saybrook, Conn. Total solids, 2.11, ash, 0.32, and acetic acid, 5.98, gm./100 cc.; permanganate oxidation number, 3.0; caramel absent. Passed.

A.L.-438. Wayne County Distilled White Vinegar. Wayne County Produce Co., Greenpoint, L. I., N. Y. Labelled "Made from distilled alcohol". Acetic acid, 4.67 gm./100 cc.; permanganate oxidation number, 4.5. Passed.

TABLE 13. WINE VINEGAR

No.	Manufacturer or distributor and brand	Solids, gm./100 cc.	Ash, gm./100 cc.	Acetic acid, gm./100 cc.	Tartaric acid, gm./100 cc.	Coal-tar dye	Remarks
K.C.-1090	Genoa Packing Co., Boston, Mass. <i>Genoa</i>	0.51	0.052	3.93	0.033	.....	Adulterated with distilled vinegar or acetic acid and water; acidity below legal minimum of 4 per cent
K.C.-1117	Genoa Packing Co., Boston, Mass. <i>Genoa</i>	0.53	0.033	3.93	0.028	.....	Adulterated and misbranded; see above
K.C.-1126	Genoa Packing Co., Boston, Mass. <i>Genoa</i>	1.09	0.040	4.51	0.021	.....	Diluted vinegar not so labelled; misbranded
K.C.-1128	J. Ossola Co., New York, N. Y. <i>Torino</i>	2.28	0.080	4.60	0.029	.....	Labelled "Reduced to 5% acidity"; low acidity; misbranded
K.F.-1978	J. Ossola Co., New York, N. Y. <i>Torino</i>	1.11	0.112	4.88	0.113	absent	Labelled as above; low acidity; misbranded
F.M.-154	Pastene & Co., Inc., New York, N. Y. <i>Pastene</i>	1.81	0.071	4.00	0.008	.....	Labelled "Reduced with water to a uniform table strength of 5% acidity"; low acidity; misbranded
K.C.-1108	Rowse Co., Somerville, Mass. <i>Madera</i>	1.19	0.18	5.03	0.088	.....	Labelled "pure Wine Vinegar 5% Acidity". Misbranded because diluted wine vinegar is not "pure" wine
F.M.-149	Joseph L. Sclafani, Inc., Brooklyn, N. Y. <i>Sclafani</i>	0.19	0.031	4.65	0.010	.....	Labelled "Reduced with water to 5% acidity". Adulterated with distilled vinegar or acetic acid and water; low acidity
F.M.-45	Uddo & Taormina Co., Brooklyn, N. Y. <i>Progresso</i>	0.99	0.116	4.80	0.077	.....	Labelled "Reduced with water to 5% acidity". Misbranded for failure to meet its claimed acidity and because not a "pure" vinegar as labelled
K.C.-1093	Jules Weber, Inc., New York, N. Y. <i>Connoisseur</i>	0.57	0.057	4.46	0.027	absent	Adulterated with distilled vinegar or acetic acid and water
K.C.-1130	Westport Herb Shop, Westport, Conn. <i>Au Gourmet</i>	1.59	0.36	5.15	0.093	.....	Passed

K.C.-1109 and A.F.-281 and F.M.-124. *Wayne County Pure Apple Cider Vinegar Made from Sound Apples.* Wayne County Produce Co., Greenpoint, L. I., N. Y. Average analysis showed: Total solids, 1.36, ash, 0.21, and acetic acid, 4.52, gm./100 cc.; caramel absent. Diluted vinegar not so labelled; misbranded.

Wine Vinegar

Eleven samples of red wine vinegar were examined for the Commissioner; one sample was passed and 10 were adulterated or misbranded. Analyses are given in Table 13.

Water

This Station does not make and never has made sanitary analyses of drinking water; the only State laboratory making such tests is the Bureau of Laboratories of the State Department of Health in Hartford. We do occasionally determine the pH and hardness of well waters as a matter of accommodation, and test samples where chemical contamination is suspected.

During 1958, 49 samples of water were examined for the tobacco laboratory of this Station at Windsor, a motor transport service, a YMCA camp and private citizens. Most of these samples were tested only for pH and hardness, and are not of general interest. Analyses of the following 12 samples may be worth reporting:

4791 to 4796. *Water from Long Pond.* Robert D. Burr, Executive Director, Camp Sloane, White Plains, N. Y. These samples were submitted for phosphate determinations, which were needed in connection with treatment of the pond to prevent growth of algae. Values found ranged between 0.04 and 11 parts per million of PO_4 , and averaged 0.15 p.p.m. (excluding the very high figure of 11 p.p.m. found in 4796, which was taken from the Hotchkiss School sanitary effluent).

5182. *Well Water.* Julia Dziadzik, Shelton, Conn. Total hardness, 64 p.p.m.; pH, 6.2. A water whose pH is below 6.5 is likely to cause excessive corrosion of copper tubing.

3768. *Well Water.* Mrs. Joseph Leinek, West Willington, Conn. Sulphuric acid, 196 p.p.m.; pH, 4.30; clay sediment present. This was an excessive-ly acid water, probably contaminated with sulphuric acid from an unknown source.

5012. *Well Water.* Kelsey MacArthur, Branford Point, Conn. Chloride, 4,713 p.p.m. Brackish water highly contaminated with sea water.

5800. *Well Water.* Mrs. Harold A. Miller, Guilford, Conn. Chloride, 91 p.p.m. Slight contamination with sea water indicated.

3767 and 4606. *Well Water Suspected of Contamination with Isopropanol.* Mrs. Alvin Glidden, Hebron, Conn. As a result of brake failure, a parked tank truck loaded with isopropyl alcohol rolled onto the Glidden property and overturned on August 20, 1957, spilling its contents onto the lawn; these soaked into the ground. About December 9, 1957 Mrs. Glidden noticed that her well water had a peculiar odor and taste, and turned brown when allowed to stand in a glass container. The trucking service submitted two samples of this well water to us to be tested for isopropanol, one (3767) on December 18, 1957

and the other (4606) on April 18, 1958. No isopropanol could be detected in either sample, but 3767 did contain iron rust and 2.70 p.p.m. of acetone; it also had an abnormal odor. No acetone was found in 4606. The acetone was probably formed by oxidation of isopropanol.

Miscellaneous

Cat and Dog Foods

One sample of cat food and five of dog foods were examined for the Commissioner; five were passed and one was misbranded:

P.S.-141. Goff 100% Pure Horse Liver for Cat Food. Roy Goff & Co., Bridgeport, Conn. Analysis, as compared with guaranties, was as follows:

	Declared, per cent	Found, per cent
Protein	15	17.13
Fat	3	4.47
Fiber	1	0.21
Water .....	.....	76.10

Passed.

K.C.-1033. Dr. Melody Beef Liver Dog Food. Dr. Melody D.V.M. Associates, Dublin, Pa. Declared ingredients were "Beef liver, $\frac{3}{4}$ of 1% wheat flour, 1% charcoal." Microscopic examination showed only liver and fat, but a positive test for starch was obtained. Passed.

