Pure Food

Inspection and Regulation

Term Paper Submitted to Dr. Henderson
in the Course of Sociology 53
"The Family"

June 13, 1913

Emma Abbott Clark
Pure Food

Inspection and Regulation.

The discussion of this subject seems to fall naturally under two heads: that of food inspection and regulation in interstate and intrastate commerce, and that in international commerce. There is, however, but one law regulating the available standards of food products in the United States, whether produced or manufactured in this country or abroad.

It has therefore seemed the most satisfactory handling of the matter to show the development chronologically of inspection and regulation (assuming the standpoint, of course, of an American); to briefly describe the Food and Drugs Act of 1904, its enforcement and working; and the procedure of inspection.

After this survey of the legal or theoretical aspect of the matter, the practical side will be taken up, and examples of adulterations in butter, preserved fruits, flour, and spices, the use of unfit and unwholesome materials in meat products, of disinfectants and preservatives in milk, etc. will be
considered— as such conditions have existed, or now exist, and what remedies can be applied.

The purpose of this discussion is to ascertain to what extent legislation has sought to protect the health of the community, how far this legislation has been carried out, and what remains still to be accomplished.
Sources of Material

Books

Annual Reports of U.S. Dept. of Agriculture

1895. Butter Substitutes; Emil de Schweinitz

1904. Inspection of Foreign Food Products; Harvey Wiley

Detection of Cottonseed Oil in Lard; L.M. Johnson

1905. Food Legislation and Inspection

Statistics of Food Examinations and Prosecutions

under Laws 1905.

Legal Weights in Pounds & Bushels.

Formaldehyde: Its Composition & Uses; Bernard Flexer

Renovated Butter; Levi Wells

1906. Foreign Restrictions on Amer. Meat; Frank Butler

1907. Bacteria in Milk; S.A. Rogers

Changes Taking Place in Chicken in Cold Storage.

Detail of Enforcement of Foods & Drugs Act; W.H. Dryfoos

Use of Microscope in Detection of Food Adulteration; Burton Howard


1910. Inspection of Imported Foods & Drug Products; Howard Cootlethlie

Annual Report of Industrial Comis of U.S. 1901

1901. Adulteration of Food Products

Annual Report of Comis on Manufactures before U.S. Senate

Amendment to Pure Food Act 1912

Commercial Methods of Canning Meat; Chas. McBay

Amer. Meat and Its Influence on Public Health; Albert Leffingwell
The Dark Side of the Food Trust: Herman Hirschauer.
Annual Report of Office of State Milk Food and Dairy Dept.

1905 Food Work in Foreign Countries.
A Few Thoughts for the Good of the Order: T. H. Brown.
City Milk Inspection: C. J. Emery.
Color & Antiseptics in Butter: C. R. Slater.
Theoretical & Practical Value of So-called Household Tests for Detection of Adulteration in Foods:
Julius Hirtwech.
The Food Laws of the Experts: H. E. Wiley.
Food from the Consumer's Point of View: Alice Lakey.
Canned Goods & Their Adulteration: C. F. Ladd.
Amber Milk & Milk Standards: Dr. W. W. Fears.
Extracts & Beverages: O. S. Marcheworth.
The Use of Sulphuric Acid in Food Products: Charles D. Howard.
Port Inspection: R. G. Coolidge.

Periodicals

Milk and Dairy Guaranty Clause: H. W. Wiley
Progress of Progress under Food Laws: H. W. Wiley
Proof of the Pudding
Pure Food
Pure Food Problems: M. A. Hopkins.
Colliers 49: 42 May 18 '12.

Jtd 72: 1167-70 May 23 '12.

Pure Food Laws of the States: H. W. Wiley
Good H. 55: 548-9 O.'12

Cold Storage Problems: P. G. Herrmann
Sci. Sci. 81: 153-62 Ag '12

Food Preservation & the Sod. Pension Question:
Beginning of Food Inspection. Up to 1893 the U.S. had been the dumping ground for all unmerchantable, adulterated and unsafe tea sold. By the Acts of 1883 and 1897 the Sec. of the Treas. was however authorized to inspect all tea imported, and prevent the importation of all those which he considered unsafe and unwholesome. Up to 1899 only articles which were manufactured in foreign countries and consumed in the United States which was subject to inspection was tea. Because of a lack of funds, the act of admission of food products important to health inspection which was authorized in 1899 could not be carried out. It was for this reason that, not until the act which went into effect July 1913, authorizing the inspection of all foreign goods before being allowed entry, that we find the true beginning of food control in the U.S.

