
The 65th Report on

FOOD PRODUCTS

And the 53rd Report on

DRUG PRODUCTS, 1960

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THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
NEW HAVEN

CONTENTS AND SUMMARY

Material	Page	From		Total	Adulterated, misbranded or otherwise objectionable
		Dept. of Consumer Protection	Other sources		
FOODS					
Alimentary pastes	6	16	1	17	11
Baked products	8	9	—	9	4
Beverages, carbonated, etc:	9				
Alcoholic beverages	9	6	1	7	5
Fruit-flavored beverages	10	27	—	27	17
Miscellaneous beverages	13	8	1	9	3
Root beer	14	96	2	98	34
Beverages, 900 calorie	15	3	—	3	1
Cacao products	18	—	6	6	2
Coffee	18	10	2	12	4
Confectionery	20	23	1	24	15
Contaminated or decomposed foods	21	122	50	172	96
Dairy products:	26				
Baby formulas	26	1	2	3	—
Butter	28	1	—	1	—
Goat's milk	28	—	1	1	1
Ice cream and ice cream mix	28	2	1	3	2
Sour cream	29	—	1	1	1
Unfortified fluid milk	29	1	17	18	1
Vitamin D milk	29	2	234	236	9
Vitamin-mineral fortified milk	36	—	8	8	8
Vitamins A and D skimmed milk	36	—	7	7	2
Deceptively packed foods	39	23	—	23	22
Egg products	40	2	—	2	—
Extracts and flavors	40	26	1	27	12
Fish and shellfish	42	9	—	9	3
Flour	44	—	6	6	2
Fruit, canned, fresh, frozen and preserved	44	23	—	23	13
Fruit juices:	46				
Apple and apple-grape juice	46	3	1	4	—
Grape juice	47	7	—	7	6
Grapefruit, lemon and lime juices	47	5	1	6	1
Orange juice	48	77	—	77	6

CONTENTS AND SUMMARY (Concluded)

Material	Page	From		Total	Adulterated, misbranded or otherwise objectionable
		Dept. of Consumer Protection	Other sources		
Meat and meat products:	48				
Cat and dog foods	48	5	—	5	—
Frankforts	48	25	—	25	6
Hamburg	49	68	1	69	14
Miscellaneous	50	7	13	20	4
Pork sausage	51	34	—	34	9
Nuts	52	23	2	25	16
Oils and fats, vegetable	55	44	6	50	36
Pickles	57	1	—	1	1
Pie fillings	57	—	12	12	10
Preservative	58	1	—	1	1
Preserves and jellies	58	22	—	22	16
Pudding mixes	62	—	2	2	1
Salad dressings	62	5	—	5	4
Spices and condiments	63	12	2	14	6
Spray residues:	64				
Aminotriazole in potatoes	64	4	—	4	—
DDT in forage	64	—	5	5	2
DDT in milk	64	—	556	556	12
Miscellaneous	65	5	20	25	1
Syrups	66	9	1	10	4
Vegetables and vegetable products	68	34	6	40	29
Vinegar	69	11	3	14	4
Water	70	—	37	37	22
Miscellaneous	70	26	38	64	17
Totals		838	1,048	1,886	496
Drugs:	75				
Prescriptions	75	3	2	5	1
Vitamin preparations	75	7	12	19	5
Other drugs	78	18	18	36	18
Cosmetics	81	24	12	36	6
Collaborative	85	—	227	227	—
Total for all		890	1,319	2,209	526
Babcock glassware, etc.	86	—	1,783	1,783	6

The Sixty-Fifth Report on FOOD PRODUCTS and the Fifty-Third Report on DRUG PRODUCTS 1960

H. J. Fisher

This report summarizes examinations of foods, drugs, cosmetics and miscellaneous materials submitted by the Commissioner of Consumer Protection and the Commissioner of Agriculture during the calendar year 1960, as well as like materials analyzed for the U. S. Geological Survey, 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.

One thousand, nine hundred and ninety-two samples of foods, drugs, cosmetics and miscellaneous materials were examined during the year. This was a drop of 230 samples from the number analyzed the previous year, but exceeded the 1958 total by 64 samples.

For the third year the number of samples examined for spray residues was greater than that of any one class of food tested for other forms of adulteration and misbranding, totalling 590. Other classes of foods of which 100 or more samples were analyzed were: Dairy products (278 samples, of which 251 were vitamin-fortified milks); contaminated or decomposed foods (172); meat and meat products (153); and carbonated and still beverages (141).

It should be particularly noted that while 26 percent of all samples tested were found to be deficient in some respect, this figure should not be construed as indicative of the general quality of products on sale in groceries and drug stores, for the reason that most of the samples received by us were submitted because they were already suspect.

There were no personnel changes during 1960.

The writer wishes to express his gratitude to all the members of the staff for their loyalty and efficiency; without their skill and adaptability the many complex analyses reported in this bulletin could not have been carried out. All had some part in the work reported herein, but the tasks of some lay primarily in the fields of feed and fertilizer analysis, whose results are reported elsewhere. Most of the food analyses were made by Messrs. Wickroski, Squires,

West and Miss Agostini; the drugs and cosmetics were examined by Mr. Merwin. Dr. Hankin, together with Mr. George Smith, Miss Barbara Johnson and other members of his staff, were responsible for the 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 the spray residue determinations, and Mr. Botsford conducted the spectrographic and infrared analyses and flame photometric sodium and potassium determinations.

In assigning credit the work of Mrs. Fritzell and Miss Caputo in typing and reading proof on this bulletin should not be overlooked. Attention should also be called to the fact that the responsibility for obtaining the official samples listed herein, and for taking any legal action resulting from our findings, rested solely with Agricultural Commissioner Gill and Consumer Protection Commissioner Frassinelli, Division Chiefs Parry, Clark and Plank, and their inspectors. This Station has no part in the enforcement of the Food, Drug and Cosmetic Act and the special dairy laws.

FOODS

Alimentary Pastes

Eleven official and one unofficial samples of egg noodle products and five official samples of macaroni and spaghetti were analyzed; six samples were passed and eleven were misbranded:

K.F.-2485. Buitoni Space Men No. 60 20% Protein Enriched Macaroni, Highest in Protein, Lowest in Starch. Buitoni Foods Corp., New York, N. Y. Analysis showed only 17.44 per cent of protein; misbranded.

K.F.-2486. Buitoni 20% Protein Enriched Mari Twists Spaghetti Twists in Meatless Marinara Sauce. Buitoni Foods Corp., South Hackensack, N. J. Since the 20 per cent protein claim was made not for the canned product as a whole (including the sauce) but for the spaghetti alone, this was washed with water, dried, rinsed with ether and again dried before analysis. Analysis showed only 15.73 per cent of protein, so sample was misbranded.

F.M.-466. Caro Brand Imported from Italy Macaroni Products Tipo O Esportazione Pura Semola Enriched Manicotti Shells. Mulini & Pastifici "Impero" Giuseppe De Martino, Gragnano (Napoli), Italy. Federal Regulation 16.9 requires enriched macaroni products to contain the following quantities of vitamins in each pound: Thiamine, 4-5; riboflavin, 1. 7-2.2, and niacin, 27-34, milligrams. Since assay of *F.M.-466* showed only 0.45 mg./lb. of thiamine, 0.21 mg./lb. of riboflavin, and 7.86 mg./lb. niacin, this sample was not enriched and was consequently misbranded.

K.F.-2464. Columbia Pure Egg Noodles, 5½% Egg Solids, No Artificial Coloring. A. Zerega's Sons, Inc., Fairlawn, N. J. Moisture, 8.50, lipoids, 5.20 lipoid P₂O₅, 0.108, and whole egg solids (dry basis), 5.65, per cent. Passed.

F.M.-387. Dutch Maid Pure Egg Pot Pie Made from Flour and Egg Yolks. Dutch Maid Food Packing Co., Inc., Allentown, Pa. Moisture, 10.00, lipoids, 4.94, lipoid P₂O₅, 0.115, and egg yolk solids (dry basis), 4.97, per cent. Passed.

K.F.-2420. Goodman's 2-X Noodles, Twice the Eggs, No Salt Added. A. Goodman & Sons, Inc., New York, N. Y. Labelled in part: "For Low Sodium Diets—Each 100 gms. of Goodman's uncooked noodles contains approximately 10.0 mgs. of sodium or less than 3.0 mgs. per ounce". Analysis showed: Moisture, 8.25, lipoids, 7.50, lipoid P₂O₅, 0.172, and whole egg solids (dry basis) 11.42, per cent; sodium, 14.5 mg./100 gm., 4.1 mg./oz. Passed.

K.F.-2484. Martini Brand Spanish Egg Noodles. De Martini Macaroni Co., Inc. Brooklyn, N.Y. Moisture, 10.02, lipoids, 4.98, lipoid P₂O₅, 0.104, and egg yolk solids (dry basis), 4.19, per cent; artificial color not detected. Low in egg yolk solids; misbranded.

F.P.-490. Pasta All-Uovo Tipo "O" Di Pura Semola Di Grani Duri 100% Pure Italian Egg Noodles Made of 100% Pure Italian Durum Semolina and Grade "A" Yolks. Russo Pasta di Lusso, Napoli, Italy. Moisture, 10.08, lipoids, 5.60, lipoid P₂O₅, 0.114, and egg yolk solids (dry basis), 4.90, per cent. Passed.

P.R.-409. Prince Contains 13% Protein Egg Bonnetts Noodles No. 83, Defatted Wheat Germ Added, Salt Free. Prince Macaroni Mfg. Co., Lowell, Mass. Moisture, 8.22, lipoids, 5.21, lipoid P₂O₅, 0.108, and egg yolk solids (dry basis), 4.32, per cent. Low in egg yolk solids; misbranded.

K.F.-2461. Prince Contains 13% Protein Egg Spaghetti, 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 (3½ oz.) uncooked contains about 1.6 milligrams of sodium." Analysis showed: Moisture, 8.66, lipoids, 4.80, lipoid P₂O₅, 0.086, and egg yolk solids (dry basis), 2.81, per cent; sodium, 10.6 mg./100 gm. Misbranded; low in egg yolk solids and contains over six times the declared sodium.

K.F.-2408. Prince Egg Pastina for Baby. Prince Macaroni Mfg. Co., Lowell, Mass. Average analysis showed: Moisture, 7.37, lipoids, 3.88, lipoid P₂O₅, 0.085, and whole egg solids (dry basis), 2.95, per cent. Low in egg solids; misbranded.

K.F.-2475. Prince New! Egg Noodles with Oodles of Eggs! Prince Macaroni Mfg. Co., Lowell, Mass. Moisture, 9.49, lipoids, 5.07, lipoid P₂O₅, 0.110, and egg yolk solids (dry basis), 4.56, per cent. Misbranded not so much because the egg yolk solids were somewhat below the required minimum of 5.5 per cent as because of the misleading "with oodles of eggs!"

K.F.-2409. Prince Spinach Pastina for Baby. Prince Macaroni Mfg. Co., Lowell, Mass. Artificial color absent; Passed.

K.F.-2462. Prince Vitamin 3 Enriched Spaghetti, Defatted Wheat Germ Added. Prince Macaroni Mfg. Co., Lowell, Mass. Labelled "Each 100 grams (3½ oz.) uncooked contains about 1.6 milligrams of sodium." Analysis showed: Moisture, 10.62, lipoids, 1.70, lipid P₂O₅, 0.034, and egg yolk solids (dry basis), 0.00, per cent; sodium, 4.7 mg./100 gm. Three times as much sodium as declared; misbranded.

843 and F.P.-475. Stop & Shop Superior Quality Egg Noodles. Stop & Shop Superior Markets, Boston, Mass. Analyses were as follows:

	843	F.P.-475
Moisture, per cent	9.59	7.76
Lipoids, per cent	5.21	3.82
Lipoid P ₂ O ₅ , per cent	0.117	0.087
Egg yolk solids (dry basis), per cent	5.04	2.34

F.P.-475 was low in egg yolk solids and misbranded; *843* was passed.

Baked Products

Two samples each of crackers, pies and rolls, and one each of bread, bread sticks and pretzels, were examined for the Commissioner of Consumer Protection. Of the total of nine samples, five were passed and four were misbranded:

K.F.-2491. Arnold All Butter Brown and Serve Rolls. Arnold Bakers, Inc., Portchester, N. Y. Analysis showed: Water 24.69, and fat, 5.50, per cent, butyro refraction of fat, 40°C., 49.2; Reichert-Meissl value of fat, 24.8; Polenske value of fat, 3.3; estimated per cent butter, 6.88. Passed.

S.O.-601. Blueberry Mrs. Wagner's Pies. Wagner Baking Corp., Newark, N. J. Submitted because of a complaint that currants had been substituted for blueberries, but passed because microscopic examination showed no fruit other than blueberries.

A.L.-648. Bond Made with Whole Eggs Brown 'n Serve Enriched Rolls. General Baking Co., New York, N. Y. Water, 28.61, lipoids, 7.13, lipid P₂O₅, 0.033, and whole egg solids (dry basis), 0.00, per cent. Misbranded.

A.F.-386. Cheese Snaps, Bonavita. Liberty Import Corp., New York, N. Y. Labelled: "Made with REAL SNAPPY CHEESE—Ingredients: Rice, Sugar, Malt, Salt, Cheese Flavor—Vac-Packed—HICKORY SMOKED." Analyses showed 18.75 per cent of fat, whose constants were: Butyro refraction, 25°C., 61.3; Reichert-Meissl value, 2.9; Polenske value, 0.2. Because these figures indicated a possible 5.42 per cent of grated cheese in the "snaps" this sample was passed.

K.F.-2647. Coq D'Or extra Deluxe Cocktail Cheesettes. F.H. Leggett & Co., New York, N. Y. Undeclared orange-yellow coal-tar dyes (both water-soluble and oil-soluble) present; misbranded.

F.P.-473. Cumberland Farms Country Fresh Enriched Bread. Cumberland Farms, Inc., Boston, Mass. This pound loaf of bread bore a picture of a gallon milk jug overprinted "This Loaf Contains 6% MILK Solids." Analysis showed: Water, 33.29, fat, 2.59, and lactose, 2.64, per cent; fat number, 1.3; net weight, 16.33 oz. These figures indicated the presence of 0.11 per cent of butter fat and 5.13 per cent of dry skim milk, and definitely showed that the only milk product present was either liquid or dry skim milk. Because the label implied that whole milk rather than skim-milk solids were present sample was misbranded.

K.F.-2454. Fritos Bitesize Pretzels. Fritos Co., Dallas, Texas. No coal-tar dye; passed.

S.O.-594. Homestead Blueberry Pie. Homestead Baking Co., South Norwalk, Conn. This sample was submitted because of a complaint that it contained currants instead of blueberries, but microscopic examination showed only blueberries, and it was passed.

A.L.-640. Mama Mia Enriched & Healthful Baked Products Bread Sticks. Mama Mia Italian American Bakery, Brooklyn, N. Y. Assay, as compared with the requirements of Federal Regulation 17.2(a) for enriched bread, was as follows:

	Found	Regulation calls for
Thiamine, mg./lb.	0.22	1.1-1.8
Riboflavin, mg./lb.	0.76	0.7-1.6
Niacin, mg./lb.	9.69	0.0-15.0

This sample was an enriched product, but it was misbranded because deficient in thiamine.

Beverages, Carbonated, Etc.

Alcoholic Beverages

Five samples of beer in 12 fl. oz. cans and one bottle of "home brew" were submitted by the Commissioner, and one sample of whiskey was analyzed for a private citizen; two samples were passed and five were misbranded or otherwise illegal:

A.J.-410. Home Brew. Alcohol, 7.56 per cent by volume; sugar, trace or none; two raisins present.

P.S.-355. IBI International Franken Muth Beer. International Breweries, Inc., Buffalo, N. Y. Average net contents per can of 24 cans comprising this sample were 11.92 fl. oz., so sample was slightly short volume and consequently misbranded.

E.C.-1192 and 1193. Original Old German Lager Beer. Queen City Brewing Co., Cumberland, Md. Average net contents of the 72 cans comprising these two samples were only 11.78 fl. oz.; misbranded.

554. *Schenley Reserve*. Schenley Distillers, Inc., Schenley, Pa. Labelled "Blended whiskey—86 proof." Analysis showed 43.15 per cent alcohol by volume, which is 86.3 proof. Passed.

E.C.-1196. Special Braumeister Pilsener Beer. Independent Milwaukee Brewery, Milwaukee, Wis. Average net contents of the 12 cans were 11.90 fl. oz.; misbranded.

P.R.-416. Yankee Premium Beer. Yankee Brewing Co., New York, N. Y. Average net contents of the 12 cans were 12.01 fl. oz.; passed.

Fruit Flavored Beverages

Twenty seven samples of true or imitation fruit flavored beverages were examined for the Commissioner; the respective flavors were: Eight grape, six orange, five cherry, one strawberry, and six miscellaneous. Ten samples were passed and 17 were misbranded:

A.J.-361. American Dry Grape Soda, King Size. American Dry Beverage Corp., Manchester, N. H. Ash, 29.6, K_2O , 1.5, and methyl anthranilate, 0.90, mg./100 cc; benzoic acid and coal-tar dye present. Misbranded because: (1), It was an imitation grape soda not so labelled; (2), it contained undeclared benzoic acid and coal-tar dye; and (3), the net contents were not declared.

A.J.-360. American Dry Orange Soda. American Dry Beverage Corp., Manchester, N. H. Ash, 52.4, and K_2O , 6.5, mg./100 cc.; estimated per cent orange juice, 3. Undeclared coal-tar dye and benzoic acid present; misbranded.

A.J.-346. B. D. Breakfast Delight Grape-Apple, a Blended Juice Drink. De Wine Brenner Co., Inc. Andover, Pa. Labelled "VITAMIN ENRICHED—Each eight-ounce serving contains 50 mgs. Vitamin B_1 and 60 mgs. Vitamin B_2 or 50% of the minimum adult daily requirement of each.—Water-Grape Concentrate—Apple Concentrate—Sugar—Natural Flavorings—Natural Color—Citric Acid—Vitamin B_1 and Vitamin B_2 ." Assay showed: Thiamine, 0.82, and riboflavin, 1.02, mg./8 fl. oz. Passed.

P.S.-357. Canada Dry Black Cherry Soda. Canada Dry Bottling Co., Meriden, Conn. Ash, 33.4, and K_2O , 2.2, mg./100 cc.; flavor, weak benzaldehyde. Imitation cherry soda not so labelled; misbranded.

F.M.-403. Canada Dry Black Cherry Soda. Canada Dry Corp., Mt. Vernon, N. Y. Ash, 29.8, and K_2O , 2.6, mg./100 cc; flavor, weak benzaldehyde. Imitation cherry soda not so labelled; misbranded.

P.S.-360 and 361. Canada Dry True Fruit Cherry Beverage. Canada Dry Bottling Co., Hartford, Conn. Average analysis showed: Ash, 31.4, and K_2O , 2.9, mg./100 cc.; flavor, benzaldehyde. Imitation cherry soda not so labelled; misbranded.

F.M.-402. Canada Dry Hi-Grape Imitation Grape Soda. Canada Dry Corp., Mt. Vernon, N.Y. Ash, 33.4, K_2O , 4.4, and methyl anthranilate, 0.09, mg./100 cc. The side of this bottle declared "Artificial Flavor" but the cap did not. Analysis did not indicate any added methyl anthranilate, and sample would have been passed even if it had not been labelled "Imitation."

P.R.-458. Cliquot Club Strawberry Cream Soda. Cliquot Club Co., Millis, Mass. Ash, 26.0, and K_2O , 2.7, mg./100 cc.; flavor, true strawberry. Benzoic acid present not declared; misbranded.

K.F.-2516 and F.M.-438. Cott Fruit Soda. Cott Beverage Corp., New Haven, Conn. Average analysis showed: Ash, 32.6, and K_2O , 7.7, mg./100 cc.; undeclared benzoic acid and artificial flavor and color present. Misbranded.

K.C.-1211. Cott Grape Soda. American Bottling Co., Bridgeport, Conn. Ash, 20.2, K_2O , 1.9, and methyl anthranilate, 0.2, mg./100 cc. Passed.

K.F.-2532. Cott Half and Half. Cott Beverage Corp., New Haven, Conn. Ash, 31.6, and K_2O , 11.2, mg./100 cc. Benzoic acid present not declared; misbranded.

A.L.-605. Cumberland Farms Dairy Products, Inc., Fruit Punch. Cumberland Farms Dairy Products, Inc., Hartford, Conn. Labelled: "Contains water, cane sugar syrup, concentrated raspberry, grape, cherry and pineapple flavors, with other natural flavors, orange extract, citric acid and artificial color. Preserved with 1/10 of 1% benzoate of soda." Soluble solids, 11.11, sucrose, 8.11, invert sugar, 2.93, and citric acid, 0.32, gm./100 cc.; ash, 27.2, and K_2O , 5.6, mg./100 cc. Passed.

A.L.-606. Cumberland Farms Dairy Products, Inc., Grape Flavored Drink. Cumberland Farms Dairy Products, Inc., Hartford, Conn. Total solids, 13.57, sucrose, 10.12, invert sugar, 3.42, and tartaric acid, 0.27, gm./100 cc.; ash, 8.4, K_2O , 0.6, and methyl anthranilate, 1.3, mg./100 cc. Imitation grape drink not so labelled; misbranded.

E.C.-1127. Grape Soda. Bell Bottling Co., Providence, R.I. Ash, 6.8, K_2O , 1.3, and methyl anthranilate, 1.6, mg./100 cc. Imitation grape soda not so labelled; misbranded.

K.C.-1437. Imitation Grape Soda, Artificial Flavor & Color. Kenney's Bottling Works, Bridgeport, Conn. Benzoate absent; passed.

P.R.-452. Lincoln Concord Grape Drink, Vitamin C Enriched. Lincoln Foods, Inc., Lawrence, Mass. Labelled: "This product does not contain any artificial flavor—No Preservatives Added—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, tartaric acid, U.S. certified food color, and vitamin C—Three 6 oz. glasses equal daily minimum requirements of vitamin C for an adult." Analysis

showed: Total solids, 14.32, total acidity as tartaric acid, 0.33, actual tartaric acid, 0.084, invert sugar, 13.92, and sucrose, 0.29, gm./100 cc.; ash, 59, K₂O, 22.6, P₂O₅, 4.3, methyl anthranilate, 0.14, and ascorbic acid, 28, mg./100 cc.; estimated per cent grape juice, 15.

This sample appeared to be a true-fruit grape drink as labelled, and the 50 milligrams of ascorbic acid present in six fluid ounces exceeded the minimum daily requirement of 30 milligrams. Passed.

A.J.-345. Mott's P.M. Fruit Juice Drink.* Duffy-Mott Co., Inc., New York, N. Y. Labelled: "New fruit juice drink! Blended of harvest-fresh apples and luscious grapes for more refreshing taste. . . . FORTIFIED WITH VITAMINS B₁ AND B₂—Ingredients: Water, Apple Juice, Grape Juice, Sugar, Citric Acid, Gum Arabic, Natural Flavoring, Artificial Color, Vitamin B₁, Vitamin B₂.—Each 8 oz. glass of this fruit juice drink supplies 50 mg. of Vitamin B₁ and 60 mg. Vitamin B₂." Assay showed: Thiamine, 0.59, and riboflavin, 0.96, mg./8 fl. oz. Too high in riboflavin, but passed.

E.C.-1170. National Fruit Juice Co. (Citrus Fruit Juices) "Enriched with Vitamin C" Orange. National Fruit Juice Co., Cranston, R. I. This half-gallon jug was labelled "Contains Fresh Orange Juice, Concentrated Orange Juice, Water and Pure Granulated Sugar." Analysis showed: Sucrose, 7.74, and invert sugar, 1.57, gm./100 cc.; ash, 132, K₂O, 72.7, P₂O₅, 17.1, and ascorbic acid, 26, mg./100 cc.; estimated per cent orange juice, 28. Probably fortified with vitamin C as claimed; passed.