K.C.-1034. Dr. Melody 100% Beef Dog Food. Dr. Melody D.V.M. Associates, Dublin, Pa. Labelled: "100% BEEF Ingredients—This meat is packed from fresh slaughtered animals and contains all meat. No by products or offal added. Cooked in its own juices." Meat, fat and trace of starch present; passed.

K.C.-990 and 1035. Dr. Melody 100% Horse Meat Dog Food. Dr. Melody D.V.M. Associates, Dublin, Pa. Microscopic examination showed only horse meat and fat and a trace of starch; passed.

K.C.-1087. K.F.S. Cero Meato Brand Kibbled Dog Food. Kennel Food Supply, Fairfield, Conn. Analysis, as compared with guaranties, was as follows:

	Declared, per cent	Found, per cent
Protein	21 min.	26.13
Fat	4 min.	2.80
Fiber	3 max.	1.46
Water	8 max.	11.99

Low in fat and high in moisture; misbranded.

Potato Chips

Eight samples of potato chips and one of corn chips were submitted by the Commissioner to be tested for the presence of undeclared artificial color; three were passed and six were misbranded:

K.C.-1066. Bar-B-Que Potato Chips. Hygrade Bakery, Inc., Philadelphia, Pa. Labelled: "Potatoes cooked in pure vegetable oil with salt and barbeque

(sic) seasoning added." Net weight: Declared, $4\frac{1}{4}$ oz.; found, 4.87 oz. Oil-soluble coal tar dye present not declared; misbranded.

K.F.-2095. Fritos Bar-B-Q Chips—Bar-B-Q Flavored Corn Chips. Frito Co., Inc., Dallas, Texas. Declared ingredients were "Selected Corn, Vegetable Oil, Barbecue Flavoring, Salt and Antioxidant Added to Preserve Quality." Oil-soluble coal-tar dye present not declared; misbranded.

K.F.-2094. Jupiter Bar-B-Q Flavored Potato Chips. Frito Co., Inc., Dallas, Texas. Declared ingredients were "Selected Potatoes, Pure Vegetable Oil, Salt, Tomato Powder, Spices, Seasoning, Sugar, Corn Starch, Monosodium Glutamate, Citric Acid, Tricalcium Phosphate, Certified Color." Since artificial color was declared and the reddish color did not simulate butter, sample was passed.

K.F.-2090. Made Rite Barbecue Chips. Made Rite Potato Chip Co., Fall River, Mass. Declared ingredients were "Potatoes, Vegetable Oil, Salt, Barbecue Seasoning." Oil-soluble coal-tar dye present not declared; misbranded.

K.F.-2081 and 2091. Made Rite Barbecue Flavored Potato Chips. Made Rite Potato Chip Co., Fall River, Mass. Labelled: "Starch Free as a Chip can Be—Potatoes, Oil, Salt and Barbecue Flavoring." Oil-soluble coal-tar dye present not declared; misbranded. (These samples differed from the "Salt Free" sample analyzed in 1957⁴, but they were probably no more starch-free than any other brand of potato chips.)

K.F.-2083. Made Rite Riplets. Made Rite Potato Chip Co., Fall River, Mass. Labelled as were *K.F.-2081* and *2091* above. Coal-tar dye absent; passed.

K.F.-2101. Schuler's America's Finest Bar-B-Q Chips. Schuler's Foods Division, Sunshine Biscuit Co., Inc., Rochester, N. Y. Labelled: "Ingredients: U. S. No. 1 Grade Potatoes, Pure Vegetable Shortening, Salt and Barbecue Flavoring." Oil-soluble coal-tar dye present not declared; misbranded.

K.F.-2106. Wise Barbecue Flavored Potato Chips. Wise Potato Chip Co., Berwick, Pa. Labelled: "Potatoes cooked in Pure Vegetable oil with the following added: salt, dehydrated tomatoes, sugar, chili powder, cornstarch, onion powder, seasoning, spices." No coal-tar dye; passed.

Other Miscellaneous Products

Fifteen miscellaneous foods and non-food products were examined for the Commissioner; four were passed and 11 were misbranded or otherwise objectionable.

E.S.-93. Beer Cans Filled with Water. Queen City Brewing Co., Cumberland, Md. The six 12-fl. oz. cans comprising this sample were submitted by the brewery in connection with a controversy over whether their beer was short volume. Average results were as follows: Gross wt., 15.12 oz.; tare wt., 2.72 oz.; net wt., 12.40 oz.; net volume, 11.95 fl. oz. Short volume.

K.F.-1959. Duff's Low Calorie Cake 'N Frosting Mixes. Duff Baking Mix Corp., Newark, N. J. Labelled: "Less Than $\frac{1}{3}$ The Calories of ordinary layer cake and frosting. Both in this package 1. Golden Layer Cake Mix add water and 2 fresh eggs 2. Fluffy White Frosting just add water.—**Cake mix:**

⁴Conn. Agr. Expt. Sta. Bul. 629, 68 (1959).

Sugar, cake flour, dextrose, corn syrup solids, baking powder, non-fat milk solids, soy flour, stearic esters, salt, cellulose gum, vegetable coloring, pure and artificial flavors. **Frosting mix:** Sugar, pre-cooked starch, egg white solids, gelatin, dextrose, corn syrup, carrogeenin, salt, cream of tartar, cellulose gum, pure and imitation flavors.—**CAKE LOVERS!** *Enjoy delicious cake 3 times as often!* Less Than 1/3 Calories Of Ordinary Frosted Layer Cake!—This generous slice of DUFF'S CAKE 'N FROSTING* actually has 67.3% LESS calories than an equal slice of regular layer cake! *AVERAGE ANALYSIS by weight available Fat . . . 4.06% Protein . . . 9.63% Carbohydrate 55.2%." Analysis was as follows:

	<u>Cake Mix</u>	<u>Frosting Mix</u>
Water, per cent	5.61	1.06
Ash, per cent	1.54	1.09
Protein, per cent	4.90	4.06
Fiber, per cent	0.12	0.10
Available carbohydrate, per cent	86.07	93.55
Fat, per cent	1.76	0.14
Calories per 100 grams	380.	392.

The average calorie content per 100 grams of frosted cake is 364⁵. On the basis of the above analyses and the recipe given on the package of *K.F.-1959* it was calculated that 100 grams of a finished cake made from the two mixes would contain 233 calories. Passed.

K.F.-2042. Edelweiss Formula 135. Dirige Sales Corp., Boston, Mass. This preparation was being sold to frankfort manufacturers as a filler; it bore no ingredient statement. Analysis showed: Dry skim milk, 34.25; added maltose (or lactose), 17.06; dextrose, 7.60, and gum (by difference), 41.09, per cent. Misbranded for failure to list ingredients.

E.C.-1025. Excel Black Raspberry Pastry Filling. Marquis Golden Donut, Uncasville, Conn. Labelled: "Contains Sugar—Corn Syrup—Black Raspberries—Pectin—Citric Acid—and less than 1/10 of 1% Benz. Soda—net wgt. 40 lbs." The flavor appeared to be natural raspberry, and tests for coal-tar dye were negative. Passed as to composition, but misbranded for failure to carry the manufacturer's name and address.

