

THE FORTY-EIGHTH REPORT ON  
**FOOD PRODUCTS**  
AND THE THIRTY-SIXTH REPORT ON  
**DRUG PRODUCTS**

1943

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Connecticut  
Agricultural Experiment Station  
New Haven

## EDWIN G. WOODWARD

Edwin G. Woodward died on July 7, 1944 as the result of burns and injuries received in the tragic circus fire in Hartford the previous day. His wife and grandson also lost their lives in the fire.

Mr. Woodward served as Dairy and Food Commissioner of this State from 1934 to 1941, resigning his commission to become Dean of the College of Agriculture of the University of Connecticut, which office he held at the time of his death.

He served as Commissioner with conspicuous success and became nationally recognized as a leader in the field of food and drug control. He was elected president of the Association of Food and Drug Officials of the United States in 1940 and declined re-election.

He was largely instrumental in securing the passage of our present Food, Drug and Cosmetic law which was enacted during his term as Commissioner.

The following resolution was adopted by the New England Association of Food and Drug Officials at their annual meeting in Brattleboro, Vt., August 2, 1944.

*Whereas*, Edwin G. Woodward was a former member of our New England Association of Food and Drug Officials and for a term of years served as its president, during which time he also rendered outstanding service as president of the Association of Food and Drug Officials of the United States: and

*Whereas*, his clear understanding and appreciation of food and drug control problems contributed largely to the interest and success of our meetings, and to constructive food and drug control throughout the country; and

*Whereas*, his many admirable qualities as a man compelled our respect and won the esteem and affection of us all; be it

*Resolved*, that we express our deep sorrow and the keen sense of personal loss that we feel at his passing; and be it further

*Resolved*, that a copy of this resolution be sent to his family, and a copy also to the Chairman of the Editorial Committee of the Association of Food and Drug Officials of the United States.

For the Association

E. M. BAILEY, *Connecticut*

E. R. TOBEY, *Maine*

W. A. QUEEN, *Washington, D. C.*

CONTENTS AND SUMMARY

Material	Page	Sampled by or submitted to		Total	Adulterated, below standard or questionable
		The Station	The Dairy and Food Commissioner		
<b>FOODS</b>					
Beverages.....	332	...	21	21	8
Coffee.....	333	...	11	11	3
Deceptive packaging.....	334	...	36	36	23
Fats and oils:					
Olive oil.....	335	3	42	45	29
Butter.....	335	4	4	8	3
Foods examined for contamination, etc.....	336	54	33	87	6
Honey.....	336	...	4	4	1
Meat products:					
Hamburg.....	337	7	14	21	1
Sausage, etc.....	337	...	22	22	7
Milk and milk products:					
Market milk.....	337	210	...	210	1
Vitamin D milk.....	338	...	115	115	6
Miscellaneous.....	338	3	...	3	...
Maple syrup, etc.....	340	...	3	3	1
Pickles, condiments, etc.....	340	...	8	8	5
Salad dressings.....	340	...	18	18	3
Spray residue.....	341	12	139	151	4
Miscellaneous.....	342	...	11	11	7
Total.....		293	481	774	108
<b>DRUGS, etc.</b>					
Denatured alcohol.....	342	...	97	97	24
U.S.P. or N.F. drugs:					
Ammoniated mercury ointment.....	343	...	60	60	23
Mercurial ointment.....	343	...	36	36	10
Tincture of iodine.....	344	...	11	11	6
Mild tincture of iodine.....	344	...	34	34	17
Strong solution of iodine.....	344	...	38	38	37
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Miscellaneous drugs, cosmetics, etc.....	347	...	23	23	...
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Warning statements.....	350	...	...	...	...
Prescription drugs.....	354	...	...	...	...
Total.....		...	397	397	122
Collaborative work.....	355	972	...	972	...
Total for all samples.....		1265	878	2143	230
Babcock glassware, etc.....	355	2804	...	2804	17

THE FORTY-EIGHTH REPORT ON FOOD

PRODUCTS

and the

THIRTY-SIXTH REPORT ON DRUGS

1943

E. M. BAILEY

This report summarizes examinations of official samples of foods, drugs and cosmetics submitted by the Dairy and Food Commissioner during the calendar year 1943.

Samples examined for health officers and others, and work done for other State and Station Departments are included.

The Dairy and Food Commissioner is responsible for the enforcement of the Food, Drug and Cosmetic law, and largely also for its administration. The Director of this Station is jointly responsible with the Commissioner for regulations provided for in the Act. Scientific and technical service required by the Commissioner is rendered by this Station and by the State Department of Health as the law provides.

During the past year, special attention has been given to food products for evidence of decomposition or of contamination, faulty labelling, deceptive packaging; and to so-called economic frauds, such as the substitution of various edible vegetable oils for olive oil without proper declaration.

The Commissioner has been active in the drug field, removing old stocks from circulation, submitting samples for checking with current official standards, and for conformity to labelling requirements. A limited survey of cosmetic preparations has been made. Samples of denatured alcohol and of turpentine have been submitted and examined under the special statutes relating to those articles.

A very considerable amount of analytical work done as a service to other State and Station departments is indicated by the summary at the end of this report.

Babcock glassware, and thermometers used in checking pasteurization temperatures in milk plants have been checked as required by statutes.

The loyal and effective cooperation of the department staff in carrying on this work is again gratefully acknowledged.

## FOODS

## BEVERAGES

H. J. FISHER AND C. E. SHEPARD

Twenty-one samples of beverages of various kinds were examined. The subjoined summary shows the nature and extent of examinations made, and the results of examination.

TABLE 1. EXAMINATION OF BEVERAGES

No.	Name of article and manufacturer	Place of sampling	Remarks
N-143	Ginger ale, Charter Oak Beverage Co., Hartford	Middletown	Mold present.
E.S.-86	Root beer, Dr. Swett's	New Haven	No declaration of net contents, or name and address of manufacturer.
E.S.-83	Lemon and lime soda, Atlantic Bottling Works, New Haven	New Haven	Mold present.
E.S.-84	Lemon soda, R.F. Baker and Co., Inc., Danbury	New Haven	Mold present; coal tar color present, not declared.
E.S.-140	Imitation grape juice drink, Grapelene; Paradise Pkg. Co., Brooklyn, N.Y.	New Haven	Pass, with suggestion for revision of label.
W-165	Extra soda, X-Tra Bot. Co., Springfield, Mass.	Hartford	Contained foreign matter (pieces of cardboard).
K.C.-301	Lime soda, Colonnade Beverage Co., E. Norwalk	E. Norwalk	Appreciable residue of silica. Faulty cleaning of bottle?
H.C.-901,S-233-4	Hard cider	Front St., Hartford	Alcohol 4.78, 5.38 and 4.67%, respectively. Sediment apple marc and yeast cells. Illegal sale of alcoholic beverage.