S.O.-649. Non-Fattening Hoffman Streamline Grape Dietary Beverage Without Sugar. Hoffman Beverage Co., Long Island City, N. Y.—Labelled: "Contains no protein, no fat and 0.8% available carbohydrates—8 ounces supply less than 8 calories—Contains: Grape and other natural flavors, fruit acids (citric and tartaric), carbonated water and 0.29% cyclamate calcium, a non-nutritive artificial sweetener which should be used only by persons who must restrict their intake of ordinary sweets." Analysis showed: Invert sugar, 0.44 gm./100 cc.; K₂O, 6.1, and methyl anthranilate, 0.2, mg./100 cc.; calories/8 fl. oz., 4.2; no benzoate or coal-tar dye. Misbranded because the statement "Without Sugar" was false and because it was an imitation grape beverage not so labelled.

K.C.-1436. Orange Soda, Artificial Flavor & Color. Kenney's Bottling Works, Bridgeport, Conn. Benzoic acid present not declared; misbranded.

S.O.-648. Penguin Brand Orange Soda. Gra-Rock Beverages, Wethersfield, Conn. Ash, 8.0, and K₂O, 0.8, mg./100 cc.; no benzoate. Passed.

J.B.-452. Shop Rite Superior Quality Sparkling Cherry Soda. Wakefern Food Corp., Port Elizabeth, N. J. Ash, 17.2 mg./100 cc., flavor, modified benzaldehyde. Red coal-tar dye present not declared; misbranded.

E.C.-1191. Sunlife Orange. Sunlife Fruit Juice Co., Springfield, Mass. Labelled "CONTENTS: Water, Pure Orange Juice Pulpy Type, Concentrated Orange Juice, Citric Acid, Sugar, U. S. Certified Color and 2200 U. S. P. Units of VITAMIN C . . . Preserved with less than 1/10 of 1% Benzoate of Soda.—There has been added to each 64 ounces of Sunlife Orange 2200 U.S.P. Units of Vitamin C. The daily minimum requirements as advocated by the Federal Security Administrator, for children and adults are: VITAMIN C for infants, 200 U.S.P. units or one 6 oz. glass; for children 1 to 12 years, 400 U.S.P. Units or two 6 oz. glasses; for adults, 600 U.S.P. units or three 6 oz. glasses." Analysis showed: Ash, 100, K₂O, 55.5, and ascorbic acid, 9.6 mg./100 cc.; estimated per cent orange juice, 22.

This sample contained more than enough juice to qualify it as an orange drink, but it was misbranded because use of a U.S.P. unit obsolete since April 1, 1947 was misleading, as was any reference to fortification since the vitamin C content was less than that normally present in 22 per cent of fresh orange juice; and because the reference to the Federal Security Administrator specifically violated the legal prohibition against "A statement . . . either directly or indirectly implying that the product is recommended or endorsed by any agency of the federal . . . government."

Several samples bearing the same brand name but listing a different manufacturer were analyzed in 1948.¹

A.J.-344. Welchade Grape Drink. Welch Grape Juice Co., Inc., Westfield, N. Y. Labelled: "8 oz. Glass of this delicious grape drink supplies 50 mgs. vitamin B₁ and 60 mgs. vitamin B₂—50% of the minimum adult daily requirement of each. A valuable vitamin supplement to your diet.—Ingredients: Water, Concord grape juice, sugar, citric acid, U.S. certified artificial color, vitamin B₁, and vitamin B₂." Assay showed: Thiamine, 0.60, and riboflavin, 0.65, mg./8 fl. oz. Passed.

P.R.-477. White Rock Orange. White Rock Corp., Boston, Mass. No benzoate present, but misbranded because it contained undeclared artificial color and bore no declaration of net contents.

Miscellaneous Beverages

Nine official samples of miscellaneous beverages were examined; six were passed, two were adulterated and one was misbranded:

K.C.-1387A and 1387B. Coca Cola. Coca Cola Bottling Co. of New York, Bridgeport, Conn. *K.C.-1387A* consisted of six 6½ fl. oz. bottles; average net contents found were 6.57 fl. oz. *K.C.-1387B* was a single 6 fl. oz. bottle containing 6.46 fl. oz. Passed.

K.F.-2494 and 2495. Coca Cola. Coca Cola Bottling Co. of Waterbury, Inc., Waterbury, Conn. Each of these samples consisted

¹ Conn. Agr. Expt. Sta. Bul. 538, 9 (1950)

of six bottles, labelled as containing 6 fl. oz. in the case of *K.F.-2494* and 6½ fl. oz. in the case of *K.F.-2495*, but the average net contents found were the same for both samples, namely, 6.62 fl. oz. Passed.

K.F.-2565. Ehrets Extra Near Beer. Metropolis Brewery of New Jersey, Inc., Trenton, N. J. Alcohol, 0.73 per cent by volume; caffeine absent; net contents 11.94 fl. oz. The alcohol content slightly exceeded the legal maximum of 0.50 per cent for non-alcoholic beverages, but sample was passed.

F.M.-481. Finast Old Fashioned Sarsaparilla. First National Stores, Inc., East Hartford, Conn. Non-saponin hemolytic agent present; adulterated.

S.O.-602. Frank's It's The Best Cream Soda. Frank's Beverages, Philadelphia, Pa. Labelled "Contains Water, Sugar, Flavor, Caramel Color, Less than 1/10 of 1% Benz. of Soda." Sample had the vanilla-like flavor characteristic of "cream" soda, but it was colorless and therefore misbranded because it contained no caramel.

F.P.-508. Red Robin. Xtra Bottling Co., Springfield, Mass. Ash, 6.0 and K₂O, 0.3, mg./100 cc; vanilla-like flavor. Passed.

C.C.-10,390. Sunshine Farms, Inc. Dietary Mil-Cholac. Smyth Farm Dairy, Thompsonville, Conn. This preparation in a quart milk bottle was labelled "Contains skim and/or non-fat dry milk and water, unsaturated corn oil, unsaturated and/or hardened soybean and cottonseed oils, vitamin A & D, lecithin, mono and di glyceride, carotene, trace of salt, artificial flavor—FREE FROM ANIMAL FAT—3% vegetable fat—3.6% protein—11.45% carbohydrate." Analysis showed: Water, 88.26, ash, 0.85, protein, 3.37, lactose, 4.85, and fat, 2.67, per cent; calories/100 gm., 57. Constants of the fat were: Butyro Refraction (40°C), 55.9; Reichert-Meissl No., 1.08; Polenske No., 0.25; Kirschner No., 0.75; iodine No., 63.1; saponification No., 194.7; cottonseed oil absent.

The analysis confirmed the absence of butter fat and unhardened cottonseed and coconut oils in more than traces; it also showed that the proportion of other unsaturated vegetable oils was low. Sample was misbranded because the amounts of vitamins A and D were not declared, but a more important fact was that this was a filled milk as defined by Section 22-171 of the General Statutes, and therefore a wholly illegal product.

Root Beer

Ninety-six samples of root beer submitted by the Commissioner, and two received from manufacturers, were tested for the presence of saponin or other unpermitted hemolytic substances; 64 samples were passed, 28 were found to be adulterated with saponin, and six contained other hemolytic agents. The adulterated samples were the following:

Containing Saponin

K.C.-1447 and 1454, K.F.-2504 and 2524-2529, and S.O.-634 and 665. Dad's Root Beer. Dad's and Flip's, Inc., New York, N. Y.

K.C.-1376. Frank's Creamy Root Beer. Frank's Beverages, Philadelphia, Pa.

K.F.-2481. Improved Super Coola Root Beer. Cantrell & Cochrane Division, Lodi, N. J.

K.C.-1390 and 1446. Midtown Club Old Fashioned Root Beer. Plaza Beverage Co., Inc., Flushing, N. Y.

A.L.-5999. Mission Root Beer. Nobby Beverage Co. Inc., New Britain, Conn.

E.C.-1183. Nehi Root Beer. Royal Crown Bottling Co., Providence, R. I.

S.O.-636 and 644. Night Club Sugar Free Dietary Beverage Root Beer. National Spring Water Co., Stamford, Conn.

A.L.-613. Root Beer. Wakefern Food Corp., Port Elizabeth, N. J.

E.C.-1171 and 1172 and P.R.-414 and 428-432. White Rock Root Beer. White Rock Corp., Boston, Mass.

Containing Non-Saponin Hemolytic Agents

F.M.-486. Mason's Root Beer. Lynbrook Beverages, Inc. West Haven, Conn.

S.O.-625. Polar Club Old Fashion Creamy Root Beer. Varuna Spring Water Co., Inc., Stamford, Conn.

A.J.-417 and P.R.-471. Polar Root Beer. Polar Ginger Ale Co., Worcester, Mass.

K.F.-2503. Royal Stewart Root Beer, Creamy Type. American Beverage Corp., Manchester, N. H.

P.R.-476. White Rock Root Beer. White Rock Corp., Boston, Mass.

Beverages, 900 Calorie

In 1960 a special type of beverage began to appear on the market: One designed to supply in one unit a balanced complete but low-calorie diet for one day, with all necessary vitamins and minerals. Some of these beverages were solids intended to be mixed with water, while others were ready-prepared aqueous suspensions; all of them furnished about 900 calories per half-pound can of powder or per quart of liquid. A number of different brands of these products were submitted by the Commissioner for examina-

tion, but analyses of only the following three were completed this year:

E.S.-163. Butterscotch Metrecal Dietary for Weight Control. Mead, Johnson & Co., Evansville, Ind.

A.J.-396. Chocolate Flavored Borden's Ready Diet 900 Metered Calories, A Dietary Food for Weight Control, Chocolate Flavored, Pasteurized, Homogenized. Mitchell Dairy Co. Div., Bridgeport, Conn.

F.H.-129. Liqui-Cal Vanilla, New 900 Calorie Food for Weight Control. Liqui-Cal of New York, Inc., New York, N. Y.

Rather extensive proximate analyses and vitamin assays were run on these three brands, with results as shown in Table 1. The only significant shortage found was in vitamin A in *F.H.-129, Liqui-Cal Vanilla*, which contained only 54 per cent of the claimed amount of this vitamin; this same sample contained excesses over guaranty ranging from 64 to 153 per cent of thiamine, riboflavin and calcium pantothenate. For these reasons we considered this sample to be misbranded.

The other two samples were passed. The very close correspondence between the proportions claimed and found for all vitamins except A in *A.J.-396, Chocolate Flavored Borden's Ready Diet*, should be particularly noted.

TABLE 1. 900—CALORIE BEVERAGES

	E.S.-163		A.J.-396		F.H.-129	
	Claimed	Found	Claimed	Found	Claimed	Found
Water, per cent	3.0	4.81	—	77.31	—	76.12
Ash, per cent	6.4	6.77	—	1.40	—	1.11
Protein, per cent	30.8	29.35	5.7	6.10	1	7.27
Fiber, per cent	—	0.12	—	—	—	0.08
Lactose, per cent	—	—	—	—	2	10.99
Other carbohydrate, per cent	51.0	52.00	12.5	8.79	—	3.20
Fat,	8.8	6.95	1.7	1.74	3	0.55
Calories/100 gm.	—	388	—	94.	—	91.
Calories/ quart or half-pound	900	880	900	968.	900	928.
Vitamin A, units/ quart or half-pound	5,000	—	5,000	8,514	5,000	2,702
Vitamin D, units/ quart or half-pound	400	O.K.	400	O.K.	500	O.K.
Thiamine, milligrams/ quart or half-pound	2.0	2.92	1.5	1.55	2.0	3.27
Riboflavin, milligrams/ quart or half-pound	3.0	4.52	3.0	3.03	3.0	7.59
Niacinamide, milligrams/ quart or half pound	15.0	18.9	20.0	19.9	15.0	16.3
Calcium pantothenate, milligrams/ quart or half-pound	10.0	14.0	—	—	10.0	19.1
Folic acid, milligrams/ quart or half-pound	0.5	0.60	—	—	—	—

¹ Grams per quart: Claimed, 70; found, 74.3

² Total available carbohydrate, gm./quart: Claimed, 140; found, 146.

³ Grams per quart: Claimed, 7.4; found, 5.6.

Cacao Products

Of six samples of medium-fat cocoa submitted by the State Supervisor of Purchases, the fat contents of four fell within the prescribed range of 10 to 22 per cent. The following two were deficient; 192, 9.68 per cent; 1742, 9.75 per cent. The average fat content of all six samples was 11.08 per cent.

Coffee

It was noted in last year's report² that considerable experimental work was done in an attempt to check the claim that "Regular Grind Fireside Egg Coffee" manufactured by Livingston Coffee Co., Chicago, Ill., had "Fresh Egg Added." From the beginning we had considered the determination of lipoid phosphoric acid to be the most practical means of estimating egg content, but as the investigation proceeded it was discovered that fine grinding was essential for extraction of all the lipoids and that a modified method gave higher and more consistent results for lipoid P₂O₅ than did A.O.A.C. Methods 13.33 and 13.34; it was also found that the alcoholic sodium and potassium hydroxide solutions used in the official methods attacked platinum dishes. The method as finally worked out by Mr. Wickroski and Miss Agostini of this laboratory was as follows:

- (1) All samples were ground in a "Mikro-Samplmill."
- (2) Twelve and one-half grams of ground sample were weighed into a flask, 125 ml. of chloroform-absolute alcohol (1+1) added, the flask stoppered, the contents shaken one-half hour on a shaking-machine, and then filtered. One hundred milliliters of the filtrate (equivalent to 10 grams of sample) were evaporated in a 125 ml. Pyrex beaker and the residue dried and weighed as in A.O.A.C. Method 16.12(a) to give the percentage of lipoids.
- (3) Two milliliters of magnesium nitrate solution, 2.9(c), and 8 ml. of alcohol were added to the residue in the beaker, the mixture evaporated, ashed, and P₂O₅ determined as in 16.12(b).

Nine official market samples of "Fireside Egg Coffee" were picked up by inspectors of the Department of Consumer Protection in 1960, and in addition one authentic sample each of coffee beans, coffee beans after addition of 12 pounds of whole eggs to each 400 pounds of coffee, and the finished ground and roasted product to which egg had been added, was taken by Mr. Harold Clark of the Consumer Protection Department at the Livingston Coffee Company plant in Chicago in the presence of Lowell Oranger, Superintendent of the Division of Foods, Dairies and Standards of the

² Conn. Agr. Expt. Bul. 647, 18 (1961)

TABLE 2. EGG IN COFFEE

No.	Material	Lipoids per cent	Lipoid P ₂ O ₅ per cent
E.S.-153	Ground coffee, egg added (Livingston Coffee Co. authentic)	13.99	0.0218
E.S.-154	Whole coffee beans, egg added (Livingston Coffee Co. authentic)	13.96	0.0215
E.S.-155	Whole coffee beans, no egg added (Livingston Coffee Co. authentic)	13.76	0.0160
K.F.-2427	"Fireside Egg Coffee" (market sample)	11.00	0.0150
K.F.-2436	"Fireside Egg Coffee" (market sample)	13.37	0.0153
K.F.-2438	"Fireside Egg Coffee" (market sample)	13.27	0.0138
F.M.-372	"Fireside Egg Coffee" (market sample)	14.60	0.0183
P.R.-424	"Fireside Egg Coffee" (market sample)	13.47	0.0140
P.R.-468	"Fireside Egg Coffee" (market sample)	12.53	0.0260
E.S.-149	"Fireside Egg Coffee" (market sample)	12.95	0.0210
—	"Freshpak" brand coffee	15.23	0.0180
—	"Savarin" coffee	17.81	0.0188

Illinois State Department of Agriculture. Two official and two unofficial samples of other brands of coffee not claimed to contain egg were also picked up for comparison. Of the total of 16 samples, only 12 were eventually analyzed by the official method and will be reported in this bulletin; one of the others (*A.J.-296*) was sent to the Boston District of the U.S. Food and Drug Administration for their examination.

Results of our analyses are given in Table 2. In our opinion these show that of the seven market samples of "Fireside Egg Coffee" four (*K.F.-2427, 2436 and 2438 and P.R.-424*) definitely contained no egg and were consequently misbranded; two (*E.S.-149 and P.R.-468*) did contain egg; and one (*F.M.-372*) was in the doubtful class.

Confectionery

Twenty-three samples of candy were submitted by the Commissioner, and one sample was received from a private citizen. Eight of the official samples and the one unofficial sample were passed; 15 official samples were adulterated or misbranded.

Only one of the passed samples will be reported here:

K.C.-1389. Estee Less Calories Dietetic Imitation White Chocolate For Sugar Restricted Diets. Dietetic Division, Estee Candy Co., Inc., New York, N. Y. Declared ingredients were "Hexitols, Vegetable Fat, Nonfat Dry Milk Solids, Milk, Vanillin (an artificial flavor), Lecithin (an emulsifier)." Analysis as compared to claims was: Water, 2.78, ash, 2.86, protein, 12.25 (claimed 13), carbohydrate, 44.09 (claimed 45.4 including hexitols), and fat, 38.02 (claimed 35), per cent; calories/100 gm., 568 (claimed 491); sodium, 96 mg./100 gm. (claimed 91); butyro refraction of fat, 36.2 at 40°C; fat probably mostly cocoanut or palm kernel oil, but some cocoa butter present because of flavor.

The adulterated and misbranded samples were the following:

K.F.-2561 and 2562. Barg & Foster's DECORETTES. Barg & Foster, Milwaukee, Wis. Both of these samples of cake decorations contained undeclared artificial color.

K.C.-1388. Bonomo's Korday Candies True Fruit Filled Candy Cherry. Gold Medal Candy Corp., Brooklyn, N. Y. No pieces of cherry present; benzaldehyde flavor.

J.B.-467, K.F.-2482 and E.S.-162. Butterlets Brock. Brock Candy Co., Chattanooga, Tenn. Declared ingredients were "Sugar, corn syrup, butter, artificial flavor added." Average analysis showed: Total fatty matter, 0.25 per cent; butyro refraction of fat, 40°C., 52.5; Reichert-Meissl value of fat, 11.4; per cent butter fat in sample, 0.09; mineral oil present. Adulterated because of the mineral oil and misbranded because no more than a trace of butter was present.

J.B.-465. Candy. Elsie's Home Made Candies, Farmington, Conn. This was a cream-colored piece of candy in the shape of a cross, resting on a bed of purple shredded paper in a plain white cellophane-wrapped open cardboard box. It bore a rubber-stamped ingredient and net weight declaration, but no manufacturer's name or address.

A.L.-624. Dandy Candy Watermelon Slices, Pure Cocoanut. Dandy Candy Co., Newark, N. J. Labelled "Ing. cocoanut, sugar, corn syrup, mol., egg alb., salt, fla., & cert. col." Analysis showed: Sucrose, 35.23, and invert sugar, 15.94, per cent; green and pink coal-tar dyes present. Misbranded because a product containing more than 45 per cent of added sugar is not "Pure Cocoanut."

J.B.-491. Leader Assorted Fruit Cuts. Leader Candies, Inc., Brooklyn, N. Y. Net weight: Declared, one pound; found (average of six packages), 14.90 oz.

J.B.-490. Leader Big Buy Chocolate & Vanilla Bulls Eye. Leader Candies, Inc., Brooklyn, N. Y. Net weight: Declared, 16 oz.; found (average of six packages), 15.03 oz.

K.F.-2498 and 2499. Original John's Pure Sugar Buttermint Puffs. Specialty Candy Co., Baltimore, Md. Labelled: "Sugar, Cream of Tartar, May Contain Butter, Molasses, Oil of Peppermint, U. S. Certified Colors added." Average analysis showed: Total fat, 0.20 per cent; butyro refraction of fat, 50.7 at 40°C.; Reichert-Meissl value of fat, 6.8; estimated per cent butter in sample, 0.08. Misbranded because the name "Buttermint" is misleading for a product containing no more than a trace if any of butter.

K.F.-2451. Susan Brooks. Thurman's Inc., McKeesport, Pa. This was a large cream-colored rabbit. It was misbranded because the claim that "Pure Milk Chocolate" was an ingredient was obviously false.

K.C.-1356. Twelve Lollipops. King Cole Gourmet Shop, Bridgeport, Conn. Misbranded because it bore no manufacturer's name or address and because no milk chocolate was present as declared.

K.C.-1350. Woolly Willie Delicious Milk Chocolate. R. M. Palmer Co., Reading, Pa. This was a large cream-colored candy in the shape of a lamb; it was misbranded because no chocolate was present.

Contaminated or Decomposed Foods

One hundred and twenty-two samples of food were submitted by the Commissioner because of suspected insect or rodent infestation, contamination with foreign materials or decomposition, or because of complaints that they had made people ill. Included were: Thirty-eight samples of soda; 10 each of beer and pickles; four of bread; three each of baby foods, cereals, flour, potato chips, shrimp and tuna fish; two each of candy, cheese and cheese spread,

chocolates, eggs, gelatine, hamburg, milk, pineapple-grapefruit drink, sardines, sweet potatoes (canned) and waffles; and one each of ale, an apizza shell, apple sauce, bologna, chili powder, chocolate, coffee, crabmeat, dog food, a frankfort, green beans, an ice cream cone, lemon juice, peanut butter, pigs' feet, raisins, roast beef, salt, sausage and soup. Forty-three samples were passed and 79 were adulterated. The adulterated samples were the following:

E.C.-1167. Anzio Apizza Shell. Anzio Food Products, Boston, Mass. Several millet seed and trace of green mold present.

A.J.-367 and F.M.-436. Ballantine Light Lager Beer. P. Ballantine & Sons, Newark, N. J. *A.J.-367* contained a 3 ft. 4 inch length of black plastic adhesive tape; traces of dirt and specks of some black material were found inside the cap of *F.M.-436*.

F.M.-437. Ballantine Pale Ale. P. Ballantine & Sons, Newark, N. J. Specks of charred material inside bottle cap; bottle was dirty and had odor of smoke.

F.M.-415. Barney's Supreme High Gluten Flour. Barney M. Ravage Co., Trumbull, Conn. Contaminated with rodent urine.

K.F.-2592 and 2594. Bread. Mayron Bake Shop, West Hartford, Conn. Sand present (3.05 per cent in *K.F.-2592*, 1.77 per cent in *K.F.-2594*).

E.C.-1194. Brookside Homogenized Vitamin D Milk. Brookside Dairies, Waterbury, Conn. This milk was sour and had an extremely bitter flavor.

K.F.-2501 and 2502. Bulk Flour. Forino's Bakery, Waterbury, Conn. Dead Mediterranean flour moths (*Anagasta Kuhnella*, Zell) and cadelle beetles (*Tenebroides Mauritanicus*, L.) present.

K.F.-2605. Castle Beverages Black Cherry Soda. Castle Beverage Co., Ansonia, Conn. Dirt and traces of thread and other fibrous material present.

K.F.-2595 and 2596 and F.M.-453 and 454. Castle Beverages Cream Soda. Castle Beverage Co., Ansonia, Conn. Traces of dirt, sand, charred material and mold, and fragments of colored thread, were found in these samples.

K.F.-2601. Castle Beverages Imitation Strawberry Soda. Castle Beverage Co., Ansonia, Conn. Specks of dust and dirt and fragments of plant material present.

K.F.-2597. Castle Beverages Orange Soda. Castle Beverage Co., Ansonia, Conn. One piece of thread, trace of dirt.

F.M.-455 and 456 and K.F.-2599 and 2600. Castle Beverages Pale Dry Ginger Ale. Castle Beverage Co., Ansonia, Conn. Traces of sand, dirt and charred material and thread fragments present.

K.F.-2606. Castle Beverages Root Beer. Castle Beverage Co., Ansonia, Conn. Traces of dirt and dust present.

K.C.-1424. Club Soda. Brooklawn Club Beverage Co., Bridgeport, Conn. Specks of charred material and trace of dust present.

A.J.-335. Coca Cola. Coca-Cola Bottling Co. of Waterbury, Inc. Waterbury, Conn. Mold present.

A.J.-359. Coca Cola. Coca-Cola Bottling Co. of Hartford, East Hartford, Conn. Pieces of spaghetti present.