K.F.-2048. Imitation Cherry Carbonated Make Your Own Instant Soda Pop Nufizz. Dietetic Drinks, Inc., New York, N. Y. Labelled: "Make Your Own Instant Soda Pop NUFIZZ—Tear and pour—pour water—and drink.—ONE-TWO-THREE-ZINGO!—Put the contents of one 'bottle' into a **BIG DRY** glass. Add cold water and ice cubes . . . Zingo! You have the world's most delicious, zestiest carbonated drink.—**NUFIZZ** also makes wonderful milk shakes and ice cream sodas. No bottles to carry. No bottles to return.—**DIETETIC**—Citric acid, sodium, bicarbonate, vegetable stabilizer, sodium cyclamate 6.0%, sodium saccharine 1.1% (non-nutritive artificial sweeteners which should be used by persons who must restrict their intake of ordinary sweets) natural flavor, U. S. certified color." There was a picture of a happy young boy drinking from a glass of the product.

Misbranded because obviously not primarily designed for the use of diabetics and other ill people required to drastically restrict their carbohydrate intake.

⁵Conn. Agr. Expt. Sta. Bul. 373, 539 (1935).

K.F.-2047. Imitation Grape Carbonated Make Your Own Instant Soda Pop Nufizz. Dietetic Drinks, Inc., New York, N. Y. Labelled as above: misbranded for the same reason.

A.L.-446. Imitation Orange Fizzies. Fizzies Division, Emerson Drug Co., Baltimore, Md. Labelled: "New! Fizzies Dietetic the Instant Soft Drink from a Tablet!—Artificially Sweetened—Rich in added VITAMIN C—8 Big Drinks 25¢ Price . . . Without Sugar! Won't Spoil The Appetite! Safer For Teeth!—8 Big Drinks FIZZIES Dietetic The Instant Soft Drink From A Tablet! Imitation Orange Flavor—*Artificially sweetened with SUCARYL & SACCHARIN*—Without Sugar! . . . Safer For Teeth! Won't Spoil Appetite! . . . Rich in added VITAMIN C the fresh fruit vitamin—Drop Tablet in Glass of Water—INGREDIENTS: Each tablet (net weight 2.2 gms.): Citric Acid, Sodium Bicarbonate, Artificial Flavors, Certified Food Coloring, and Sodium Cyclamate (Sucaryl ®) 6.2% Saccharin 1.4% which are non-nutritive, artificial sweeteners which should be used only by persons who must restrict their intake of ordinary sweets. (This points out that the sweeteners are non-nutritive.) Vitamin C (ascorbic acid) added—each prepared drink is guaranteed to contain 15 mgm., 1/2 the adult minimum daily requirement. Fat less than 1.0%, Carbohydrate less than 1.0%, Protein, less than 2.0%, Calories less than 4." There was also a picture of a joyous young boy holding a glass in one hand and a tablet in the other.

Analysis, as compared with claims, was as follows:

	<u>Declared</u>	<u>Found</u>
Average wt. per tablet, grams	2.2	2.27
Ascorbic acid, mg./tablet	15.	16.
Protein, per cent	less than 2	2.13
Fat, per cent	less than 1	.....
Total carbohydrate, per cent	less than 1	.....
Invert sugar, per cent	none	0.40
Calories per tablet	less than 4	0.23

The quantitative claims were essentially correct, but sample was misbranded for the same reason as *K.F.-2048* above.

K.F.-2049. Imitation Root Beer Carbonated Make Your Own Instant Soda Pop Nufizz. Dietetic Drinks, Inc., New York, N. Y. Labelled as was *K.F.-2048* above, and misbranded for the same reason.

K.C.-1022. Mixture of Vinegar, Water and Salt. Liedle's Kitchen, Bridgeport, Conn. This was a mixture of *K.C.-1019* (see page 61), water and salt used to prepare *K.C.-1021* below. Analysis showed 0.87 gm./100 cc. of acetic acid; passed.

F.M.-115. Myglo. Griffith Laboratories, Inc., Newark, N. J. Labelled: "Processed from Beef blood pigment from Federally inspected beef blood, corn syrup, propylene glycol and salt." This was sold to Italian sausage manufacturers to color their products. Passed.

K.F.-2046. Natural Orange Carbonated Make Your Own Instant Soda Pop Nufizz. Dietetic Drinks, Inc., New York, N. Y. Labelled as was *K.F.-2048* above; misbranded for the same reason.

K.F.-2045. *New! Imitation Grape Fizzies, the Instant Soft Drink from a Tablet.* Fizzies Division, Emerson Drug Co., Baltimore, Md. Labelled as A.L.-446 above; misbranded for the same reason.

K.C.-1021. *Potato Salad.* Liedle's Kitchen, Bridgeport, Conn. This sample was submitted by the manufacturer with a complaint that on standing it became so sour as to be unpalatable; K.C.-1022 above was used as the dressing. Analysis showed only 0.32 gm./100 cc. of acetic acid in the liquid portion, however.

J.S.-464. *Stockings.* Mrs. H. C. Gustafson, Rocky Hill, Conn. Mrs. Gustafson complained that these stockings caused a rash on her legs. Analysis showed the presence of titanium dioxide and a flesh-colored basic dye. It was possible that sensitivity to this dye (or allergy to nylon itself) was the cause of the trouble.

E.S.-81. *Wild Mushrooms.* Mrs. Mary Mann, Hartford, Conn. Tentatively identified by Mrs. Frances Meyer of our Plant Pathology Department as *Russula emetica* or *sanguinea*, both poisonous species.

In addition to the official samples, 38 miscellaneous foods and non-food materials were analyzed for the State Department of Agriculture, the State Department of Health, the State Fire Marshal's office, Cheshire, Hamden and West Haven police, the New Haven board of education, a dairy, a veterinarian and private citizens. Twenty-one samples were passed and 17 were adulterated, misbranded or otherwise objectionable. Many of these were not of general interest, but the following may be:

3859. *Acetic Acid.* Calabro's Dairy, Stratford, Conn. Analysis showed 10.0 gm./100 cc. of acetic acid.

4736. *Alpha-1 Ballistic Missile and Launcher.* Scientific Products Co., Richmond, Va. This sample consisted of a large cardboard box containing: (1), The "missile" proper on its launching stand; (2), two transparent plastic bags labelled "Alpha-1 Oxidizer"; (3), two gray plastic cylindrical containers labelled "Alpha-1 Fuel"; (4), an empty wide-mouthed bottle labelled "Oxidizer Dilution Tank"; (5), a larger small-mouthed bottle labelled "Oxidizer Storage Tank"; (6), a large nail and some twine; and (7), an "Alpha-1 Ballistic Missile Launching Manual". Analysis showed the "Alpha-1 Oxidizer" to be citric acid and the "Alpha-1 Fuel" to be sodium bicarbonate. It was the carbon dioxide formed by reaction between these two chemicals in the presence of water that furnished the propulsive force for this "missile".