TABLE 1. EXAMINATION OF BEVERAGES—CONTINUED

No.	Name of article and manufacturer	Place of sampling	Remarks
K.C.-272-5	Gold Medal Beer and Old India Ale, Commonwealth Brewing Corp., Springfield, Mass.	So. Norwalk, E. Portchester and Greenwich	Visible sediment consisting of or containing yeast cells, mold mycelia and spores, and flecks of paint or enamel from bottle tops.
K.C.-287-91	Beer and ale, Commonwealth Brewing Corp., Springfield, Mass.	So. Norwalk	Filter clean; no appreciable sediment.
Sta. No. 7676	Light beer, Ballantine	New Haven	No mold or sediment other than trace of yeast.
Sta. No. 7685	Orange soda	New Haven (Purchaser's sample)	No evidence of foreign matter.

## COFFEE, etc.

C. E. SHEPARD AND H. J. FISHER

Eight samples of ground coffee were examined and no evidence of adulteration was found. One sample, E.S.-104, was misbranded in that the package did not bear the name and address of the packer or distributor.

Two samples of Demi Tasse coffee ("extract") were examined. They were Mexican products labelled as containing 15 per cent of sugar.

## Partial analysis:

	E.S.-79	K.C.-267
Caffeine gm./100 cc. . . . .	0.12	0.27
Sucrose gm./100 cc. . . . .	1.43	0.52
Invert sugar gm./100 cc. . . . .	2.39	2.65
Total sugars gm./100 cc. . . . .	3.82	3.17

Assuming the average caffeine content of coffee to be 1.2 per cent, the extracts represent approximately 10 and 20 per cent coffee, respectively. Sugar is much less than declared.

A sample of "Coffeeaid", a coffee stretcher composed of roasted rye, barley and malted barley cereal was analyzed as follows:

Moisture 6.85 per cent, protein 13.88, crude fiber 7.43, fat 3.00.

The article is apparently a mixture of roasted cereals as claimed, and for the purpose of mixing with coffee to stretch the household coffee supply.

#### DECEPTIVE PACKAGING OF FOODS

H. J. FISHER AND E. M. BAILEY

An article of food is misbranded if its container is "so made, formed or filled as to be misleading". The immediate container may be slack filled; or outer cartons may be deceptive as to the size of the inner immediate container. In both of such cases the food is misbranded.

If the package is closed so that the purchaser cannot see and judge as to the quantity of contents before purchase, the question of deception is not difficult to decide. In case of packages in which the contents are more or less exposed to view, e. g. packages with cellophane "window" or covers, deception depends upon the extent to which the purchaser may inform himself as to the nature and quantity of contents by exercise of reasonable attention and alertness. Novelty packages designed for holiday trade belong in this category.

**Flavoring Extracts.** Eight samples of vanilla or imitation vanilla extracts were examined as to deceptive packaging. Seven were regarded as deceptively packaged. The bottles containing the extracts occupied much less than the actual capacity of the outside cartons. Waste space in the cartons ranged from 54 to 71 per cent. One sample showed about 50 per cent of waste space in the outside container but the shape of the bottle was such (tapering) that a smaller container would hardly suffice and the package was passed.

Two samples were examined as to labelling. Both were imitation vanilla extracts. One failed to bear a statement of ingredients, and the other failed to declare artificial color although caramel was listed as an ingredient.

**Orange Extracts.** Four samples of orange extract were deceptively packaged, the waste space in the outer containers ranging from 50 to 68 per cent.

**Miscellaneous.** Twenty-two samples of confections, pastry, etc. were examined. Seven were considered to be deceptively packaged. The others were passed on the point of deceptive packaging, but three of them were otherwise misbranded.

#### FATS AND OILS

H. J. FISHER, W. T. MATHIS AND C. E. SHEPARD

##### Olive Oil, etc.

Forty-two official samples of olive oil and other vegetable oils have been examined. Of this number, 29 were adulterated or misbranded, or both. Thirteen were passed as examination revealed nothing objectionable.

Adulteration consisted in substituting common domestic oils such as corn, cottonseed and peanut oils for olive oil, or in some cases substituting them for one another. The addition of artificial color and flavor to simulate olive oil and so make the article appear better or of greater value than it is has been another common form of adulteration.

Misbranding has consisted in selling oils or mixtures that were not the oils or mixtures that they purported to be; in failing to give the name and address of the packer or distributor; in not correctly stating the net volume of contents of cans (many were short volume), and in failure to declare the presence of artificial color and artificial flavor if present.

The large proportion of illegal samples found is probably not a true picture of market conditions in the State because many of the samples have been taken on complaint or suspicion or in channels of trade where sophistication is more likely to occur.

Three unofficial samples of olive oil were examined for purchasers and all appeared to be genuine.

#### Butter

Four official samples of butter were examined.

Analyses:

No.	G-171 %	KC-196 %	KC-302 %	N-138 %
Moisture.....	12.87	22.23	14.06	13.07
Ash (salt).....	2.25	2.00	2.05	2.19
Casein.....	0.86	0.87	0.72	0.76
Fat.....	84.02	74.90	83.17	83.98
Artificial color.....	present	none	present	none

Sample KC-196, made by Norman Dairy, New Canaan, contained excess water and less than the standard amount (80%) of fat. It was also misbranded because the package did not show the name and address of the packer; and there was no declaration of net weight.

Two samples contained artificial color which was not declared. The food law in this State does not exempt butter from the requirement to declare artificial color if present.

Four samples were submitted by purchasers on suspicion of quality but no evidence of adulteration was found.

#### FOOD EXAMINED FOR EVIDENCE OF CONTAMINATION

C. E. SHEPARD AND H. J. FISHER

Thirty-three official samples, including tea, corn starch, pop corn, canned vegetables, flour, sugar, salt, peanuts, cereal products and meat products were submitted by the Commissioner to be examined for evidence of filth or other contamination.