Right of Inspection Judicially Affirmed. Objection to this act was raised by the importers on the ground that it was unreasonable and unconstitutional, and that Congress did not have the power to authorize any other body or person (such as the Sec. of Treas.) to make such regulations. The right of Congress to thus delegate its power of inspection was nevertheless affirmed in the decision of the U.S. Supreme Court 1904.
Scope of the law. In order to inspect food, the
right to fix standards is necessary. Accordingly
Congress granted to the Sec. of Agriculture the
right to fix standards of purity, which were
first proclaimed in 1903. The Act applies
to food, drugs, beverages (mineral and other
waters offered for importation), condiments
and ingredients.

Execution of the law. In the beginning of the
execution of the law, exporters from foreign
countries and importers in this country were
informed as to the character of inspection to
be exercised. Through the State Dept., the
Consuls were called upon to examine the
invoices of articles sent to the U. S. A.
declaration was attached to a duplicate of
the regular invoice, in which the exporter
declared the exact character of the articles
he proposed to send.

Nature of Inspection. The Sec. of Agriculture
was given power to request of the Sec. of
the Treas. samples from original packages
of any goods which he might consider
dangerous to health, or improperly branded.

Character of Inspection. This is to decide:

1. Whether the article contains substances
deleterious to health, or not natural constitu-
of the article.

2. Whether it is misbranded or mislabeled so as to deceive the purchaser as to the character of its contents, the country in which it is manufactured, or from which it is exported.

3. Whether it is of such character as to be forbidden entry to, or to be restricted in sale in the country where made, or from which exported. (This last clause is to assist foreign countries in their attempt to improve the quality of food products they manufacture. If we accept from an exporter goods which he is forbidden to sell in his own country, we would be encouraging wrong.)

In the same way Congress has given the Sec. of Agriculture power to inspect all goods exported from the U.S., and to refuse a clean bill of health to those goods of a character contrary to the regulations of the country to which they are consigned.

Procedure in Inspecting Imports. During the first year of the enforcement of the Act, all information regarding importations was obtained through the Consular Invoices, and samples were requested of the customs officers for examination. The time consumed in the shipment of samples to Washington was
found to make this procedure impracticable, and in 1904 a laboratory was established at the port of New York. This was found to expedite matters greatly, and in the following year branch laboratories were organized at Boston, Philadelphia, Chicago, New Orleans, and San Francisco. These six laboratories were in operation at the passage of the Food & Drugs Act.

Since then additional laboratories have been equipped at Buffalo, Cincinnati, Detroit, St. Louis, Kansas City, Savannah, Galveston, Seattle, Portland (Ore.), Denver, St. Louis, Pittsburgh, and Alabama. At the various customs houses the invoice submitted by the importer is filed with the examiner by whom the goods are to be appraised. The Sec. of Agric. has made a general request upon the Sec. of Treas. that the representatives of the Dept. of Agric. be allowed to inspect shipments of imported foods and drugs, and that samples be furnished them if they have any cause for suspicion. The Sec. of Treas. has complied with this by instructing collectors of customs to allow such privileges and supply samples to the chiefs of branch laboratories at their respective ports.
dear mother en loving wife, we are all well and very happy to hear from you. we hope you are well too. your letters are very welcome.

we have just arrived at our new home. we have settled in and are enjoying ourselves. we are very happy with our new surroundings.

regards,

[Handwritten signature]

[Date]

P.S. we miss you very much.
is permitted to be returned by the examiner until inspected by a representative of the Dept. of Agric. If the invoice contains any article which he wishes to inspect, he attaches to it a small tag giving the amount and specimen desired. If he does not consider it necessary to inspect any of the articles on the invoice, the inspecting officer stamps it with a statement that no sample is desired.