5521. *Broken Fluorescent Light Tube.* State Dept. of Health, Hartford, Conn. This was submitted for checking for the presence of the poisonous element beryllium; antimony and mercury were found, but no beryllium.

4078. *Colgate's Florient Floral Air Deodorant.* Colgate-Palmolive Co., New York, N. Y. This sample was submitted by the State Fire Marshal because its vapor could be ignited by a cigarette lighter. The solvent was suspected of being ethyl or isopropyl alcohol, but proved to be chiefly refined kerosene, only 2.60 per cent of ethyl alcohol being present—presumably as a vehicle for the perfume.

4075. *Condensed Smoke.* State Fire Marshal, Hartford, Conn. This magician's novelty consisted of two small cardboard boxes labelled "A small

quantity of this powder will give off huge clouds of smoke when lit. Can be started by touching with lit cigarette." Each box contained about two ounces of white powder, which analysis showed to be a mixture of ammonium chloride and sodium and potassium nitrates.

4305. *"Dairy Craft D" 1:200 Vitamin D Dairy Concentrate.* Dairy Craft Supply Co., Long Island City, N. Y. Labelled: "Aqueous Irradiated Ergosterol Concentrate in Propylene Glycol, U.S.P.—Conc. is guaranteed to contain no less than 80,000 U.S.P. XIV Units of Vitamin D₂ per cc." Assay for vitamin D by feeding to rats was satisfactory.

4077. *Firecracker.* State Fire Marshal, Hartford, Conn. This white "firecracker" (2¼ inches long) was empty except for a short red fuse filled with black powder.

4076. *Firecrackers.* State Fire Marshal, Hartford, Conn. This sample consisted of two 2-inch red "firecrackers" similar to 4077 above.

4074. *Flash Paper.* State Fire Marshal, Hartford, Conn. This sample consisted of a single 9 x 10 inch sheet of paper in an envelope labelled "This envelope contains FOUR SHEETS of the world's finest quality controlled **FLASH PAPER**—Fire from your Fingertips! Flashes of Fire—Startling effect!" Analysis showed this sheet to be nitrocellulose.

4951. *Material Sprayed onto Face from Rubber Water Pistol.* John O'Connor, Hamden, Conn. Analysis showed this to be dilute ammonia water.

5498. *Material Washed Up on Beaches in Old Lyme.* Miss Fennessey Cauty, Old Lyme, Conn. Examination by Mr. Ernest Stoddard of our Plant Pathology Department showed this material to consist of macerated plant stems, leaves, mica and some microscopic fresh-water animals (*Pectinatella Magnifica Bryazoa*). This showed that the deposit must have come from up the Connecticut River rather than out of the Sound.

4787. *Pink Lemonade Crystals.* Cafeteria Dept., Board of Education, New Haven, Conn. Ascorbic acid, 9.99 mg./gm.; 126 milligrams in the total 12.59 gm. sample.

6130. *Shirt, Sweater and Shoes Suspected of Having Been Poisoned.* Jean Boies, Seymour, Conn. No poison was found, but clinging to the shirt and sweater were sharp-pointed seeds of the tick trefoil (*Desmodium canadense*), which were probably responsible for the itching complained of.

6499. *Skybright Glass Cleaner.* William Pinchbeck, Inc., Cleveland, Ohio. Analysis showed this to be ammonium bifluoride dyed pink. Such a preparation could be dangerously corrosive if it got on the hands.

5478. *Spectrum Rainbow Cocktail.* William V. Lindsay, Greeneville, Tenn. This magician's favor submitted by the State Fire Marshal was examined by Mr. Edward A. Stuba of the Winchester-Western Division of the Olin-Mathieson Chemical Corporation in New Haven. It consisted of a cardboard cylinder 2 inches long and one-and-one-half inches in diameter, with a friction-triggered firecracker attached to one end and a package of five tightly rolled colored paper streamers attached to the other; the cylinder was wrapped in a paper cover extending below the firecracker and bunched to form a handle, through which ran a cord to trigger the firecracker. Analysis showed the contents

of the firecracker to be a mixture of red phosphorus, potassium chlorate and ground glass.

4085. *Unknown Powder*. John Benesh, Branford, Conn. Mr. Benesh said someone was spraying this material around where his mother worked. It proved to be sodium carbonate.

6388. *Unknown Powder*. Charles Barr, West Haven, Conn. Identified as garlic salt.

5484. *Vi-Dee "250,000" Vitamin D Concentrate*. Vitamins, Inc., Chicago, Ill. Labelled: "Contains 200,000 U.S.P. units per cc. Total units: 100 million Irradiated Ergosterol (Vitamin D₂) in Propylene Glycol Solution For the Fortification of Milk With Vitamin D." Assay for vitamin D by feeding to rats was satisfactory.

5464. *White Dress*. Miss Elmo's Bridal Shoppe, New Haven, Conn. This dress was brought in by a man who had purchased it for his daughter for her graduation, only to find that whenever she put it on her eyes would swell up and she would suffer from an extreme itching sensation; these symptoms developed almost immediately, and at the last of four tries to wear the dress the child had to be taken to the hospital. Examination showed that dilute ammonia would strip from this silk organza dress some white substance with an intense blue fluorescence; it was no doubt sensitivity to this whitening agent that was responsible for the symptoms that were observed.

DRUGS

Barbiturates

Six samples of barbiturate-containing drugs were examined for the Commissioner; all were passed:

J.S.-453. *Barbised Richale*. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Each tablet contains: Sodium pentobarbital gr. $\frac{1}{8}$, phenobarbital gr. $\frac{1}{8}$, hyoscyamine sulfate 0.10037 mg., atropine sulfate 0.0194 mg., hyoscine hydrobromide 0.0065 mg." This was equivalent to 0.239 grain/tablet of total barbiturates. Analysis showed 0.255 grain/tablet of barbiturates that infrared examination showed to be a mixture of pentobarbital and phenobarbital. Passed.

J.S.-456. *Bi-Barb Richale Antispasmodic and Sedative*. Richale Pharmaceutical Co., Hartford, Conn. Declared ingredients were the same as J.S.-453 above. Analysis showed 0.253 grain/tablet of a mixture of pentobarbital and phenobarbital; passed.

J.S.-452. *Bi-Sed Richale Sedative*. Richale Pharmaceutical Co., Hartford, Conn. Labelled as containing one-eighth grain each of sodium pentobarbital and phenobarbital per tablet, which is equivalent to 0.239 grain/tablet of total free barbiturates. Analysis showed 0.252 grain/tablet of a mixture of pentobarbital and phenobarbital; passed.

J.S.-435 and 436. *Butisol Sodium Tablets, 1 $\frac{1}{2}$ Grain*. McNeil Laboratories, Inc., Philadelphia, Pa. Average analysis showed 1.52 grains/tablet of butabarbital sodium; passed.