Three of these, salted peanuts and two samples of flour, were infested with insects; one sample, corn meal, was found to be contaminated with filth (rodent hairs and excreta), and one sample of chocolate syrup was moldy.

Fifty-four samples were submitted directly by health officers and others, chiefly on suspicion of unfitness for food purposes or to determine the cause of alleged illness. One of these, a sample of sugar said to have caused illness may well have done so. It contained about 15 per cent of boric acid, evidently an instance of accidental contamination in the home.

#### HONEY

H. J. FISHER AND D. C. WALDEN

Four official samples of honey were examined.

One sample N-146, packed by the H & M Packing Co., Inc., Brooklyn, N. Y., was grossly short weight. It was not further examined.

Two samples had the flavor and composition of true honey, but one of them was an opaque, cream-colored paste. It was called "creamed" honey and distributed by Meyer and Lange, New York City. It appeared to be full of minute air-bubbles, an effect that could conceivably be accomplished by whipping.

One sample was strawberry-flavored honey "Rexley brand", packed by Tavern Fruit Juices Co., Inc., Brooklyn, N. Y. The flavor of honey predominated but it also had a true strawberry flavor.

#### MEAT AND MEAT PRODUCTS

C. E. SHEPARD, R. T. MERWIN AND D. C. WALDEN

#### Hamburg

Fourteen official samples of hamburg were examined. No preservative (sulphite) was detected in any of the samples.

A regulation limiting the proportion of fat in hamburg has been proposed and 25 per cent appears to be a reasonable limit. Some control officials regard 20 per cent as liberal enough while others regard 27 per cent as not excessive.

Fat was determined in six of the samples submitted and the range for fat content was 26.4 to 37.7 per cent. The average was 30 per cent. Selling fat at the price of meat is an unfair practice especially in times of strict rationing and high prices of meat and meat products.

Seven samples of chopped meat were submitted by health officers and others. One contained sulphite, an illegal preservative.

#### Sausage, etc.

Twenty-one samples of frankfurt sausage were submitted by the Commissioner. Seven were found to contain starchy filler in excess of the limit of 3.5 per cent fixed by government regulation.

One sample was corned mutton of Argentine packing. No evidence was found that the article was not as labelled.

#### MILK AND MILK PRODUCTS

#### Market Milk

O. L. NOLAN

Two hundred and ten samples of milk have been tested for producers, consumers and health officers. One sample examined for the Bridgeport Department of Health was found to be watered milk. Most of the samples were submitted by producers and were tested only for fat content.

Vitamin D Milk

R. B. HUBBELL

One hundred and fifteen samples of vitamin D milk were examined during the year and 95 per cent of the samples contained the guaranteed unitages of vitamin D or were sufficiently close to the guaranty to be passed without question.

The results of the vitamin D tests are given in Table 2.

The following summary shows the inspection record of this product since it was first offered for sale in this State in 1935. Only 10 per cent of all samples examined have been definitely below guaranty.

SUMMARY OF VITAMIN D MILK ASSAYS, 1935-1943, INCLUSIVE

Year	No. of samples tested	Satisfactory	Passed	Below guaranty
1935	14	10	2	2
1936	62	49	6	7
1937	78	65	6	7
1938	87	79	3	5
1939	84	63	10	11
1940	77	63	8	6
1941	92	62	14	16
1942	101	80	10	11
1943	115	99	10	6

Miscellaneous

Two samples of ice cream and one of evaporated milk were also tested.

TABLE 2. SUMMARY OF ASSAYS OF VITAMIN D MILK

City or Town	Dairy	No. of samples tested	Satisfactory	Passed	Below unitage claimed	
Avon	Woodford Farm	2	2	...	...	
	Bloomfield	Chris Neilsen & Son	3	2	...	1
	Bridgeport		2	2	...	...
			2	2	...	...
			2	2	...	...
			2	2	...	...
			2	2	...	...
			2	2	...	...
			2	2	...	...
			2	2	...	...
	2		2	...	...	
Bristol	E. H. Elton	3	3	...	...	
Clinton	Burr Dairy	1	1	...	...	
Danbury	Rider Dairy	3	3	...	...	
Fairfield	Wade's Dairy	2	2	...	...	
Greenwich	Round Hill Farm	4	3	1	...	
Hamden	Brock-Hall Dairy	4	4	...	...	
Hartford	Bayer's Dairy	1	...	...	1	
	Bergen's Dairy	3	3	...	...	
	Bryant & Chapman Co.	2	2	...	...	
	Cloverdale Dairy	2	2	...	...	
	Farmers' Cooperative	2	2	...	...	
	Highland Dairy	3	2	1	...	
	Lincoln Dairy	3	3	...	...	
	Petersen Farms	3	2	1	...	
Kensington	Ferndale Dairy	2	2	...	...	
Litchfield	Preston Davenport	1	...	...	1	
	Tollgate Farms	1	1	...	...	
Manchester	Dart's Dairy	2	2	...	...	
	West Side Dairy	2	2	...	...	
Milford	Cold Spring Farms	2	1	...	1	
New Britain	United Milk Co.	2	2	...	...	
New Haven	Clark Dairy	2	2	...	...	
	Knudsen Bros. Dairy	2	1	...	1	
	New Haven Dairy	3	2	1	...	
	Sagal-Lou Dairy	2	2	...	...	
	J. H. Story	2	2	...	...	
Newington	J. A. Moylan	1	1	...	...	
	Spring Brook Dairy	2	2	...	...	
New London	Radway's Dairy	2	2	...	...	
New Milford	Sunny Valley Farms	3	3	...	...	
Norwalk	Borden Co.	2	2	...	...	
	Harrick Dairy	3	3	...	...	
	Strawberry Hill Dairy	3	1	2	...	
	Sanford's Overlook Farms	1	1	...	...	
Oakville	Deary Bros.	2	2	...	...	
Putnam	Von Werder Farms	1	1	...	...	
Shelton	Clear View Dairy	4	2	2	...	
Springdale	Maplehurst Dairy	3	3	...	...	
Stratford	Deering Dairy	2	1	1	...	
Thompsonville	Skipton's Dairy	2	2	...	...	
Torrington	Torrington Creamery	3	2	1	...	
Waterbury	Brock Hall Dairy	2	2	...	...	
	Brookside Dairies	2	2	...	...	
	Worden's Dairy	2	1	...	1	
Watertown	Sanford's Overlook Farms, Inc.	1	1	...	...	
Totals		115	99	10	6	

## MAPLE SYRUP, etc.

H. J. FISHER

Two official samples of maple syrup were examined and both were passed. No evidence of adulteration was found.

