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258 QUESTIONS AND ANSWERS

for Civil Service Examinations for

FOOD INSPECTOR

Including Answers to all the Questions Asked at past examinations in
New York City for Inspector of

**MEAT, POULTRY, FISH, FRUITS
AND VEGETABLES.**

The various forms used by Inspectors in the Department of Health.

REPORT WRITING

for all branches of the examination, and

RULES OF THE HEALTH DEPARTMENT.

By **CHARLES L. FRANK, B.S., LL.B.**

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PREFACE.

Hitherto the examination for Food Inspector, Department of Health, New York City, was divided into three parts, each part being distinct, viz: (1) Meat and Poultry; (2) Fish; (3) Fruit and Vegetables. There were separate eligible lists for each part. Every candidate, however, was asked to answer some general questions on food inspection. The indications are, however, that in coming examinations there will be but one list and a candidate will be expected to qualify in the inspection of all kinds of foods.

The scope of the examination has been greatly extended. This is indicated by the recommendations of Dr. Lederle in his request to the Board of Estimate for 125 additional Inspectors for 1913:

"Instead of infrequent special investigations and raids, as at present, it would be possible to undertake the supervision of retail establishments, including bakeries, butcher shops, confectionery and grocery stores, and a great variety of wholesale establishments, including those for bakers' and butchers' supplies, butter, cheese, eggs, canned goods, cereals, chewing gum, chocolate and cocoa, cider and vinegar, coffee, confectionery, fish, flavoring extracts, fruits, ice cream and cone manufacturers, table and mineral waters, wholesale and retail drugs, and many other varieties of provisions, as well as poultry slaughter houses and cold storage plants."

A candidate, to be thoroughly prepared, should be ready to answer questions on any of the above topics.

It would seem that the Inspector, therefore, is required to know a great deal. It must be remembered, however, that an Inspector cannot be expected to be an expert chemist or analyst. His examinations are mostly physical; he should be able to note the color, odor, appearance and other conditions of foods which he is sent to inspect. The student must not make the mistake, therefore, of delving too deeply into the chemistry and analysis of foods. This would be very desirable for the expert, but the prospective inspector, in order to economize on time, should keep in view the requirements of the position. There are some simple chemical tests, however, which are given in this book, which even an Inspector is expected to know, as in some instances these tests are the only means of detecting certain adulterations.

This book has been divided into five parts for convenience in mastering it. The first part deals with foods in general—foods kept in grocery stores, such as eggs, cheese, butter, canned goods, coffee, cereals, flour, vinegar, flavoring extracts, etc. The second part is devoted to meats—their handling and inspection. Poultry is the subject of the third part. Then comes fish, and finally fruits and vegetables. The provisions of the Sanitary Code and the regulations of the Health Department with respect to the different foods are considered under their appropriate headings.

Questions Asked at previous examinations have been placed at the end of the book, so that after the student has mastered the contents of this book he can test his accomplishments by trying to answer questions which were actually asked at former examinations. He can then compare his answers with those given in the body of the book.

ALL THE QUESTIONS ASKED AT PAST EXAMINATIONS ARE COVERED IN THE ANSWERS PUBLISHED IN THIS BOOK, so that the candidate should have no difficulty in answering the examination questions separately printed.

This work has been shorn of all technicalities and presented from the standpoint of the Inspector. The questions present concrete problems such as are presented at the examination and in the field of actual inspection. The student should not go on to any new questions until he has thoroughly mastered the answer to the preceding one. It is also very profitable to test one's self as to the matter thus far covered.

It is manifestly impossible to entirely cover the subject of Food Inspector in a work of any size, no matter how large.

But the questions' herein asked involve, as nearly as can be anticipated, the questions which may be asked at any examination for Food Inspector, and those who thoroughly master this book will be able to enter the examination with a considerable degree of assurance that little has been overlooked.

The subject of Milk Inspection is not treated in this book, for the reason that the examination for Milk Inspector is separate and held at another time.

THE AUTHOR.

PREVIOUS SUBJECTS AND WEIGHTS AND OTHER INFORMATION.

The examination in 1908 was divided into three parts, each part being distinct, viz., (1) Meat and Poultry; (2) Fish; (3) Fruit and Vegetables, and there were separate eligible lists for each. However, the coming test may combine all in one.

The previous subjects and weights were: Technical, 6; Experience, 3; Arithmetic, 1. The salaries range from \$1,200 to \$1,800 per annum. There are at present in the service 1 at \$1,800; 6 at \$1,500, and 81 at \$1,200.

Other Books to Study.

This book covers the subject in a practical way for the purposes of Civil Service examinations. There are, however, a number of other books that can be studied to advantage by those desirous of making more technical study. All of the following

books can be obtained from the book department of the Civil Service Chronicle, 33 Park Row, New York. By mail, add 10 per cent to cover postage:

"Pure Foods; Their Adulteration, Nutritive Value and Cost" (210 pages), \$1; "Foods and Their Adulteration," by Harvey W. Wiley, late Chief Chemist, U. S. Dept. of Agriculture (641 pages), \$4; "Food Inspection: A Practical Handbook for Inspection of Meat, Fish, Poultry, Fruits and Vegetables," \$2.50; "Practical Guide to Meat Inspection," \$3; Dr. Price's "Handbook on Sanitation," \$1.50; Sanitary Code, 25 cents; "Business Laws of N. Y. State," 10 cents (contains important laws).

Eye test cards for the physical examination, 25 cents.

FOODS IN GENERAL.

Groceries, Spices, Butter, Eggs, Flavoring Extracts, Etc.

Ques. 1:—What are the duties of a Food Inspector?

ANS.:—To carry out the provisions of the Sanitary Code with respect to the storing, keeping, selling or offering for sale any food in or brought into the City of New York.