K.C.-1406. Coconut Soda. Brooklawn Club Beverage Co., Bridgeport, Conn. Dirt and dust present.

K.C.-1432. Cooked Bottom Round Roast. Grandway, Stratford, Conn. This meat contained two lead shot.

K.C.-1382 and 1403-1405. Cream Soda. Brooklawn Club Beverage Co., Bridgeport, Conn. Dirt, dust and mold present.

A.J.-294. Frankfort. Mrs. Benjamin Paterivic, Somersville, Conn. Black brush bristles present.

K.C.-1415. Frozen Eggs. Purity Food Co., Inc., Bridgeport, Conn. Dead fly present; ammonia nitrogen 6 mg./100 gm. Decomposed.

K.C.-1353. Frozen Ground Beef. Board of Education, Stamford, Conn. This meat was U. S. Government surplus stock supplied for the school lunch system. Decomposed.

E.C.-1152. Gerber Strained Dinner, Beef & Egg Noodles. Gerber Products Co., Fremont, Mich. Piece of glass present.

P.S.-373. Gerber Strained Dinner, Vegetables and Turkey. Gerber Products Co., Fremont, Mich. Larva of some moth or butterfly present.

F.M.-430. Grade A Size X Large Fresh Eggs. Nazzareno Goffi, West Haven, Conn. These eggs had a musty or moldy odor apparently picked up from the damp cartons.

K.C.-1355. Hamburg. Smirnoff's Super Market, Fairfield, Conn. Decomposed.

K.C.-1399 and 1425. Imitation Strawberry Soda. Brooklawn Club Beverage Co., Bridgeport, Conn. Specks of dust, dirt and charred material and pieces of thread present.

P.S.-312. Iodized Diamond Crystal Salt. Mrs. Carolyn Lune, Hartford, Conn. Contaminated with grease.

A.J.-323. Jan Boon Milk Chocolate with Hazelnuts. N. V. Cacao en Chocolade—Fabrieken Boon, Wormerveer, Holland. A piece of string was embedded in this chocolate.

A.J.-337. Jes-So Cut & Short Cut Stringless Green Beans. Sweet Life Brands, Inc., New York, N. Y. Immersed vertically in the can was a strip of purple-dyed wood $3\frac{1}{4}$ inches long and over half an inch wide.

F.M.-347. King Roland Brand Crosspack (Midget) Fancy Quality Finest Norwegian Sild Sardines. Stavanger Anejos Co., Stavanger, Norway. Incipiently decomposed.

A.F.-396. Light Rock Dietary Beverage Sugar Free Pale Dry Ginger Ale. Polar Ginger Ale Co., Hartford, Conn. Moldy.

A.J.-311. Light Rock Pale Dry Ginger Ale. Polar Ginger Ale Co., Hartford, Conn. Moldy.

K.C.-1398. Nehi Lime-Lemon Soda. Nehi Bottling Co., Inc., Bridgeport, Conn. Dead fly present.

K.C.-1381, 1383, 1400 and 1401. Orange Soda. Brooklawn Club Beverages, Bridgeport, Conn. Traces of dirt, dust and mold present.

K.C.-1384. Pale Dry Ginger Ale. Brooklawn Club Beverages, Bridgeport, Conn. Traces of dust and dirt present.

K.C.-1272 and 1370 and A.L.-616. Pepsi-Cola. Pepsi-Cola Bottling Co. of Fairfield, Fairfield, Conn. Pieces of plant material and mold present.

P.S.-375-377. Pik-L-Barrel Sweet Cheese Peppers, Fresh Pack. Famous Virginia Foods Corp., Lynchburg, Va. Traces of sand, dirt and thread fragments present.

S.O.-669. Premier Brand Sweet Mixed Peppers. Cliff's Market, Danbury, Conn. Dried skin of an insect and traces of sand, dirt and colored threads present.

K.F.-2569 and 2570. Ray-Field Maryland Golden Syrup Pack Sweet Potatoes. P. A. Capizola, Buena, N. J. Excessive tin (average 88 parts per million).

A.L.-630. Realemon Reconstituted Lemon Juice, Natural Strength. Realemon-Puritan Corp., Chicago, Ill. Piece of green glass (one-half inch long) present.

F.M.-440. Roessler's Bologna. Carl Roessler, Inc., New Haven, Conn. Contaminated with brush bristles.

F.M.-355. Ruppert Knickerbocker Beer. Jacob Ruppert, New York, N. Y. Contained the head and neck of a well-decomposed mouse.

K.C.-1430. Rye Bread. Zwerdling Bakery, Bridgeport, Conn. Portion of worm present.

F.M.-435. Schlitz Beer. Jos. Schlitz Brewing Co., Brooklyn, N. Y. Traces of charred material and smoke film present.

P.S.-345. Schuler's America's Finest Potato Chips, Twin Pack. Schuler's Foods Division of Sunshine Biscuits, Inc., Rochester, N. Y. Incipiently rancid.

K.C.-1428 and 1431. Seven-Up. Seven-Up Bottlers, Inc., Norwalk, Conn. *K.C.-1428* had a turpentine-like odor and contained

a patch of lead paint; the odor of *K.C.-1431* was normal, but it was contaminated with fragments of colored thread, specks of charred material and a piece of plant stem.

K.C.-1442. Silver Lane Pickles Dill Pickles. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand and dirt present.

K.C.-1440. Silver Lane Pickles Fresh Imported Style Kosher Dill Pickles. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand, dirt and colored threads present; inside of cover dirty.

K.C.-1443. Silver Lane Pickles Hot Cherry Peppers. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand, dirt and colored threads present.

K.C.-1444. Silver Lane Pickles Hot Finger Peppers. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand, dirt and colored threads present.

K.C.-1441. Silver Lane Pickles Sour Gherkins. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand and dirt present.

K.C.-1445. Silver Lane Pickles Sweet Mixed Pickles. Silver Lane Pickle Co., East Hartford, Conn. Traces of sand, dirt and colored threads present.

K.F.-2567. Strawberry Gelatine. Vintage Canning Corp., Boston, Mass. Dirty.

K.C.-1315 and 1316. Sugar Jets. General Mills, Inc., Minneapolis, Minn. Rancid.

E.S.-160. Vegetable Soup. State Office Building Cafeteria, Hartford, Conn. Portion of rubber pencil-eraser present.

F.P.-488. Whitman's Chocolates-Messenger. Stephen F. Whitman & Sons, Philadelphia, Pa. Indian meal moth larva (*Plodia interpunctella*) and trace of insect webbing present.

Fifty unofficial samples were submitted by the State Department of Health, the Department of Animal Diseases of the University of Connecticut, the Bridgeport, New Britain, Norwalk, Waterbury and West Haven health departments, Hamden and Madison schools, attorneys, insurance companies and private citizens. Included were: Eight samples of milk; five each of meat and sodas; four of corn meal; two each of bread, coffee, corned beef and hash, cupcakes and grapefruit juice; and one each of butter, cake frosting, canned corn, canned peaches, a cereal, chili powder, chili sauce, chocolates, cocoa, cookies, ice cream, meat loaf, a milk shake, pie, a pudding mix, sausage, tomato paste and water. Thirty-three samples were passed and 17 were adulterated. The adulterated samples were the following:

2156. Ann Page Chili Powder. Great A & P Tea Co., New York, N.Y. This sample contained a few cast skins of the black carpet beetle (*Attagenus piceus*).

489. *Breakstone's Fine Quality Sweet Butter Unsalted.* Breakstone Food Division, National Dairy Products Corp., New York, N. Y. Moldy.

1895. *Canada Dry Root Beer.* Canada Dry Corp., Mt. Vernon, N. Y. Sand and small pieces of glass were stuck to the inside bottom surface of the bottle.

158. *Chili Sauce.* Albert Nutile, North Haven, Conn. This had been made in a galvanized container, and analysis showed 250 parts per million of zinc.

745. *Chocolate Bridge Mix Lewis.* Edgar P. Lewis & Sons, Inc., Malden, Mass. Live pavement ants (*Tetramorium caespitum*, L.) and insect webbing present.

1373. *Cumberland Farms Approved & Homogenized Milk.* William Stratton, Northford, Conn. Off-flavor and odor suggesting chlorine.

1119 and 1120. *Grape Soda.* Foxon Spring Water Bottling Co., East Haven, Conn. Piece of grape skin and stems present.

9745. *Hostess Filled Cup Cakes.* Continental Baking Co., Rye, N. Y. One dead adult fruit fly (*Drosophila*) was found imbedded in the cake.

1101. *Lynbrook Quality Pale Dry Ginger Ale.* Lynbrook Beverages, Inc., New Haven, Conn. Moldy.

191. *Milk.* George Brauer, Cromwell, Conn. Off odor, apparently due to feed.

1769. *Milkshake.* Mrs. Kenneth Burrows, New Haven, Conn. Kernel of corn present.

1015. *Peplau's Dairy Approved Milk Pasteurized.* Peplau's Dairy, New Britain, Conn. Cowy or feed flavor.

1014. *Peplau's Dairy Homogenized Vitamin D Approved Milk.* Peplau's Dairy, New Britain, Conn. Cowy or feed flavor.

267. *Post Raisin Bran Fruit 'n' Cereal Treat.* Post Division, General Foods Corp., Battle Creek, Mich. Infested with live adult saw-toothed grain beetles (*Oryzaephilus surinamensis*).

1886. *Refreshing Bordo Grapefruit Juice.* Bordo Products Co., Chicago, Ill. Not grapefruit juice but beef, iron and wine or some similar medicament.

469. *Sealtest Milk.* Health Dept., New Britain, Conn. Trace of foreign volatile substance with odor resembling turpentine.

Dairy Products

Baby Formulas

The following three samples of liquid baby food, of which one was submitted by the Commissioner of Consumer Protection and two by the Commissioner of Agriculture, were analyzed with results as shown in Table 3:

TABLE 3. BABY FORMULAS

	W.S.-757, "Bremil"		C.C.-7742, "Modilac"		C.C.-7743, "Similac"	
	Claimed	Found	Claimed	Found	Claimed	Found
Water, per cent	75.0	—	74.30	72.70	75.90	74.80
Protein, per cent	3.0	—	4.06	3.94	3.45	3.25
Ash, per cent	1.0	—	0.98	0.84	0.75	0.79
Lactose, per cent	—	—	—	10.72	—	14.53
Other carbohydrate, per cent	—	—	—	6.55	—	0.00
Total carbohydrate, per cent	14.0	—	15.44	17.27	13.10	14.53
Fat, per cent	7.0	—	5.22	5.25	6.80	6.63
Calories/fluid ounce	40.	—	40.	42.	40.	41.
Vitamin A, units/quart (1:1 diln.)	2,500	—	3,000	3,519	2,500	2,308
Vitamin D, units/quart (1:1 diln.)	800	O.K.	600	O.K.	400	O.K.
Thiamine, mg./quart (1:1 diln.)	0.4	0.50	0.55	1.10	0.65	0.79
Riboflavin, mg./quart (1:1 diln.)	1.0	1.06	1.00	1.28	1.00	1.47
Niacin, mg./quart (1:1 diln.)	6.0	6.41	—	—	present	—

W.S.-757. Borden's Bremil Liquid Infant Food. The Borden Company, Pharmaceutical Division, New York, N. Y.

C.C.-7742. Modilac Modified Milk Formula for Babies Gerber. Gerber Products Co., Fremont, Mich.

C.C.-7743. Similac Liquid Ross Prepared Infants Formula for The Important First Year. Ross Laboratories, Columbus, Ohio.

In general all three brands closely met their quantitative claims and were passed. *C.C.-7742* did, however, contain twice as much thiamine as declared, and there was a 47 per cent excess of riboflavin in *C.C.-7743*.

Butter

S.O.-661. Creamery Best Butter, packed by Dari Best Butter Co., Inc., New York, N. Y. was analyzed as follows: Butyro refraction of fat, 40°C., 42.4; Reichert-Meissel No. of fat, 27.5; Polenske No. of fat, 2.2. Passed.

Goat's Milk

R.A.-2235. Meyenberg Brand Evaporated Goat Milk with Added Vitamins B₆ and B₁₂ and Folic Acid, Homogenized, Unsweetened, Sterilized, packed by Meyenberg Milk Products Co., San Francisco, Calif., was analyzed as follows:

	Claimed	Found	Mean value for goat's milk ³
Total solids, per cent	—	24.22	14.24
Protein, per cent	—	6.57	4.17
Fat, per cent	7	6.55	4.72
Lactose, per cent	—	9.75	4.75
Ash, per cent	—	1.71	0.96
Solids not fat, per cent	15	17.67	—
Folic acid, mg./14 oz.	1	0.85	—

These figures indicate a concentration of about 1.7 to 1 for this evaporated product. The fat content was 0.45 per cent below guaranty, so sample was misbranded.

Ice Cream and Ice Cream Mix

Two samples of ice cream were examined for the Commissioner, and one sample of ice cream mix was analyzed for a manufacturer. The two ice creams were misbranded and the mix was passed:

W.M.-4222. Dietary Ice Cream. H. P. Hood & Sons, New Haven, Conn. Labelled: "Sweetened with saccharine (*sic*), calcium, sucaryl and sorbitol. Contains 15% by weight of artificial sweetening agents.—This product has been especially prepared for persons who must restrict their sugar intake. The carbohydrate

content does not exceed 10%. Artificial flavor and color added." Analysis showed: Water, 68.48, ash, 0.59, protein, 3.45, sucrose, 0.00, lactose, 4.64, other carbohydrate, 10.61, and fat, 12.23, per cent; calories/100 gm., 185; calories/pint, 573. Misbranded because the carbohydrate exceeded the claimed maximum of 10 per cent.

W.M.-4221. Golden Crest Farm Dietary Ice Cream. Golden Crest Farm Ice Cream Co., New Haven, Conn. Labelled: "Sweetened with calcium, sucaryl and sorbitol.—This product is especially prepared for persons who must restrict their sugar intake.—The calcium sucaryl content 2/100 of 1% by weight.—This pint contains approximately 399 calories or 133 calories per hundred grams. The carbohydrate contents do not exceed 10%." Analysis showed: Water, 66.01, ash, 0.71, protein, 4.59, sucrose, 0.00, lactose, 4.23, other carbohydrate, 11.10, and fat, 13.36, per cent; calories 100 gm., 200; calories/pint, 620. Misbranded because the carbohydrate and calorie contents were higher than the specified maxima.

1316. Ice Cream Mix. Cret's Marioni Ice Cream, Hamden, Conn. Total solids, 39.38, and fat, 12.69, per cent; flavor normal, Passed.

Sour Cream

2606. Breakstone's Sour Cream, submitted by the Bridgeport Health Department, was analyzed spectrographically for lead; 0.48 part per million was found, which was rather high.

Unfortified Fluid Milk

One sample of such milk was submitted by the Commissioner to check its net contents, the lead contents of 16 samples were determined for the Bridgeport Health Department, and fat was determined on one sample for a dairy. All except one sample were passed:

954. Approved Milk. Bruns Bros. Dairy, Ansonia, Conn. Fat, 3.4 per cent.

2434-2437, 2573-2575, 2578-2580, 2604-2605 and 2607-2610, Milks for Lead. Health Dept., Bridgeport, Conn. The lead contents ranged between 0.02 and 0.28 part per million, and averaged 0.08 p.p.m. The sample containing 0.28 p.p.m. was definitely too high in this element.

S.O.-638. Orem's Dairy Homogenized Approved Milk Pasteurized. Orem Dairy, Wilton, Conn. Average net contents (six quart cartons), 32.52 fl. oz.

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 such milk on the Connecticut market by feeding tests on rats. In the 26-year period 1935-1960

³ Winton and Winton, "Structure and Composition of Foods," III, 18.

inclusive, 3,957 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.

In 1960, 232 samples were examined for the Commissioner of Agriculture. Results of the assays are shown in Table 4; seven samples were definitely substandard. The percentage of samples fully or substantially meeting guaranties was 97.

In addition to the samples assayed for Vitamin D, the net volumes of two vitamin D milk samples were checked for the Commissioner of Consumer Protection and the fat contents of two other samples were determined for a dairy:

952 and 953. *Bruns Bros. Homogenized Vitamin D Approved Milk.* Bruns Bros. Dairy, Ansonia, Conn. Average fat content, 3.53 per cent.

P.R.-418. *Fisher Bros. Dairy Homogenized Vitamin D Approved Milk Pasteurized.* Fisher Bros., Putnam, Conn. Average net contents (six quart paper cartons), 31.24 fl. oz. Short 0.76 fl. oz.; misbranded.

A.L.-570. *Guida-Seibert Dairy Co. Pasteurized Homogenized Vitamin D Approved Milk.* Guida-Seibert Dairy Co., New Britain, Conn. Average net contents (six quart paper cartons), 31.64 fl. oz. Short 0.36 fl. oz. Misbranded.

TABLE 4. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Baltic	Sunrise Farm Dairy (John Ozga)	2	2		
Berlin	Johnson's Dairy	2	2		
	Lower Lane Dairy	2	2		
	Ventres Dairy	2	2		
Bloomfield	Maple Hill Farms	1	1		
	Chris Nielsen & Sons	2	2		
	A. C. Petersen Farms	1	1		
	Talcott View Farms	2	2		
Bolton	A. J. Wade Dairy Farms	2	2		
Bridgeport	Bolton Dairy	1	1		
	Beechmont	2	2		
	Dewhurst Dairy	2	2		
	Mitchell Dairy Div., The Borden Co.	2	2		
Bristol	Elton Dairy Co.	2	2		
	Roberge Dairy	2	2		
Clinton	Burr Dairy, Inc.	2	1		
Cromwell	McAllister Dairy	2	2		
Danbury	Marcus Dairy	2	1		
	Rider's Dairy	1	1		
Derby	Kinney's Dairy	1	1		
East Haddam	Sprecher Dairy	2	2		
East Hampton	Wall's Dairy Farm	2	2		
East Hartford	Bergren's Dairy Farms	2	2		
	Homestead Farm Dairy	1	1		
East Lyme	Drabik Farms	2	2		
East Norwalk	Devine Dairy	2	2		
Easton	Center Farm Dairy	2	2		
	Snow's Milk Farm	2	2		
East Windsor	Bassdale Farm Dairy	2	2		

TABLE 4. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Ellington	Cordtsen's Dairy	1	1	—	—
	Moser Dairy Farms	1	1	—	—
Fairfield	Marsh Dairy	1	1	—	—
	Wade's Dairy	2	2	—	—
Forestville	R. H. Gifford Dairy	2	2	—	—
Greenwich	Round Hill Farms	1	1	—	—
Guilford	Maple Shade Farm, Inc.	1	1	—	—
Hamden	Brock-Hall Dairy Co.	2	2	—	—
Hartford	Bayer's Milk	2	2	—	—
	Farmers' Co-Operative	2	2	—	—
	H. P. Hood & Sons	3	3	—	—
Jewett City	National Dairy Products Corp. (Sealtest)	3	3	—	—
Kensington	Norman's Dairy	2	2	—	—
	Ferndale Dairy, Inc.	2	2	—	—
Lisbon	Rockland Dairy Farms	2	2	—	—
Litchfield	Stanley Wildowsky	2	2	—	—
Manchester	Tollgate Dairy Farms	2	2	—	—
	Dari-Maid Milk Co.	3	3	—	—
	Dart's Dairy	3	3	1	—
	Wilkie Dairy	1	1	—	—
Meriden	Countryside Dairy (C. Barillaro)	1	1	—	—
	Diamond Hill Dairy (J. D. Ives)	2	2	—	—
	Charles Greenbacker & Sons	2	2	—	—
	E. J. Kaemmer & Sons	2	2	—	—
	Meadow Brook Dairy	1	1	—	—
	Schwink's Dairy, Inc.	2	2	—	—
	Sievert's Dairy	1	1	—	—
	Triple Springs Farms	2	2	—	—
	Wayside Dairy	2	2	—	—

TABLE 4. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Middletown	Brookfield Dairy	2	1	1	—
	Daniels Farm	2	2	—	—
	Green Acres Farm (A. Jablonski)	1	1	—	—
	Hillside Dairy	2	1	—	1
	Pleasant View Dairy	2	2	—	—
	Sunshine Dairy	3	2	—	1
Milford	Clover Dairy	1	1	—	—
	A. J. Platt & Sons	1	1	—	—
Milldale	Riverside Dairy	2	2	—	—
Monroe	Pine Tree Farm	1	1	—	—
New Britain	Guida-Seibert Dairy Co.	1	1	—	—
	Heslin Dairy Co.	2	2	—	—
	J. J. Shapiro & Sons	2	2	—	—
	A. J. Spring & Sons	1	1	—	—
	Miller's Farm Dairy	2	2	—	—
New Canaan	Eddy's Dairy	1	1	—	—
Newington	Hillcrest Farm	2	1	1	—
	J. William Holt Farm Dairy	2	2	—	—
	Mortensen Dairy Farms	2	2	—	—
	J. A. Moylan & Son	2	2	—	—
	Spring Brook Farm Dairy	1	1	—	—
	Michael's Dairy	2	2	—	—
	New London & Mohegan Dairies	2	2	—	—
	Radway's Dairy	2	2	—	—
	Conn's Dairy	2	2	—	—
	Knudsen Bros.	1	1	—	—
	Clover Farm Dairy	2	2	—	—
	Harrick's Dairy	1	1	—	—
Oxford	Great Oak Farm	1	1	—	—

TABLE 4. VITAMIN D MILK

City or town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Orange	McDermott Dairy	2	2	—	—
Plainville	Peterson's Dairy	2	2	—	—
Preston	Broad Brook Dairy	2	2	—	—
	Preston Dairy	2	2	—	1
Putnam	Fisher Bros.	2	1	—	—
Redding	Burrill's Dairy	2	2	—	—
Rocky Hill	Charles B. Gilbert	2	2	—	—
	Krol's Dairy	2	2	—	—
	Sunny Crest Dairy	2	2	—	—
	Sun Valley Farms	1	—	1	—
	Ajello Bros.	2	2	—	—
	Bomba Bros.	2	2	—	—
	Chatfield Dairy	1	1	—	—
	W. W. Sherman & Sons	2	2	—	—
Southbridge, Mass.	Sheffield-Maplehurst Div., Natl. Dairy Products Corp.	2	2	—	—
Springdale	Hilltop Farm	1	1	—	—
Suffield	Welles Farms	1	1	—	—
Talcottville	E. E. Freimuth	2	2	—	—
Terryville	High Farm Dairy	1	1	—	—
Thomaston	Fred J. Wood Dairy	2	2	—	—
Thompsonville	Enfield Dairy	2	2	—	—
	Riverview Dairy	2	2	—	—
	Smyth Farm Dairy	2	2	—	—
Torrington	Clover Dairy	2	2	—	—
	Cooperative Dairy	2	2	—	—
	Greenwood's Dairy	2	2	—	—
	Torrington Creamery	2	2	—	—
Trumbull	Parker's Dairy	2	2	—	—

TABLE 4. VITAMIN D MILK

City or Town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed
Wallingford	Beaumont Farm	1	1	—	—
	J. H. Daly Co.	1	1	—	—
	Fairview Dairy	1	1	—	—
	Joseph P. Novak Dairy	2	1	—	—
Washington	Marsh Dairy	1	1	—	1
Waterbury	Litchfield Farm, Inc.	1	1	—	—
	Maple Hill Dairy	1	1	—	—
	Tranquility Farm Dairy	1	1	—	—
	Waterbury Cooperative Dairy, Inc.	1	1	—	—
Wauregan	Wauregan Dairy Farm	1	—	1	—
Webster, Mass.	Choiniere's Dairy	2	2	—	—
	Deary Bros.	2	2	—	—
	Lincoln Dairy	1	1	—	—
West Hartford	Ferris Dairy	2	2	—	—
Westport	Kenwood Farms	2	2	—	—
Wethersfield	Orem's Dairy	2	1	—	1
Wilton	J. Noga & Son	2	2	—	—
Windsor	Rosehurst Dairy	1	1	—	—
Woodbridge	Driscoll's Dairy	1	1	—	—
Yantic		2	2	—	—
	Totals	232	220	5	7

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; thiamine, 1, riboflavin, 2, niacin, 10, iron, 10, and iodine, 0.1, milligrams. Eight samples of such milk submitted by the Commissioner of Agriculture were assayed with results as shown in Table 5. While only one of these samples was significantly low in any vitamin (C.C.-10,304, which was deficient in both vitamin D and niacin), all of the others contained much more of two or more vitamins than the standard called for. In our opinion for such a standard to have any meaning all of the added vitamins should fall within plus or minus 20 per cent of the specified amounts.