A sample of "pancake syrup" was examined as to labelling only. It was misbranded in that it bore no statement of net weight or of ingredients.

## PICKLES, CONDIMENTS AND SAUCES

H. J. FISHER

Seven official samples of pickles and relishes were submitted for review of labels. Three were passed with minor criticisms. Four were misbranded in that they were articles for which no definition and standard has been promulgated and the labels failed to bear lists of ingredients.

Although the law does not require it, some manufacturers give label information as to ingredients in articles of food for which definitions and standards of identity have been adopted. This is a commendable practice because, as a matter of informative labelling, the ingredient picture of standardized foods is of as much interest and importance to the purchaser as that of unstandardized foods.

A sample of "Mos-ness French Sauce", Mosness Food Products, Boston, was examined. The label declaration describes the product as non-fattening. The ingredients are declared to be "oil, vinegar, sugar, flavoring, salt and spices". It contains about 36 per cent of oil and about 18 per cent of sugar. The oil is a food oil, largely or entirely saponifiable. Together the oil and sugar yield about 400 calories per 100 grams of sauce, and the "non-fattening" claim is not convincing.

## SALAD DRESSINGS

H. J. FISHER AND R. T. MERWIN

Eighteen samples of salad dressings were submitted by the Commissioner. The oil ingredient in three of these was mineral oil.

Mineral oil is a non-food oil and is not a suitable ingredient of salad dressing for general food purposes. It is permissible in dressings sold for special dietary purposes (low-calorie diets) when labelled

to show its restricted purpose as provided by the special purpose foods clause in the Food, Drug and Cosmetic Act. But packing such dressing in large-sized containers (e.g., 1 gallon), is an invitation to misuse, especially when sold to hotels and restaurants. Such misuse was found in one case.

In sample W-157, Thallon-naise, the oil ingredient was substantially all mineral oil. The container was labelled to show its special dietary purpose. Inspection evidence, however, revealed a large stock of gallon jars of this dressing in a restaurant; and the dressing was served there as mayonnaise.

Sample W-166, Eee Bee Brand, Minermaise, listed mineral oil among its ingredients, but the label did not reveal any special purpose feature.

Sample E.S.-93, Golden brand salad dressing, was labelled as containing cooked starch and mayonnaise, but it contained mineral oil. There was no special purpose declaration on the label.

In the remaining samples no evidence of mineral oil was found. They were passed with suggestions or criticisms as to labels in some cases.

## SPRAY RESIDUE

C. E. SHEPARD AND J. L. SHEPARD

One hundred and thirty-nine official samples of apples from orchards in the State were submitted by the Dairy and Food Commission.

The tolerance for lead (.05 grain per pound) and arsenic (.025 grain  $As_2O_3$  per pound), named in 1940 by the U. S. Public Health Service and adopted by the Food and Drug Administration, has been used as the guide in judging samples submitted. Only two samples exceeded the limit for lead and these also carried slight excesses of arsenic. The amounts found were lead, .056 and .064, and arsenic, .029 and .028, grain per pound in the two samples, respectively. In routine examinations only lead was determined. Arsenic was determined only in those samples showing excess of lead.

Six samples of apples, grapes and grape juice were examined for growers. Two samples of grapes carried 11.8 and 16.8 parts per million of lead. This is 1.7 and 2.4 times the tolerance and washing the grapes with dilute acid and salt solution was recommended.<sup>1</sup> A sample of grape juice made from the grapes carrying the higher amount of lead contained 6.5 p.p.m. of lead.

1. To 5 gallons of water in a wooden tub or stone crock add 7 ounces of table salt, 18 fluid ounces of concentrated hydrochloric acid and mix thoroughly. Immerse the fruit in the solution for two minutes and rinse thoroughly with water.



Six samples of vegetables were submitted by home gardeners. The vegetables, celery, beets, turnips, cabbage and rhubarb, had been grown in soil previously treated with lead arsenate to destroy Japanese beetles.

The celery, cabbage and rhubarb gave negative tests for arsenic; the beets and turnips showed negligible amounts, .2 and .07 p.p.m., respectively.

#### MISCELLANEOUS

Eleven official samples of miscellaneous foods were submitted chiefly for criticism of labelling.

Seven were misbranded in one or more respects; the others were passed.

#### DRUGS, etc.

##### DENATURED ALCOHOL

C. E. SHEPARD

Having noted some flagrant abuses in the sale of denatured alcohol in paint and hardware stores, the Dairy and Food Commissioner made a survey of market conditions and submitted 97 samples for examination as to identity and/or labelling.

Twenty-one of the samples submitted contained wood alcohol. They were sold in bulk without any identification whatever, or were falsely labelled "alcohol".

The remaining 76 samples were labelled as "denatured alcohol" with the usual cautionary statement, or labelled as "poison" or otherwise to warn the purchaser of the identity of the articles.

Section 2674 of the General Statutes prohibits the sale of any wood alcohol unless labelled "wood alcohol, poison"; and it further prohibits the sale of any article of food or drink, or of any drug, or of any perfume or toilet preparation containing any wood (methyl) alcohol. No specific provision is made for the labelling of denatured alcohol, but in case the denaturing is accomplished wholly or in part by the addition of wood alcohol the statute cited was considered to be applicable; and in any case the article should be so labelled as to inform the purchaser of its true identity and with proper warning statements.

Three other samples were straight wood alcohol without proper labelling.

#### AMMONIATED MERCURY OINTMENT

H. J. FISHER AND R. T. MERWIN

This official preparation formerly contained 10 per cent of ammoniated mercury (7.1 to 8.7 per cent of mercury), but the active ingredient has been reduced to 5 per cent (3.5 to 4.5 per cent of mercury) in the current Pharmacopoeia, U.S.P. XII.

Sixty samples were submitted by the Dairy and Food Commissioner. Of these, 25 were 10 per cent preparations, no doubt manufactured when U.S.P. XI was in effect. The remainder were 5 per cent preparations.

All met the requirements of the respective standards for mercury content except three of the 5 per cent samples in which the mercury was excessive in one and deficient in two.