To inspect all places in his district or wherever directed by his superiors, where food is kept, stored, sold or offered for sale.

To collect samples of food which appear to be unwholesome, to be analyzed in the laboratories of the Health Department.

To keep a record of all his inspections and make proper reports thereof.

When necessary, to testify in court on facts within his knowledge which are the result of his inspections.

To follow all instructions of his superiors.

Ques. 2:—If you are sent out to collect a sample, give all the details of your execution of such order.

ANS.:—(1) Upon entering the store I would show my badge and state that I am an Inspector of Foods.

(2) I would look around for the article I was sent for. When I saw it I would ask if it were for sale, and the price. I would buy it. If the article were in bulk, I would note the marks, brands or tags upon the

package, carton, container, wrapper or accompanying printed or written matter.

I would note the name of the vendor and the person through whom the sale was actually made, together with the date of the purchase.

If the sample were taken from bulk goods, I would divide it into three parts and I would label each with identifying marks. I would seal the samples.

If the goods were in package or bottle form, I would buy two or three packages or bottles, as directed.

Ques. 3:—What should a Food Inspector know about the distribution of supplies to the different places of sale?

ANS.:—He should know where it is likely that the unfit food would be sold, where food is exposed; where the cheaper grades of food find their way for sale.

Ques. 4:—To what extent should a Food Inspector acquaint himself with the sources of supply?

ANS.:—This would often indicate the fitness of the food. If the Inspector learns that fish have come from a great distance, or meat not properly refrigerated, this would put him on the lookout for putrefaction. If he finds that poultry comes

from a district where the water is bad, this would put him on his guard for disease in the poultry.

Ques. 5:—What should a Food Inspector know about the seasons at which different kinds of food are offered in the markets?

ANS.:—This would be a guide as to what foods to inspect. For example, after April until the end of August he would examine oysters carefully to see that they are wholesome. He should know the seasons when each fruit and vegetable is in season and after the season is over he should look for merchandise which has been kept so long that it is decayed.

Ques. 6:—What should a Food Inspector know about the points at which supplies are delivered in the city?

ANS.:—He should know where the different foods enter the city, so that he can go there and inspect them before they have been spread over the city. In this way he might stop a whole consignment of diseased meat or decayed fruit. He should know where all the big markets are, especially those which make a specialty of any particular food.

Ques. 7:—What food may not be brought into the city, held for sale or stored?

ANS.:—Meat, fish, eggs, birds, fowl, fruit, vegetables or milk not being then healthy, fresh, sound, wholesome and safe for human food, nor any meat or fish that died by disease or accident.

Ques. 8:—What foods must be covered so as to protect them from dust, dirt or other contamination?

ANS.:—No breadstuffs, cake, pastry, sliced fresh fruits, dried or preserved fruits, candies, confectionery or other perishable food products, except those that are peeled, pared or cooked before consumption, shall be kept, sold, offered for sale, or displayed outside of any premises, or in any street or public place, unless they be kept covered.

Ques. 9:—What are the objectionable features of using coloring matters in food?

ANS.:—They introduce materials injurious to health and they deceive the purchaser by concealing inferiority or by making the goods appear of greater value than they really are.

Ques. 10:—What are the provisions of the Sanitary Code with regard to adulterated or misbranded food? What is meant by "food" in these provisions?

ANS.:—No person shall have, sell or offer for sale in the city any food which is adulterated or misbranded.

The term food as herein used shall include every article of food and every beverage used by man, and all confectionery.

Ques. 11:—When is food deemed to be adulterated under the above provisions?

ANS.:—If any substance or substances

has or have been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

If any inferior or cheaper substances have been substituted wholly or in part for the article.

If any valuable constituent of the article has been wholly or in part abstracted.

If it consists wholly or in part of diseased or decomposed or putrid or rotten animal or vegetable substance, or any portion of any animal unfit for food, whether manufactured or not, or if it is a product of a diseased animal or one that has died otherwise than by slaughter.

If it is colored or coated or powdered or polished whereby damage is concealed or it is made to appear better than it really is.

If it contains any added poisonous ingredient which may render such article injurious to health; or if it contains any anti-septic or preservative not evident and not known to the purchaser or consumer.

If, in the case of confectionery, it contains terra alba, barytes, talc, chrome yellow, or other mineral substance of poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any **vinous, malt or spirituous liquor or compound** or narcotic drug.

If, in the case of spiritous, fermented and malt liquors, they contain any substance or ingredient not normal or healthful to exist in such liquors, or which may be deleterious or detrimental to health when such liquors are used as beverages.

Ques. 12:—When, under the above provisions, is food deemed to be misbranded?

ANS.:—If it be an imitation or offered for sale under the distinctive name of another article.

If it be labeled or branded so as to deceive or mislead the purchaser or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package; or if it fails to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, chloroform, cannabis, indica, chloral hydrate or acetanilid or any derivative or preparation of any such substances contained therein.

If in package form and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

If the package or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular; provided that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First—In the case of mixtures or compounds which may be now or from time to

time hereafter known as articles of food; under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

Second—In the case of articles labeled, branded or tagged, so as to plainly indicate that they are compounds, imitations or blends, and the word "compound," "imitation" or "blend," as the case may be, is plainly stated on the package in which it is offered for sale; provided that the term "blend" as herein used shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only; and provided further that nothing in this section shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this section may require to secure freedom from adulteration or misbranding.

Ques. 13:—What is tumeric paper?

ANS.:—This is an ordinary white filter-paper, cut into strips, dipped into a tincture of tumeric, and dried. It is useful in making certain chemical tests.

Ques. 14:—What is a reagent?

ANS.:—It is a chemical or an agent of some kind, by means of which definite chemical changes are produced which are more or less easy of observation.