Frequently the inspector cannot determine from examination of the invoice whether a sample should be sent to the laboratory. The brand of goods contained in the assignment may be one with which he is not acquainted, or its description on the invoice may be inadequate. In such cases he attaches what is known as a "detention tag." When a shipment with an invoice so designated reaches the examiner, he notifies the chief of the Food and Drugs Inspection Laboratory of the Dept. of Agric., and gives him an opportunity to inspect the shipment on the floor, and decide whether a sample is desired or not. The detention tag is especially useful in the case of foods on whose labels a declaration
If some ingredient is required. Frequently the inspector need only see the label to know whether there is such a declaration. Sometimes an analysis is necessary to determine whether such a declaration has been omitted, or whether the nature of the goods has been changed since its first inspection. After seeing the shipment, the inspector decides whether he should take a sample for the laboratory. He tears off the yellow detention tag, and either stamps the invoice that no sample is desired, or puts on a tag stating that no sample is needed. Thus he eventually marks each invoice. On the arrival of the goods represented by an invoice marked with a sample tag, the examiner forwards a sample to the laboratory. When the shipment is appraised on the docks, the examiner sends an order for the sample to the proper officer.

Because of the great number of importations this appraising is done by the customs authorities as quickly as possible. The inspection of food and drugs is so arranged as to interfere as little as possible with the appraising of merchandise for levying duty. As soon as the samples are sent to branch laboratories
and examined, if they are found to conform to the law, the importer is notified that no further action will be taken. He receives the same notice in case the chief cannot determine the final solution of the case, and requires more time. If it is found out later on that the shipment should not have been released, the importer is informed why the product is regarded as adulterated or misbranded.

If the consignment is considered in violation of the law, the importer is notified and given an opportunity to present evidence in a hearing before the Sec. of Agric., to prove the fitness of the article for importation. A sample is sent to the Bureau of Chemistry at Washington for a check analysis. The evidence is considered, and if the articles are proven not contrary to law, detention is suspended, and the articles released. If however, the final examination shows the goods unfit, the Sec. of Treas. orders them reshipped beyond the jurisdiction of the U. S. If this is not complied with by 90 days from the time the notice is received, the Sec. of Treas. can order them destroyed.

There are no prosecutions made in the
inspection of imported food products. Either
importation of illegal goods is prevented,
or they are forced to be retouched. This
inspection was begun in 1903 by authority
granted to the Bureau of Chemistry by Congress
and was in full operation at the time of
the passing of the Food and Drugs Act.

Invoices and Certificates. All consignments
of merchandise over $100 must be invoiced
before a consular officer, and, since the
passage of the food laws, copies sent to
the Bur. of Chem. The invoice contains a
list of articles in the consignment, and
the amount and value of each. On the
attached declaration the shipper states where
the goods were grown and manufactured,
by whom and where manufactured, from
whence exported, and whether they contain
coloring matter and chemical preservatives;
and if so what they are, and whether the
article is of a character to be prohibited
entry or restricted in sale in the country
whence it comes.

Invoices of meat must carry a
certificate of official inspection to assure
the Sec. of Agri. that they are not dangerous
to health. The certificate must also give
the official position of the inspector, and
character of his own, and the early life of the city, which the men had
in heart, or else, with which they were familiar. At first, it was
in all, of which the latter was
to mortem time; they
were one of mine, in a way that the
means used in which there were
chemicals or other substances
in use to health. All of the ducts of
and other were on sale in
cooking, in which the made or, in
which we know.

Domestic products, the use of
charge of domestic products, in
use, the later to
and upon alike, blue to
and on a can

The culture of rice and lotus:
was common to the wild and the

are done in
and place of

the will run of the day up

and

and
food, which damage food; or the use of improper materials.

2. To inspect foods and drugs entering ports where branch laboratories are not established.

3. To carry on special investigation of sanitation and the processes of manufacture.

Organization in Enforcing of Act. The Food and Drugs Act of June 30, 1906, otherwise known as the "Pure Food Law" forbids a. Importation into the U.S.

b. Exportation from

c. Introduction into interstate commerce

d. Manufacture and sale in the district of Columbia and Territories of misbranded and adulterated food and drugs. The law is administered by the Sec. of Agnc. Uniform regulations are required to be made by the Sec. of Treas., Sec. of Agnc., and the Sec. of Commerce and Labor for carrying out its provisions. These regulations are printed for distribution with the Act by the Dept. of Agnc. Food Inspection decisions, giving the opinion of the Dept. on various features of the law are published from time to time. The organization which enforces the law includes 1) Inspectors who procure samples for analysis, and information regarding the manufacture and sale of food and drugs.
På en viss tid var en familj familj.

Detta gick inte att ta emot varje dag.