As to labelling, 29 samples bore directions for use and warning statements that were satisfactory or acceptable. A satisfactory warning statement is one that cautions the user that this preparation may cause irritation of the skin and that application to large areas may cause serious mercury poisoning (Conn. Agr. Exp. Station Bul. 460, p. 453, 1942). Other forms of statement that convey an equal warning are acceptable.

For 20 samples directions or warning statements, or both, were omitted or were regarded as unsatisfactory.

Eleven samples bore statements that restricted the articles to prescription use and in such cases it is presumed that sales will be made on prescription only.

#### MILD MERCURIAL OINTMENT

H. J. FISHER

This official preparation formerly contained 30 per cent of mercury, but the mercury content has been reduced to 10 per cent. U.S.P. XII specifies that the mercury content shall be not less than 9 nor more than 11 per cent.

Thirty-six samples were examined of which 19 contained substantially 10 per cent of mercury as required by U.S.P. XII now in effect. Seventeen samples contained 30 per cent of mercury and were evidently old stock.

Twenty-four samples bore directions for use and adequate warning statements, and 10 did not. In one sample the warning statement did not recognize the possibility of poisoning through application to the skin. One other bore the legend "to be used as directed by the physician". In our opinion this limits the article strictly to prescription use. No directions or warning statement appeared on the label.

## IODINE PREPARATIONS

H. J. FISHER

### Tincture of Iodine

Tincture of iodine contains in each 100 cc 6.8 to 7.5 grams of iodine and 4.7 to 5.5 grams of potassium iodide.

Eleven official samples were examined. All were passed as to composition, but only five had directions for use and cautions against misuse.

### Mild Tincture of Iodine

This preparation differs from tincture of iodine in that it is made with sodium iodide instead of potassium iodide, and both iodine and iodide are present in lesser proportion.

The mild tincture contains in each 100 cc from 1.8 to 2.2 grams of iodine and from 2.1 to 2.6 grams of sodium iodide.

Thirty-four official samples were examined. Twenty-three were passed as to composition. Eleven samples did not meet the specifications of the U.S.P. in all respects. Some contained potassium iodide instead of sodium iodide and others were not within the specified limits for iodine or iodide, or both.

Seventeen of the samples bore adequate directions for use and suitable cautions against misuse. The remaining seventeen bore no directions or cautionary statements

### Strong Solution of Iodine

Strong Solution of Iodine is a new official name for Lugol's solution, the latter name being retained, however, as a synonym. Compound Solution of Iodine U.S.P. XI is another synonym recognized in the present Pharmacopoeia U.S.P. XII.

This preparation contains in each 100 cc 4.5 to 5.5 grams of iodine and 9.5 to 10.5 grams of potassium iodide. It is an aqueous solution and not a tincture.

A new preparation of iodine has been included in U.S.P. XII. Its official name is Solution of Iodine. It is especially adapted for wound dressing in first aid work. It is an aqueous solution containing in each 100 cc 1.8 to 2.2 grams of iodine and 2.1 to 2.6 grams of sodium iodide. It contains the same ingredients in the same proportions as the Mild Tincture but it is a water solution instead of an alcoholic solution (tincture).

Thirty-eight official samples of aqueous solutions of iodine were examined. There was apparently some confusion as to what was called for, but taking the samples as labelled, 30 were labelled Lugol's Solution or Compound Solution of Iodine U.S.P. XI, and eight were labelled Solution of Iodine.

Of the latter, only three were correct as to composition; five were made with potassium iodide instead of sodium iodide, or the amounts of one or both ingredients were not within the official limits specified for this article. Moreover, only one sample bore directions for use.

Of thirty samples labelled as Lugol's solution, 26 were passed as to composition but none bore directions for use or cautions against misuse.

With so many preparations of iodine, some of them relatively new, it was anticipated that there might be some confusion in dispensing them. The differences are shown in the following summary:

Name	Solvent	Ingredients in 100 cc		
		Iodine	potassium iodide	sodium iodide
Tincture of Iodine.....	Alcohol...	6.8—7.5	4.7—5.5	.....
Mild Tincture of Iodine...	Alcohol...	1.8—2.2	.....	2.1—2.6
Strong Solution Iodine, (Lugol's Solution, Compound Solution of Iodine U.S.P. XI).....	Water.....	4.5—5.5	9.5—10.5	.....
Solution of Iodine.....	Water.....	1.8—2.2	.....	2.1—2.6

Directions for use and cautions against misuse appeared on some of the labels, especially those that were dispensed in original commercial packages. When small quantities (1 or 2 ounces) are dispensed from bulk, the objection may well be made that it is not reasonably possible to type or write directions and warning statements in the space available on such small containers. But it is quite evident that stock labels are available for small containers and the alternative is to use such stock labels or to stock the drug in unit packages suitable for retail trade.

## TURPENTINE

C. E. SHEPARD AND E. M. BAILEY

Seventy-nine samples of turpentine were examined for the Dairy and Food Commissioner under the provisions of Section 2461 of the General Statutes relating to adulterated turpentine.

Gum turpentine is made by distilling the gum or oleoresin that exudes from the chipped or scarified trunks of living pine trees. Wood turpentine is made by steam distillation or destructive distillation of resinous stumps of dead or fallen pine timber. Sulphate wood turpentine is a type of turpentine recovered from pine wood in the sulphate process of making paper pulp. It is so refined as to comply with specifications for gum or wood turpentine except as to odor.

Adulteration of turpentine may be due to admixtures of cheaper oils derived from petroleum and which resemble turpentine in physical character, such as benzine, kerosene, "painters' naphtha" and "mineral spirits". Products of coal-tar origin such as benzol (not the same as benzene), xylol or coal-tar naphtha are also sometimes used as adulterants.

The statute provides no numerical specifications for pure turpentine. The specifications given in Bulletin 898, U.S. Department of Agriculture, were used as a guide in judging the samples submitted and are as follows:

	Maximum	Minimum
Specific gravity at 15.5° C. ....	0.875	0.862
Refractive Index at 20° C. ....	1.478	1.468 <sup>1</sup>
Unpolymerized residue,		
gum turpentine .....	2.0	.....
wood turpentine .....	2.5	.....
Initial B.P. degrees C. ....	160.0	150.0
Distilling below 170° C., per cent	.....	90.0

Of the samples submitted, 54 were entirely within the limits prescribed for pure turpentine. Unpolymerized residues ranged from a trace to 2.5 per cent by volume, and averaged 1.9 per cent.