Ques. 15:—What alums are used as a reagent?

ANS.:—The ordinary iron, potassium or ammonium alum.

Ques. 16:—What is hydrochloric acid? How should it be used?

ANS.:—This is a chemical which is usually called "muriatic acid" and can be obtained at any drug store. All tests in which hydrochloric acid is used should be conducted in glass, or stoneware, as this acid will attack many metals, such as iron, tin, zinc, etc. It does not attack silver or gold. Care must be exercised not to spill any of the acid over the skin or clothing, as it will burn both.

Ques. 17:—What is potassium permanganate?

ANS.:—This is a bright colored crystal which, when dissolved, will give a purple-red solution. This is used as a reagent. Dissolve about one part of the crystals in 99 parts of water.

Ques. 18:—What is a mold?

ANS.:—It is a fungus (vegetable) growth which is found on vegetables and in cheese. Hot, damp weather usually molds fruit.

Ques. 19:—What is terra alba?

ANS.:—This is a clay, same as pipe clay, and is used as an adulterant in certain foods.

Ques. 20:—What is a vinous substance?

ANS.:—One which is made of or of the nature of wine.

Ques. 21:—What is meant by a deleterious substance?

ANS.:—One which is poisonous or destructive, injurious or unwholesome; dangerous to life or health.

Ques. 22:—What is a narcotic?

ANS.:—Any substance which has the quality of causing stupor—e. g., opium, belladonna.

Ques. 23:—How would you test for coal-tar dyes in food?

ANS.:—Cheap jellies and jams, "blood orange" tonic, fruit syrups, tomato ketchups, often owe their fine appearance to the use of dyes.

Stir up about one-fourth of the contents of the tumbler of jelly with about a pint of water in an agate stewpan. Take a small piece of white woolen cloth and wet it with boiling water. Immerse the cloth in the diluted jelly and boil it on the stove for five or ten minutes, stirring it frequently with a small wooden stick. Then remove it and wash well in boiling water. If a dye has been used in the jelly the cloth will be brightly colored. This test can also be applied to sausages.

Ques. 24:—How should articles of food be labeled?

ANS.:—No meat, fish, fruit, vegetables, eggs, milk or other food or unwholesome liquid shall be sold, held, offered for sale, labeled, or any representation made in respect thereof, under a false name or quality, or as being what the same is not, as respects wholesomeness, soundness or safety for food or drink.

Ques. 25:—In what condition shall food be kept?

ANS.:—Every person having charge, or interested or engaged, whether as principal or agent, in the care or in respect to the custody or sale of any meat, fish, fruits, birds, fowl or vegetables, designed for human food, shall put and preserve the same in a cleanly and wholesome condition, and shall not allow the same, or any part thereof, to be poisoned, infected or rendered unsafe or unwholesome for human food.

Ques. 26:—How shall places be kept where food is to be stored or held for human food?

ANS.:—Every person, being the owner, lessee or occupant of any room, stall or place where any meat, fish, fruit or vegetables, designed or held for human food, shall be stored or kept, or shall be held or offered for sale, shall put or keep such

room or place and its appurtenances in a cleanly and wholesome condition.

Ques. 27:—What action may an Inspector take when he finds any unwholesome or unfit food?

ANS.:—Upon any cattle, milk, meat, birds, fowl, fish or vegetables being found by any Inspector or other officer of the Department of Health, in a condition which renders them, in his opinion, unwholesome and unfit for use as human food, or in a condition or of a weight or quality condemned in or forbidden by the Sanitary Code, he is empowered, authorized and directed to immediately condemn the same and cause it to be removed to the offal or garbage dock for destruction and report his action to the department without delay.

Ques. 28:—What order may an Inspector, a Sanitary Superintendent or his assistant issue to one who has unfit food?

ANS.:—The owner or person in charge thereof when so directed by the said Inspector or by an order of the Sanitary Superintendent or an Assistant Sanitary Superintendent, shall remove or cause the same to be removed, to the place designated by the said Inspectors or the order of said Sanitary Superintendent or Assistant Sanitary Superintendent, or to the offal dock, and shall not sell, or offer to sell, or dispose of the same for human food.

Ques. 29:—What are butchers and milk dealers required to do in order to aid an Inspector in his work?

ANS.:—Every butcher or milk dealer and their agents shall allow the parties authorized by the Department of Health to freely and fully inspect the cattle, meats, fish, vegetables and milk held or kept by them, or intended for sale, and will be expected to answer all reasonable and proper questions asked by such persons relative to the condition thereof, and of the places where such articles may be.

Ques. 30:—Of what materials shall the receptacles and conduits of liquors be made?

ANS.:—In the sale or keeping for sale of any beverage or drink, no person shall keep or use any tap, faucet, tank, fountain or vessel, or any pipe or conduit in connection therewith, which shall be, either wholly or in part, made of brass, lead, copper or other metal that will be affected by liquids, so that dangerous, unwholesome or deleterious compounds are formed therein or thereby or such that beer, soda water, syrups or other liquids; or any beverage, drink or flavoring material drawn therefrom, shall be unwholesome, dangerous or detrimental to health.

Ques. 31:—Name five spices and their most common adulterants.

ANS.:—Cloves are adulterated by placing allspice in with it. Cinnamon is adulterated by the addition of foreign bark. Pepper should be free from pepper shells, pepper

dust and other pepper by-products. Ginger is adulterated by adding wheat, corn, rice and sawdust. Mustard is adulterated by the addition of wheat.

Ques. 32:—Name ten foods (aside from spices) which are frequently adulterated, and name the adulterants used in the particular cases.

ANS.:—
Sausage—Boric acid.
Jellies—Starch.
Peas (canned)—Sulphate of copper.
Baking Powder—Terra Alba.
Butter—Foreign fat.
Cheese—Foreign fat.
Honey—Cane sugar.
Jams—Commercial glucose.
Lard—Cottonseed oil.
Molasses—Commercial glucose.