Vitamins A and D Skimmed Milk

Each quart of Vitamins A and D Skimmed Milk is required to contain not less than 2,000 U.S.P. units of vitamin A and 400 units of vitamin D, and not more than 0.5 per cent of butter fat. Of seven samples submitted by the Commissioner of Agriculture, four were assayed for vitamin A and three for vitamin D. One sample was low and one high in vitamin A; the other five samples were passed. Results are given in Table 6.

TABLE 5. VITAMIN-MINERAL FORTIFIED MILK

No.	City or town Dairy	Vitamin A, units/qt.	Vitamin D, units/qt.	Thiamine, mg./qt.	Riboflavin, mg./qt.	Niacin, mg./qt.	Remarks
C.J.-1619	Bloomfield	5,975	O.K.	1.81	2.40	9.88	Too high in vitamin A and thiamine.
C.J.-1617	Hamden	6,679	O.K.	2.63	2.46	12.12	Too high in vitamin A and thiamine.
C.C.-10,304	Kensington	—	Below standard	1.29	1.84	4.52	Low in vitamin D and niacin.
C.J.-1666	Kensington	5,440	—	1.57	3.48	9.11	Too high in vitamin A, thiamine and riboflavin.
C.C.-10,307	Meriden	—	O.K.	4.03	5.80	19.05	Too high in thiamine, riboflavin and niacin.
C.J.-1671	Meriden	7,973	—	1.78	4.05	10.06	Too high in vitamin A, thiamine and riboflavin.
C.J.-1672	Meriden	5,940	—	1.66	3.72	9.75	Too high in vitamin A, thiamine and riboflavin.
C.J.-1618	New Britain	6,615	O.K.	2.43	2.54	12.97	Too high in vitamin A and thiamine.

TABLE 6. VITAMINS A AND D SKIMMED MILK

No.	City or town	Dairy	Vitamin A, units/qt.	Vitamin D, units/qt.	Remarks
C.C.-10,306	Berlin	Ventres Dairy	—	satisfactory	O.K.
C.J.-1667	Berlin	Ventres Dairy	1,807	—	Passed.
C.C.-10,301	East Hartford	J. A. Bergren Dairy Farms	—	satisfactory	O.K.
C.J.-1670	East Hartford	J. A. Bergren Dairy Farms	2,365	—	O.K.
C.J.-1668	Hartford	Sealtest-National Dairy Products	1,599	—	Low in vitamin A.
C.C.-10,305	Kensington	Ferndale Dairy, Inc.	—	satisfactory	O.K.
C.J.-1665	Kensington	Ferndale Dairy, Inc.	2,961	—	Too high in vitamin A.

Deceptively Packed Foods

A food is misbranded under the law if its container is "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 such a practice is misleading to the consumer. In 1960, 23 samples were submitted by the Commissioner because of suspected slack fill; all except one of these were misbranded. The deceptively packed samples were the following:

F.M.-459. Assorted Flip-Up Packs Candy Cigarettes, Air Filtered, Hole in Center. Four Star Candy Co., Inc., Newark, N.J. Fill of container 36 per cent.

E.C.-1202. Candy "Cigarettes." Smiley Candy Co., Easton, Pa. Fill of container 35 per cent.

F.M.-414. Cardinal Candies Candy Cigarettes. Cardinal Candies, West Point Pleasant, N.J. Fill of container 37 per cent.

F.M.-417. Firecracker Filled with Candy. Thompson Candy Co., Meriden, Conn. Fill of container 47 per cent.

A.L.-579. Milk Chocolate Basket and Candy No. M348. Jacobs Candy Co., New Orleans, La. Fill of container 37 per cent.

E.C.-1154. Nabisco Oatmeal Cookies. National Biscuit Co., New York, N.Y. Fill of container 58 per cent.

E.C.-1155. Nabisco Rye Thins Crackers. Biscuit Co., New York, N.Y. Fill of container 65 per cent.

A.J.-319. Necco Molasses Chews. Necco, Cambridge, Mass. Fill of container 52 per cent.

A.J.-318. Necco Molasses Chips. Necco, Cambridge, Mass. Fill of container 58 per cent.

A.J.-320. Necco Peanut Caramels. Necco, Cambridge, Mass. Fill of container 52 per cent.

A.J.-322. Necco Peanut Crunch. Necco, Cambridge, Mass. Fill of container 65 per cent.

A.J.-321. Necco Vanilla Caramels. Necco, Cambridge, Mass. Fill of container 50 per cent.

F.M.-433. Newman's De Luxe Atlantic City Salt Water Taffy. Newman, Inc., Atlantic City, N.J. Fill of container 66 per cent.

J.B.-447. New! Royal Instant Lemon Flavor Pie Filling. Standard Brands, Inc., New York, N.Y. Fill of container 58 per cent.

F.M.-460. 100 4 Star Individually Wrapped Kiddie Assortment Hallowe'en Trick or Treat. Four Star Candy Co., Inc., Newark, N.J. Fill of container 39 per cent.

A.L.-592. Barbara Scott Thin Mints. Deran Confectionery Co., Inc., Cambridge, Mass. Average fill of container (two boxes) 57 per cent.

S.O.-653. Slim-Mint Chewing Gum. Thompson Medical Co., Inc., New York, N.Y. Fill of container 36 per cent.

K.F.-2581. Swell Bubble Gum Double Comics. Philadelphia Chewing Gum Corp., Havertown, Pa. Fill of container 50 per cent.

K.F.-2497. 2620 and 2621 and F.M.-461. World's Finest Candy Cigarettes. World Candies, Inc., Brooklyn, N.Y. Average fill of container 44 per cent.

Egg Products

One sample each of dried egg yolks and egg whites solids was examined for the Commissioner; both samples were passed:

K.N.-4895. Hall Mark Spray Dried Egg Yolk. Stein-Hall & Co., Inc., New York, N.Y. Moisture, 4.24; lipoids, 60.80, and lipid P_2O_5 , 1.64, per cent.

K.F.-2634. Henningsen Egg White Solids. Henningsen, Inc., Malveen, Iowa. Water, 9.40, ash, 7.30, protein, 78.80, dextrose, 0.00, lipoids, 0.15, lipid P_2O_5 , 0.00, salt (NaCl), 2.24, and undetermined, 4.35, per cent; coal-tar dye absent.

Extracts and Flavors

Sixteen samples of root beer beverage bases, two each of grape beverage bases, lemon bar mixes and a yucca extract, and one each of imitation vanilla extract, "liquid smoke", an orange beverage base and a strawberry beverage base, were submitted by the Commissioner; one sample of imitation vanilla extract was analyzed for the State Supervisor of Purchases. Of the total of 27 samples, 15 were passed and 12 were adulterated or misbranded:

P.R.-411. Admiral Brand Root Beer Flavor. P.X. Vending Co., Danielson, Conn. Saponin present; adulterated.

K.N.-4777. A. & W. Root Beer Concentrated Syrup. Marmel Corp., Waterford, Conn. No saponin present; passed.

K.F.-2538 and 2541. Baker's Indian Root Beer Beverage Base. Baker's Extract Co., Springfield, Mass. No saponin; passed.

F.M.-467. Foote and Jenks Root Beer Flavor, Special 911. Foote & Jenks, Jackson, Mich. No saponin; passed.

1864. Helmet Brand Imitation Vanilla Flavor. Durkees Famous Foods, New York, N.Y. Labelled "Composed of Vanillin, Ethyl Vanillin, Alcohol, Caramel & Water". Alcohol, 0.80 per cent by volume; passed.

K.F.-2493. Hi-Lem 3 in 1 Lemon Flavored Cocktail Mix. Martrude Corp., Glendale, N.Y. Non-saponin hemolytic agent present; adulterated.

K.F.-2487 and A.L.-611. Instant Crystal-Jus Dehydrated Fruit Base, Grape Flavor. Crystal Foods, Inc., Toms River, N.J. Labelled: "Makes 14 Quarts Beverage — VITAMIN C ADDED — Dextrose, dehydrated fruit juice, corn syrup solids, citric acid, ascorbic acid (Vitamin C), natural and imitation grape flavor, sodium citrate, calcium phosphate, certified food color. — One rounded teaspoon CRYSTAL-JUS is equivalent in flavor to one ounce (2 tablespoons) Grape Juice." Average analysis was: Total acidity (as citric acid), 9.12, sucrose, 0.00, dextrose, 86.54, ash, 1.58, and tricalcium phosphate, 0.98, per cent; K_2O , 10, P_2O_5 , 446, methyl anthranilate, 30.9, and ascorbic acid, 0.0, mg./100 gm.; estimated per cent grape juice, 8. Imitation grape product not so labelled; no vitamin C present; misbranded.

A.L.-610. Instant Crystal-Jus Dehydrated Fruit Base, Orange Flavor. Crystal Foods, Inc., Toms River, N.J. Declared ingredients were "Dehydrated orange juice, dextrose, corn syrup solids, citric acid, ascorbic acid (Vitamin C), sodium citrate, calcium phosphate, orange oil from rind, certified food color"; the other claims were as for *K.F.-2487* and *A.L.-611* above. Analysis showed: Total acidity (as citric acid), 16.90, sucrose, 2.76, dextrose, 48.30, ash, 2.15, and tricalcium phosphate, 1.18, per cent; K_2O , 182, P_2O_5 , 540, and ascorbic acid, 45, mg./100 gm.; estimated per cent orange juice, 8.9. Passed.

A.L.-612. Instant Crystal-Jus Dehydrated Fruit Base, Strawberry Flavor. Crystal Foods, Inc., Toms River, N.J. Declared ingredients were "Dextrose, dehydrated fruit juice, corn syrup solids, citric acid, ascorbic acid (Vitamin C), natural and imitation strawberry flavor, sodium citrate, calcium phosphate, certified food color"; other claims were as for *K.F.-2487* and *A.L.-611* above. Analysis showed: Total acidity (as citric acid), 10.37, sucrose, 0.00, dextrose, 86.08, ash, 1.47, and tricalcium phosphate, 0.97, per cent; K_2O , 10, P_2O_5 , 442, and ascorbic acid, 0.0, mg./100gm.; estimated per cent strawberry juice, 5; odor synthetic. Imitation strawberry product not so labelled; no vitamin C present; misbranded.

K.F.-2490 and A.L.-618. Mission Root Beer No. 454-C Concentrate. Mission of California, Inc., New Haven, Conn. No saponin; passed.

J.B.-451. Norris Imitation Vanilla Extract. Dill Co., Norristown, Pa. Labelled: "3% Alcohol-Contains Vanillin, Pure Vanilla, Imitation Vanilla Bean Flavor, Saccharin, Caramel Color and Water." This sample was submitted for an opinion on whether the use of saccharin in a product that might be employed to flavor confectionery was permissible. While such a speculative use would not be sufficient to condemn this flavor, it was at least technically adulterated because its label did not carry a statement that it was "to be used only by those who must restrict their intake of ordinary sweets".

F.M.-444. No. 301 Nu-Blend Root Beer Beverage Base. Whittle & Mutch, Inc., Philadelphia, Pa. No saponin; passed.

K.C.-1410. Oil Compound for Root Beer. Varuna Spring Water Co., Inc., Stamford, Conn. No saponin; passed.

K.F.-2540. Philadelphia Root Beer Concentrate. Twitchell Co., Camden, N. J. No saponin; passed.

P.R.-441. Root Beer Extract. First National Stores, Inc., Somerville, Mass. Saponin present; adulterated.

P.R.-446. Root Beer Extract. Hurty & Peck, Inc., Indianapolis, Ind. Saponin present; adulterated.

K.C.-1411 and 1412. Root Beer Flavor Emulsion. Varuna Spring Water Co., Inc., Stamford, Conn. No saponin; passed.

E.C.-1212. Sunlife Bar Lemon. Sunlife Fruit Juice Co., Springfield, Mass. Non-saponin hemolytic agent present; adulterated.

F.P.-499. Dr. Swett's Early American Root Beer Beverage Base. Dr. Swett's Root Beer Co., Inc., Peoria, Ill. No saponin; passed.

F.M.-450. Three Vee Syrup Concentrate (Natural) Root Beer. Three Vee Co., New York, N. Y. No saponin; passed.

A.L.-594. Wright's Bar-B-Q Smoke, a Liquid Smoke. E. H. Wright Co., Ltd., Kansas City, Mo. Labelled: "Since 1895 Made By Distilling Wood—For Cooking and Barbecuing. Barbecue the modern way by the use of Wright's Smoke. Used on ribs, beef, pork, mutton, fowl, game and fish. Adds a piquant flavor when cooking all kinds of vegetables usually cooked with ham or bacon". This sample had a creosote-like odor; it was misbranded because it bore no list of ingredients.

K.F.-2479 and 2480. Yucca Foam "F". S. Twitchell Co., Camden, N. J. Saponin present; adulterated.

Fish and Shellfish

Four official samples of tuna fish, two each of clams and salmon cat food, and one of oyster stew, were examined; six samples were passed and three were misbranded:

K.C.-1433. Jack August Stew For Two Ready To Serve Oyster Stew. Jack August's, Northampton, Mass. Labelled: "Approx. 14-16 Whole Oysters in each can". This sample consisted of six 10.5 oz. cans, of which one contained 10 oysters, two nine oysters, two eight oysters and one seven oysters; not all of these were intact whole oysters. Misbranded.

A.J.-314. Bonnie All Light & Dark Tuna for Cats. Bonnie Dog Food Co., Sacramento, Calif. Labelled: "Bonnie Tuna Fish contains 50% Light and 50% DARK Meat Tuna"; also "It may be fed

straight as a treat." This sample and the following one were picked up because of a complaint of a cat-owner that her animals became ill when fed on tuna fish. It is true that the Angell Memorial Hospital in Boston reported some years ago that when cats were fed a nearly exclusive diet of red meat tuna they developed a liver ailment called "yellow fat disease", which subsequent investigations showed could be counteracted by the administration of *a*-tocopherol (vitamin E). In our opinion all dark meat tuna-fish cat foods should carry warnings against their being fed to cats as a sole diet, but because of doubt over the legal situation this sample was passed.

P.S.-348. Bumble Bee Brand Fancy Solid White Tuna Albacore. Columbia River Packers' Association, Inc., Astoria, Oregon. Examination by the Division of Microbiology of the U. S. Food and Drug Administration showed that this was solid pack albacore (white meat tuna) of excellent quality, with no dark meat. Passed.

K.F.-2615. Dalton Brand Steamer Clams In The Shell In Their Own Natural Juice. Gull Fisheries Corp., Gloucester, Mass. Labeled: INGREDIENTS Clams, brine added. Minimum contents: 15 clams."

There were only 13 clams (in the shell) in this 1 lb. 5 oz. can, and comparison with previous analyses of canned clams⁴ showed that the natural liquor of the clams had been diluted with about 1.8 parts of brine of the same salt content:

	K.F.-2615	Average for canned clams
Total solids, per cent	2.51	6.23
Ash, per cent	0.70	1.87
Protein, per cent	0.81	2.50
Salt (NaCl), per cent	1.31	1.33

Misbranded.

K.F.-2612 and F.P.-505. Kitty Brand 100% Salmon Cat Food. Whiz Pet Food Co., Seattle, Wash. Labelled: "Ingredients Salmon, Salt and seasoning added to flavor with only sufficient Flour to provide proper texture. GUARANTEED ANALYSIS Minimum crude protein 12.00%, minimum crude fat 2.00%, maximum crude fibre 2.00%, maximum moisture 74.00%, maximum ash 6.50%". These samples were picked up because the "100% Salmon" declaration was questioned for a product that admittedly contained added salt, seasoning and flour. However, because analysis showed 15.56 per cent of protein and microscopic examination indicated the product was substantially all fish with only traces of salt and flour, both samples were passed.

A.J.-315. 9-Lives Cat Food, 22% Protein All-Tuna Fish. French Sardine Co., Terminal Island, Calif. This sample was taken at the same time as *A.J.-314* above, and for the same reason. It was labelled: "Tuna red meat, sufficient water to process—Feeding in-

⁴ Conn. Agr. Expt. Sta. Bul. 248,390 (1923)

structions—Every cat lover has an obligation to feed the pet a variety of the foods it needs. It is neither wise nor kind to limit a cat's diet to any one food. This wonderful high-protein cat food is so tasty to cats that, out of false kindness, some owners may decide to feed nothing else. You will be a far better friend to your cat if you mix 9-Lives with cereals, kibble, or table scraps and feed these mixed foods as well as milk. We request that you devote the time and attention to giving your cat the variety in its diet that it must have to be the happy, healthy companion you want it to be."

While this brand did not come out and state flatly that an exclusive diet of red-meat tuna would cause yellow fat disease, it did at least advise a mixed diet, and to that extent was more satisfactorily labelled than *A.J.-314*. Passed.

P.S.-349. Star Kist Albacore Chunk White Tuna. Star Kist Foods, Inc., Terminal Island, Calif. Examination by the Division of Microbiology of the U.S. Food and Drug Administration showed this to be chunk style pack albacore (white meat tuna) of good quality without any dark meat. Passed.

K.F.-2629. Sugar Heart Whole Maine Clams. Hartford Sugar Co., Hartford, Conn. These were shelled clams; there was no ingredient declaration. Analysis showed: Total solids, 7.45; ash, 2.06; protein, 1.92, and salt (NaCl), 2.03, per cent. Added salt or brine present not declared; misbranded.

Flour

Six samples of cake flour submitted by the State Supervisor of Purchases were analyzed for compliance with State purchasing specifications for plain bleached soft-wheat flour. Of these, four met all of the specifications, while the pH of one was too low and the ash of another too high. Average analyses were: Protein (14% moisture basis), 6.90; ash (14% moisture basis), 0.30, and moisture, 10.90, per cent; pH of 10 per cent suspension, 4.9.

Fruit, Canned, Fresh, Frozen and Preserved

Sixteen samples of "Maraschino" type cherries, two of glacé fruit, and one each of frozen strawberries, oranges, peach nectar, pineapple ice-cream topping and spiced apple rings, were submitted by the Commissioner. Of the total of 23 samples, 10 were passed and 13 were adulterated or misbranded:

J.B.-475. A & P Our Finest Quality Sliced Strawberries, Sugar Added—Quick Frozen. Great Atlantic & Pacific Tea Co., New York, N. Y. Net weight: Declared, 10 oz.; found, 9.80 oz. Short weight; misbranded.

F.M.-488. Bon Maraschino Cherries. Bonoil Packing Corp., Brooklyn, N. Y. Undeclared sulphur dioxide, 19 parts per million. Misbranded.

K.C.-1323. Capitol Brand Extra Quality Peach Nectar. Capitol Foods, Brooklyn, N. Y. Labelled: "Peach Pulp and Juice, Sugar Syrup, Citric Acid." Analysis showed: Total solids, 14.90, sucrose, 4.87, invert sugar, 8.64, and citric acid, 0.23, per cent, ash, 159, K₂O, 97.6, and P₂O₅, 19.8 mg./100 gm.; estimated per cent fruit, 39. Passed.

K.C.-1420 and 1453 and F.M.-448 and 449. Castanet Fancy Maraschino Cherries. Benedict Packing Corp., New York, N. Y. Undeclared sulphur dioxide ranged from 31 to 1,355 p.p.m., and averaged 781 p.p.m. All samples were misbranded, and *F.M.-448 and 449* (which actually smelled and tasted of sulphur dioxide) were considered adulterated as well.

A.J.-375 and F.M.-381. Co-Op Maraschino Cherries. National Co-Operative, Inc., Albert Lea, Minn. Sulphur dioxide, none or trace; passed.

K.F.-2585. Dromedary Fruits & Peels. National Biscuit Co., Special Products Div., New York, N. Y. Sulphur dioxide trace; passed.

K.C.-1469 and K.F.-2584. Dromedary Whole Cherries Modified. National Biscuit Co., Special Products Div., New York, N. Y. Undeclared sulphur dioxide (average, 20 p.p.m. Misbranded.

A.F.-384 Greenwood's Spiced Apple Rings in Heavy Syrup, U. S. Certified Color Added. Greenwood Foods, Inc., Waterloo, N. Y. Analysis of the syrup portion showed: Total solids, 31.66, invert sugar, 25.09, and sucrose, 4.97, per cent; Brix gravity, 32.8. Since Federal regulations for heavy syrup packing for other fruit than apples specify Brix gravity ranges between 18 and 25 degrees, this sample was plainly entitled to be labelled "in Heavy Syrup", and was passed.

F.M.-407. Murray's Ice Cream Topping, Cherries. Murray Co., Boston, Mass. Undeclared sulphur dioxide, 460 p. p. m. Misbranded.

K.F.-2446. Smucker's Cherry Ice Cream Topping. J. M. Smucker Co., Orrville, Ohio. Sulphur dioxide, none; sodium benzoate, trace or none. Passed.

K.F.-2447. Smucker's Pineapple Ice Cream Topping. J. M. Smucker Co., Orrville, Ohio. Sulphur dioxide, none; sodium benzoate, trace or none. Passed.

K.C.-1462. Snow Crest Fruit and Peels, Ready to Use. Food Division, Snow Crest Beverages, Inc., Salem, Mass. Sulphur dioxide, 8 p.p.m.; passed.

K.C.-1364. Stop and Shop Navel Oranges. Stop and Shop, Hartford, Conn. These oranges were picked up because of a consumer complaint of a bitter taste and a rash on the skin following their use. The skins were quite glossy but no evidence of resin-coat-

ing was found, and the fruit was of exceptionally good flavor. Passed.

K.F.-2623. Sweet Life in Heavy Syrup Maraschino Cherries. Sweet Life Brands, Inc., New York, N. Y. Labelled "Contains Artificial Flavor & Color, 1/10 of 1% Benzoate of Soda, Sulphur Dioxide." Analysis of the syrup showed: Invert sugar, 31.10, and sucrose, 0.00, per cent. This was actually an *extra* heavy syrup; passed.

F.M.-350, 357 and 406. Topping Time Brand Cherries Sundae Topping. Sea Snack Co., Philadelphia, Pa. Undeclared sulphur dioxide (average), 91 p.p.m.; misbranded.

K.C.-1347. Walgreen's Topping for Delicious Sundaes, Cherries. Walgreen Co., Chicago, Ill. Undeclared sulphur dioxide, 18 p.p.m.; misbranded.

Fruit Juices

Apple and Apple-Grape Juice

Two samples of apple juice and one of an apple-grape juice mixture were examined for the Commissioner, and one sample of cider fortified with ascorbic acid was analyzed for Dr. Lester Hankin of our Biochemistry Department at intervals over a period of 20 days to check the stability of the ascorbic acid. All samples were passed:

1284. Cider Fortified with Ascorbic Acid. Lester Hankin, Biochemistry Dept. This cider originally contained 38.5 mg./100 cc. of ascorbic acid; in three days this had dropped to 26.5 mg./100 cc., and in 20 days to 12.0 mg./100 cc. The loss in the first three days was therefore at a rate of about 10 per cent a day, but this leveled off so that the overall rate for 20 days was only 3 per cent a day.

E.S.-143. S.S. Pierce Co. Red Label Pure Apple Juice. S.S. Pierce Co., Boston, Mass. Total solids, 11.58, ash, 0.203, invert sugar, 11.03, and malic acid, 0.36, gm./100 cc.; K₂O, 135, and P₂O₅, 17.2 mg./100 cc.

K.C.-1339. Repp-u-tation Brand Apple Juice. National Fruit Products Co., Glassboro, N. J. Invert sugar, 10.47, and malic acid, 0.43, gm./100 cc.; ash, 230, K₂O, 149, and P₂O₅, 14.5 mg./100 cc.; specific gravity, 20°C., 1.0456.