Twenty-one were within the limits as to specific gravity and refractive index, but the percentages of unpolymerized oil were somewhat excessive, ranging from 2.6 to 3.9 per cent. The refractive indices of the unpolymerized residues in nearly all cases, however, were not less than the minimum of 1.480 given in A.S.T.M. specifications for wood turpentine; and in no case was it significantly less than that minimum.

One sample contained 4.1 per cent of unpolymerized oil, the refractive index of which was 1.457. This was suspicious and probably was manipulated. Two samples were not turpentine but rather

1. A.S.T.M. specifications give 1.465 for gum and 1.463 for wood turpentine.

paint solvents, one of them being so labelled. One sample had the odor of turpentine but it was contaminated with unidentified foreign material.

Many of the samples were purchased in bulk and were not in original commercial containers.

## MISCELLANEOUS DRUGS, COSMETICS, etc.

H. J. FISHER AND R. T. MERWIN

## Drugs

Eleven samples of miscellaneous drugs were examined for the Commissioner, health officers and others.

Among these were three samples of *Castoria*, a well-known laxative preparation for children. The samples were submitted following rather wide-spread complaints of unfavorable symptoms following administration of the remedy. From our chemical examination we could find nothing to suggest a probable cause of the ill effects of which consumers complained. That the product did produce nausea and other symptoms appears not to be questioned but the causes were obscure. The manufacturers of the product made an exhaustive investigation and in due time were able to correct the difficulty.

Sta. No. 7452, *Amzol*. American Drug and Chemical Co., Minneapolis, Minn. A disinfectant and germicide. Examination indicated the preparation to be essentially a solution of sodium benzylphenate (equivalent to approximately 16 per cent of benzylphenol) in 30 per cent isopropyl alcohol, colored with a coal-tar dye, probably fluorescein.

## Cosmetics

Twelve samples of miscellaneous cosmetic preparations were examined. They were submitted by the Commissioner, in some cases at the request of the manufacturer, distributor or user. The following are recorded for reference.

P-104. *Hair Lacquer*. Paramount Beauty Service, Inc., Springfield, Mass. The preparation is chiefly, or wholly, an aqueous solution containing in each 100 cc about 4.5 grams of rosin sodium soap (judging from the total solids 4.57 grams per 100 cc). Chemical tests and the odor indicated natural rosin as a component of the article rather than synthetic resins to some of which skin irritation has been attributed.

S-268. "A" *Inecto* 4¾, hair dye. Sales Affiliates, New York City. The preparation is an alkaline solution containing resorcinol as the major active ingredient with a little 2,5 diaminotoluene and perfumed oil. Other ingredients, if present, were not identified. The article bears on the label suitable directions for preliminary skin tests before using; and a warning not to use it on eyelashes or eyebrows.

S-265. "B" *Inecto*. This preparation accompanies *Inecto* "A" above and consists of or contains hydrogen peroxide.

S-267 *Instant Clairol*. No. 17-A. Clairol, Inc., Stamford, Conn. This is a medium brown hair dye bearing cautionary and warning statements cited above. The article consists of (1) a bottle of liquid; (2) a package containing 2 large white tablets, and (3) a package containing 1 small white tablet.

The composition of the several parts of the sample appear to be as follows:

(1). The liquid is an ammoniacal solution of organic amines containing about 16 per cent of potassium soap. The only amine identified was 2,5 diaminotoluene, but probably the bulk of amino compounds consists of aminophenols or aminosulfonic acids. There was not more than a trace of resorcinol, if any.

(2). The large tablets consist of, or contain, urea hydroperoxide.

(3). The small tablet was not analyzed.

S-264. *Roux Lash and Brow Tint*. Roux Laboratories, New York City. The sample consisted of three bottles labelled "No. 1 Brown", "No. 2 Brown", "Stain Remover", some paper shields and two glass cups. The liquid preparations appeared to be in the order named, a dilute isopropyl alcohol solution of pyrogallol, a solution of silver ammonium nitrate, and a sodium hypochlorite solution.

S-269. *Roux Lash and Brow Tint*. Roux Laboratories, New York City. Qualitative tests showed presence of silver, ammonia and nitrate. Preparation is a silver ammonium nitrate solution.

S-270. *Roux Lash and Brow Tint*. Roux Laboratories, New York City. Qualitative tests indicate the preparation to be an isopropyl alcoholic solution of tannic acid and sodium sulphite.

S-266. *Laxol Oil Shampoo Tint*. Sales Affiliates, Inc., New York City. A perfumed dark brown liquid. Examination indicates the product to be an ammoniacal solution of resorcinol containing alkyl sulphate, perfume, a little oil and some soap. Other ingredients, if present, not detected. Tablets accompanying the liquid consist of, or contain, urea hydroperoxide.

P-57. *Helene Curtis Empress Cold Wave*. National Mineral Co., Chicago. The sample consisted of (1) 2 ounce bottle of Preliminary Lotion Regular; (2) 2¾ ounce bottle "Waving Compound Regular"; (3) a paper of Neutralizing Fixitive; (4) a paper cap; (5) two test curl pads.

Examination of the components of the sample indicated the following composition:

(1) Preliminary Lotion, ammonium sulphite, 9.39 grams per 100 cc; free ammonia 0.49; alcohol, 0.25; ash, 0.06, perfume present.

(2) Waving Compound. Ammonium thioglycollate, 7.23 grams per 100 cc; free ammonia, 0.82; ash, 0.05, perfume present.

(3) Neutralizing Fixitive. Powder consisted of, or contained, borax and sodium lauryl sulphate (which according to directions are to be dissolved in hydrogen peroxide before use).

Other ingredients, if present, were not detected, but some wetting agent may be present in the liquid.

S-273. *Hygienic Powder*. Dainty Maid, Inc., Middlefield, Conn.

Analysis: Boric acid, 95.97 per cent; zinc oxide, 0.62; chlorine, 0.32; salicylic acid, 0.35, sulphate present.

Calculated composition: Boric acid, 95.97 per cent; zinc sulphate, 2.19; sodium chloride, 0.53; salicylic acid, 0.35, undetermined, 0.96.

Sta. No. 7674. *Shampoo 112 and 7675, Scalp Lotion 1052*, submitted by State Board of Pharmacy were examined. Analysis indicated the shampoo preparation to be a 32 per cent aqueous solution of potash soap perfumed with extractives of pine. The scalp lotion was essentially an aqueous solution of resorcinol (34 per cent) and hydroxyquinoline sulphate (0.4 per cent, approximately).