Ques. 33:—How is benzoic acid detected in tomato catsup, mincemeat, fruit juices, etc.?

ANS.:—If any considerable quantity of benzoate of soda has been used in tomato catsup, it can be detected by setting aside a small quantity in an ordinary dish in a warm place, as, for instance, near a radiator, covering to keep out the dust, and allowing to stand for a few days, so that the evaporation goes on very slowly. As the concentration takes place, beautiful lamellar crystals of benzoic acid are formed. These sometimes grow up to the height of a half inch or even more. If the contents of benzoic acid is very small, it may be extracted by acidifying and shaking with chloroform and then be set aside in a cool place to evaporate. The chloroform should be subjected to only a gentle temperature, so that the evaporation may be slow. The characteristic appearance of the lamellar crystals as before indicates the presence of benzoic acid.

Ques. 34:—May benzoate of soda be mixed with food?

ANS.:—Yes, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda.

The quantity of benzoate of soda used must not exceed one-tenth of one per cent.

Ques. 35:—What are the most common adulterations found in allspice?

ANS.:—Cocoanut shells and the cereal starches.

Ques. 36:—How would you detect the presence of boric acid or borax in butter?

ANS.:—Place a teaspoonful in a cup with double the quantity of hot water, which will melt the butter. After melting, the contents of the cup are well stirred with a teaspoon and set aside in a cool place until the butter solidifies. The butter will be attached to the spoon and can be lifted out, the remaining liquid being strained through a white cotton cloth or filter-paper.

Place a tablespoonful of the liquid in a

dish with five drops of hydrochloric acid. A strip of tumeric paper is dipped into the liquid and afterward removed and held in a warm place until dry. If boric acid or borax is present, the tumeric paper assumes a bright cherry-red color on drying. If a drop of ammonia is now added, the red color changes to dark green or greenish-black.

Ques. 37:—What butter or cheese is it unlawful to offer for sale?

ANS.:—No person shall have at any place where butter or cheese is kept for sale, nor shall at any place sell, deliver or offer, or have for sale, or keep for use, nor shall any person bring or send to the city any unwholesome cheese or butter, or cheese or butter made from milk known as "swill milk" or made from the milk of cows or other animals that for the most part have been kept in stables or that have been fed in whole or in part on swill; nor shall any such cheese or butter be made from the milk of sick or diseased cows or other animals.

Ques. 38:—What practical test should be used to determine whether a firkin exposed in a grocery store contained butter, oleomargarine or renovated butter?

ANS.:—Boil a small portion of a sample. Use as the source of heat a low flame, gas or kerosene. Melt the sample to be tested (a piece the size of a small chestnut) in an ordinary tablespoon, hastening the process by stirring with a splinter of wood (for example, a match); then, increasing the heat, bring to as brisk a boil as possible. After the boiling has begun stir the contents of the spoon thoroughly, not neglecting the outer edges, two or three times at intervals during the boiling, also shortly before the boiling ceases. In the laboratory, a test tube and spoon, or sometimes a small tin dish, are used in making this test.

Oleomargarine and renovated butter boil noisily, sputtering and crackling, more or less like a mixture of grease and water when boiled, and produces no foam, or very little. Renovated butter produces usually a very small amount. Genuine butter boils usually with less noise and produces an abundance of foam.

The difference in regard to foam is very marked as a rule. The absence of abundance of foam would indicate a suspicious product.

Ques. 39:—In inspecting cheese, what conditions would you note?

ANS.:—If the odor is obnoxious the cheese is probably unfit for food. I would look for worms or other evidences of vermin in stale and decomposed cheese.

Ques. 40:—What would you look for in a superficial examination of cereals?

ANS.:—Dirt, worms, mite, dust and moisture.

Ques. 41:—What chemicals are not to be used for coating chocolates and other confections?

ANS.:—Shellac and other gums; these are usually used to conceal inferiority. The use of wood alcohol is also prohibited.

Ques. 42:—What does a concave head on a can indicate?

ANS.:—It indicates that the contents of the can are spoiled.

Ques. 43:—In a physical examination of preserved chow-chow in glass jars, what would lead you to suspect adulteration?

ANS.:—A very dark brown color; dryness of the substance; accumulation of a fermented layer at the top.

Ques. 44:—What internal conditions of food lead to its rapid decomposition?

ANS.:—The presence of worms or parasites, molds, fungi and overripeness.

Ques. 45:—What external conditions lead to decomposition of food?

ANS.:—Air, low temperature, high temperature, moisture, chemicals.

Ques. 46:—How are baking powders adulterated?

ANS.:—By the addition of too much starch or other substances which are merely used to increase the weight.

Ques. 47:—How is bread adulterated?

ANS.:—By making the bread from flour which contains alum or from adulterated and spoiled flour; by allowing the bread to become too moist.

Ques. 48:—What are the common adulterations of candy and confectionery?

ANS.:—Clay, starch, gypsum, flour and mineral dyes.

Ques. 49:—What are the chief sanitary requirements for bakeries in the City of New York:

ANS.:—Permit.

Cleanliness.

Fireproofing of places where fat is boiled—floors, walls and ceilings; fireproofing of doors and transoms leading to halls and other parts of the house.

Sink and other plumbing should be in a good condition.

Absence of any water closets.

Sanitary conditions of the sponge-trough, raising-box, molding-bench, molds, pans and other receptacles.

Ques. 50:—What are the sanitary requirements for mineral water and bottling establishments?

ANS.:—Permits.

They must not be in tenement houses.

The floors must be cemented, graded and drained and sewer-connected.

The filtering vessels, bottles and other appliances must be kept in a clean and sanitary condition.