J.S.-455. *Hexatrate Richale Antispasmodic and Sedative*. Richale Pharmaceutical Co., Hartford, Conn. Labelled: "Each tablet contains: Sodium pento-

barbital gr. $\frac{1}{8}$, phenobarbital gr. $\frac{1}{8}$, mannitol hexanitrate $\frac{1}{2}$ gr." Analysis showed: Total free barbiturates, 0.250, and mannitol hexanitrate, 0.476, grain/tablet. Passed.

Cigarettes

6416 and W.S.-737 and 738, *Camel Choice Quality Cigarettes*, manufactured by R. J. Reynolds Tobacco Co., Winston-Salem, N. C., were submitted by the Commissioner because of the complaint of a customer that the cigarettes in 6416 had made her ill. This sample as received consisted of a package containing only one cigarette. It was noted in connection with this complaint that other consumers had protested that "Camel" cigarettes in newer packages "tasted terrible", and had associated this change in flavor with the omission from the label of the words "Turkish & Domestic Blend". Apparently rumors that the composition of the cigarettes had been changed were fairly widespread, because on November 11, 1958 the manufacturer published page advertisements in newspapers stating: "Recently we have been testing a slightly different label on the Camel package. The experimental design changed the illustration and the wording a little. That's all. No change whatever was made in the famous Camel blend of choice Turkish and domestic tobaccos."

The one cigarette in 6416 was insufficient to test, but when the cigarettes in W.S.-737 (new pack) and W.S.-738 (old pack) were examined microscopically and smoked, no difference could be found between them.

Vitamin Preparations

Twenty-five official samples of multi-vitamin preparations were examined for the Commissioner, and five unofficial samples were assayed for the State Department of Health, an attorney and a private citizen. Ten samples came within \pm 20 per cent of the claimed amounts of all vitamins tested for, and were passed; 20 were either too low or too high in one or more vitamins and were considered misbranded. Analyses are given in Table 14.

Miscellaneous Drugs

Eleven official samples of miscellaneous drugs were examined for the Commissioner, and 15 unofficial samples were tested for the Commissioner, the State Department of Health, the Pharmacy Commission, the State Supervisor of Purchases, Dr. Erwin Jungherr of the Storrs Agricultural Experiment Station, a physician, a manufacturer and private citizens. Ten samples were passed and 16 were misbranded or otherwise objectionable:

5769 and 5770. *Adhesive Bandages from State Hospital*. State Supervisor of Purchases, Hartford, Conn. These bandages were submitted because of a complaint that several patients developed burned skin areas after a few days' use. Examination showed them to be neutral, and no definite irritant could be isolated, but their alcoholic extracts were strongly fluorescent. It was possible that sensitivity to the fluorescent substance was responsible for the symptoms complained of.

5509. *Bella-Mia Face Cream*. G. S. Zuccala Laboratories, Inc., Hartford, Conn. This sample was a biological preparation submitted to the Food and Drug Commission in connection with a new drug application; it was not analyzed.

TABLE 14. VITAMIN PREPARATIONS

No.	Manufacturer or distributor and brand	Control No.	Niacinamide, mg./tablet or capsule		Riboflavin, mg./tablet or capsule		Calcium Pantothenate, mg./tablet or capsule		Folic Acid, mg./tablet or capsule		Remarks
			Declared	Found	Declared	Found	Declared	Found	Declared	Found	
W.S.-687	Bristol Laboratories, Inc., Syracuse, N. Y. <i>Myritic Tablets</i>	M6357	10	10.6	1.3	1.25	2.0	1.78	.....	.....	Passed Less than half strength in Ca pantothenate
W.S.-690	Calval Co., Inc., Mt. Vernon, N. Y. <i>Hemotin Tablets</i>	13972	15	16.9	1.5	1.54	1.5	0.72	.....	.....	Vitamins A, B ₁ , C, D and E also declared; naturopathic preparation; not analyzed
5742	Darrell Laboratories, Los Angeles, Calif. <i>Formula 51</i> .....	.....	.....	.....	0.5	.....	.....	.....	.....	.....	Vitamins A and E declared; naturopathic preparation; not analyzed
5743	Darrell Laboratories, Los Angeles, Calif. <i>Formula 103</i> ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	O.K.
W.S.-688	Endo Laboratories, Inc., Richmond Hill, N. Y. <i>Endoglobin Tablets</i>	6230	10 ¹	10.71	2.0	2.18	.....	.....	.....	.....	O.K.
W.S.-689	Geriatric Pharmaceutical Corp., Bellerose, L. I., N. Y. <i>Geriatric Tablets</i>	22354	10	10.6	3.0	2.95	1.0	0.55	0.10	0.08	Very low in Ca pantothenate
W.S.-696	Hoffman-Laroche, Inc., Nutley, N. J. <i>Supradin Roche Capsules</i>	16-17 504046	50	52.5	5.0	5.33	.....	.....	.....	.....	O.K.
W.S.-697	Hoffman-Laroche, Inc., Nutley, N. J. <i>Vi-Penta Perles Roche Forte</i>	274- 512176	20	21.0	3.0	3.01	.....	.....	.....	.....	O.K.
4735	Hudson Vitamin Products, Inc., New York, N. Y. <i>Duo-Kaps</i> .....	.....	20 ¹	28.41	5.0	6.12	5.0	4.61	0.25	.....	Too high in niacin and riboflavin
W.S.-700	Ives-Cameron Co. Division, Philadelphia, Pa. <i>Improved Oil-Vitum Capsules</i>	1562632	20	21.8	2.5	2.56	5.0	6.87	0.25	0.31	High in Ca pantothenate and folic acid

TABLE 14. VITAMIN PREPARATIONS (Continued)