E.S.-145. New Winter Hill Apple-Grape Juice. Rowse Co., Greenville, N. H. This was claimed to be a mixture of 85 per cent apple juice and 15 per cent grape juice. The claim was confirmed by the following analysis: Total solids, 12.33, ash, 0.220, invert sugar, 11.49, total acidity (as malic acid), 0.42, and tartaric acid, 0.13, gm./100 cc.; K₂O, 149, and P₂O₅, 18.8, mg./100 cc.

Grape Juice

Seven official samples of grape juice were examined; one was passed and six were misbranded:

E.S.-144. Clermont Pure Grape Juice. Rowse Co., Greenville, N. H. Total solids, 15.52, ash, 0.288, invert sugar, 13.93, total acidity (as tartaric acid), 0.82, and actual tartaric acid, 0.75, gm./100 cc.; K₂O, 164, and P₂O₅, 23.6, mg./100 cc. Passed.

K.F.-2392 to 2397. Trupak Grape Juice. Trupak Finer Foods, Inc., Chicago, Ill. These 24 fl. oz. bottles were labelled "Juice of Concord Grapes—Naturally Sweet". Average analysis showed: Total solids, 15.80, invert sugar, 14.44, total acidity (as tartaric acid), 0.71, and actual tartaric acid, 0.56, gm./100 cc.; ash, 244, K₂O, 133, and P₂O₅, 22.21, mg./100 cc. This analysis did not indicate the presence of added sugar, but the samples were misbranded because they averaged 0.16 fl. oz. short volume.

Grapefruit, Lemon and Lime Juices

Two samples each of lemon juice and lime juice and one of grapefruit juice were examined for the Commissioner, and juice squeezed in this laboratory from two grapefruit was analyzed to provide information on the composition of authentic grapefruit juice; five samples were passed and one was misbranded:

K.C.-1396. Concentrated Tempo Lemon Juice. Henry Thayer Co., Cambridge, Mass. Labelled: "1 Tablespoon Equals 1 Lemon—Concentrated: More Than Double Strength—Preserved with sulphur dioxide and 0.1% sodium benzoate." Analysis showed 691 mg./100 cc. of ash and 347 mg./100 cc. of K₂O, indicating a concentration of 2.4 to 1. Passed.

K.C.-1397. Florida Key Tempo Lime Juice. Henry Thayer Co., Cambridge, Mass. Labelled "Not A Concentrate—Florida Key Lime Juice—Preserved with sulphur dioxide and 0.1% sodium benzoate." Analysis showed 436 mg./100 cc. of ash and 198 mg./100 cc. of K₂O, which would indicate a 1.3 to 1 concentration. Sample was however passed.

J.B.-445. Horsey Grapefruit Juice. Salada, Sherriff & Horsey, Palm City, Fla. Labelled "Florida Grapefruit Juice, Sugar Added". Analysis showed: Sucrose, 1.34, and invert sugar, 8.62, gm./100 cc.; ash, 369, K₂O, 194, and P₂O₅, 30.8, mg./100 cc. This analysis indicated that the sample was not straight juice but juice that had been concentrated about 1.3 to 1. Misbranded because not labelled "Concentrated Grapefruit Juice."

K.F.-2489. Lime Juice. Citrus Corporation of America, Boston, Mass. Ash, 390, and K₂O, 166, mg./100 cc. Passed.

K.F.-2488. Natural Lemon Juice in the Easy Juicer for All Lemon Uses. Citrus Corporation of America, Milford, Conn. Ash, 398, and K₂O, 183, mg./100 cc. Passed.

9868. *Two Florida Grapefruit*. H. J. Fisher. These fruit averaged 438 grams, and the average juice content was 176 cc. Analysis of the juice showed: Total solids, 8.17, sucrose, 3.11, invert sugar, 3.11, and total acidity (as citric acid), 0.97, gm./100 cc.; ash, 294, K₂O, 176, P₂O₅, 19.3, and ascorbic acid, 39, mg./100 cc.

Orange Juice

Seventy-seven official samples of orange juice, mostly in quart paper cartons, were examined; 71 samples were passed and six were adulterated or misbranded. The adulterated and misbranded samples were the following:

W.M.-5116. Borden's Reconstituted Orange Juice. The Borden Co., New York, N. Y. Short volume 0.56 fl. oz.

S.O.-660 and 668. King Sun Brand Florida Orange Juice. Osceola Fruit Distributors, Kissimmee, Fla. Average analysis showed: Ash, 384, and K₂O, 196, mg./100 cc. estimated per cent added water, 28; net contents, 31.36 fl. oz. Watered; short volume 0.64 fl. oz.

A.J.-351 and S.O.-592 and 667. Sealtest Reconstituted Orange Juice. National Dairy Products Corp., New York, N. Y. Short volume (average), 0.52 fl. oz.

Meat and Meat Products

Cat and Dog Foods

Five official samples of beef, horsemeat and liver cat and dog foods were examined microscopically and their protein contents checked against the guaranties. There was no visible evidence of cereal or other filler in any sample, all substantially met their claims for protein, and all were passed:

S.O.-656. Libner's Cubed Horse Meat Dog Food. Libner Grain Co., Norwalk, Conn. Protein, per cent: Declared, 14; found, 15.90.

S.O.-655. Libner's Liver & Horse Meat Cat Food. Libner Grain Co., Norwalk, Conn. Protein, per cent: Declared, 12; found, 13.95.

S.O.-657. Libner's 100% Horse Meat Dog Food. Libner Grain Co., Norwalk, Conn. Protein, per cent: Declared, 15; found, 28.42.

S.O.-659. Libner's 100% Liver Dog Food. Libner Grain Co., Norwalk, Conn. Protein, per cent: Declared, 14; found, 14.75.

S.O.-658. 100% Beef Libner's Dog Food. Libner Grain Co., Norwalk, Conn. Protein, per cent: Declared, 13; found, 12.82.

Frankforts

Twenty-five samples of frankforts were submitted by the commissioner; 19 met the requirements of the State standards, and six did not. The misbranded samples were the following:

K.F.-2467. Armour Star Skinless Franks, Artificially Colored. Armour & Co., Waterbury, Conn. Water, 51.88; protein, 12.25; lactose, 0.41; dextrose, 1.99; starch, 0.00; dry skim milk, 0.80, and added water, 4.00, per cent; sodium nitrite, 38 parts per million. Dry skim milk or corn syrup solids present not declared.

K.F.-2625. Bulk Frankforts. H. L. Handy Co., Springfield, Mass. Water, 45.76; protein, 12.13; lactose, 2.89; dextrose, 0.91; starch, 0.00; dry skim milk, 5.61, and added water, 5.68, per cent; sodium nitrite, 36 p.p.m. Excessive dry skim milk present.

K.C.-1340 and 1365. Frankforts. Barnum Market, Bridgeport, Conn. Average analysis showed: Water, 52.63; protein, 14.94; lactose, 0.87; dextrose, 1.06; starch, 0.00; dry skim milk, 1.68, and added water, 0.00, per cent; sodium nitrite, 61 p.p.m. Undeclared dry skim milk or corn syrup solids present.

K.C.-1342. Super-Right Brand All Beef Skinless Franks. Great Atlantic and Pacific Tea Co., New York, N. Y. Water, 53.28; protein, 12.63; lactose, 1.18; dextrose, 0.85; starch, 0.00; dry skim milk, 2.29, and added water, 6.04, per cent; sodium nitrite, 88 p.p.m. Dry skim milk or corn syrup solids present not declared.

K.C.-1327. Super-Right Brand All Meat Skinless Baby Franks. Great Atlantic and Pacific Tea Co., New York, N. Y. Water, 52.77; protein, 12.75; lactose, 0.91; dextrose, 1.07; starch, 0.00; dry skim milk, 1.77, and added water, 4.29, per cent; sodium nitrite, 64 p.p.m. Undeclared dry skim milk or corn syrup solids present.

Hamburg

Sixty-eight official and one unofficial samples of hamburg were examined. All except two of these were analyzed for fat and checked for the presence of sulphite, which is an illegal preservative in all meat products; no sulphite was found in any sample, but 14 contained more than the 30 per cent of fat permitted by regulations. The two samples not analyzed for fat were tested for nitrite and sulphite with negative results.

Analyses of the misbranded samples are given in Table 7. The percentage of deficient samples was 21 in 1960, as against 28 in 1959⁵ and 44 the year before that⁶, indicating that annual inspection was having an effect in keeping down this type of fraud against the consumer.

⁵ Conn. Agri. Expt. Sta. Bul. 647, 51 (1961)

⁶ Conn. Agri. Expt. Sta. Bul. 635, 47 (1960)

TABLE 7. MISBRANDED HAMBURG

No.	City or town	Market	Fat, per cent
A.L.-621	Bristol	Friday-Saturday Market	38.52
J.B.-493	Clinton	First National Stores	32.20
P.R.-499	Danielson	Foodarama	39.44
P.R.-433		Gerardi's Super Market	30.41
E.C.-1228	Groton	Rybak's Meat Market	38.71
J.B.-497	Meriden	First National Stores	34.17
F.M.-356	New Haven	State Beef Co.	30.74
E.C.-1215	Norwich	Lehrer Bros. Meat Market	35.14
E.C.-1217		Preston Super Market	31.84
E.C.-1223		Shop-Rite Durable Super Market	30.26
E.C.-1214		United Fruit Store, Inc.	31.15
E.C.-1227		United Fruit Store, Inc.	32.42
E.C.-1229	Poquonock Bridge	Central Super Market	35.42
A.F.-403	West Hartford	Sedgwick Foods	31.60

Miscellaneous

Two samples of liverwurst and one each of fried pork skins, knockwurst, Polish sausage, smoked beef sausage and shortening were examined for the Commissioner, 12 samples of meat were analyzed for Mr. Louis A. Malkus of the Department of Animal Diseases of the University of Connecticut at Storrs in connection with a research study, and one sample of pickled pigs' feet was tested for a packing company. Of the total of 20 samples, 16 were passed and four were misbranded:

K.F.-2572. Chicharrones Bayamon Fried Pork Skins. Puerto Rico Food Specialties Div., Gusto Food Products, Brooklyn, N. Y. Analysis showed 5.12 per cent of undeclared salt; misbranded.

1222 to 1233. Meat. Louis A. Malkus, University of Connecticut, Storrs, Conn. Average analysis showed: Water, 70.57; ash, 0.99; protein, 21.62; carbohydrate, 0.19, and fat, 7.46, per cent.

K.F.-2519. Morrell Pride Golden Shortening Artificially Colored. John Morrell & Co., Chicago, Ill. Labelled: "A blend of meat fats artificially colored with annatto—with monoglycerides and diglycerides—oxygen interceptor added to improve stability—Specially developed for golden deep fat frying." Analysis showed: Water, 0.14, ash, 0.00, protein, 0.25, and fat, 99.46, per cent; butyro refraction of fat (40°C.), 54.0; iodine number of fat, 61.7; saponification number of fat, 195. These constants closely resembled those of lard, and the product was probably essentially lard colored with annatto.

Sample was misbranded because it bore no manufacturer's address or net weight declaration, because it was not specifically labelled as containing a preservative, and because the ingredient declaration was not specific.

A.J.-341 and 343. Mother Goose Brand Liver Sausage. Tobin Packing Co., Inc., Albany, N. Y. *A.J.-341* was analyzed only for fat and was passed because the fat content of 22.83 per cent was well within the 50 per cent limit for pork sausage. Analysis of *A.J.-343* showed: Water, 55.53, protein, 15.75, lactose, 0.54, dextrose, 1.42, starch, 0.00, dry skim milk, 1.05, and added water, 0.00, per cent; sodium nitrite, 43 p.p.m. Undeclared dry skim milk and dextrose present; misbranded.

K.F.-2456. Nepco All Beef Knockwurst. New England Provision Co., Boston, Mass. Water, 58.27, protein, 12.50, lactose, trace or none, dextrose, 0.20, starch, 0.00, dry skim milk, 0.00, and added water, 8.27, per cent; sodium nitrite, 69 p.p.m. Passed.

689. Pickled Pigs' Feet. Norwich Packing Co., Inc., Norwich, Conn. This sample represented a product competitive with that of these manufacturers, and they wanted us to analyze the pickling liquid completely enough to furnish them a manufacturing formula. This we were not prepared to do, but we did report that the spiced pickle contained 1.33 gm./100 cc. of acetic acid and no sugar.

K.F.-2449. Polish Sausage. Colonial Provision Co., Boston, Mass. Water, 44.87, protein, 16.00, fat, 29.32, lactose, 2.78, dextrose, 0.91, starch, 0.00, dry skim milk 5.40, and added water, 0.00, per cent; sodium nitrite, 92 p.p.m. Undeclared dry skim milk present in excess of standard; misbranded.

K.F.-2459. Tid-Bit Smoked Beef Sausage. Tid Bit Products Co., Cleveland, Ohio. Water, 12.90, protein, 25.00, lactose, 0.00, dextrose, 0.35, starch, 0.00, dry skim milk 0.00, and added water, 0.00, per cent; sodium nitrite, 10 p.p.m. Passed.

Pork Sausage

State regulations do not permit pork sausage to contain more than 50 per cent of fat. Of 34 samples submitted by the Commissioner, 25 met this standard and nine contained excessive fat. Analyses of the misbranded samples are given in Table 8.

TABLE 8. PORK SAUSAGE CONTAINING EXCESSIVE FAT

No.	Manufacturer or distributor and brand	Fat, per cent
K.F.-2471	Armour & Co., Chicago, Ill. <i>Armour</i>	53.29
A.J.-328	Armour & Co., Chicago, Ill. <i>Campfire</i>	52.50
F.M.-352	City Market, New Haven, Conn. <i>Savage Meat</i>	55.70
A.J.-333	Grand Union Co., East Paterson, N. J. <i>Grand Union</i>	52.90
K.C.-1366	George A. Hormel & Co., Austin, Minn. <i>Hormel</i>	62.02
K.C.-1474	George A. Hormel & Co., Austin, Minn. <i>Hormel</i>	51.81
K.C.-1368	John Morrell Co., Chicago, Ill. <i>Morrell Pride</i>	50.34
A.J.-329	H. G. Parks, Inc., Baltimore, Md. <i>Parks Famous Flavor</i>	55.93
A.J.-327	Sperry & Barnes Co., New Haven, Conn. <i>Sperry and Barnes Old Homestead</i>	50.55

Nuts

Fifteen samples of cocoanut, two each of Brazil nuts, pistachios and walnuts, and one each of almonds and mixed nuts, were submitted by the Commissioner, and two other samples of cocoanut were picked up by us for comparison purposes. Of the total of 25 samples, nine were passed and 16 were adulterated or misbranded.

Analyses of the 17 cocoanut samples are given in Table 9. The only straight cocoanuts were 1711 and K.F.-2630 to 2633; the other 12 samples were labelled to show the addition of one or more of the following substances: Sugar, water, sorbitol, propylene glycol and salt. While these added materials were mostly declared in the respective lists of ingredients, the product names in more prominent type listed only "Flaked Coconut", sometimes with the additional word "Sweetened". Considering the fact that the minimized added ingredients were all (except the salt) present in substantial proportions, and that less than half of the products were cocoanut in many samples, we believed this type of labelling to be definitely misleading and the 12 samples to be consequently misbranded. In preparing the "Calculated Composition, Per Cent" portion of the table the following average figures for authentic desiccated cocoanut were used: Water, 2.77; fat, 64.99; sucrose, 5.48; invert sugar, 0.19, and salt, 0.43, per cent. These averages were those of 1711, K.F.-2630-2633 and six cocoanut samples analyzed in 1950⁷.

Of the eight samples of other nuts, four were passed and four were misbranded:

K.F.-2450. Bes-By Salted Nuts. R. A. Mathewson, Manchester, Conn. These were pistachio nuts colored deep red with undeclared coal-tar dye; misbranded.

K.C.-1328 and 1329. Edible Decorative Holi-Gay Nuts. Holi-Gay Nuts, Bay City, Mich. Labelled "U.S. Certified Food Colors, Confectioner's Glaze, Silver Coating". These were whole unshelled walnuts whose shells had been dyed in various colors—some red, some green, and some yellow; one nut was actually coated with silver. Passed.

K.C.-1468. Lady Graham Medium Polished Brazil Nuts. Graham Co., Inc., New York, N. Y. These nuts were artificially colored with an undeclared mineral pigment high in iron and silicon, probably Sienna or umber; a little brown coal-tar dye was also present. Misbranded.

K.C.-1466. Nu Harvest Fancy Mixed Nuts. Harvest Queen Packing Co., Boston, Mass. No artificial color; passed.

F.M.-427. Toasted Almonds Nut House of New Jersey. Nut House Products Co., Perth Amboy, N. J. Labelled: "Ingredients nut meats cooked in vegetable oil, salt added. If pistachio, U. S. certified food coloring". Since these were not pistachios but sugar-coated

⁷ Conn. Agr. Expt. Sta. Bul. 558, 46 (1952)

TABLE 9. COCOANUT

No.	Manufacturer or distributor and brand	Water, Per cent	Fat, Per cent	Sucrose, Per cent	Invert sugar, Per cent	Total Sugars, Per cent	Salt, Per cent	Calculated Composition, Per Cent				Propylene glycol & sorbitol	Declared Ingredients
								Desiccated Cocoanut	Sucrose	Salt	Water Added		
K.F.-2522	Barg & Foster's Milwaukee, Wis., Barg & Foster's flaked	5.68	33.83	31.20	0.72	31.92	0.83	50.5	29.1	0.6	4.3	15.5	Coconut, sugar, propylene glycol, sorbitol, salt, certified color (yellow).
K.F.-2523	Same	5.72	34.83	29.98	0.76	30.74	0.65	53.6	27.7	0.4	4.2	14.1	Coconut, certified color (pink).
K.F.-2556	Same	6.66	28.50	31.76	0.67	32.43	0.71	43.9	29.9	0.5	5.4	20.3	Coconut, certified color (green).
K.F.-2557	Same	8.68	29.37	31.08	0.54	31.62	0.56	45.2	29.3	0.4	7.4	17.7	Coconut, certified color (yellow, or range, green, pink, colorless). Same as K.F.-2522, but cocoanut was uncolored.
K.F.-2558	Same	10.08	30.87	30.44	0.58	31.02	0.44	47.7	28.3	0.2	8.8	15.0	Coconut, sugar, water, sorbitol, propylene glycol, salt.
1712	Durkee Famous Foods, Cleveland, Ohio Durkee's Snowflake	8.22	29.57	30.67	0.98	31.65	0.89	45.1	29.1	0.7	7.0	18.1	Coconut, sugar, water, sorbitol, propylene glycol, salt.
K.F.-2587	Durkee Famous Foods, Cleveland, Ohio Durkee's Snowflake Thin Moist Flakes	20.02	23.00	25.08	0.48	25.56	0.24	35.5	23.5	0.1	19.1	21.8	Coconut, sugar, water, sorbitol, propylene glycol.
K.F.-2856	Durkee Famous Foods, Cleveland, Ohio Durkee's Stay Fresh	7.08	28.57	28.48	trace	28.48	0.62	41.1	25.9	0.4	7.0	22.6	Same as 1712
K.F.-2582	General Foods Corp. White Plains, N.Y. Baker's Angel Flake Sweetened	12.06	21.80	28.17	trace	28.17	1.15	33.7	26.2	1.0	11.2	27.9	Coconut, sugar, propylene glycol, salt.

TABLE 9. COCOANUT (Concluded)

No.	Manufacturer or distributor and brand	Water, per cent	Fat, per cent	Sucrose, per cent	Invert sugar, per cent	Total Sugars, per cent	Salt, per cent	Calculated Composition, Per Cent						Declared Ingredients			
								Dried Coconut	Sucrose	Salt	Added Water	Propylene glycol & sorbitol	Coconut, sugar				
K.F.-2583	General Foods Corp., White Plains, N.Y.																
1711	Baker's Southern Style Extra Moist Sweetened	19.14	18.10	28.11	0.75	28.86	0.32	27.9	27.2	0.2	18.4	26.3			Coconut, sugar		
K.F.-2613	Gilbert's Bakery, New Haven, Conn., Desiccated, Philippine	2.62	64.77	5.32	0.63	5.95	0.41	100.									
K.F.-2614	Great Atlantic & Pacific Tea Co., New York, N.Y., Rajah	6.38	31.43	30.76	0.34	31.10	0.77	48.5	28.2	0.6	5.0	17.7			Coconut, sugar, water sorbitol, propylene glycol, salt		
K.F.-2630	Peter Paul Philippine Corp., Desiccated	8.32	34.53	32.81	trace	32.81	0.80	53.3	29.6	0.6	6.9	9.6					
K.F.-2631	Same	2.62	60.73	5.38	0.16	5.54	0.35	100.									
K.F.-2632	Red V Coconut Products, Ltd., Manila, P.I., Va Vasseur's Red, Desiccated	2.80	61.93	5.38	0.16	5.54	0.47	100.									
K.F.-2633	Same	2.96	60.43	5.61	trace	5.61	0.47	100.									
		2.84	59.93	5.72	trace	5.72	0.47	100.									

almonds, yet were colored with a red coal-tar dye, the sample was misbranded.

K.C.-1470. Tropical Selected Brazil Nuts, Cured and Hand-picked. William A. Camp Co., Inc., New York, N. Y. Labeled: "Shells Artificially Colored". These nuts had been tumbled with Sienna or umber, but were passed because color was declared

F.M.-375. Westcott Salted Nuts Jumbo Pistachios. Westcott Nut Products Co., Irvington, N. J. Heavily colored with undeclared red coal-tar dye; misbranded.

Oils and Fats, Vegetable

Thirty-one samples of olive oil, nine of blended oils, two of vegetable shortenings, and one each of cottonseed and soy oils, were examined for the Commissioner; three shortenings, two samples of olive oil and one of cottonseed oil were analyzed for the State Supervisor of Purchases, the Norwalk health department and a private citizen. Of the total of 50 samples, 14 were passed and 36 were adulterated or misbranded.

The adulterated or misbranded olive oils were the following:

K.C.-133 and 1335-1337, K.F.-2418 and 2429, A.L.-572, 576, F.M.-359-364, 367-368, 370 and 379 and S.O.-603. Enrico Caruso Brand 100% Pure Virgin Imported Olive Oil, Superfine Quality. Caruso Products Distributing Corp., Pelham Manor, N. Y. Nineteen of the 22 samples were gallon cans, whose net contents ranged from 123.4 fluid ounces to a full gallon (one sample); they were short volume an average of 1.7 fl. oz. and all except two were adulterated with from 10 to 40 per cent of peanut oil (average 28 per cent). Of the other three samples, two were quarts and one a pint can. One quart was adulterated with 40 per cent of peanut oil, while the other was short volume 0.6 fl. oz. The pint was both adulterated with 30 per cent of peanut oil and rancid.

K.C.-1417. Mother Italy 100% Pure Olive Oil—Superfine Virgin Imported Olive Oil. A Corrao Corp., Brooklyn, N. Y. Short volume 1.9 fl. oz.; misbranded.

P.S.-382. Sicilia Brand Pure Olive Oil, 100% Virgin. Sicilia Olive Oil Co., Boston, Mass. Short volume 5.4 fl. oz.; misbranded.

All nine of the blended oils were adulterated or misbranded:

K.F.-2430 and F.M.-365. Enrico Caruso Brand, a Special Blend of 75% Pure Peanut Oil Enriched with 25% Pure Imported Olive Oil. Caruso Products Distributing Corp., Pelham Manor, N. Y. These two gallon cans averaged 2.4 fl. oz. short volume. Both were also adulterated, *K.F.-2430* in that it contained about 41 per cent of undeclared cottonseed oil and *F.M.-365* in that the olive oil content was only about 8 per cent.

K.F.-2616. Imperiale All-Purpose Oil Choice Vegetable Oil. Catania-Spagna Corp., Somerville, Mass. This sample apparently was a mixture of cottonseed and corn or soy oil or both as claimed, but was misbranded because of the false statements that it "contains no saturated fats", and was "rich in Vitamin P". "Vitamin P" is a term devised for advertising purposes to apply to the group of highly unsaturated fatty acids such as linoleic; these may possibly be dietary essentials, but they are not vitamins.