Ques. 51:—What are the sanitary requirements for syrup, pickle and preserve factories?

ANS.:—Same as above.

Ques. 52:—What is a common standard egg?

ANS.:—One which when candled will show a small air space at the top between the shell and the white; the egg should be transparent and the yoke is not attached to the shell.

Ques. 53:—What are "soaked" canned goods?

ANS.:—It has become quite common, especially in the case of peas, beans and corn, to utilize for canning purposes those that have grown old and dried, after soaking them for a long time.

Ques. 54:—How would you detect "soaked" goods?

ANS.:—Soaked goods are entirely lacking in juiciness, and in the flavors so characteristic of the various vegetables, when gathered and canned before becoming dry. The process of soaking also develops the growth of the rudimentary stem of the embryo in the dried pea and bean. Peas and beans of the soaked variety are almost entirely lacking in the green color of the fresh vegetables, unless the color has been artificially supplied.

Ques. 55:—Is it lawful to sell "soaked" goods?

ANS.:—It is unlawful when the canned goods are misbranded. If the can states that it contains "choice early June peas," then this would be misbranding. The label should indicate that the can contains "soaked" goods.

Ques. 56:—How would you inspect bean coffee?

ANS.:—I would look for split and imperfect beans or the presence of grit, gravel, dirt or foreign bodies of any kind.

Ques. 57:—How would you detect adulterations in coarse ground coffee?

ANS.:—Ground coffee has a uniform appearance, whereas, if beans, peas, cereals, chicory, etc., have been added, the adulterated character of the mixture is more or less evident. Chicory particles are especially easy to detect, as they are dark-looking, gummy, and not granular in character. Chicory particles have a bitter taste. The real coffee particles have a distinct appearance. They usually have a dull surface, whereas some of the coffee substitutes, such as peas and beans, often present a polished surface.

Ques. 58:—How would you test for adulterants in fine ground coffee?

ANS.:—Place the coffee in water. Shake the mixture well. The vessel is then set aside for a moment and its appearance observed. Pure coffee contains a large quantity of oil and for this reason the greater

number of the particles will float. Nearly all of the coffee substitutes, however, are heavier than water and will sink to the bottom, carrying with them, of course, some of the particles of coffee. If there is a large deposit at the bottom the coffee is adulterated.

Ques. 59:—How would you test for chicory in ground coffee?

ANS.:—Chicory mixed with ground coffee can be detected by the water test. Drop some particles of the sample, a few at a time, into a glass of water, and, being slightly heavier than water, they sink, leaving behind them a brownish streak. This test, however, should be made with care, as the person making the test should know the characteristic colorings of chicory. It is advisable to get some pure chicory and pure coffee and experiment with each separately, and then with the mixtures of coffee and chicory.

Ques. 60:—How would you test ground coffee for the presence of cereals, peas, beans, etc.?

ANS.:—Coffee is distinguished from the cereals, beans and peas which are usually substituted for it by the fact that it contains no starch, while the cereals, peas, etc., contain very large quantities. Even when the adulterated coffee is roasted there may be enough starch left to respond to the test.

A half teaspoonful of the coffee is stirred into half a cupful of boiling water and the boiling continued for two or three minutes; this dissolves any starch which may be present in the coffee. After cooling, if the color of the mixture is dark, some water should be added to dilute it; drop a small portion of iodine into the mixture. If a blue color appears it shows that starch has been added.

Ques. 61:—Describe fully a practical test to detect spoiled eggs?

ANS.:—The best method of examining eggs for freshness is "candling," consisting in placing the egg between a bright light and the eye. If the egg is fresh, it will show a uniform rose-colored tint, without dark spots, the space in the egg for air being small and occupying about one-twentieth the capacity of the egg. If the egg is not fresh, it will appear more or less cloudy, being darker as the egg grows older, becoming in extreme cases opaque. At the same time the air space grows larger as the age increases. So-called "spots" are eggs which show on candling black patches due to fungi.

Ques. 62:—When is a permit necessary for a person to break out eggs?

ANS.:—No person shall break out eggs for sale or conduct the business of breaking out eggs to be canned, frozen, dried or used in any other manner in the City of New York, and no eggs broken from the shell, whether canned, frozen, dried or

treated in any other manner, shall be received, held, kept, sold, offered for sale or delivered in the city without a permit from the Board of Health and subject to the conditions and rules thereof.

Ques. 63:—What are the provisions of the Sanitary Code as to adulterated eggs?

ANS.:—No person shall receive, hold, keep, sell or offer for sale or deliver, as or for food, any canned, frozen or dried eggs or eggs broken from the shell, which are adulterated or to which has been added any poisonous ingredient or any ingredient which may render such eggs injurious to health, or to which has been added any antiseptic, preservative or foreign substance not evident and not known to the purchaser or consumer, or which shall contain filthy, decomposed or putrid animal matter.

Ques. 64:—Under what conditions may "spot" eggs be brought into the city or kept here?

ANS.:—No person shall receive, hold, keep, sell or offer for sale or deliver in the city, any eggs known as "spots" except in cases which shall be plainly and indelibly labeled at both ends with the printed words, "spot eggs," with black letters at least two inches high and one and one-half inches wide, with no intervening marks or lettering between the words or the letters composing the words, and a record of such eggs and the disposition thereof shall be kept as required by the rules and regulations of the Board of Health.

Ques. 65:—What is included in the terms "spots" and "spot eggs"?

ANS.:—All unsound eggs, including those affected by molds, partly decomposed, broken yolked, blood ringed or veined, partially hatched, sour, or eggs the shells of which are so broken or cracked that the contents are leaking therefrom.

Ques. 66:—When shall a case of eggs be deemed "spot eggs"?