No.	Manufacturer or distributor and brand	Control No.	Niacinamide, mg./tablet or capsule		Riboflavin, mg./tablet or capsule		Calcium Pantothenate, mg./tablet or capsule		Folic Acid, mg./tablet or capsule		Remarks
			Declared	Found	Declared	Found	Declared	Found	Declared	Found	
4129A	Kare Pharmal Co., Hartford, Conn. <i>O-B-LAC Tablets</i> .....	.....	2.5	2.9	0.4	0.57	0.8	0.93	0.04	0.04	High in riboflavin High in riboflavin, Ca pantothenate and folic acid
J.S.-461	Kare Pharmal Co., Hartford, Conn. <i>O-B-LAC Tablets</i>	32347	2.5	2.9	0.4	0.54	0.8	1.10	0.04	0.08	High in Ca pantothenate
W.S.-706	Lederle Laboratories Div., American Cyanamid Co., New York, N. Y. <i>Yuvral Vitamins and Minerals Capsules</i>	4339- 104R	20	20.3	3.0	2.95	1.0	1.35	.....	.....	High in Ca pantothenate
W.S.-698	Eli Lilly & Co., Indianapolis, Ind. <i>Betalin Compound Pulvules</i>	1111- 698477	10	10.4	2.0	2.09	3.3	4.14	.....	.....	High in Ca pantothenate
W.S.-702	Eli Lilly & Co., Indianapolis, Ind. <i>Mic-Cebim Tablets</i>	2079- 673824	30	36.4	5.0	4.61	10.0	9.35	0.10	0.09	Slightly high in niacinamide
W.S.-704	Parke, Davis & Co., Detroit, Mich. <i>Kapsels ABDEC</i>	15-371- 50	25	25.2	3.0	2.72	5.0	4.92	.....	.....	O.K.
W.S.-708	Pharmaceuticals, Inc., Newark, N. J. <i>Geritol Tablets</i>	278603	30	31.8	5.0	4.61	2.0	1.83	0.25	0.24	O.K. Less than half strength in Ca pantothenate
W.S.-686	Rawl Chemical Co., New York, N. Y. <i>Rawl-Vite Tablets</i>	18340	50	51.7	5.0	5.58	5.0	2.06	.....	.....	Passed
J.S.-454	Richale Pharmaceutical Co., Hartford, Conn. <i>Elixir Be-twely* Plus</i> .....	.....	.....	.....	.....	.....	.....	.....	0.50 ²	0.43 ²	Slightly high in niacinamide
J.S.-458	Richale Pharmaceutical Co., Hartford, Conn. <i>Preg Tabs</i>	13262	2.5	3.4	0.4	0.52	0.8	0.88	0.04	0.05	Slightly high in folic acid
J.S.-460	Richale Pharmaceutical Co., Hartford, Conn. <i>Preg Tabs</i>	50085006	2.5	2.6	0.4	0.40	0.8	0.79	0.04	0.06	Slightly high in folic acid
4129B	Richale Pharmaceutical Co., Hartford, Conn. <i>Preg Tabs</i> .....	.....	2.5	2.6	0.4	0.39	0.8	0.75	0.04	0.06	Slightly high in folic acid

TABLE 14. VITAMIN PREPARATIONS (Concluded)

No.	Manufacturer or distributor and brand	Control No.	Niacinamide, mg./tablet or capsule		Riboflavin, mg./tablet or capsule		Calcium Pantothenate, mg./tablet or capsule		Folic Acid, mg./tablet or capsule		Remarks
			Declared	Found	Declared	Found	Declared	Found	Declared	Found	
W.S.-699	J. B. Roerig & Co., Chicago, Ill. <i>ASF Anti-Stress Formula Capsules</i>	55307	100.0	105.0	10.0	9.16	20.0	21.67	1.50	1.33	Passed
W.S.-705	E. R. Squibb & Sons Div., Olin-Mathieson Chemical Corp., New York, N. Y. <i>Squibb Stress Formula Vitamins Capsules</i>	6851075	100.0	102.7	10.0	10.76	20.0	28.23	1.50	1.52	High in Ca pantothenate
W.S.-693	E. R. Squibb & Sons Div., Olin-Mathieson Chemical Corp., New York, N. Y. <i>Vigean Squibb Capsules</i>	6G56535	20.0	21.0	2.0	2.07	1.0 ³	1.20 ³	.....	.....	Passed
W.S.-703	The Stuart Company, Pasadena, Calif. <i>Muividen (Stuart) Tablets</i>	3458047	10.0	11.4	2.0	2.03	3.0	3.16	.....	.....	Passed
W.S.-694	The Upjohn Company, Kalamazoo, Mich. <i>Zymacap Capsules</i>	F2656	30.0	32.2	5.0	5.35	10.0	10.40	0.50	0.63	Slightly high in folic acid
W.S.-691	U.S. Vitamin Corp. (Arlington-Funk Laboratories Div.), New York, N. Y. <i>Poly-B with Vitamin C Capsules</i>	15682	50.0	48.8	5.0	5.13	5.0	3.38	.....	.....	Low in Ca pantothenate High in niacinamide and Ca pantothenate
W.S.-695	Winthrop Laboratories, New York, N. Y. <i>Pluravit Improved Formula Pellets</i>	5140L	20.0	24.5	2.0	2.14	5.0	6.70	.....	.....	Very low in Ca pantothenate
W.S.-701	Wyeth Laboratories, Inc., Philadelphia, Pa. <i>Vitules Capsules with Carotene</i>	1561128	20.0	21.1	3.0	3.01	20.0	11.71	.....	.....

¹Niacin

2mg./5 cc.

³Pantothenic acid

6501. *Collyrium Wyeth Isotonic Neutral Borate Solution with Antipyrine.* Wyeth Laboratories, Inc., Philadelphia, Pa. Analysis was as follows:

	Declared, per cent	Found, per cent
Borax, anhydrous (Na ₂ B ₄ O ₇)	present	1.63
Boric acid (H ₃ BO ₃)	present	1.41
Antipyrine	0.4	0.40
Sodium ethyl-mercuri-thiosalicylate	0.002	0.0020

The pH was 6.85. Passed.

5640. *Cu-Nicotine Drench for Sheep.* Coe Bros., Durham, Conn. Analysis showed: Copper sulphate (CuSO₄.5H₂O), 1.50, and nicotine, 0.78, gm./100 cc.

5508. *Dermalaxia.* G. S. Zuccala Laboratories, Inc., Hartford, Conn. This sample was a companion of 5509 above; it likewise was not analyzed.

W.S.-721 to 729. *Drugs Suspected Stolen from New Britain Pharmacies.* J. Niezgodra, New Britain, Conn. All of these samples were seized from Mr. Niezgodra by police, and submitted to us through the Food and Drug Commission for identification. Some of the bottles bore the labels and prescription numbers of New Britain pharmacies and some did not; most of them contained mixtures of several drugs. Drugs identified were the following:

W.S.-721: "Dexamyl Spansules No. 2" of Smith, Kline & French Laboratories, Philadelphia, Pa. (Analysis showed 14.3 mg. of dextroamphetamine sulphate and 97.3 mg. of amobarbital per capsule.)

W.S.-722: (a), "Compazine Spansules" of Smith, Kline & French Laboratories; (b), "Dexamyl Spansule No. 2"; (c), "Butisol Sodium" tablet of McNeil Laboratories, Inc., Philadelphia, Pa. (analysis showed 33 mg./tablet of butabarbital sodium); (d), two other drugs not identified.

W.S.-724: Forty-two unmarked chlorpromazine hydrochloride [10-(3-dimethylaminopropyl)-2-chlorophenothiazine hydrochloride] tablets.

W.S.-725: Nine 10-milligram "Thorazine Hydrochloride" (chlorpromazine hydrochloride) tablets of Smith, Kline & French Laboratories.

W.S.-727: Twelve "Amesec" capsules of Eli Lilly & Co., Indianapolis, Ind. (Analysis showed: Amobarbital, 22 mg./capsule; aminophylline and ephedrine present.)

5181. *Hemro.* Alcor Laboratories Corp., New Haven, Conn. This sample was an aqueous infusion of *Tetragastris Pananensis* bark; it was submitted by the manufacturer for identification of a mold growth that had developed in it. Examination by Mr. Ernest Stoddard of our Plant Pathology Department showed several different fungi to be present, mostly mucors.

6127. *Herb Remedy.* Duke Hull, New Haven, Conn. This preparation was a more concentrated version of 5181 above; it was not moldy.