Men det fanns också dagar där det

fanns en mer varm atmosfär.

Men det fanns också dagar där det

fanns en mer varm atmosfär.

Denna familj var inte bara

en familj, men också en

samfund.

Denna familj var inte bara

en familj, men också en

samfund.

Det finns också dagar där det

fanns en mer koldioxid

utsläpp.

Men det fanns också dagar där det

fanns en mer koldioxid

utsläpp.

Denna familj var inte bara

en familj, men också en

samfund.

Men det fanns också dagar där det

fanns en mer koldioxid

utsläpp.

Det finns också dagar där det

fanns en mer koldioxid

utsläpp.
2) Chemists and clerks in the laboratory of the U.S. Dept. of Agric., Wash., D.C., and in branch laboratories.

3) The Board of Food and Drug Inspection, who consider all questions arising under the Act, upon which the decision of the Sec. of Agric. is necessary, and conduct all hearings based upon alleged violations of the Act.

Information secured by inspectors and laboratories is reported and goes through the procedure already explained in regard to the import. In the case of domestic goods, the manufacturer is prosecuted. Penalties cannot be visited on a dealer protected by a guaranty, and the retailer who is acting in good faith is protected whenever possible, and the responsibility placed on the shipper or manufacturer who is aware or should be of the nature of the product.

Public Opinion. To quote an authority on the matter of American-produced food:

"The exposures and revelations in the public press of the U.S. during this year have gone thundering around the world in tones defamatory of us as a people, of us as purveyors of deleterious foods, . . .
of filthy foods, of more filthy methods, of business in the packing houses of our land. We are, as a people, regarded abroad with derision, and our food products with abhorrence." He entitles these remarks "a few thoughts for the good of the order." They may seem very radical at first, but coming, as the time they did, just after the discoveries in the packing industry, we are forced to acknowledge that they are true to the letter, and that such conditions have existed.

Food Experts' Difficulties. It is a remarkable fact, and one that greatly impedes the food expert in performing his duty, that certain natural products contain minute traces of the very materials which are added to them as adulterants. For example—boric acid is a normal constituent of certain wines; salicylic acid and benzolic acid of a number of fruits; fluorine of potable water, and so on. But it is the adulteration and misbranding of distilled liquors that has been the chief subject for investigation and discussion. English officials have found dealers in so-called
brandy and whiskey, consisting of neutral spirits mixed with flavoring, coloring, and coloring oil etc.

Extent of Inspection, July 1, 1913 - June 30, 1914

**Found Contrary to Law**
- Admitted with caution on ground of being 1st offense: 50
- After labels were changed to harmonize with law: 1
- Required to be reshipped beyond jurisdiction of U.S.: 37
- Condemned but not disposed of: 4

**Total**: 92

**Found to comply with law**: 776

**Total number of samples examined from violations detailed**: 865
**Samples taken from violations not detained**: 300

---

**Statistics of Food Examinations - Prosecutions under Law in Illinois, 1915**

<table>
<thead>
<tr>
<th>Category</th>
<th>1914</th>
<th>1915</th>
<th>1914</th>
<th>1915</th>
<th>1914</th>
<th>1915</th>
<th>1914</th>
<th>1915</th>
<th>1914</th>
<th>1915</th>
<th>1914</th>
<th>1915</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Inspection</td>
<td>495</td>
<td>1,907</td>
<td>40</td>
<td>703</td>
<td>25</td>
<td>203</td>
<td>27</td>
<td>134</td>
<td>25</td>
<td>69</td>
<td>Food Commission</td>
<td></td>
</tr>
<tr>
<td>Chicago</td>
<td>25,727</td>
<td>9,610</td>
<td>1,592</td>
<td>80</td>
<td>1,296</td>
<td>12</td>
<td>1,176</td>
<td>12</td>
<td>102</td>
<td>Health Dept.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boise</td>
<td>405</td>
<td>35</td>
<td>-</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Milk Inspector</td>
<td></td>
</tr>
<tr>
<td>Rockford</td>
<td>400</td>
<td>200</td>
<td>0</td>
<td>20</td>
<td>0</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Health Dept.</td>
<td></td>
</tr>
<tr>
<td>Springfield</td>
<td>230</td>
<td>-</td>
<td>7</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>4</td>
<td>1</td>
<td></td>
<td>1</td>
<td>Bd. of Health</td>
<td></td>
</tr>
</tbody>
</table>

P. 645, 646, 647

P. 104, 105, 106, 107
Classification of Foods and Beverages (As it should be)

1. Perfectly pure natural foods, properly prepared, and made from or composed of best obtainable substances. Permitted to be entitled "Pure - Made from Finest Materials" or "First Class Materials".