ANS.:—When 50 per cent or more of the eggs in the case are "spots" as defined above.

Ques. 67:—What are the characteristics of good flour?

ANS.:—It must have a fine, white appearance, must not show any lumps which cannot be crushed. If any of it is subjected to pressure, it must remain lumpy; it should not be too moist. The taste and odor should not be musty or moldy.

Ques. 68:—How would you determine that flour has been adulterated with rice, corn meal or Indian corn?

ANS.:—I would throw some of it on a wall and, if unadulterated, some of it should stick to the wall. I would then place a sample in water; flour will float; the adulterations, being heavier, will sink.

Ques. 69:—How would you detect the addition of starch to jelly as a thickener?

ANS.:—A teaspoonful of the jelly is dissolved in a teacup, adding enough water

to half fill it, and the contents are heated to boiling. While boiling, a solution of potassium permanganate is added, drop by drop, stirring constantly with a teaspoon, until the solution is almost colorless. The mixture is allowed to cool, and to hasten the cooling the vessel may be placed in cold water. It is then tested with a drop of tincture of iodine. If the jam or jelly contains any starch a blue color will be produced. Starch may be a natural constituent of some fruits, as apples.

Ques. 70:—What are the constituents of lemon extract?

ANS.:—Lemon extract is made by dissolving oil of lemon in strong alcohol. The alcoholic strength of the solution must not fall below 80 per cent. or the constituents will be separated. Strong alcohol is therefore one of the principal constituents.

Ques. 71:—How would you test for adulteration in lemon extract?

ANS.:—Dilute a tablespoonful of the sample with two or three teaspoonfuls of water. If the sample is real lemon extract the lemon oil will be thrown out of the solution by reason of its insolubility in the weakened alcohol. The first result is marked turbidity and later the separation of the oil of lemon on the top of the watery fluid. If the sample remains perfectly clear after the addition of water, no marked turbidity being produced, it is undoubtedly a very low grade product, and contains little, if any, of the real oil of lemon.

Ques. 72:—What condensed milk is it unlawful to bring into the city or offer for sale?

ANS.:—No condensed milk which is adulterated shall be brought into the city or held, kept, sold or offered for sale at any place.

Ques. 73:—What is meant by "adulterated" condensed milk?

ANS.:—Condensed milk in which the amount of fat is less than twenty-five per cent. of the milk solids contained therein or to which any foreign substance whatever has been added, excepting sugars, as in preserved milks.

Ques. 74:—What duty is imposed on the manufacturer or importer of mineral, spring or other water for drinking purposes?

ANS.:—It shall be the duty of every manufacturer, importer or other person who manufactures or imports, in the city, any artificial or natural mineral, spring or other water for drinking purposes, to file, under oath, with the Department of Health, the name of such water and the exact location from which it is obtained, together with the chemical and bacteriological analysis thereof, and, when manufactured, the exact formula used in its production, giving qualitatively and quantitatively each and every item entering into its composition. No person shall manufacture or bottle min-

eral, carbonated or table waters in the city without a permit from the Department of Health.

Ques. 75:—How is tea adulterated? How may it be ascertained?

ANS.:—The most common method of adulteration is by "facing," that is, by treating with certain coloring materials, to give intensity to the color of the leaves. The facings in most general use are indigo, Prussian blue, plumbago and tumeric, often accompanied by such minerals as gypsum and soapstone.

The addition of mineral matter may be detected by burning a certain weighed quantity—say, one grain—in a platinum dish and weighing the ash. If the tea is good it will give 5 to 7 per cent of ash. If not, it will give less.

Tea which gives a high color when steeped has probably been doctored.

If there is not much extract the leaves have been exhausted.

Spent or exhausted leaves—leaves that have been once steeped and afterwards again rolled and dried—have been used as an adulterant. The leaves of willow, elder, rose, elm, etc., are sometimes used as adulterants.

Ques. 76:—How would you test the kind of vinegar of a given sample?

ANS.:—Place the sample of vinegar in a shallow dish, such as a saucer, on a warm stove or flame and heat until the liquid is evaporated. The odor of the residue, which should not be burned, is carefully observed. The residue from cider vinegar has the odor of baked apples and is present in considerable quantity. Ordinary distilled vinegars leave very little residue, with almost no odor. The so-called molasses vinegars, which are now being quite largely sold, have a characteristic molasses-like flavor.

Ques. 77:—How can you detect the use of caramel as a coloring matter in vanilla extract?

ANS.:—Shake the bottle and observe the color of the resulting foam after a moment's standing. The foam of pure extracts is colorless. If caramel is present a color persists at the points of contact till the last bubble has disappeared.

Question 78:—What are the constituents of pure vanilla extract?

ANS.:—The true product is made by extracting vanilla bean with alcohol, and the flavoring may consist of an alcohol solution of vanillin, which is the chief flavoring ingredient of the vanilla bean, together with other constituents of the bean soluble in alcohol, which are classed principally under the head of resins.

Ques. 79:—What are common adulterants of vanilla extract?

ANS.:—One of the most common adulterants is an extract made from the tonka bean, which in some respects resembles that of vanilla bean, but is inferior.

Another adulterant is artificial vanillin, a chemical product. Extracts made from this substance contain no resin, which is the deciding test as to whether the vanillin is artificial.

Caramel is also an adulterant.

Ques. 80:—How would you test for adulterations of vanilla extract?

ANS.:—If pure vanilla extract, slightly acidified with acetic acid, be evaporated to about one-third its volume, the resins, which were before in solution, are separated and settle to the bottom of the vessel. On the other hand, artificial extracts remain clear under the same treatment.

Ques. 81:—How would you test for the presence of the resin of the vanilla bean?