6125. *Liniment*. Carl Schneider, North Haven, Conn. Analysis showed: Total solids, 0.56, and methyl salicylate, 16.42, gm./100 cc.; alcohol, 5.38 per cent by volume; arnica flowers present.

J.S.-457. *Parcasal Richale Antirheumatic and Analgesic*. Richale Pharmaceutical Co., Hartford, Conn. Analysis was as follows:

	Declared	Found
Sodium salicylate, grains/tablet	5	4.66
Para-aminobenzoic acid, grains/tablet	5	4.89
Ascorbic acid, mg./tablet	50	45.

Passed.

5744. *Pills in Envelope Marked "1 on arising 1 middle afternoon 1 before retiring"*. State Dept. of Health, Hartford, Conn. Cream-colored tablets with a cheese-like odor; barbiturates, alkaloids and synthetic drugs absent. Not identified.

5502. *Pimple Remedy*. Benjamin Young, New Haven, Conn. This was an unidentified plant extract containing no alkaloid, anthraquinone derivative or synthetic drug. Analysis showed: Total solids, 0.63, and ash, 0.015, gm./100 cc.; alcohol, 1.04 per cent by volume.

4797. *Prescription No. 240144 of Moran's Drug Store, Wallingford*. Martin Heinemann, M.D., New Haven, Conn. The prescription called for the following ingredients to be mixed and divided into 20 capsules: Nitroglycerine 0.004 cc.; sodium seconal, 0.15 gm., glutamic acid hydrochloride, 6.0 gm. Analysis showed 0.123 gm./capsule of sodium seconal as against 0.0075 gm./capsule called for. Sample was therefore 16 times the proper strength of this barbiturate, and was consequently misbranded.

J.S.-459. *Rubicol Richale*. Richale Pharmaceutical Co., Hartford, Conn. Analysis was as follows:

	Declared	Found
Alcohol, per cent by volume	5	5.14
Sodium citrate, grains/cc.	1	1.00
Desoxyephedrine hydrochloride, mg./5 cc.		1.04
Guaiacol and glycerine	present	.....

Passed.

3806. *Rum Infusion of "Bois Cochon"*. Samuel Alderman, New Haven, Conn. This preparation was made from the bark of a Haitian tree (*Tetragastris Pananensis*). Analysis showed: Alcohol, 32.85 per cent by volume; alkaloids absent; tannin and red coloring matter present; slight anise odor.

5741. *33 Vitaminerals Baldrian*. Vitaminerals, Inc., Glendale 1, Calif. Labeled: "A Mild Non-Habit Forming Relaxant For Relief of Simple States TENSION SLEEPLESSNESS—Each tablet contains: BALDRIAN*—*Vitaminerals brand of biologically standardized EXTRACT VALERIAN ROOT 0.5 Kochmann-Kunz Unit In a carrier base of Passiflora and Magnesium Gluconate with excipients and coating." Valerian extract identified; passed.

4130. *Unknown Liquid*. Roger Montagnon, Branford, Conn. Identified as a solution of sodium saccharin in glycerine.

COSMETICS

Two official and five unofficial samples of cosmetics were examined; six were passed and one was misbranded:

3807 and 4272. *Soap Chips*. State Supervisor of Purchases, Hartford, Conn. These samples were submitted to see if they complied with Federal Purchasing Specification P-S-566b for "Soap; Chip", which calls for: Moisture and volatile at 105°C., not over 10 per cent; sum of free alkali, alcohol-insoluble matter and sodium chloride, not over 4 per cent; free alkali as sodium hydroxide, not over 0.2 per cent; water-soluble matter, not over 1 per cent, and anhydrous soap, not less than 85 per cent—all (except moisture) on a 10 per cent moisture basis. Average analysis (on an *as is* basis) was: Moisture and volatile, 3.60; alcohol-insoluble, 1.25; water-soluble, 0.20; free sodium hydroxide, 0.00; free sodium carbonate, 0.85, and anhydrous soap, 93.48, per cent. The percentage of anhydrous soap on a 10% moisture basis was 87.28. Both samples passed the specifications, but the pound box of 3807 was 2.74 oz. short weight.

5631 and J.S.-478. *Stephan's Dandruff Remover and Hair Tonic*. National Sales Co., Hartford, Conn. This sample was submitted by an attorney who claimed that his client suffered severe skin irritation from its use. Analysis showed this to be an aqueous suspension of 11.00 per cent mineral oil containing 3.97 per cent of ethyl alcohol by volume and 0.33 per cent of solids including borax, a yellow coal-tar dye and traces of brucine sulphate and arsenic. Passed.

J.S.-472. *Tiz Color Spray Creme-And-Color Rinse Combined, Blonde*. Tiz Products, Inc., Fort Lauderdale, Fla. A user complained that after using this hair dye "she felt a pressure on top of her head—her eyes swelled up—her face swelled up & her shoulder ached." Analysis showed this sample to be a 0.64 per cent aqueous solution of a synthetic wetting agent, perfume and a yellow coal-tar dye. The reactions noted (if due to this product at all) were probably due to allergy to the perfume. Sample was passed.

1645. *Willat Magic Hair Sapphire Permanent Wave Lotion*. Willat Production Co. for Heatless Permanent Wave Co., San Francisco, Calif. Analysis showed: Total solids, 18.26; sodium carbonate, 3.45; total sulphur, 3.78, and ammonia nitrogen, 0.04, gm./100 cc. An organic sulphide whose 2,4-dinitrochlorobenzene derivative melted at 142.5°C, and whose infrared pattern resembled that of beta-mercaptopropionic acid, was present.

1644. *Willat Neutralizer*. Heatless Permanent Wave Co., San Francisco, Calif. White powder identified as sodium perborate.

COLLABORATION WITH OTHER DEPARTMENTS

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

	<i>Samples</i>
State Highway Dept.	6
State Police	1
U. S. Geological Survey (water)	30
Station Departments:	
Biochemistry	44
Entomology	5
Genetics	5
Plant Pathology	58
Soils	70
Tobacco Laboratory	56
	275

BABCOCK GLASSWARE, ETC.