S-256. *Face Powder*. Lady Esther, Chicago. Qualitative tests indicated the powder to consist of a talc-stearate-zinc oxide base probably a little chalk, with perfume and coloring.

#### Rubber Prophylactics

Nineteen samples submitted by the Dairy and Food Commissioner were examined, of which two contained defective units.

## WARNING STATEMENTS IN LABELLING OF CERTAIN DRUGS

Section 901 e, (f) (2) of the 1939 supplement to the General Statutes provides that a drug shall be deemed to be misbranded "unless its labelling shall bear such adequate warnings against use in those pathological conditions or by children where its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application, in such manner and form as shall be necessary for the protection of users."

The responsibility for suitable warning statements rests with the manufacturer or distributor of drugs, but in response to requests for suggestions as to acceptable statements, the Dairy and Food Commissioner issued the following notice to druggists and drug manufacturers. The suggested statements are in substantial accord with statements suggested by the Food and Drug Administration under the corresponding section of the federal act. The list is not complete and the manufacturer or distributor is not relieved of responsibility under the section referred to in the case of drug preparations not included.

- I. Cathartic or laxative drugs (except castor oil and phenolphthalein) which act as irritants to the gastro-intestinal tract or stimulate intestinal peristalsis:  
"Warning: Not to be used when abdominal pain (stomach-ache, cramps, colic), nausea, vomiting (stomach sickness) or other symptoms of appendicitis are present."  
"Frequent or continued use of this preparation may result in dependence on laxatives."
- II. Castor Oil:  
"Warning: Not to be used when abdominal pain (stomach-ache, cramps, colic), nausea, vomiting (stomach sickness) or other symptoms of appendicitis are present."  
"Frequent or continued use of this preparation may result in dependence on laxatives."  
"Do not use during pregnancy except on competent advice."
- III. Phenolphthalein:  
"Warning: Not to be used when abdominal pain (stomach-ache, cramps, colic), nausea, vomiting (stomach sickness) or other symptoms of appendicitis are present."  
"Frequent or continued use of this preparation may result in dependence on laxatives."  
"Important: If a skin rash appears, discontinue use."
- IV. Roughage materials (so-called) intended for use in constipation: "Important: All varieties of constipation are not benefited by this preparation. It should be particularly avoided in cases such as spastic constipation in which abdominal discomfort or pain may be present."
- V. Mineral oil for oral administration:  
"Important: Do not take directly before or after meals."  
Note: There will be no objection to an explanation added to the above statement indicating that mineral oil may interfere with the absorption of pro-vitamin A, carotene, and other substances.
- VI. Sodium perborate intended for local use in the mouth and throat:  
"Warning: This preparation may cause irritation and inflammation of the gums, tongue and mucous membranes of the mouth. It should be discontinued at the first sign of irritation or soreness. In case of doubt, consult your physician or dentist."

- VII. Nose drops, inhalants and sprays:
  1. Those that contain oil as a vehicle or base:  
"Caution: Frequent or excessive use of this preparation may cause injury to the lungs. Do not use at all in infants and younger children except on competent advice."
  2. Those that contain ephedrine, epinephrine, amphetamine (benzedrine), prepadrine, neosynephrin and other vaso-constricting drugs of similar activity:  
"Caution: Frequent or continued use may cause nervousness, restlessness or sleeplessness. Individuals suffering from high blood pressure, heart disease, diabetes, or thyroid trouble should not use this preparation except on competent advice."  
Note: The above warning may also be appropriate for the same ingredients intended for internal administration. However, amphetamine (benzedrine) indiscriminately distributed and intended for its systemic effect is dangerous.
- VIII. Resins, oleoresins, and volatile oils intended for their effect upon the urinary tract:  
"Warning: If disturbance of the stomach or bowels or skin rash is noticed, discontinue use."
- IX. Atropine, hyoscyamine, scopolamine and pharmacologically related drugs:  
"Caution: Frequent or continued use of this preparation should be avoided. Use cautiously if dryness of the throat occurs: discontinue if rapid pulse or blurring of vision appears."  
"Warning: This preparation should not be taken by elderly people except on competent advice."
- X. Iodine or iodides: (Internal use)  
"Warning: Do not use in cases of lung disease, chronic cough or goiter (thyroid disease) except upon the advice of a physician."  
"If a skin rash appears, discontinue use."
- XI. Carbolic acid in preparations for external application:  
Note: Products containing more than 2 per cent of carbolic acid are not considered safe for indiscriminate distribution.  
"Warning: When applied to fingers and toes, do not use a bandage. "Apply according to directions for use, and in no case to large areas of the body."
- XII. Cresols, creosote, guaiacol and similar substances intended for use as douches.  
Note: Preparations intended for use after dilution should bear adequate directions for preparing solution and thorough mixing before pouring into douch bag.  
"Warning: The use of solutions stronger than those recommended may result in severe local irritation or burns or serious poisoning."
- XIII. Cresols, creosote, guaiacol and similar substances intended for surface application:  
"Warning: Do not apply to large areas of the body."
- XIV. Nux vomica and strychnine:  
"Warning: Do not take more than the dosage recommended. Frequent or continued use is to be avoided and its use for children and elderly persons may be especially dangerous."
- XV. Acetanilid:  
"Warning: Frequent or continued use may be dangerous, causing serious blood disturbances, anemia, collapse, or a dependence on the drug. Do not take more than the dose recommended. Not to be given to children."
- XVI. Acetophenetidin:  
"Warning: Frequent or continued use may be dangerous, causing serious blood disturbances."  
"Do not take more than the dosage recommended."