ANS.:—A dish containing about an ounce of the extract is placed over a teakettle or other vessel of boiling water until the liquid evaporates to about one-third or less of its volume. The alcohol having been by this time all driven off, the resins become insoluble and separate. Water is added to bring the liquid back to approximately its original volume. This separates the resins, which will be thrown out as a brown flocculent precipitate. A few drops of hydrochloric acid are added, the liquid is stirred, and the insoluble matter allowed to settle. It is then filtered, and the resin on the filter-paper is washed with water and afterward dissolved in a little alcohol. To one portion of this solution is added a small particle of ferric alum, and to another portion a few drops of hydrochloric acid. If the resin is that of the vanilla bean, neither ferric alum nor hydrochloric acid will produce more than a slight change in color. With resins from most other sources, however, one or both of these substances cause a distinct color change.

Ques. 82:—What is saccharin? What is it used for?

ANS.:—Saccharin is a very sweet substance prepared from coal-tar and has been used largely for sweetening purposes instead of sugar. One part of saccharin is said to have as much sweetening power as 400 to 500 parts of sugar. Saccharin has some preservative power also, but is never used solely for this purpose, the preserving influence being only incidental.

Ques. 83:—How would you detect saccharin?

ANS.:—The substance containing it, which is usually a liquid, is shaken with chloroform, which settles to the bottom and is removed by means of a medicine dropper. The saccharin enters into solution in the chloroform, while sugar, if present, does not. The chloroform solution is then evaporated by heating gently, and if saccharin has been present the residue has a distinctly sweet taste. This method is not applicable to substances whose chloroform layer contains a flavor that would mask the sweet taste of the saccharin, as, for instance, ginger ale.

Ques. 84:—Is the use of saccharin permitted in food products in New York City?

ANS.:—Foods or food products containing saccharin should be deemed adulterated under the Sanitary Code.

Ques. 85:—In what foods would you look for saccharin?

ANS.:—Syrups, flavoring, candies.

Ques. 86:—How is yeast adulterated?

ANS.:—By the addition of starch. It is unlawful to sell yeast containing starch as "compressed yeast." Similarly with decomposed yeast under any label.

Ques. 87:—What responsibility is placed on the manager or keeper of a saloon as to the sale of unfit food or drink?

No person, being the manager or keeper of any saloon, boarding house or lodging house, or being employed as a clerk, servant, or agent thereat, shall therein or thereat offer or have, for food or drink, or to be eaten or drunk, any poisonous, dele-

terious or unwholesome substance, nor allow anything therein to be done or to occur, dangerous to life or prejudicial to health.

Ques. 88:—How should an ice box be connected with the sewer?

ANS.:—No drain pipe from a refrigerator shall be connected with the soil or waste pipe, but it shall discharge into a properly trapped, sewer-connected, water-supplied, open sink. All ice boxes must be lined with a proper metallic substance, so as to make them air-tight.

Ques. 89:—What is the penalty for violating a section of the Sanitary Code?

ANS.:—A violation of any section of the Sanitary Code is a misdemeanor punishable by imprisonment not exceeding one year or a fine not exceeding \$500, or both, and in addition the offender is liable to a penalty of \$50 to be recovered by the Health Department in a civil action.

INSPECTION OF MEATS.

Ques. 90:—What is the peritoneum of an animal?

ANS.:—The serous membrane that lines the abdominal cavity; it usually lines or covers all the viscera (internal organs).

Ques. 91:—What is the pleura of an animal?

ANS.:—The serous membrane that envelopes the lungs and is reflected upon the walls of the thorax and upon the diaphragm. This often becomes inflamed as in the case of pleuro-pneumonia.

Ques. 92:—What is meant by an exudate?

ANS.:—Any substance which is discharged gradually through pores or small openings; the presence of a yellow exudate in the joint of a carcass would be an indication of disease.

Ques. 93:—What is the trachea of an animal?

ANS.:—This is the pipe (duct) by which air passes from the throat (larynx) to the bronchi (large tubes leading into each lung) and the lungs; it is usually called the windpipe.

Ques. 94:—What are the general characteristics of good meat?

ANS.:—The flesh should be firm, elastic, of a bright, uniform color; in fresh meat the outside is lighter than the inside; lean meat is paler than blood, so that a dark purple color shows that the blood has not been properly drained away, and fresh meat placed on a plate should always part with a slight amount of reddish juice. The muscles should be fine grained, have a

slight, pleasant odor, becoming savory when heated; the flesh should present a marbled appearance, owing to the mixture of fat with the muscular fibres. On cutting, the interior should show no softening of the connective tissue, as this indicates the commencement of decay. The fat should be healthy-looking, free from bleeding and firm, not jelly-like in texture; its color varies from straw-white to pale-yellow. The fat should not be too yellow. The state of the marrow is often a good test of the condition of meat. It should be light rosyrred in color, and in the hind legs solid and firm, while in the fore legs it is rather softer, like honey.

Ques. 95:—What are the traces of putrefaction in flesh?

ANS.:—The flesh becomes softer than normal and is moist looking. A disagreeable odor is given off and the color is usually dark-green or black. Putrefaction often begins deep down in the flesh, near the bone; this is especially true of refrigerated meat which has been put in the cold room before the animal heat has entirely left the carcass. It also occurs with ham, bacon, tongues, corned, salted and pickled meats. By use of the "trier" this putrefaction can best be discovered.

Ques. 96:—What is a trier?

ANS.:—A trier is a sharp-pointed instrument varying from 6 to 12 inches in length and is employed to detect the presence of putrefaction. The trier is inserted into a fleshy part of the meat and is then withdrawn and smelled.

Ques. 97:—How would you estimate the age of an ox from its teeth?