2. Perfectly pure natural foods, properly prepared, and made from or composed of an inferior quality of substances. Permitted to be entitled "Pure - Made from Wholesome Materials".

3. Mixtures of perfectly pure natural foods of like character, properly prepared, the mixture being made to bring out specific flavors or aromas. To be designated as "Blends".

4. Every product, perfectly wholesome and nutritious, made in imitation of an article described in the foregoing 3 classes.

5. Preparations of various kinds, not made in imitation of standard food articles, and having distinctive names. To be made from perfectly pure, natural, nutritive materials, and contain no added inert ones.

6. Any product not belonging to one of the above classes shall be unsaleable.
Adulteration, History of Food Work in Foreign Countries.

Twenty-five years ago a single German journal, with about 400 pages a year, sufficed for a record of world food investigation. By 1906 it contained 1,600 pages, and there were other journals in French and English as well as numerous government and state reports to swell the literature on this subject to immense proportions.

In England, they adulterated milk with lactic acid. For butter substitutes they used oleo oil, cotton seed oil, coconut oil, palm oil, and other vegetable oils.

Flour bleaching was done by chemical processes, by using ozone and nitrogen peroxide. Tests in France showed that though the appearance was improved by bleaching, the flour, and the bread made from it, suffered in flavor.

Egg powders were found to be made either dehydrated eggs with or without preservatives or other admixture, or skim milk powders colored in imitation of yolk color. German chemists have been able to devise means for determining whether eggs have been used in the preparation of noodles, or whether they have been dyed with vegetable or coal tar dyes.
Adulteration of sausage with preservatives, starchy matter, and artificial coloring is easily detected. The disclosures of 1915-6 in the Chicago meat-packing industry caused much criticism in foreign journals, and was followed by increased zeal in inspection of exports.

Fruit products, jams, jellies, and fruit syrups, are often grossly adulterated. Copper sulphate is used to green canned spinach, peas, string beans, and other canned vegetables and pickles.

Among the cases with which glucose syrup can be detected in honey, this adulterant has now been replaced by cane-sugar, or invert-sugar syrup. An adulterant, sold under the name "Fructin" was found to contain beet-sugar with 14% of tartaric acid and coal tar coloring. "Fructin" honey, prepared from this product by boiling with water, according to the directions of the manufacturer, contained 69.1% invert-sugar, 14.7% cane-sugar. Another honey-adulterant "Honamim" contained 30% cane-sugar, mixed with true honey and invert-sugar.
Arsenic was found in beer in England. Since it is claimed that minute quantities of arsenic may be found in beer made entirely from pure malt and hops, it was necessary to fix the limit for arsenic content of the natural product.

Milk City Inspection In Wisconsin the authorities have worked out a test which they call the Wisconsin Curd Test for Milk. It is the simplest, quickest, most practicable, and effective method known to ascertain imperfections in milk. It can be used not only by city milk inspectors, and butter and cheese makers, but by all housewives. A one pint sample of milk is placed in a sterilized glass or metal can with a cover. It is then immersed in a tub of warm water and the temperature raised to 95° Fahrenheit, and about 10 drops of standard commercial rennet added. As the curds form, the whey is drawn off. After six to nine hours, the curd is solid and can be cut. If the cut surface is smooth, firm, of close texture, and without undesirable taints, it is all right. In the presence of gas-producing organisms,
which are generally associated with filthy conditions, the gas produced in their development will, according to its quantity, give the curd either a pinholey or spongy texture, which condemns the milk.

**Formaldehyde in Milk.** Formaldehyde has been used quite generally in the milk in large cities. The use of any preservative in milk or cream should be absolutely prohibited. Only cleanliness and cold temperature are necessary in their handling.