F.M.-366. La Bianca Brand Extra Fine Oil, 75% Choice Peanut Oil, 25% Imported Olive Oil. Newark Edible Oil, Newark, N. J. Adulterated with cottonseed oil; olive oil content only about 8 per cent; short volume 2.4 fl. oz.

E.C.-1201 and 1203, A.L.-625 and 629 and F.M.-463. Prosperity Brand 78% Corn and/or Peanut Oils 22% Pure Virgin Olive Oil. J. Ossola Co., New York, N. Y. These five gallon cans were short volume from 3.2 to 5.9 fl. oz. (average 4.4 fl. oz.); none of them contained any peanut oil and all contained undeclared cottonseed oil; the estimated olive oil content ranged from 21 to 68 per cent, and averaged 34 per cent. All were both adulterated and misbranded.

The three unofficial shortening samples were oleomargarines, tested for the State Supervisor of Purchases; their fat contents averaged 81.30 per cent, and all were passed. Of the two official samples, one was an oleomargarine and the other a cooking fat; both were misbranded:

K.C.-1414. Purity Brand Hydrogenated Shortening. Purity Food Co., Bridgeport, Conn. This sample was submitted because of a suspicion that it contained animal fat from a non-Federally-inspected source. Sterol acetates prepared from it had a melting-point of 116° C. that was unchanged on recrystallization; since the melting-point of cholesteryl acetate is 114° C. and cholesterol occurs only in animal fats, the material was undoubtedly chiefly if not wholly of animal origin. There was no way of telling whether this sample did or did not originate in a Federally-inspected slaughterhouse, but it was misbranded because its name was not a specific one.

A.F.-387. VSF Vegetable Salt Free Margarine. Swift & Co., Chicago, Ill. Labelled in part: "Hardened soybean and cottonseed oils, skim milk, monoglycerides, and lecithin. Benzoic acid and citric acid added as preservatives. ARTIFICIALLY FLAVORED and ARTIFICIALLY COLORED. Vitamin A added . . . VSF contains NO SALT". Analysis showed: Water 15.11; casein, 1.5; fat, 83.24; total ash, 0.14, and salt, 0.08, per cent. Misbranded because not completely salt-free and because the number of milligrams of sodium per 100 grams and per portion were not stated.

Of the two samples of cottonseed oil and one of soy oil, all were passed except one cottonseed oil:

1374 and A.L.-620. Magestic Brand Salad Oil, Made from Cottonseed Pure Vegetable Oil. American Edible Oil Co., Brooklyn, N. Y. These were both quart cans; analysis indicated that they were straight cottonseed oil as labelled. 1374 was, however, short volume 0.58 fl. oz., and therefore misbranded.

A.L.-650. Salud Brand Pure Vegetable Oil "Unsaturated" Soya Bean Oil. F. Capizzi & Sons, Inc., Brooklyn, N. Y. Butyro refraction, 70.6 at 25°C.; no cottonseed, peanut or mineral oil or artificial flavor or color. Passed.

Pickles

Only one sample of pickles (other than those listed under "Contaminated or Decomposed Foods" on pages 24 and 25) was submitted by the Commissioner:

E.C.-1204. Hamburger Slices. B. T. Barr Co., New London, Conn. Labelled: "Contains: Cured Pickles, Spices, Salt, Alum, Turmeric, Vinegar". In spite of its name, this gallon can contained only sliced cucumbers in brine; the pickles were of poor quality. Misbranded because the name was false or misleading and because the label bore no manufacturer's name or address.

Pie Fillings

Twelve pie fillings (two each apple, cherry, lemon and pineapple, and one each apricot, fig, peach and prune) were analyzed for the State Supervisor of Purchases to see if they complied with State purchasing specifications. These specifications are too detailed, and the analyses they required were too extensive, for either to be reproduced completely in this bulletin, and we will confine ourselves to pointing out the significant departures from specific requirements.

Two samples (one cherry and the prune filling) were passed; the noncomplying samples were the following:

806. Apple Pie Filling. Buxton Preserving Co., Everett, Mass. The specification required not less than 14 per cent of evaporated apples and no glucose; analysis indicated only 7.8 per cent evaporated apples and 10 per cent glucose.

1216. Efco Brand Apple Pie Filling. Efco Products, Inc., Poughkeepsie, N. Y. Evaporated apples only 7.3 per cent; no glucose.

809. Fig Filling. Buxton Preserving Co., Everett, Mass. The specification required not less than 27 per cent of figs; we found 10 per cent.

807 and 1821. Lemon Pie Filling. Buxton Preserving Co., Everett, Mass. The specification required between 40 and 46 per cent solids and no glucose; average analysis showed only 33.55 per cent total solids, of which 11.31 per cent was glucose.

TABLE 10. PRESERVES AND JELLIES (Concluded)

No.	Manufacturer or distributor and brand	Soluble solids per cent	Invert sugar per cent	Sucrose, per cent	Ash mg./100 gm.	K ₂ O mg./100 gm.	P ₂ O ₅ mg./100 gm.	Estimated per cent juice	Parts of juice to 55 parts sugar	Remarks
A.L.-531	Goodman Bros., Inc., Meriden, Conn. <i>Old Mill Pure Grape Preserve</i>	65.57	56.28	9.09	200	103	12.0	58	57	Low in soluble solids; misbranded.
A.L.-582	Same	64.04	45.87	18.02	150	68	10.7	45	43	Low in soluble solids; misbranded.
A.L.-530	Goodman Bros., Inc., Meriden, Conn. <i>Old Mill Pure Strawberry Preserve</i>	69.33	44.80	24.37	160	70	17.9	37	30	Low in fruit content; misbranded.
A.L.-581	Same	64.73	44.74	19.75	240	93	29.6	56	67	Low in soluble solids; misbranded.
A.L.-532	Goodman Bros., Inc., Meriden, Conn. <i>Old Mill Spiced Apple Jelly</i>	71.43	33.50	37.78	150	73	12.8	48	40	Low in fruit content; misbranded.
A.L.-583	Same	68.53	34.62	33.72	190	83	15.1	57	50	Passed.
K.F.-2412	Hartford Sugar Co., Hartford, Conn. <i>Sugar Heart 100% Pure Sweet Orange Marmalade</i>	60.53	21.23	37.24	130	39	13.7	29	29	Passed because a marmalade; see text.
A.L.-544	Kettle Cove Industries, Inc., Manchester, Mass. <i>Kettle Cove Fresh Mint Jelly, Certified Green Color Added</i>	61.59	46.59	7.12	230	59	20.6	78	77	Low in soluble solids; should have been labelled "Mint Flavored Apple Jelly"; misbranded.
A.L.-632	Francis H. Leggett & Co., New York, N.Y. <i>Premier Pure Apple Mint Jelly</i>	64.70	49.65	12.31	170	47	12.8	41	39	Coal-tar dye present not declared; misbranded.
K.F.-2411	Lincoln Foods, Inc., Lawrence, Mass. <i>Lincoln 100% Pure Orange Marmalade</i>	68.35	17.65	45.50	120	43	11.2	27	25	Passed because a marmalade; see text.
K.F.-2640	Plee-Zing, Inc., Evanston, Ill. <i>Plee-Zing Pure Mint Jelly</i>	62.18	56.38	5.71	90	25	8.3	25	23	Coal-tar dye present not declared; not pure mint jelly; misbranded.
A.L.-633	Reese Finer Foods, Inc., Chicago, Ill. <i>Reese Mint Jelly With Mint Leaves (Pectin Jelly)</i>	62.17	61.24	0.90	30	5	1.6	5	5	Imitation jelly no so labelled; misbranded.
A.L.-565	Tropical Palm Products Co., New York, N.Y. <i>Tropical Palm Table Delicious Mint Jelly</i>	58.72	49.95	8.37	65	3	1.7	15	15	Substandard jelly improperly labelled; misbranded.
A.L.-615	Wakefern Food Corp., Cranford, N.J. <i>Shop-Rite Superior Quality Apple Mint Jelly, Flavoring, U.S. Certified Color Added</i>	62.85	30.80	27.59	240	56	10.0	38	39	Passed.

preserves. It was primarily on the bases of those specifications that the samples in Table 10 were judged, although an exception had to be made for orange marmalade because of a doubt on the part of some Federal authorities as to whether the regulations for preserves applied to marmalade.

Pudding Mixes

Two starch-base pudding mixes submitted by the State Supervisor of Purchases were analyzed for compliance with state purchasing specifications; one was passed and one was not:

1165. *Chocolate Pudding*. T. A. F. Faulds Co., Boston, Mass. Moisture, 5.81; starch, 24.36; sucrose, 26.36; dextrose, 33.30, and gelatin, 1.75, per cent. Passed.

1203. *Favorite Brand Imitation Coconut Flavor Instant*. Favorite Food Products, New York, N. Y. Moisture, 1.29; starch, 6.03; sucrose, 80.19; dextrose, 6.14; gelatin, 0.44, and salt, 0.78, per cent. Total sweetening agents of 86.33 per cent exceeded the 75 per cent maximum set by the specification.

Salad Dressings

Three samples of mayonnaise and two of French dressing were examined for the Commissioner; one was passed and four were adulterated or misbranded:

S.O.-632. *Daitch Enriched Mayonnaise*. Daitch Crystal Dairies, Inc., New York, N. Y. Calculated composition was: Egg yolk, 6.19; egg white, 1.09; cottonseed oil, 77.48; vinegar (4% acidity), 9.50; sugar, salt, spices, 8.57, and added water, 0.00, per cent. Misbranded because the characterization "Enriched" was misleading for a normal mayonnaise.

F.M.-351. *French Dressing Canadienne by Seidner, Garlic Flavored*. Otto Seidner, Inc., Westerly, R. I. Calculated composition was: Egg yolk, 1.30; egg white, 7.27; cottonseed oil, 42.65; vinegar (5.15% acidity), 32.23, and sugar, salt, spices and stabilizers, 16.55, per cent. Passed.

J.B.-446. *Ken's Famous Steak House Salad Dressing, Italian Style, Sugar Free*. Ken's Steak House Dressing, Framingham, Mass. Labelled: "Ingredients: Vegetable Oil, Vinegar, Salt, Onion, Garlic and Spices." Calculated composition was: Egg yolk, 0.45; egg white, 9.19; corn or soy oil, 55.57; vinegar (5.06% acidity), 29.28; sucrose, 0.16; invert sugar, 0.15, and salt, spices and stabilizers, 5.20, per cent. This product, which was actually a French dressing, was misbranded because not "Sugar Free" and because it did not bear a complete address, the name of the state being missing from the label.

K.C.-1371 and 1379. *Melba Low Cholesterol Mayonnaise*. Melba, Inc., New York, N. Y. Labelled "Made with 100% Pure Corn

Oil". Calculated composition was: Egg yolk, 6.17; egg white, 0.30; cottonseed oil, 79.27; vinegar (4% acidity), 10.25; sugar, salt, spices, etc., 2.78, and added water, 1.23, per cent. The "Low Cholesterol" claim was true because no vegetable oil contains cholesterol, but it was misleading. Both samples were definitely adulterated because cottonseed oil had been substituted for corn oil.

Spices and Condiments

Eight samples of prepared horseradish, two of black pepper, one of paprika and one of salt were examined for the Commissioner; the composition of one sample of poultry seasoning was determined for the State Supervisor of Purchases; and one sample of salt was analyzed for Dr. Lester Hankin of our Biochemistry Department. Eight samples were passed and six were adulterated or misbranded:

A.L.-568. *Brede Horseradish Prepared*. Brede, Inc., Detroit, Mich. Passed.

K.F.-2473. *Cain's Horse-Radish*. John E. Cain Co., Cambridge, Mass. Passed.

E.C.-1161. *Damp Proof Sterling Salt*. International Salt Co., Inc., Scranton, Pa. This sample was examined because of a complaint that "bright green spots appeared on foods" after using it. The cause was the same as that found in 1954 where green spots appeared on meat loaves cooked in stainless steel pans: Corrosion of a metal (stainless steel or copper) container at high temperatures at points where salt crystals were in contact with the surface.⁸ The sample was passed.

K.C.-1280 and 1281. *Good & Hot Prepared Horse Radish*. Ralph Zolan, Inc., Bridgeport, Conn. K.C.-1281 was adulterated with turnip; K.C.-1280 was passed.

A.L.-623. *Karnilow's Prepared Grade Horseradish or Horseradish with Beets*. Karnilow & Son, Brooklyn, N. Y. Labelled "Made with beets, horseradish, salt and dist. vinegar". No beets present; misbranded.

K.F.-2410. *Lecroy's J L Pure Ground Black Pepper*. John Le Croy & Son, Camden, N. J. Passed.

424. *Mallinckrodt Sodium Chloride Crystals NaCl Analytical Reagent*. Mallinckrodt Chemical Works, St. Louis, Mo. Sodium chloride, 99.45 per cent; pH of 10% solution, 5.8; sulphate, alkaline earths, heavy metals, magnesium, iodide, potassium, iron, ammonia and phenols absent. Passed.

K.C.-1279 and S.O.-622. *Mother's Prepared Horsh Radish*. Mother's Food Products, Inc., Newark, N. J. Misbranded because of the inconspicuousness of the ingredient declaration.

⁸Conn. Agr. Expt. Sta. Bul. 602, 16 (1956).

F.M.-447. Paprika. Rosner's Market, New Haven, Conn. Misbranded because it bore no manufacturer's name or address.

9957. Poultry Seasoning #946. E. Schoenfeld, Brooklyn, N. Y. Microscopic examination showed the presence of salt, cornstarch, ground dill seed, thyme, possible some sage, and orange coloring matter; onion or garlic flavoring was also present. Not a normal poultry seasoning.

F.M.-343. Pure Horse Radish. H. L. Welles, Wapping, Conn. Passed.

K.C.-1418. Purity Maid Pure Ground Black Pepper. Purity Maid Packing Co., Brooklyn, N. Y. Passed.

Spray Residues

Aminotriazole in Potatoes

Four samples of potatoes submitted by the Commissioner of Consumer Protection were tested for the presence of aminotriazole with negative results.

DDT in Forage

As a followup on the DDT-in-milk survey reported below, three samples of hay and one each of corn silage and ground corn submitted by the Commissioner of Agriculture were analyzed for this insecticide. No DDT at all was found in three samples, while two contained proportions that would be insignificant were it not for the possibility of a slight carryover into the milk:

W.G.-1747. Cattle Hay. Albert Glownia Estate, West Suffield, Conn. DDT, 4 parts per million.

W.G.-1746. Corn Silage. Albert Glownia Estate, West Suffield, Conn. DDT absent.

A.H.-13442. Ground Corn. Willard Penney, Somers, Conn. DDT absent.

W.G.-3365. Hay. M. L. & J. G. Cannon, Granby, Conn. DDT 0.1 p.p.m.

W.G.-3364. Hay. Werbitzkas Bros., Granby, Conn. DDT absent.

DDT in Milk

Since 1958 the Commissioner of Agriculture has been making an annual survey of the Connecticut milk supply for the presence of DDT. Seven hundred and thirty samples submitted by him were analyzed by us in 1958⁹, and 529 were tested in 1960¹⁰. This year

⁹ Conn. Agr. Expt. Sta. Bul. 635,54-58 (1960)

¹⁰ Conn. Agr. Expt. Sta. Bul. 647, 62 (1961)

555 samples were examined for the Commissioner and one sample was tested for a dairyman.

Twelve of these samples (Table 11) contained traces of DDT; the other 543 samples were free from this pesticide. It should be noted that the 12 samples listed in Table 11 represent only eight dairy farms. The milk from one of these is sold wholly outside Connecticut.

TABLE 11. DDT IN MILK

No.	Producer	DDT, p.p.m.
C.R.-1330	Simon Brewster, Jewett City	0.3
H.W.-1610	M. L. & J. G. Cannon, Granby	0.1
W.G.-1749	Albert Glownia Estate, West Suffield	0.2
C.L.-10145	Albert Glownia Estate, West Suffield	0.2
W.G.-3361	Al Guarco, Granby	0.1
H.W.-2972	J. L. Hall, Simsbury	0.1
W.R.-5872	Joseph Spezzano, Northford	0.2
H.W.-1605	Werbitzkas Bros., Granby	0.2
W.C.-30	William T. Wenzel, North Haven	0.5
W.C.-163	William T. Wenzel, North Haven	0.05
W.C.-2742	William T. Wenzel, North Haven	0.1
9799	William T. Wenzel, North Haven	0.6

Miscellaneous:

Two samples of apples and one each of a chicken dinner, citrus fruit and potatoes were examined for the Commissioner of Consumer Protection, and 20 unofficial samples were tested for the State Park and Forest Commission, the Tobacco Laboratory of this Station, the Norwalk and Stamford health departments, a nursery, two pest control companies and private citizens. The unofficial samples included: Four of soils; three of cranberry sauce; two each of blueberries, peach wine and water; and one each of alfalfa, a deposit on picnic tables, dogwood and peony leaves, an evergreen tree, grape leaves, a rhododendron branch and scum from a lake surface. Of the total of 25 samples, no residue was found on 16. Residues were present on the following nine samples, but (with the exception of sample 464) not in significant proportions:

464. Deposit On Picnic Tables. Donald Grey, Chatfield Hollow State Park, Clinton, Conn. This deposit was nearly pure pentachlorophenol, probably resulting from fungicidal treatment of the wood. Because of the irritating properties of this compound the ranger was advised that these tables be taken out of public use until the deposits had been removed.

1777. Evergreen Tree. Frank Muzio, North Haven, Conn. Arsenic trioxide, 1.0 part per million.

A.J.-368. McIntosh Apples. Valley View Farm, Cheshire, Conn. Lead, 0.008 grain/lb. Since the tolerance is 0.05 grain/lb. this sample was passed.

A.J.-371. McIntosh Apples. West View Orchard, Plainfield, Conn. Lead, 0.007 grain/lb.; combined DDT and TDE, 0.9 p.p.m. Since the respective tolerances are 0.05 grain/lb. and 7 p.p.m., sample was passed.

1194. Rhododendron Branch. Jonathan Freeman, New Canaan, Conn. Arsenic trioxide, p.p.m.: Leaves, 1.3; stems, 1.5.

771 to 774. Soils From Tobacco Seed Beds Previously Treated With Methyl Bromide. Tobacco Laboratory, Conn. Agr. Expt. Sta., Windsor, Conn. Total bromine content ranged from 13 to 20 p.p.m., and averaged 18 p.p.m.

A.J.-412. U.S. No. 1 Potatoes. Henry A. Pollak & Co., Hicksville, L. I., N. Y. DDT less than 0.1 p.p.m.

Syrups

Four samples of grape syrup, three of root beer syrup, and one each of black raspberry and orange syrups, were examined for the Commissioner; one sample of honey was analyzed for a private citizen. Of the total of 10 samples, six were passed and four were adulterated or misbranded:

P.R.-406. Admiral Brand Root Beer Flavored Syrups. Eclipse Food Products Corp., Providence, R. I. Undeclared saponin present; adulterated and misbranded.

P.R.-459. Blackman's Ready-To-Use Fruitee Grape Flavored Syrup. Gillette Co., Willimantic, Conn. Saponin absent; passed.

F.M.-342. Concentrated Orange-Flavored Syrup Easy Orange. Citrus Corporation of America, Boston, Mass. Labelled: "Makes 6 full glasses of delicious orange drink . . . Directions: 2 tablespoons per glass of chilled water. Stir. Contains: orange juice, natural flavor, cane sugar, fruit acid, less than 1/10 of 1% benzoate of soda and U.S. certified color." Analysis showed: Total solids, 64.27, sucrose, 24.48, invert sugar, 36.43, and ash, 0.39, per cent; K₂O, 57.8, and P₂O₅, 28.7, mg./100 gm.; estimated per cent orange juice, 23; flavor, poor. Adulterated because a loose shaving of plastic material was immersed in the syrup; otherwise passed.

K.F.-2286. Cott Made From Natural Fruit Flavors Black Raspberry Syrup. Cott Pure Fruit Syrup Co., Manchester, N. H. Labelled: "Made with raspberry juice, extractions of black and red raspberries and other natural flavors, cane sugar syrup, fruit acid, 1/10 of 1% benzoate of soda, natural color." Analysis showed: Total solids, 68.07, invert sugar, 63.74, sucrose, 3.54, and citric acid, 0.73, per cent; ash, 133, K₂O, 27.1, and P₂O₅, 4.5 mg./100 gm.; estimated per cent raspberry juice, 11; odor and flavor, good raspberry. Passed.

F.P.-498. Florade Old Fashioned Root Beer Syrup. Newgate Ginger Ale Co., Thompsonville, Conn. Saponin absent; passed.

J.B.-437. Grandmother's Grape Fruit Flavored Syrup. Whipple Co., Natick, Mass. Declared ingredients were "Sugar Syrup, Grape Juice, Grape Flavor With Other Natural Flavors, Citric Acid, U.S. Certified Color, 1/10% Sodium Benzoate." Analysis showed: Total solids, 69.03, invert sugar, 60.68, sucrose, 7.30, and citric acid, 0.62, per cent; ash, 95.8, K₂O, 2.97, P₂O₅, 5.7, and methyl anthranilate, 0.64, mg./100 gm.; estimated per cent grape juice, 22. Passed.

J.B.-466. Grape Cal-Lac Non Fattening Dietetic Instant Soft Drink. Cal-Lac Corp., Brooklyn, N. Y. Labelled: "INGREDIENTS: Water, Cyclamate Calcium, Citric Acid, artificial flavor, artificial color. Contains 5.6% Cyclamate Calcium, a non nutritive artificial sweetener SWEETENED WITH SUCARYL . . . Cal-Lac mixed with water as per directions contains in each 8 ozs.: No protein, no fat, no available carbohydrates . . . only 1.5 calories . . . Cal-Lac is a new concentrated syrup that is lower in calories." Analysis showed: Total solids, 8.41, citric acid, 3.59, ash, 1.49, protein, 1.86, ether extract, 0.03, total sugars, 0.00, and total carbohydrate (by difference), 1.44, gm./100 cc.; K₂O, 0.99, and methyl anthranilate, 20.1, mg./100 cc.; calories/100 cc., 13.

This sample was misbranded because it was not a syrup and not "concentrated" (it contained no sugar), and because it was a wholly imitation grape product not so labelled. The claim that the contents of one 6 fl. oz. bottle diluted to four quarts with water would produce a product containing 1.5 calories/8 fl. oz. was however substantially correct; calculation from our analysis indicated 1.4 calories/8 fl. oz.

1372. Honey. P. J. Hewett, Jr., Litchfield, Conn. This sample was submitted to see if it contained powdered skim milk "added as a catalyst". It was quite opaque, and apparently contained added butter, but no dry skim milk was found. Analysis showed: Invert sugar, 78.70; sucrose, 6.84; total nitrogen, 0.04, and starch, 0.00, per cent. Passed.

F.M.-285. Mrs. Filbert's Quick Drink Natural & Artificial Grape Flavor Syrup, No Sugar Needed. J. H. Filbert, Inc., Baltimore, Md. Labelled "Contains a blend of water, sugar, citric acid, natural fruit flavor and artificial fruit flavor and color". Analysis showed: Total solids, 59.52, invert sugar 58.39, sucrose, 1.11, and citric acid, 0.64, per cent; ash, 2.07, K₂O, 9.9, P₂O₅, 0.8, and methyl anthranilate, 2.45, mg./100 gm. Imitation grape syrup not so labelled; misbranded.

K.F.-2285. Za-Rex Grape Syrup, Pure Fruit Flavored. S. C. Clayton Co., Inc., Boston, Mass. Labelled "Contains sugar, water, grape juice, concentrated grape flavor with other natural flavors, citric acid, U.S. certified food color, 1/10 of 1% benzoate of soda". Analysis showed: Total solids, 65.49, invert sugar, 62.91, sucrose,

0.83, and citric acid, 0.63, per cent; ash, 134, K₂O, 54.3, P₂O₅, 4.0, and methyl anthranilate, 1.28, mg./100 gm.; estimated per cent grape juice, 30. Passed.