- XVII. Antipyrine:  
 "Warning: Frequent or continued use may be dangerous, causing serious blood disturbances."  
 "Do not take more than the dosage recommended."
- XVIII. Bromides:  
 "Warning: Frequent or continued use may lead to mental derangement, skin eruptions or other serious effects."  
 "Do not take more than the dosage recommended."  
 "Not to be taken by those suffering from kidney disease."
- XIX. Chlorates in mouth washes and gargles:  
 "Caution: Avoid swallowing."
- XX. Arsenic preparations except those employed as chemotherapeutic agents for specific diseases such as syphilis, amebic dysentery, etc.:  
 "Caution: Continued or prolonged use may result in serious injury."
- XXI. Quinine, cinchonine and cinchonidine:  
 "Caution: Discontinue use if deafness, skin rash, visual disturbances (eye trouble) or other serious symptoms appear."
- XXII. Silver preparations:  
 "Caution: Prolonged or frequent use of this preparation may result in permanent discoloration of the skin and mucous membranes."
- XXIII. Preparations sold under representations relating to coughs due to colds:  
 "Important: Persistent coughs may indicate the presence of a serious condition. Do not use this preparation if there is a high fever or the cough has persisted for 10 days without securing medical advice."
- XXIV. Mercury:  
 1. Intended for administration by mouth or as a douche:  
 "Warning: The prolonged or frequent use of this preparation or the use of amounts in excess of the prescribed directions may cause serious mercury poisoning."  
 2. Intended for application to the skin:  
 "Warning: This preparation may cause irritation of the skin, and the application to large areas may cause serious mercury poisoning."  
 Note: This warning is not applicable to mercury bleach creams.
- XXV. Rubefacients and counter-irritants such as ammonia, arnica, cantharides, cayenne pepper (capsicum), chloroform, ether, kerosene, methyl salicylate, pepper, mustard, or turpentine oil intended for surface application:  
 "Caution: This preparation may cause excessive irritation of the skin particularly if applied with rubbing. Avoid getting it into the eyes or on mucous membranes."
- XXVI. Goa Powder and chrysarobin:  
 "Caution: The use of this product over large skin areas may cause kidney irritation."  
 "Warning: Keep away from the eyes."
- XXVII. Digitalis, strophanthus, and pharmacologically related drugs in therapeutically effective proportions:  
 Note: Potent doses of these drugs have cumulative action and may lead to disastrous effects upon the heart and circulation. They should be used only under the direct supervision of a qualified physician. They should not be sold at retail except on prescription.
- XXVIII. Anthelmintics:  
 Note: The following preparations in therapeutically potent doses are not safe for indiscriminate distribution and should only be used under the direct supervision of a physician:  
 1. Carbon tetrachloride:

- Note: Specific adequate directions for administration of a saline cathartic after use of this drug should be given:  
 "Warning: Avoid castor oil or other preparations or foods containing oil or fat while this drug is being administered. The use of this preparation in debilitated children and persons addicted to alcohol is dangerous."
2. Tetrachlorethylene:  
 Note: Specific adequate directions for the administration of a saline cathartic should be given.
3. Aspidium (Male Fern):  
 Note: Specific adequate directions for administration of a saline cathartic should be given:  
 "Warning: Avoid castor oil or other preparations or foods containing oil or fat while this drug is being administered."
4. Santonin:  
 "Very important: Shake vigorously before using. Failure to do so may result in serious injury."  
 "Caution: The use of more than the prescribed dose is dangerous."  
 "Avoid castor oil or other preparations or foods containing oil or fat while this drug is being administered."  
 "The prescribed dose should not be repeated within 7 days."
5. Chenopodium oil:  
 Note: Specific adequate directions for administration of a cathartic, preferably castor oil, should be given.
6. Thymol:  
 Note: Specific adequate directions for administration of a saline cathartic should be given.  
 "Warning: Avoid alcohol or any preparation containing alcohol before or during administration of this drug."

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#### DRUGS WHICH MAY NOT BE

#### SOLD AT RETAIL EXCEPT ON PRESCRIPTION

The Food, Drug and Cosmetic law of this State makes illegal the sale at retail of any drug which contains any quantity of amidopyrine, barbituric acid, cinchophen, dinitrophenol or sulfanilamide, or any derivative of any of these substances, except on prescription.

In addition thyroid, benzedrine (for internal use), chloral and paraldehyde should be likewise restricted according to agreement between the Dairy and Food Commissioner and the Pharmacy Commission, and the secretary of the Pharmacy Commission has so advised the retail trade.

Drugs which the Federal Food and Drug Administration consider too dangerous for sale at retail except on prescription are listed below:

Aconite	Cantharides (for internal use)
Amidopyrine	Chrysarobin or goa powder
Anthelmintic drugs:	Chrysophanic acid
Carbon tetrachloride	Colchicine
Male fern (aspidium)	Colchicum
Santonin	Emetine
Tetrachlorethylene	Phosphides
Thymol	Phosphorus
Wormseed oil (chenopodium oil)	Radium
Barbiturates	Sulfanilamide
Benzedrine sulfate (for internal use)	Sulfapyridine
Cinchophen, and derivatives including neocinchophen	Sulfathiazole
	Tansy, Tansy oil
	Thiocyanates
	Thyroid

Bromides—requiring dosage of more than thirty grains per day or more than fifteen grains during any three-hour period.

Acetanilid—in the case of medicines providing a total daily intake of more than five grains or more than three grains during any three-hour period.

Bromide-Acetanilid Combination—providing for more than a total daily dosage of fifteen grains sodium bromide and five grains acetanilid, or more than 5½ grains sodium bromide or 2½ grains acetanilid during any three-hour period. Comparable amounts of other bromide preparations are subjected to the same restrictions.

Acetophenetidin—in daily dosages of more than 15 grains.

Antipyrine—in daily dosages of more than 15 grains.

Epinephrine—in solution of 1 per cent or stronger.

Ipecac—in daily doses greater than 10 grains.

Strychnine—in daily dosages greater than 1/20 grain.

The Federal Food and Drug Administration also feels that products containing therapeutically effective proportions of digitalis, squill, strophanthus or any other pharmacologically related drugs will not be safe for indiscriminate distribution.

It has been ruled that the enforcement of the State and local Acts relating to the sale of drugs and the practice of Pharmacy in no way restricts the application of the Federal Law to the distribution by retailers of drugs which have been in interstate commerce.

#### COLLABORATION WITH OTHER DEPARTMENTS

Analytical work done for other State and Station departments not included in other reports from this laboratory is summarized as follows:

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Station departments:	
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Soils.....	87
Entomology.....	212
Botany.....	27
Genetics.....	3
Total.....	972

#### BABCOCK GLASSWARE, etc.

#### J. L. SHEPARD

Under the provisions of Sections 2463 and 2488 of the General Statutes, glassware used in testing milk and cream, and thermometers used in milk-pasteurizing plants have been examined as follows:

	Pieces	Imperfect or inaccurate
Babcock glassware.....	2,635	10
Thermometers.....	169	7
	2,804	17