**Color and Preservatives in Butter.** Preservatives, other than salt, should be prohibited in butter and cheese. The use of one tends to lower the quality of the article since it encourages carelessness in production of the article. The coloring of butter is a practice sanctioned by time. After churned, the cream till its fat globules gather into a mass, washing and salting it, it is not considered butter till it has been colored. Coloring matter in butter does not cover up inferiority as in other foods. It is only by coloring butter, and prohibiting the coloring of oleomargarine that the
public can be sure to distinguish between the two, and be protected from the fraudulent sale of oleomargarine. Coal-tar coloring should, however, be prohibited.

Renovated Butter. The Great Bill covering the sale of oleomargarine and renovated butter was made law in 1902. It defines butter as:

1. Butter.
2. Renovated or process butter.
3. Adulterated butter (including that which carries an undue amount of water, milk, or cream). The tax on adulterated butter is 50 cents per pound, plus the same tax for the license to manufacture, being same tax as that imposed on coloring oleomargarine. Any butter carrying less than 80% fat is sure to be banned as adulterated butter.

In regard to renovated butter, rigid and frequent inspection of the factories where it is made over is necessary. It is made over from butter churned the preceding summer or even earlier than that, and kept in cold storage, because of the insufficiency of the demand in comparison to the supply. During the
winter months, when the supply of fresh butter is very low, this is brought out of cold storage and renovated; that is, it is melted, washed, reboiled, recut and repacked, to be used as second-class butter. It is very important to keep the closest inspection on the materials used, to see that they are not too old, and on the sanitary condition of the factories. The recent improvement of the product is due to packing the surplus stock while still fresh, and keeping it at a temperature below zero until needed, rather than allowing it to lie around in cellars or country stores till rancid, and then trying to renovate it. As to the extent of the industry, in 1905 there were 78 factories with a total product of 60,000,000 lbs. There was $1,000,000 invested in these plants.

Manufacture and Sale of Oleomargarine. The original process for the manufacture of oleomargarine was patented in the United States in 1873. This was the preparation of margarine oil by the artificial digestion of animal fats, and separation of the butterin which melts at a high temperature by pressure. This was then
churned into milk, finely divided cow's udder and carbonate of sodium being added to facilitate the emulsion. It was then salted and colored, and the resulting article resembled butter in appearance, taste, and general properties.

The present process is comparatively simple. Vegetable oil and "neutral" lard are mixed together, sometimes with the addition of cotton-seed oil, or milk and butter, in steam-jacketed vessels provided with paddles. The resulting product is oleomargarine or butter according to the amount of butter added.

The two questions of importance in preparing oleomargarine are: to be sure of the character of the animal fats used, and of cleanliness in preparation. The points in favor of its use are that by the correct admixture of steam, the product will retain its consistency in warm weather, and it can be easily transported and kept for a long time without becoming rancid. It is useful for cooking as it is cheap and has practically the same consistency as butter. It is however
I think you've been misunderstood
more often than you realize. I was just
theoretically at the studio. I hear a plan
was perhaps one letter. With some
attitude between trusting unfriendly
learning does, start, some people in

pointing guns. In bending through Zeit
hard pictures have to well. Again
attitude points towards, catalytic because on
them as his nose. Trot to matches
bend his story. Meet me! Trotted this
pointing. Why will they think this before
with thence reconnaissance as talking
who settled to become with at it.particularly
preact it. As reconnaissance passed
big because it. Deutonals passed
safely from an arrangement of them. Here, some
step once. In truth it. But
as understanding to come with it. Perhaps
the writer was tawny of it. Whenever
as matter without matter in point.

The hunter brazenly gives...
not palatable in the place of eating butter.

Because of the cheapness with which oleomargarine could be made, demand began immediately by selling it as pure butter. This led to the adoption by many states of very stringent laws on the manufacture and sale of oleomargarine. In 1895, its manufacture was confined to Illinois 5 factories, Indiana 2, Kansas City 3, Nebraska 1, Ohio 1, Pennsylvania 1, and Rhode Island 4.

In 1893 45, 115, 000 lbs. were sold in the U.S. 67' 224' 295 " manufactured 1' 2', 785, 494 " exported

In 1894 69, 622, 246 " manufactured 3', 406, 683 " exported.

Thus in spite of restrictions, its manufacture and export increased.

Materials used. In the Eastern states the beads oil and lard are purchased. In the Western states they are prepared directly in the oleomargarine factories. The animal fats are selected, ground, and melted at 150° Fahrenheit, and then the fibres allowed to settle, leaving the beads oil. This is then chilled till the cream is crystallized, and pressed, the amount of pressure depending upon the amount of steam
left in the oil.