As required by Sections 22-151 and 22-198 of the General Statutes, milk and cream test bottles and milk pipettes, and check thermometers used in milk pasteurizing plants, were examined as follows:

	<i>Pieces</i>	<i>Incomplete or inaccurate</i>
Babcock glassware	1,619	3
Thermometers	71	29

INDEX

Acetic acid	68	Deodorant, air	68
Acetone in well water	63	Desserts, gelatine	53
Acid, acetic	68	"Dermalaxia"	75
Alimentary pastes	8	"Dexamyl Spansules"	75
"Alpha-1 Ballistic Missile and Launcher"	68	Dog foods	20, 64
Amesec Capsules	75	Dough	20
Ammonia in water pistol	69	Doughnut	22
Ammonium bifluoride in glass cleaner	69	Drench, sheep	75
Apple juice	33, 34	Dress, fluorescent whitener in	70
Apples, spray residues on	54, 58	Drugs	70
Arsenate of lead on raspberries	58	Drugs, miscellaneous	71
		Dye, hair	77
Baked products	10, 19, 20, 21, 22	Eggs and egg products	29, 31
Bandages, adhesive	71	Eggs, whole, frozen	29, 31
Barbiturates	70	Egg yolks	29, 31
Bases, beverage	32	Extracts and flavors	29
Beans, wax, canned	20	Extract, vanilla	30
Beer	13, 21	Face cream	71
Beer cans, fill of container	65	Filler, frankfort	66
Beer, root	13	Filling, raspberry pastry	66
Beverage bases	32	Firecrackers	69
Beverages	13, 19, 20, 21	Fish	32
Blood, beef	67	"Fizzies"	67, 68
"Bois Cochon" infusion	76	Flavors and extracts	29
Bologna	43, 44	Flash paper	69
Bread	10, 19	Fluoride, ammonium acid, in glass cleaner	69
Butter	22	Foaming agents	30
Butter, peanut	22	Foods	8
Cacao products	17	Frankfort filler	66
Candy	18, 20, 21, 27, 29	Frankforts	43, 44
Cane, corn and sugar syrup	58	Frosting mixes	65
Cat food	64	Fruit, canned	22
Cheese	19, 21, 22, 23	Fruit cocktail	22
Cherries, glacé	18	Fruit, fresh	33
Cherries, "Maraschino"	41	Fruit juice	33, 38
Chewing gum	19	Fruit juice concentrates	33
Chocolate	21	Fruit, preserved	41
Chocolate coating	17	Gelatine desserts	53
Chocolate milk drink	22	Gin	13
Chocolates	19	Ginger ale	19, 20, 21
Cider	33, 34	"Glass Cleaner, Skybright"	69
Cigarettes	71	Glassware, Babcock	78
Cigarettes, candy	27, 29	Grape drinks	15, 17, 20
"Cleaner, Skybright Glass"	69	Grape spread	42
Cocoa	17	Gum, chewing	19
Cocoa butter	17	Guthion in apples	58
Cocktail, fruit	22	Hair dye	77
Coffee	17, 18, 22	Hair "rinse"	77
Collaboration with other departments ..	78	Hamburg	20, 43, 47
"Collyrium Wyeth"	75	"Hemro"	75
"Compazine Spansules"	75	Herb remedy	75
Confectionery	18, 20, 21, 27, 29	Horseradish	54
Contaminated or decomposed foods	19	Jellies	41, 42
Contents	5	Juice, fruit	33, 38
Cookies	21, 22, 24	Juice, orange	33, 38
Corn, canned	20, 21, 22	Lead arsenate in raspberries	58
Cosmetics	77	Lead in wine	58
Crackers	27	"Lemonade Crystals"	69
Cranberry juice cocktail	16	Lettuce	60
Cream, face	71	Liniment	76
"Crystals, Lemonade"	69	Loaf, luncheon	47
"Cu-Nicotine Drench for Sheep"	75	Lotion, permanent wave	77
Dandruff remover	77	Macaroni	8
DDT in milk	54	Macaroon	19
DDT, method for, in milk	56	Marmalade, orange	42
Deceptively packed foods	24		
Decomposed and contaminated foods ..	19		

INDEX—Continued

Matzos	10, 11	Salad, potato	68
Meat and meat products	19, 20, 43	Salami	47
Meat loaf	47	Salt, garlic	70
Mercury in rose leaves and stems	58	Salt, popcorn	54
Methoxychlor on apples	54	Sausage, beef	48
Milk, chocolate	22	Sausage, pork	43, 47
Milk, DDT in	54	Sausage seasoning	53
Milk, evaporated	20	Seasoning, sausage	53
Milk, method for DDT in	56	Sheep drench	75
Milk, unfortified fluid	21, 22, 24	Shirt, tick trefoil in	69
Milk, vitamin D	24, 25	Shoes, tick trefoil in	69
Milk, vitamin-mineral fortified	24, 28	"Skybright Glass Cleaner"	69
Milk, vitamins A and D skimmed ..	24, 29	"Smoke, Condensed"	68
Miscellaneous drugs	71	"Smoke Fluid"	32
Miscellaneous foods	64	Soap chips	77
Mixes, pudding	53	Sodas	13
Molasses	59	Sodium carbonate	70
Mushrooms	68	Sodium perborate	77
"Myglo"	67	Soy oil	49
"Neutralizer, Willat"	77	Spaghetti	8
Nolan, Owen, obituary	4	"Spectrum Rainbow Cocktail"	69
Noodles, egg	8	Spices and condiments	53
Nuts, pistachio	48	Spinach	61
Nuts, soup	8	Spray residues	54
Obituaries	3, 4	Spread, grape	42
Oil, olive	49, 50	Spread, strawberry	42
Oil, soy	49	Stockings	68
Oils, salad	48	Strawberry spread	42
Olive oil	49, 50	Sundae, pineapple	22
Orange drinks	16, 22	Sweater, tick trefoil in	69
Orange-flavored syrup	58	Sweet potatoes	60
Orange juice	33, 38	Syrup, cane, corn and sugar	58
Orange juice concentrate	33	"Syrup, Dietetic Sugar-Free"	59
Orange marmalade	42	Syrup, Orange	58
Oregano	53	Syrup, root beer	59
Paper, flash	69	Syrups	58
Pastes, alimentary	8	Syrup, vanilla	59
Pastina, egg	8	TDE on apples	54
Pastry filling, raspberry	66	Tea	18
Peanut butter	22	Thermometers	78
Peanuts	48	Thorazine Hydrochloride Tablets	75
Perborate, sodium	77	Toast	10, 11
Permanent wave lotion	77	Tomato paste	20
Pickles	49, 51	Trefoil, tick, in shirt, sweater and shoes	69
Pie	22	Tube, fluorescent, antimony and mer-	
Pie filling	21	cury in	68
Pimple remedy	76	Valerian in drug	76
Pistachio nuts	48	Vanilla extract	30
Pistol, water, ammonia in	69	Vanilla syrup	59
Popcorn	21, 49	Vegetables	27, 60
Popcorn salt	54	Vinegar, cider	61, 63
Potato chips	64	Vinegar, distilled	61
Potatoes	27, 60	Vinegar, wine	62, 63
Potatoes, sweet	60	Vitamin D concentrates	69, 70
Potato salad	68	Vitamin D milk	24, 25
Prescription	76	Vitamin-mineral fortified milk	24, 28
Preserves	42	Vitamin preparations	69, 70, 71, 72
Raisins	22	Vitamins A and D skimmed milk ..	24, 29
Raspberries and leaves, lead arsenate in	58	Water	63
Raspberry pastry filling	66	Water, well, acetone in	63
Remedy, herb	75	Wave lotion, permanent	77
Remedy, pimple	76	Whiskey	13
"Rinse", hair	77	Wine	13, 20
Rolls	20	Wine, lead in	58
Root beer	13	"Yams"	60
Rose leaves and stems, mercury in	58	Yucca extractive	32
Saccharin	77	"Zanzibar Brand Additive No. 2"	52
Salad oils	48		