Vegetables and Vegetable Products

Twenty-five samples of sweet potatoes and four of white potatoes were submitted by the Commissioner to check on whether their skins were artificially colored, a practice which is forbidden because it makes them "appear better or of greater value than they are". Two samples of tomato juice and one each of pickled peppers, a bottled salad and sauerkraut, were also examined for the Commissioner, and spectrographic analyses were run on six samples of tomatoes for a private laboratory. Of the total of 40 samples, 11 were passed and 29 were adulterated or misbranded.

The skins of 24 out of the 25 sweet potato samples and three of the four samples of the white potatoes were found to be colored yellow, orange or red with coal-tar dye. The adulterated samples were the following:

A.J.-302. Carolina Yams Kiln Dried Sweet Potatoes. Mrs. William Stephens, Waitesville, N.C.

F.M.-457. Fancy Porto Rican Yams. Herman J. Ardis & Son, Snow Hill, Md.

K.C.-1360 and 1361. Gulf Stream Brand Red Potatoes. Walter Peterson, Goulds, Fla.

F.M.-384. James & Johnnie Brand North Carolina Yams. Bardin Bros., Wilson, N. C.

F.M.-489. Jersey Orange Sweet Potatoes. Glossy Fruit Farms, Hammonton, N. J.

S.O.-605. Jumbo Yams. Eastern Products Co., Stamford, Conn.

F.M.-490. Merit Brand Jersey Sweets. N. Coia & Sons, Hammonton, N. J.

E.C.-1163 and 1225. "Presti Sweets" Brand Washed—Waxed—Graded Sweet Potatoes. Nathan C. Presti & Sons, Hammonton, N. J.

F.M.-369. Pride of Carolina Brand Yams. Andrew & Knowles Produce Co., Inc., Mt. Olive, N. C.

K.F.-2637. Pride of the South North Carolina Yams. Honey Dew Markets, Hamden, Conn.

F.M.-482. Pride of the South North Carolina Yams, Kiln Dried. M. Sette & Sons, New Haven, Conn.

P.S.-351. Sun Sprayed Brand Sweet Potatoes. Oswald Stern, Vineland, N. J.

P.S.-350. Sweet Potatoes. C. & V. Farms, Hammonton, N. J.

P.S.-346. Sweet Potatoes. First National Storehouse, East Hartford, Conn.

K.F.-2483 and P.S.-344. Sweet Potatoes. A. Gordon Fruit & Produce, Hartford, Conn.

S.O.-650. Sweet Potatoes. Grand Union Co., Danbury, Conn.

K.F.-2636. Sweet Potatoes. J. R. Hickman, Atlantic, Va.

E.C.-1164, 1165 and 1224 and P.S.-343. Top Hat Brand Sweet Potatoes. C.R.S., Inc. Hammonton, N. J.

K.C.-1343. U.S. No. 1 Red Nugget Brand New South Florida Potatoes. H. L. Cox & Son, Princeton, Fla.

P.S.-378. Yams. C & C Farms, Hammonton, N. J.

F.M.-385. Yams. George Gordon Fruit & Produce Co., New Haven, Conn.

The pickled pepper and sauerkraut samples were misbranded:

K.F.-2543. Mrs. Anna Myer's Wine Flavored Pimento Style Peppers. Anna Myers Pure Food, Inc. Garfield, N. J. No alcohol, and therefore no wine, present.

A.J.-416. Silver Lane Pickles Sauerkraut. Silver Lane Pickle Co., East Hartford, Conn. Labelled "Contains: Sauerkraut with added ascorbic acid (Vitamin C) and sorbic acid." Analysis showed: Water, 89.98, ash, 2.71, protein, 0.86, fiber, 0.72, available carbohydrate, 4.32, and fat, 1.41, per cent; calories/100 gm., 33. Misbranded because the label did not declare that the ascorbic and sorbic acids were added as preservatives.

The two tomato juice samples were passed, but their analyses are given here as a matter of information:

P.S.-362. Campbell's Home Style Tomato Juice. Campbell Soup Co., Camden, N. J. Total solids, 6.02, ash, 1.28, salt, 0.84, and salt-free solids, 5.18, per cent; ascorbic acid, 13 mg./100 gm.

P.S.-363. Libby's Tomato Juice. Libby, McNeil & Libby, Chicago, Ill. Total solids, 6.90, ash, 1.18, salt, 0.72, and salt-free solids, 6.18, per cent; ascorbic acid, 25 mg./100 gm.

Vinegar

Nine samples of wine vinegar and one each of cider and distilled vinegar were examined for the Commissioner, and three samples of cider vinegar were analyzed for a manufacturer. Of the total of 14 samples, all except the following four were passed:

1391. Cider Vinegar. R. W. Young, North Haven, Conn. Total solids, 3.14; ash, 0.225, and total acidity, 1.66, gm./100 cc. Acidity below the statutory limit of 4 per cent.

F.M.-380. Eldeen Brand Pure Wine Vinegar. Randall Wine Vinegar Co., New York, N. Y. Labelled "NO COLOR OR PRESERVATIVE ADDED—Reduced with water to 5% acidity—Made from California Wines". Analyses showed: Total solids, 1.06; ash, 0.071; total acidity, 5.28, and tartaric acid, 0.025, gm./100 cc. Misbranded because the words "Pure WINE VINEGAR" were in large conspicuous type and the "Reduced with water", etc., in very inconspicuous type.

A.L.-567. La Rose D'Or Superior White Wine Vinegar. Seeman Bros., Inc., New York, N. Y. Total solids, 0.92; ash, 0.045; total acidity, 5.04, and tartaric acid, 0.024, gm./100 cc. Not a straight wine vinegar, but wine vinegar diluted with undeclared water; misbranded.

S.O.-647. Tiara Authentic Wine Vinegar, 5% Acidity. Blendix Co., Inc., New York, N. Y. Total solids, 1.50; ash, 0.058; total acidity, 5.18, and tartaric acid, 0.013, gm./100 cc.; color, natural. Diluted vinegar not so labelled; misbranded.

Water

This Station never has made sanitary analyses of drinking water; this is a function of the Bureau of Laboratories of the State Department of Health in Hartford. We do, however, occasionally determine pH and hardness of well waters, and test samples where chemical contamination is suspected, as an accommodation.

In 1960, 37 samples were examined. Seven of these were submitted by the Bridgeport health department for lead determinations, 10 were analyzed for sulphuric acid for the Naugatuck health department, and a sediment in two was examined for the West Rock Nature Center. The other 18 samples were submitted by private citizens for routine determinations.

The sediment in the West Rock Nature Center samples, 150 and 151, proved to be fine sand, and consequently harmless.

Spectrographic analysis of the seven Bridgeport water samples showed between 0.025 and 0.030 part per million of lead in four, and no determinable lead in the others.

The 10 Naugatuck samples were submitted to check on the runoff from a dump that was known to contain bricks from an old sulphuric acid plant. Values ranged from a pH of 2.50 and 2.695 parts per million of sulphuric acid (water from the dump) to a pH of 6.20 and no sulphuric acid (end of Vanesse Pond furthest from where a rill entered).

Miscellaneous

Twenty-six official samples that failed to fall completely into any of the previous classifications were examined; 20 were passed and six were adulterated or misbranded:

K.C.-1409. Caramel Color. Varuna Spring Water Co., Stamford, Conn. Saponin absent; passed.

S.O.-646. Caramel Coloring, Acid Proof, Williamson's. Natural Spring Water Co. Stamford, Conn. Saponin absent; passed.

K.C.-1465. Chicken Chow Mein Without Noodles. Temple Frosted Foods, Inc., Brooklyn, N. Y. Net weight: Declared, 2 lb.; found, 2 lb. 1.75 oz. Passed.

K.F.-2578. Effco Brand Quality Cream Fondant. Effron Bakers' Supply, Poughkeepsie, N. Y. The only declared ingredient was "Sugar". Analysis showed: Sucrose, 76.25; glucose, 12.24; water, 10.77, and undetermined, 0.74, per cent. Misbranded for failure to disclose the presence of glucose.

F.H.-3558-3560. Empty Quart Milk Cartons. Various dairies. These samples were submitted to determine tare weights, which were respectively 1.12, 1.59 and 1.65 ounces. Passed.

E.C.-1153. Foaming Caramel Color 163. Union Starch & Refining Co., Columbus, Ind. Saponin absent; passed.

K.F.-2455. Fritos Brand Caramel Corn. Fritos Co., Dallas, Texas. No artificial color; passed.

E.C.-1169. Gold Mine Icicle Water Ice. DCA Food Industries, Inc., New York, N. Y. Net contents: Declared, 3 fl. oz.; found, 2.39 fl. oz. Misbranded because short volume and because the manufacturer's name was not declared.

K.C.-1413. Gum Arabic. Varuna Spring Water Co., Stamford, Conn. No saponin; passed.

K.F.-2639. Holsum Spanish Olives, Supreme Quality, Stuffed with Spanish Sweet Peppers, Finest Imported. Holsum Products, Inc., Milwaukee, Wis. Analysis showed 8.55 per cent of undeclared salt; misbranded.

J.B.-448. Honegar. Honegar Division, New York, N. Y. This pint bottle was labelled "Undiluted PURE HONEY Unpasteurized & Unfiltered APPLE CIDER VINEGAR (from whole, washed sound apples)". Analysis showed: Total solids, 53.36; ash, 0.083; acetic acid, 2.05; invert sugar, 49.60, and sucrose, 0.00, per cent. These values and the direct and indirect polarizations at 20° and 37°C. indicated this sample to be a 60/40 mixture of honey and vinegar. On the basis of the labeling and such other evidence as we had at the time, this sample was passed; subsequently the Federal Government proceeded against "Honegar" because of medicinal claims made elsewhere than on the label.

A.J.-326. Insects. Smith's Bakery, East Hampton, Conn. Identified as termites in the swarming stage. Passed because believed to be more of a danger to the bakery building than to its products.

J.B.-461. Just-Add Vodka Grape Cordial Mixer. Snow Crest Beverages, Inc., Salem, Mass. Labelled in part: "This product contains all the ingredients that most expensive alcoholic cordials contain such as sugar, water, true fruit flavor, citric acid and preserved with less than 1/10 of 1% of benzoate of soda." Analysis showed: Total solids, 46.30, citric acid, 0.14, invert sugar, 35.10, and sucrose, 11.09, per cent; ash, 110, K₂O, 21.4, P₂O₅, 3.7, and methyl anthranilate, 5.0, mg./100 gm.; estimated per cent grape juice, 13. Misbranded because it contained added synthetic methyl anthranilate and was not labelled "Imitation".

K.M.-400. Kids Love 'Em Su-Par! Candy Apple Kit. Par Products Co., West Haven, Conn. This sample consisted of a box containing 12 pointed wooden sticks and a cellophane bag of coarse red crystals. Directions said to prepare a syrup from two cups of sugar, one of water and the contents of the bag, impale apples on the sticks, and dip them in the syrup. Declared ingredients were "Glucose, Cream of Tartar, U.S. Cert. Color, 12 Sticks". Passed.

K.F.-2463. King Korn Caramel Coated Popcorn Made with Creamery Butter. Old London Foods, New York, N. Y. Declared ingredients were "Cane sugar, popcorn, corn syrup, pure creamery butter, coconut oil, salt, lecithin, artificial flavor added". Analysis showed 6.23 per cent of fat, whose constants were: Butyro refraction (40°C.), 39.7; Reichert-Meissl No., 13.7; Polenske No., 8.1. This analysis confirmed the presence of coconut oil, but there was insufficient material for the additional tests necessary to prove or disprove the presence of butter. Sample was therefore passed.

E.S.-157. Kosher Gelatin. Myron's Bakery, Hartford, Conn. Analysis showed 83.47 per cent of gelatin, but there was no way of telling by chemical analysis whether or not it was *Kosher* (i.e., made from material derived only from beef forequarters). Passed

A.J.-303 and 304. Laddie Boy 50% Meat Dog & Cat Food. Laddie Boy Dog Food, Inc., Glendale, L. I., N. Y. Spectrographic analysis of *A.J.-303* showed: Lead, 1; zinc, 10, and copper, 5, parts per million. *A.J.-304* contained about the same proportions of these three metals, but in addition 10 p.p.m. of tin and about 25 p.p.m. of molybdenum were present. Both samples were passed.

A.J.-273. Purified Starch. Fiorillo, Southington, Conn. Identified as cornstarch; passed.

K.C.-1392. Tiara Wine Base Meatless Marinara Sauce for Discriminating Tastes. Blendix Products Co., Inc., New York, N. Y. Labelled: "Ingredients: Pure olive oil, tomatoes, onions, herbs, condiments, and a liberal blend of proper wines". Analysis showed 0.31 per cent of alcohol, which would correspond to 2.58 per cent of wine of 12 per cent alcohol content. Passed.

J.S.-582. Upper Left Second Biscuspid. Emma Lehmann, Hartford, Conn. "Black material" applied by a dentist about which Mrs. Lehmann complained proved to be a silver amalgam. Passed.

S.O.-645. Vegetable Foam. Salient Flavoring Corp., New York, N. Y. Saponin present; adulterated.

P.S.-358. Vesta Frozen Dessert. Vesta Foods Co., New York, N. Y. Labelled: "Homogenized—Water, Corn Oil, Sugar, Corn Syrup Solids, Sodium Caseinate, Mono and di-glycerides—Artificial flavor & color." Analysis showed: Water, 59.75; casein, 1.62; sucrose, 16.28; maltose, 1.40; fat, 17.44, and ash and undetermined, 3.51, per cent. Contents of the fat were: Butyro refraction (25°C.), 71.0; saponification No., 199; Reichert-Meissl No., 0.27; Polenske No., 0.18; Kirschner No., 0.00. These constants showed that no butter fat or coconut oil was present and that the fat was probably all corn oil as claimed.

This product was misbranded because it was an imitation ice cream whose sale in this State is illegal.

K.C.-1455. Yerba Maté. Connecticut Development Commission. This sample was submitted for information on "whether it contained any tranquilizing or other drug that would make it unfit for general sale". Examination showed it to be the product variously known as "Maté" or "Paraguay tea", which is the dried and cured leaves of *Ilex paraguayensis*, an evergreen shrub abounding in Brazil, Argentina and other South American countries. Infusions of this are prepared in a similar manner to ordinary tea and consumed in large quantities in South America; the active ingredient is the same as that in tea and coffee, namely, caffeine. Passed.

Thirty-eight unofficial samples were submitted by Michigan State University, the Connecticut State Purchasing Division, the Bridgeport Health Department, the Cheshire police, a veterinarian, a food manufacturer, an automobile agency and private citizens. Twenty-seven samples were passed and 11 were objectionable for one reason or another. Not all of these samples were of public interest, but the following may be:

253. Alumi-Glo Instant Active Aluminum Cleaner. Commonwealth Products, Inc., Kalamazoo, Mich. Analysis indicated the following composition: Abrasive (fullers' earth plus titanium dioxide), 84.03; synthetic detergent (sodium lauryl sulphate), 6.14; sodium sulphate, 6.69, and moisture, 3.14, per cent. The pH of a 10 per cent aqueous suspension was 2.42, which is very acid and may have explained a complaint that this product resulted in the development of a rash on the arms.

2101. Blue State Police Necktie. State Purchasing Division. This tie was submitted to determine whether it was all nylon as specifications called for it to be. Our tests showed that it was.

2054-2065. Dog and Cat Foods. Leo L. Lieberman, D.V.M., Waterford, Conn. These 12 samples were submitted by Dr. Lieberman for determination of their salt contents—information that he needed in connection with a research study. Analyses are given in Table 12.

TABLE 12. SALT IN DOG AND CAT FOODS

No.	Manufacturer or distributor and brand	Salt (NaCl), per cent
2055	Brennan Packing Co., Chicago, Ill. <i>Robust Dog and Cat Food</i>	0.67
2059	Foster Canning Co., Inc., Farmingdale, N. J. <i>Snappy Cat Food</i>	0.38
2060	French Sardine Co., Terminal Island, Calif. <i>9-Lives Cat Food</i>	0.35
2058	Great Atlantic & Pacific Tea Co., New York, N. Y. <i>Dairy Brand Cat Food</i>	0.15
2065	Irving Canning Co., Boston, Mass. <i>Cop-E-Cat New Formula Cat Food</i>	0.36
2062	Jack & Jill Pet Foods, Inc., Woburn, Mass. <i>Jack & Jill Cat Food</i>	0.17
2063	T. Passarini Co., Newton, Mass. <i>Golden Twins Fish & Liver Cat Food</i>	0.34
2061	Prescription Diets Dept., Hill Packing Co., Topeka, Kansas. A <i>"Prescription Diet" C/D</i>	0.12
2064	Roy-Goff & Co., Inc., Bridgeport, Conn. <i>Goff Quality Cat Food</i>	0.19
2054	Special Diet Dept., Atlas Canine Products, Inc., Glendale, L.I., N. Y. <i>Atlas Rx Felodiet.</i>	0.34
2057	Usen Canning Co., Boston, Mass. <i>Tabby All Fish Cat Food</i>	0.31
2056	Wilson & Co., Chicago, Ill. <i>Ideal Dog Food</i>	0.50

1818. *Edson Floor Polish.* State Purchasing Division. Water, 78.28 per cent; pH, 9.1.

1776. *Material Found in Toilet Bowl.* Mrs. S. Russell Mitchell, Guilford, Conn. This material proved to be a mixture of calcium and magnesium carbonates and phosphates.

567. *Material from Truck Cylinders.* Gillman Motor Co., Inc., New Haven, Conn. Considerable quantities of sugar were present—obviously added to disable the truck.

2313. *Noah's Ark Crayons.* Bridgeport Health Dept. These crayons were submitted because they were suspected of having caused lead poisoning in a child; they were of four colors—red, yellow, green and blue. Only traces of lead were found, but the yellow and green crayons contained substantial proportions of the white pigment lithopone, which is an equimolecular mixture of barium sulphate and zinc sulphide. In 1948 and 1949 several cases of methemoglobinemia in children in Connecticut were found to be associated with the ingestion of lithopone-containing crayons.¹¹

2441. *Swiss Chard, Carrot Tops and Lilac Leaves.* Raymond Hughner, Fairfield, Conn. Mr. Ernest Stoddard of our Plant Pathology Department had diagnosed the condition of these leaves as due to sulphur dioxide injury, and this was confirmed by our finding of 7 parts per million of this compound.

¹¹ Conn. Agr. Expt. Sta. Bul. 549, 51-54 (1951)

DRUGS

Prescriptions

Two official and three unofficial prescription samples were examined; four were passed and one was adulterated:

9663 and R.W.-388. *Cher-Iomine.* Pitman-Moore Co. Div., Allied Laboratories, Inc., Indianapolis, Ind. R.W.-388 was submitted by a patient with a complaint of grotesque symptoms following its use; 9663 was a comparison unopened pint bottle. Analyses of both samples were essentially identical and both were passed. Average composition of this expectorant found, as compared with the declared composition, was as follows:

	Claimed, mg./5cc.	Found, mg./5cc.
Total solids	3,076	—
Ash	12	—
Ethylenediamine dihydroiodide	47.4	43.5
Free ethylenediamine	2.3	—
Ammonium chloride	171.	172.5
Sugar, extract of squill and benzoic acid, by difference	2,855	—

A.J.-378. *Pentids Tablets.* E. R. Squibb & Sons, New York, N. Y. Crystalline penicillin G potassium, units/tablet: Claimed, 200,000; found 205,500. Passed. (This sample was assayed by the Washington, D.C. laboratories of the U.S. Food and Drug Administration.)

1295. *Prescription for Athlete's Foot.* Mayor Adam Mengacci, Naugatuck, Conn. The original prescription had been written by a physician since retired, and Mr. Mengacci wanted the sample analyzed so that he could have it duplicated. Analysis showed: Vaseline, 73.2, calamine, 19.5, and bismuth subnitrate, 7.3, per cent; mercury (probably as an organic mercurial antiseptic), trace. Passed.

2177. *Prescription No. 181,028.* Riverside Pharmacy, Milford, Conn. This prescription called for a 2 per cent solution of pilocarpine hydrochloride, but analysis showed only 1.23 gm./100 cc. of this alkaloid. Adulterated.

Vitamin Preparations

Seven official and 12 unofficial samples of vitamin preparations were assayed; 14 were passed and five were adulterated or misbranded:

9527. *a & de-Viosol 400, Vitamins A & D in Milk Carrier.* Vitamins, Inc., Chicago, Ill: This was a preparation for fortifying milk. Vitamin A, units/cc.: Declared, 2, 666; found, 2, 625. Vitamin D, units/cc.: Declared, 400; found, satisfactory. Passed.

W.S.-766. Aquasol A and D Drops Aqueous. U. S. Vitamin Corp., Arlington-Funk Lab. Div., New York, N. Y. Vitamin D, units/0.1cc.: Declared, 800; found, satisfactory. Passed.

2630. Ascorbic Acid Tablets. Mrs. L. S. Longley, West Haven, Conn. These 250 milligram tablets had turned yellowish, but since analysis showed them to contain 277 milligrams of ascorbic acid per tablet they were passed.

R.W.-6150. C P Multi Vitamin & Mineral Milk Enrichment Wafers. Food Products Laboratories, Inc., Kansas City, Mo. Assay (when diluted in the proportion of one wafer to 25 gallons of milk as directed) was as follows:

	Declared	Found
Vitamin D, units/quart	400	Essentially none
Niacin, mg./quart	10	9.25
Thiamine, mg./quart	1	1.19
Riboflavin, mg./quart	2	2.05

Adulterated because of the absence of vitamin D.

1093. CP Vitamin A-D Wafers. Food Products Laboratories, Inc., Kansas City, Mo. These tablets were for fortifying milk. Vitamin A, units/100 wafers: Declared, 40,000,000, found, 41,300,000. Vitamin D, units/100 wafers: Declared, 8,000,000; found satisfactory. Passed.

1092 and 1455. CP Vitamin D Wafers. Food Products Laboratories, Inc., Kansas City, Mo. This product (intended for fortifying milk) was labelled as containing 160,000,000 U.S.P. units of vitamin D in 100 wafers, but assay showed essentially no vitamin D. Adulterated.

9258. de-viosol 2000 Pure Crystalline Vitamin D from Calciferol U.S.P. in Milk Carrier. Vitamins, Inc., Chicago, Ill. This product was for fortifying milk. Vitamin D, units/cc.: Declared, 2,666; found, satisfactory. Passed.

1094. Drew Quintamin Number-1 In Milk Components. E. F. Drew & Co., Inc., Dairy Products Div., Boonton, N. J. This product was for fortifying milk. Vitamin A, units/cc: Declared, 26,666 2/3; found, 26,842. Vitamin D, units/cc: Declared, 2,666 2/3; found, satisfactory. Passed.

W.S.-762. Drisdol in Propylene Glycol. Winthrop Laboratories, New York, N. Y. Vitamin D, units/drop: Declared, 250; found, satisfactory. Passed.

348. Mahva-F Multi Vitamin-Mineral Concentrate. No. 1, Freeman. Freeman Industries, Inc., Tuckahoe, N. Y. Assay of this milk-fortifying preparation was as follows:

	Declared	Found
Vitamin A, units/cc.	40,000	42,500
Vitamin D, units/cc.	4,000	satisfactory
Riboflavin, mg./cc.	20	20.4
Niacinamide mg./cc.	100	109.

Passed.

349. Mahva-F Brand of Multi Vitamin-Mineral Concentrate No. 2, Freeman. Freeman Industries, Inc., Tuckahoe, N. Y. Assay of this milk-fortifying preparation was as follows: Thiamine hydrochloride, mg./cc: Declared, 10; found, 9.29. Passed.