The fats used should be clean and fresh. In the large packing houses the manufacture is usually carefully conducted. In the smaller factories, however, they use scraps from butcher shops, hotel waste etc., including hog, sheep, and chicken fats.

Good leaf lard and cotton-seed oil are the other ingredients. Some manufacturers use butter instead of cotton-seed oil, thus securing a better flavor and color. That used for domestic trade cannot be artificially colored, but the export trade demands a high color. The West Indies and South America wish even a tomato color.

In hygienic effects, it is not quite as digestible as butter because of the amount of stearin and palmitin. However as to healthfulness, if it is made from good, fresh fat, it is just as healthful as butter. In the transmission of infectious disease, there are three times as many germs in oleomargarine as in butter, and they are of a different character, those in butter being harmless, whereas those in oleomargarine are dangerous.
genus are fungi and bacteria. The cream from which butter is made can be pasteurized so as to be perfectly harmless while the temperature for pasteurization is unfavorable to oleo-oil.

Failure of Ordinary Tests for Cotton-Seed Oil Added
Cotton-seed oil is the cheapest fat in the U. S. and the one most used. A large amount is used in the manufacture of compound lard, and is sold under various trade names, but sometimes comes onto the market as pure lard. Out of the many tests tried to detect it, there are only two which have not failed utterly.

a) The Becher Reaction and b) the Aldehyde Test. The reactions in these tests are the same as in pure lard made from hogs fed on cotton-seed meal, and in lard adulterated with a very small percent of cotton-seed oil. As a matter of fact, few hogs are fed on this meal as it has been known to cause their death. However in cases of litigation a large packing house can, and has, fallen back on this theory to prove that as far as they are concerned their product contains no cotton-seed oil.

Difficulty of Detecting Any Lard Adulterate
Difficulty of Detecting Any Land Adulteration.

The determination of small quantities of foreign fat in land is necessarily difficult, and taxes the skill of the chemist to the utmost. Most of the fats which are suitable for mixing are so similar to land in physical and chemical properties, that the small quantities which are used in adulteration cannot be detected. The chemist has to depend upon a qualitative or approximately quantitative tests, based upon some impurity due either to manufacture, or in the case of animal fats, to the food upon which the animal has been fed.

Working of the Inspection Law

1. Olive oil. Many so-called olive oils have been found mixed with large or small quantities of other edible oils. There are many of such oils — cottonseed oil, peanut oil, oil of the sunflower seed, sesame oil, etc. It has been claimed by some manufacturers that the addition of small quantities of these oils improves olive oil, without making it harmful. If such a compound is however labeled "Pure Olive oil" it is evident that it is misbranded and must be prosecuted as a fraud.
2. Preservatives and Antiseptics. These include all substances acting as anti-
ferment or destroyers of germs. They may be divided roughly into two classes.
a) Those of a condimentary nature which have always been used, and whose smell, flavor, or color indicates their presence. These are sugar, salt, spices, alcohol, vinegar, and wood smoke. These are of use in aiding digestion and are not deleterious to health. The other class are the noncondimentary preservatives, which do not reveal themselves, namely salicylic and benzoic acids, formaldehyde, boric acid and borax, silica, sulphites and sulphurous acid. These are used by manufacturers who are looking for profit because they are effective and it requires a chemical analysis of the food to detect them. They are not useful and positively deleterious to health, and shall be condemned. In all cases of imports, the importer is notified of the existence of a preservative in his product, and if it is deleterious to health, the product is excluded.

3. Preserved Meats. All preserved meats other than those cured by salting,
pickling or smoking, have to be carefully inspected. This is especially true in the case of the comminuted meats, such as sausage, in which it is impossible to tell what sorts of meats have entered into its composition. Almost all civilized countries have laws governing the inspection of animals to be slaughtered, which to a certain extent ensures their wholesomeness. In comminuted meats, poisoning from botanomycoses and trichinae must be carefully watched for.

4. Preserved Fruits. These must be true to name, manufactured only from the fruit itself or its juice. They should contain no artificial coloring and no added substances save sugar which must be sucrose—not glucose. No preservatives are necessary.