J.S.-562. No. 8 Ononatal Capsules. Monroe Pharmacal Co., Waterbury, Conn. Assay was as follows:

	Declared	Found
Vitamin D, U.S.P. units/capsule	500	Below standard
Thiamine, mg./capsule	1	0.90
Riboflavin, mg./capsule	0.5	0.50
Niacinamide, mg./capsule	10	9.59
Folic acid, mg./capsule	0.5	0.47

Adulterated because low in vitamin D.

W.S.-760. Parke-Davis ADC Drops with Vitamin B6. Parke, Davis & Co., Detroit, Mich. Vitamin D, units/0.6 cc.: Declared, 1,000; found, satisfactory. Passed.

1095. Quintamin No. 2. E. F. Drew & Co., Inc., Boonton, N. J. Assay of this milk-fortifying preparation (diluted at the rate of one package to 50 gallons of skim milk as directed) was as follows:

	Declared	Found
Thiamine, mg./quart	1	1.06
Riboflavin, mg./quart	2	2.09
Niacin, mg./quart	10	9.41

Passed.

W.S.-767. Super D. Drops. Upjohn Co. Kalamazoo, Mich. Vitamin D, units/gm.: Declared, 8,500 found, satisfactory. Passed.

9256. Vi-Mins Dry No. 800. Vitamins, Inc., Chicago, Ill. Assay of this milk-fortifying preparation was as follows:

	Declared	Found
Thiamine, mg./quart	6.0	6.83
Riboflavin, mg./gm.	7.2	12.9
Niacin, mg./gm.	60.0	65.1

This sample was misbranded because it contained excessive riboflavin.

9255. Vi-Mins Liquid No. 800 Vitamins A & D in Milk Carrier. Vitamins, Inc., Chicago, Ill. Assay of this milk-fortifying preparation showed: Vitamin A, units/cc.: Declared, 10,666; found, 9,510; vitamin D, units/cc.: Declared, 1,066; found, satisfactory. Passed.

W.S.-775. Walker Concentrated Oleo Vitamin A-D Drops. Walker Laboratories, Inc., Mt. Vernon, N. Y. Vitamin D, units/gm.: Declared, 10,000; found, satisfactory. Passed.

Other Drugs

Eighteen official and 18 unofficial samples of miscellaneous drugs were examined; 18 samples were passed and 18 were adulterated or misbranded:

J.S.-530. A-Gic. A-Gic Laboratories, Inc., Mt. Carmel, Conn. This ointment was labelled: "A permanent jel of Aloe leaf which promotes healing and relieves pain of minor burns, sunburn, scalds and cuts—FOR EXTERNAL USE ONLY—Active ingredient is pulp of freshly plucked Aloe Vera Leaf (78%). Compounded with Glycerin, Gum Tragacanth, Sodium Benzoate and Sodium Bi-sulphite." Microscopic examination showed no aloe leaf; chemical analysis indicated: Water, 82.37, glycerine, 11.39, gum, 4.26, sodium bisulphite, 0.19, and aloe extract and sodium benzoate (by difference), 1.79, per cent. Misbranded.

193 and 194. Aromatic Spirits of Ammonia. Merck & Co., Rahway, N. J. The U.S.P. XV requires this preparation to contain 1.7—2.1 gm./100 cc. of total ammonia (NH₃), 3.5—4.5 gm./100 cc. of ammonium carbonate [(NH₄)₂CO₃], and 62—68 per cent of alcohol. Average analysis showed: Total ammonia, 1.96, and ammonium carbonate, 4.55, gm./100 cc.; alcohol, 61.48 per cent by volume. Passed.

9978. Arthro for Relief of Pain Due to Arthritis, Bursitis, Neuritis, Phlebitis and Rheumatism. Alcor Laboratories Corp., New Haven, Conn. This was a deep reddish-brown aqueous infusion containing some suspended fibrous material; its pH was 5.3. Analysis showed: Protein, 0.06, ash, 0.05, ether extract, 0.15, sugars, trace; tannins, 0.01, and fiber, 0.20, gm./100 cc. Passed.

*9841 and W.S.-753. Bufferin with De-Alminate.** Bristol-Myers Co., New York, N. Y. *W.S.-753* was adulterated with a trace of naphthalene; *9841* was passed.

9665. Dr. Nathan Tucker Asthma Specific. Dr. Nathan Tucker Laboratory, Mt. Gilead, Ohio. Labelled: "Active ingredients per Fluid Ounce: Products of Decomposition of 7.5 grains of Cocaine; 0.85 grains Atropine Sulphate; Sodium Nitrite—GRINDELIA ROBUSTA". The original "Tucker's Asthma Specific", which was sold on the mail-order plan, contained five grains of cocaine per fluid ounce, and cases of cocaine poisoning following its use were reported; subsequent to 1910 the manufacturers claimed that the cocaine had been hydrolyzed and did not appear in the preparation as such. Federal action was taken against this product in 1911.¹²

¹² *Nostrums and Quackery and Pseudo-Medicine*, Vol. III, pp 4-5 (1936)

The present sample was submitted by an asthmatic who claimed he could get no relief from any other drug but could purchase no more of this preparation because it was off the market; he wanted an analysis so that he could get a prescription made up. We informed him that it was impossible to make a complete quantitative analysis of a preparation of this sort, but did run the following determinations: Total solids, 19.54, ash, 5.60, and sodium nitrite, 1.76, gm./100 cc.; atropine present; cocaine not detected.

"Grindelia Robusta" is an herb variously known as "gum plant", "gumweed" and "tar-weed" that has been used in the treatment of acute bronchitis, especially where there is a tendency to asthma; it is usually met with in admixture with stramonium in asthma powders and cigarettes designed to be smoked.

Because the preparation was off the market and this sample was not in the original package, it was passed.

1715 to 1720. Ethyl Alcohol. Police Dept., New Haven, Conn. These samples were stolen from Grace-New Haven Hospital in New Haven and were submitted by the police to confirm that they were 95 per cent grain alcohol. Analysis showed 95.40 per cent of alcohol by volume.

J.S.-583. Green Heart-Shaped Tablets. Police Dept., Stratford, Conn. Analysis showed: Amobarbital, 32.7, and amphetamine sulphate, 5.3, mg./tablet. These were "Dexamyl" tablets manufactured by Smith, Kline & French Laboratories, Philadelphia, Pa., and were misbranded because not sold on prescription.

2066. Heart-Shaped Orange Tablets. Maxwell Drug Store, Hamden, Conn. Analysis showed these to be the 5.4 milligram d-amphetamine sulphate tablets manufactured by Smith, Kline & French Laboratories, Philadelphia, Pa., under the name of "Dexedrine Sulfate" tablets. They were sold without prescription to a customer who asked for vitamin pills, and were consequently both adulterated and misbranded.

1291. Hillshire Down Medicated Lotion. State Dept. of Health. This product was being dispensed by a person not a licensed physician at \$4.00 for a small bottle; analysis showed it to be a 2.80 gm./100 cc. solution of hydrogen peroxide. This is the strength of Hydrogen Peroxide Solution U.S.P. XV.

J.S.-554. Kor-Val Sweetabs. E. J. Korvette, New York, N. Y. Labelled: "Each non-caloric tablet contains: Sodium Cyclamate, 50 mgs., Sodium Saccharin 5 mgs." Adulterated with a trace of some unidentified substance with a very sweet odor.

825. Large Red Pill. Campus Police, Yale University, New Haven, Conn. This pill was found beside a running track; it was identified as a sodium chloride pill whose total weight was 1.74 grams.

J.S.-564. No. 7 Elixir Onased. Monroe Pharmacal Co., Waterbury, Conn. Labelled: "Alcohol 13%—Each 100 cc. contains

0.4 Gm. of Phenobarbital." Analysis showed: Phenobarbital, 0.38 gm./100 cc.; alcohol, 13.03 per cent by volume. This preparation was of the same strength and flavor as Phenobarbital Elixir U. S. P. XV, but was colored green instead of red. Passed.

J.S.-528. Onahist Tablets. Monroe Pharmacal Co., Waterbury, Conn. Odor of acetic acid indicated decomposition; adulterated.

J.S.-561. Onomag No. 6. Monroe Pharmacal Co., Waterbury, Conn. Labelled: "Each fluid ounce contains: *Belladonna Tincture* . . . (.20 min.) 1.2cc.—*Phenobarbital Elixir* . . . (160 min.) 10.6 cc.—*Warning*: May be habit forming—*Magnesium Trisilicate* . . . q.s." This statement is equivalent to a claim of between 39.0 and 45.6 milligrams of phenobarbital per fluid ounce, and our analysis showed 41.0 mg./fl. oz. However, the magnesium trisilicate claim does not even make sense, because if the specified amounts of the other ingredients were made up to a fluid ounce with this insoluble powder the result would be a moist solid; actually analysis showed only 1.05 gm./fl. oz. of magnesium trisilicate. Adulterated and misbranded.

J.S.-529. Pan-A-Hist. Waterbury Medical Co., Waterbury, Conn. Declared ingredients were: Alcohol, 4 per cent; pryrilamine maleate, 50, and chloroform, 50, mg./fl. oz.; ammonium chloride, 0.5, and ephedrine hydrochloride, 0.1, gm./fl. oz. This cough remedy was submitted not for analysis but for an opinion on whether it properly carried the statement "CAUTION; Federal Law prohibits dispensing without prescription". We saw no objection to this statement.

R.W.-389. Rexall Tincture Benzoin Compound U. S. P. (Tur-lington's Balsam). Rexall Drug Co., Boston, Mass. The U. S. P. XV requires this preparation to contain between 74 and 80 per cent of alcohol. Analysis showed: Alcohol, 60.30 per cent by volume; total solids, 13.88 gm./100 cc. Adulterated.

E.S.-102. Rose Hip Tea. John Colwick, Pittsburgh, Pa. Webster's Dictionary defines the rose "hip" as "The ripened pseudocarp or false fruit of a rosebush, esp. of the dog rose." In England during World War II extracts of rose hips were made into a jam or jelly that was used in place of the then-unobtainable citrus fruits as a source of Vitamin C. We were unable to identify the present sample positively, and it was passed.

J.S.-563. Syrup Onahist No. 4 for Bronchial Asthma & Hay Fever. Monroe Pharmacal Co., Waterbury, Conn. Labelled: "Each teaspoonful (5 cc.) contains Phenobarbital Sodium (1/8 gr.) 8 mg.; Ephedrine (1/4 gr.) 15 mg.; Ppyrilamine Maleate 10 mg., in a base containing Squill, Ipecac, Ammonium Chloride, Tolu, Menthol and Grape Flavor". Analysis showed 15.0 mg./5cc. of ephedrine; passed.

9833 to 9835. Tobacco Ash. General Cigar Co., Lancaster, Pa. Average analysis showed: Potassium, 15.76; calcium, 15.14;

magnesium, 3.95; phosphorus, 0.78; manganese, 0.068; iron, 0.46; aluminum, 1.16; zinc, 0.07; sodium, 0.31; copper, 0.019, and boron, 0.013, per cent. 9833 and 9834 contained considerable proportions of acid-insoluble material and more than traces of titanium, so it is doubtful whether they were straight tobacco ashes.

J.S.-544. Tucks B-EN Chewing Tobacco. Bendixen Tobacco Co., Syracuse, N. Y. This sample was submitted with a complaint that its use led to a "hacking cough". Nothing was found that could definitely account for such an effect, but in the course of examination the following analyses were run: Arsenic and fluoride absent; lead, 4, zinc, 30, copper, 8, and barium, 30, parts per million. Passed.

2124. Vaginal Douche. Setco Pharmaceuticals, Inc., New Haven, Conn. This product was a 4 per cent solution of acetic acid containing "Polysorbate 80", oil of peppermint and color. The sample was submitted by the manufacturers to determine the cause of the slight precipitate that developed on standing. The sediment proved to be a mold growth high in tin and nickel; its origin remained uncertain.

J.S.-487 and 525-527. Vira Caps. Waterbury Medical Equipment & Supply Co., Waterbury Conn. These capsules were labelled as containing: Aspirin, 0.3, and phenacetin, 0.12, gm.; caffeine, 30, pyrilamine maleate, 20, and quinine sulphate, 30, mg. All four samples had odors of acetic acid, indicating decomposition. Adulterated.

J.S.-581. Yellow Capsules. Police Dept., Hartford, Conn. These were identified as the pentobarbital sodium capsules manufactured by Abbott Laboratories, North Chicago, Ill., under the brand name of "Nembutal Sodium". Because they had been obtained without a prescription they were misbranded.

J.S.-556. Zubo-Reducer. Brewer Pharmacy, East Hartford, Conn. Labelled: "All Day Appetite Suppressant . . . Each capsule contains: Phenylpropanolamine hydrochloride 75 mg., Protein Hydrolysate 15 mg., specially prepared to disintegrate over an 8 to 10 hour period for continuous appetite suppression. Dosage: One capsule ½ hour before breakfast. Do not exceed dosage recommended. Caution: individuals with Heart Disease, Diabetes, High Blood Pressure or Thyroid Disease should use this product only on advice of physician". This sample was submitted not for analysis but for an opinion on whether over-the-counter sale should be permitted. It is now generally recognized that phenylpropylamine is of no value as an appetite-depressant, although it was once promoted for such use. The sample was therefore misbranded regardless of its method of sale.

COSMETICS

Twenty-four official samples of cosmetics were examined for the Commissioner of Consumer Protection, and 12 samples of soap and other detergents were analyzed for the State Supervisor of

Purchases, a dealer and a private citizen. Of the total of 36 samples, 30 were passed and six were adulterated or misbranded:

W.S.-778. Alphosyl Lotion. Reed & Carnrick, Kenilworth, N. J. Labelled: "Contains: Special coal tar extract and allantoin in synergistic combination, in a greaseless, stainless vanishing cream base". Analysis of this hair "tonic" showed no arsenic; passed.

J.S.-578. Anatome Cream. Mrs. Sidney La Berge, East Hartford, Conn. Labelled: "Anatome Cream contains 6,000 units of estrogenic hormones per ounce of cream". This and *J.S.-574-577* below were submitted because of a complaint that "swelling, burning of skin, and marks and grooves on the face" followed their use. The reaction was believed to be an allergic one, and the samples were not analyzed.

J.S.-576. Bio-Miracle Cream. Mrs. Sidney La Berge, East Hartford, Conn. Labelled: "Contains 110 milligrams of biotin per ounce". Not analyzed; see *J.S.-578* above.

J.S.-551 and 555. Curtis Dandruff Treatment Hair Tonic. Curtis Pharmacal Co., Inc., Chicago, Ill. Labelled: "With Exclusive Anti-Dandruff Ingredient Dantrol-39—STOPS DANDRUFF WHILE IT GROOMS YOUR HAIR! . . . CONTAINS: N-trichloromethyl-mercapto-4-syclohexene-1,2-dicarboximide (Dantrol-39) and lauryl isoquinolinium bromide. Alcohol 67%." These samples were submitted because of a complaint of a user that he got some of the material in his eye and came close to being blinded. The "Dantrol-39" is better known as "Captan", under which name it is commonly used as a fungicide spray for fruits and vegetables; lauryl isoquinolinium bromide is a quaternary ammonium compound also used as a fungicide. Average analysis showed: Captan, none; total acidity as hydrochloric acid, 0.070 gm./100 cc.; alcohol, 61.10 per cent by volume; pH, 2.13. Captan is readily hydrolyzed in alcoholic solution to tetrahydrophthalimide, sulphur and carbon dioxide, which probably accounts for its absence in these samples and may explain the relatively high acidity. The irritation of the complainant's eye was probably due to a combination of this acidity and the high alcohol content. Adulterated.

1116. Dairy Washing Powder. S. A. Washburn, Cheshire, Conn. Sodium hydroxide, 87.60; sodium carbonate (Na_2CO_3), 2.46; trisodium phosphate (Na_3PO_4), 8.03; soap, 0.32, and water (by difference), 1.59, per cent. Passed.

1454. Diplo Suds (Synthetic Detergent). Ultra Chemical Works, Inc., Paterson, N. J. Moisture and volatile matter, 9.82; alcohol-soluble, 35.31, anhydrous soap, 0.00, fatty matter, 1.84, water-insoluble, 3.12, ash, 57.50, silica, 5.52, alcohol-soluble chlorides (as NaCl), 8.70, acetone-soluble, 23.06, total phosphates (as P_2O_5), 14.60, and orthophosphate (as P_2O_5), 2.60, per cent; pH of 1 per cent solution, 9.79; optical brightener present. This sample failed to meet the requirement of Federal Purchasing Specification P-D-00245 (GSA-FSS) for a minimum of 17 per cent polyphosphates.

1287. Diversey Zerospot. Diversey Corp., Chicago, Ill. This sample and *1288* and *1289* below were submitted by the State Supervisor of Purchases with a request that their ingredients be identified. Analysis indicated *1278* to be a blue-dyed solution of a polyoxyethylene derivative (similar to the "Tweens", "Spans" etc.) in glycerine. Its pH was 6.30.

1289. Du Bois Dri-It. Du Bois Co., Inc., New York, N. Y. This yellow liquid contained glycerine and a polyoxyethylene derivative as did *1287* above, but sodium tripolyphosphate (or some other phosphate) and soap were also present. The pH was 8.15.

1288. E. L. Rinse Dry. Economics Laboratory, Inc., St. Paul, Minn. This was a greenish-blue-dyed viscous solution of a polyoxyethylene derivative in glycerine similar to *1287* above. Its pH was 6.45.

J.S.-575. Germaine Monteil Skin Freshener. Mrs. Sidney La Berge, East Hartford, Conn. This sample was submitted because of an apparent allergic reaction (see *J.S.-578* above); it was not analyzed.

1293 and 1294. Helene Harrison Pine Castile Shampoo. Harrison Specialty Co., Boston, Mass. Examined because of a user's complaint that after using it twice a week her hair started to fall out. Analysis showed: Soap, 10.54, free fatty acid, 0.77, and free caustic alkali, 0.00, per cent; wetting agent, trace; pH, 8.40. Passed.

J.S.-567. Hillshire Down After Shaving Lotion. Hillshire Down, Killingly, Conn. This and *J.S.-565, 566* and *568-573* below were submitted to check on claims made on some of them (but not *J.S.-567*) that they contained goat's milk. Because there was no way of proving or disproving such a claim by chemical analysis, all of these samples were passed.

J.S.-572. Hillshire Down Cleansing Cream. Hillshire Down, Killingly, Conn. Labelled "Made from the curds of goat's milk, lanolin, mineral oil and other cleansing agents". Passed (see *J.S.-567* above).

J.S.-569. Hillshire Down Foundation Cream Peach Bloom. Hillshire Down, Killingly, Conn. Labelled "Your foundation cream is made from the curds of goat milk, lanolin, zinc oxide ointment". Passed. (see *J.S.-567* above).

J.S.-568. Hillshire Down Goat Milk Bath For Sensitive Skin. Hillshire Down, Killingly, Conn. Labelled "Contents: Dehydrated goats milk, oil of perfume, starch." Passed (see *J.S.-567* above).

J.S.-573. Hillshire Down Hand And Arm Cream. Hillshire Down, Killingly, Conn. Labelled "Contents: Goat milk, cocoa butter and other beneficial ingredients". Passed (see *J.S.-567* above).

J.S.-571. Hillshire Down Night Cream. Hillshire Down, Killingly, Conn. Labelled "Made from the curds of goat's milk, zinc

oxide, boric acid ointments and other beneficial agents". Passed (see *J.S.-567* above).

J.S.-570. Hillshire Down Special Cream. Hillshire Down, Killingly, Conn. Labelled "This cream contains the curds of goat milk, lanolin, zinc oxide ointment, and other beneficial agents". Passed (see *J.S.-567* above).

J.S.-565. Hillshire Down Special Lotion for Sensitive Skin. Hillshire Down, Killingly, Conn. Labelled "This lotion contains goat milk whey and thymol". Passed (see *J.S.-567* above).

J.S.-566. Hillshire Down Toning Lotion For Dry Skin. Hillshire Down, Killingly, Conn. No ingredient declaration; passed (see *J.S.-567* above).

J.S.-538. Lanolite Revlon Red Caviar Non-Smear Type J 110. Revlon, Inc., New York, N. Y. This lipstick was submitted because of a complaint that it caused a rash. No untoward reaction was observed by four of our staff who used it, so it was passed.

1166. Liquid Soap 36%. H. Bresky. Anhydrous soap, 34.27, free oleic acid, 0.87, and alcohol-insoluble, 0.09, per cent; pH, 9.8. This sample did not contain the claimed 36 per cent of soap and had an objectionable odor; misbranded.

J.S.-520 and 523. New Odorless Neet Facial Quality Cream Hair Remover. Whitehall Laboratories, Inc. New York, N. Y. These samples were submitted because of a user's complaint that a rash broke out on her face subsequent to using this product. Analyses of both samples were identical: Calcium thioglycollate, 3.33 per cent; pH, 11.20. Since these were normal for a product of this kind both samples were passed.

425. Norco Liquid Hand Soap Item 12 Type 1. Northeast Cleaning Materials Co., New Haven, Conn. Anhydrous soap, 16.24, free oleic acid, 0.14, and alcohol-insoluble, 0.35, per cent; pH, 10.2. Passed.

426. Norco Liquid Hand Soap Item 12 Type 2. Northeast Cleaning Materials Co., New Haven, Conn. Anhydrous soap, 33.70, free oleic acid, 0.14, and alcohol-insoluble, 0.22, per cent; pH, 10.4. Low in soap content (specification called for 36 per cent); misbranded.

J.S.-553. Old Holland Original Formula Beer Shampoo with Lanolin and Coconut Oil. Silver-K Corp., Manchester, N.H. Analysis of this perfumed liquid showed 1.65 per cent of alcohol by volume; soap and a surface-active agent were also present. Passed.

803. Palco Cleanser 7930-205-2868 Fed. Specs. P-S 311. Type 11 Powder Scouring Compound. Pal Products Mfg. Corp., Jersey City, N. J. Volatile at 105°C., 0.34, sodium carbonate plus soap or detergent, 6.27, anhydrous soda soap, 3.61, sodium carbon-

ate, 2.66, free oleic acid, 0.19, and insoluble siliceous matter, 93.20, per cent; 1.0 per cent retained on 50-mesh sieve, 4.0 per cent on 100-mesh sieve. This sample met the applicable Federal purchasing specifications and was passed.

W.S.-755. Rexall Tooth Paste. Rexall Drug Co., Los Angeles, Calif. A moth's wing and broken portions of a moth's body were stuck to the outside of this tube; adulterated.

J.S.-577. Super-Royal Cream. Mrs. Sidney La Berge, East Hartford, Conn. Submitted because of an apparent allergic reaction (see *J.S.-578* above); not analyzed.

J.S.-574. Super-3 Liquid Cleanser. Mrs. Sidney La Berge, East Hartford, Conn. Submitted because of an apparent allergic reaction (see *J.S.-578* above); not analyzed.

1290. Texo 213. Texo Corp., Cincinnati, Ohio. This was a water-white viscous solution of a polyoxyethylene derivative, together with sodium tripolyphosphate and sodium lauryl sulphate (or similar compounds), in glycerine; its pH was 8.15.

J.S.-549 and 552. Tot Time Baby Shampoo. Fuller Brush Co., East Hartford, Conn. These flexible plastic bottles in the shape of a clown (colored yellow, red and pink) were labelled: "A gentle, cleaning shampoo. Will not sting the eyes like regular shampoos. Empty container safe for use as a toy." There was a complaint that a child drank some of this material and became ill. Analysis showed the shampoo to be a lilac-perfumed 12.63 per cent aqueous solution of a synthetic detergent; no soap was present; the flavor was salty and bitterish. Because any type of shampoo would cause at least queasiness if drunk, and there was no evidence of serious illness, the samples were passed.

COLLABORATION WITH OTHER DEPARTMENTS

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

	Samples
State Police	15
U.S. Geological Survey (water)	7
Station Departments:	
Biochemistry	60
Entomology	39
Genetics	6
Plant Pathology	46
Soils	46
Tobacco Laboratory	8

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 pasteurization plants, were examined as follows:

	Pieces	Incomplete or inaccurate
Babcock glassware	1,727	3
Thermometers	56	3

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