5. Beverages. The labels now used are often misleading. We must secure honesty in labeling and purity of product to protect the public financially and physically. If labeled from a certain vineyard, the entire content of the bottle must be from that vineyard and not mixed. Certificates of purity must be obtained.
from growers or makers of wines, and
from those through whose hands they
pass. This is even more to the point
in the case of whiskies, brandies, and
liqueurs.

6. Flour and Baking Powder. A kind of
Terra Alba, known as Mineraline, has been
used to adulterate flour. It is absolutely
insoluble in the stomach. Sulphate of lime
or gypsum, in powdered form, has also been
used, and before the passage of the mixed-
flour law, corn-starch, corn-flour, and
mineral substances were used. Baking
powders are of two classes, those made with
cream of tartar, and those made with
alum. The first are harmless, but the
second are dangerous to health. They
produce many injurious effects, among
which is chronic indigestion. For this
reason all manufacturers should be
compelled to state on their labels what
the ingredients of the powder are, and
alum should be prohibited.

7. Confectionery. The most injurious
materials used in this are: Terra alba,
alcohol (liquor spirits), aniline dyes contaminated
with arsenic and glueose. The large-
confectionery concerns have organized to
[Handwritten text not legible]
to bring to punishment manufacturers and dealers in candies, the like elements.

7. Condiments have thus been adulterated: spices with ground peanut or coconut shells; colored flour or middlings of bran; cloves with cloves stems; horseradish with Indian turnips; mustard with flour colored with turmeric, and plaster of Paris; pepper with cracker meal, ground corn, acids, charcoal, and mixture colored with aniline dyes; salt with cornstarch; vinegar from the low wines of the distillery; pickles with alum; tomatoes ketchup with cores and skins of tomatoes dyed with coal-tar dye, and preserved with salicylic or benzoic acid.

9. Tea and Coffee. The duty of 10 cents per pound on tea has practically done away with adulteration. It is however often artificially colored. Coffee is grossly adulterated with chicory and crushed peas and black beans.

There are still several classes of food products in which adulteration is practiced, but the examples cited are enough to prove the point that adulterations have existed and still exist. We shall therefore end this paper.
with a few facts about Chicago's
chief crime in the line of impure
food, namely the conditions existing
in her packing plants up to 1906,
although it is a relief to say that
great reforms have been brought about
in this industry in the past six
or seven years.

The Dark
side of the Beef Trust. In every other
civilized country of the world, the manu-
facture or sale of unclean, impure, or
adulterated foods is made a crime by
law, and nowhere on the face of the
globe is it contumacious as it is in
America.

Of the strong and healthy cattle
that go to the slaughter houses, they
make the prime beef which is sold
by the carcass to the local dealer,
who in turn sells it from the
block in cuts and quantities to suit
the customer, provided he can afford
it. Prime beef never enters into any
of the products of the packing house
for it is never sold except in the
open market, or on the block or hook.
Good beef is just as good today as
it ever was, but the return to the
producer is small, and the cost to the consumer is so great as to often prohibit its purchase.

It is accordingly the "prepared" meat, made from a variety of meat material whose sources are unknown and untraceable, which the average person can afford to buy, and which the packer likes to sell, for in it he makes his big profit. The chief thing in the production of these products is the "Canner" cow, or steer, or sheep - as the case may be. These "Canners" may be divided into two classes, neither of which is the flesh suitable for human food. The first class is made up of old animals, too old, feeble, crippled to work, which the farmer does not wish to shelter, and would kill and bury if the "Canner" rounder did not come around every so often and offer to buy them for a dollar or two. There is no marrow in their bones nor nourishment in their flesh, and it has no value as human food. The second class is made up of these distempered, diseased, and diseased animals, which ought to be killed, it is true,
but the sale of whose flesh as food is a crime.

Because of the conditions prevailing here, the following restrictions have been placed on our meat by foreign countries. Austria-Hungary prohibits all but pork; Norway prohibits all fresh meat from U.S.; Sweden all fresh pork; Germany all fresh beef and canned meat, and other countries in similar degree.

If it has reached the stage where other countries, who use only a very small part of our food product, consider it a menace to the health of their people, and have been forced to pass restrictive measures, what are we who do the producing, and the majority of the consuming, going to do to protect ourselves? Are we going to send what good food we have across the ocean, and eat ourselves what is too poor for them to accept, or are we going to carry out our legislation already on the books, to protect ourselves, the health of the nation, and its future commercial reputation?