ANS.—The adult ox has eight incisors (cutting teeth—like the front teeth in a grown person's mouth), situated in front of the lower jaw. The front part of the upper jaw is devoid of teeth, but is provided with a dense fibrous pad. In the back part of both jaws molar teeth (grinding teeth—like those in the back of the human mouth) are found; twelve on the upper and twelve on the lower jaw.

Animals under one year still possess their milk teeth, which are comparatively small, of a porcelain white color and narrower near to the gum than they are beyond. They are eight in number, four on each side, on the lower jaw. At two years the two central milk teeth are dropped and are replaced by two larger ones—the rest of the milk teeth remaining comparatively small. At three years the four central teeth are large and the others small; at four years of age the six central teeth are large, and at the fifth year all the permanent teeth come into wear. The teeth so far are all close together; almost as wide at the top as at the base. From six years of age onward the teeth change into a neck at the base and wide, as before, at the top. This neck becomes more noticeable as the age advances.

In animals of ten years or more the teeth appear much worn, project far out from the gums, and are separated from one another.

Ques. 98:—How may the age of cows be approximately determined from their horns?

ANS.—By counting the rings around their horns. These show the number of calves that the animal has had. Add two to their number to get the age.

Ques. 99:—Where the head of an animal is not available, making it impossible to examine the teeth, how in such a case would you determine the age of the animal?

In young animals, the bones are soft and smaller than in older animals. The inner surface of the ribs is pink. There is much cartilage at the joints. The flesh of young animals should be bright red, firm and juicy, but not too moist, and well marbled with layers of fat, especially in the loins.

In old animals the bones are dense, hard and large. The inner surface of the ribs is white and shiny. The flesh is stringy, tough and less marbled with fat.

Ques. 100:—How would you determine the age of a sheep?

ANS.—A sheep has four pairs of incisor teeth on the lower jaws; they appear and are replaced by larger ones as follows: 1 year, the central pair; 1½ years, the four central ones are replaced by large teeth; 2 years 3 months, the six central teeth are large; 3 years, all are large.

The permanent teeth are larger and broader than the milk teeth, and can thus

be distinguished from them. After six the incisors become notched.

Ques. 101:—How would you judge the age of a pig?

ANS.—A pig has three pairs of incisor and a pair of canine teeth (like the sharp teeth of dogs, used for tearing meat), called "tusks", on its lower jaw. They appear and are replaced as follows: The central pair of incisors by a large pair, at 12 months; the next pair of incisors, one tooth on each side of the central pair and the tusks, at 9 months; the corner or end incisors at 18 months.

Ques. 102:—What are the provisions of the Sanitary Code as to the age and weight of veal?

ANS.—No calf or the meat thereof shall be brought into the city, or held, sold or offered for sale for human food, which when killed was less than four weeks old, or when killed and dressed weighs less than forty-five pounds.

Ques. 103:—Below what age is the meat of a pig unwholesome?

ANS.—If the pig when killed was less than five weeks old, then it shall not be brought into, held, sold or offered for sale for human food, in the City of New York.

Ques. 104:—What are the provisions of the Sanitary Code as to the age at which a lamb may be killed.

ANS.—No lamb, or the meat thereof, shall be brought into the city or held, sold or offered for sale for human food, which when killed was less than eight weeks old.

Ques. 105:—Tell what you know about "stearin."

ANS.—Stearin is the solid residue of meat or fat after the oil has been taken out.

Ques. 106:—What appearances or conditions in meat would lead you to suspect that a forbidden preservative or coloring matter had been used?

ANS.—The meats gradually lose the natural red tint of the fresh meat, and to that extent the color is an index of the preservatives. A "too red" color would also indicate the addition of sulphite of soda to heighten the color.

Ques. 107:—What preservatives and coloring matters are used in meats?

ANS.—Sulphurous acid, boric acid, salicylic acid, salt, cochineal, vegetable and coal-tar colors.

Ques. 108:—What is the general appearance of flesh of an animal that has not been bled?

ANS.—The flesh contains a great amount of blood; the veins are filled with blood, as well as the left ventricle.

Ques. 109:—What conditions are necessary in order that putrefaction should not take place?

ANS.—Putrefaction will not take place

without moisture; for meat or vegetable matters, if thoroughly dried, will keep unchanged for an indefinite period. Neither will it go on at a low temperature; and dead substances kept at the freezing point will not putrefy. The most complete preservation takes place when the two conditions of cold and dryness are combined.

Ques. 110:—What are the evidences of anthrax before and after killing?

ANS.:—This is sometimes called splenic fever, or “staggers.” It occurs most frequently in young oxen. The animal stands, if possible, by itself, with drooping head, and refuses to move or feed. Its temperature is raised, pulse rapid and feeble, and breathing accelerated. If made to move the gait is staggering, as though the animal were giddy, and the muscles twitch and quiver. There may be a discharge of saliva from the mouth. The dung as a rule contains blood and the urine, too, is often red from a similar cause. Bleeding from the nose and anus has also been observed. If an Inspector suspects that an animal is suffering from this disease the animal should be taken to a place by itself and a blood test taken. A little blood taken from the ear and examined under the microscope will show large rod-shaped organisms.

In the dead carcass anthrax is usually evidenced by an enlarged spleen. Further skinning and dressing should be prohibited until a blood test has been taken. If the animal has anthrax, all knives and instruments used on it should be boiled and the part of the slaughter-house affected should be closed until thoroughly disinfected.

Ques. 111:—What diseases would you look for in the inspection of slaughtered cattle and hogs?

ANS.:—Tuberculosis, anthrax or “staggers,” foot-and-mouth disease, pleuro-pneumonia, affections of the tongue, “wooden-tongue,” jaundice or yellows, red water, black water or muir ill, dysentery or bloody flux, swine plague, hog cholera or pig typhoid.

Ques. 112:—Tell what you know about septicemia.

ANS.:—This is a disease chiefly found in calves and adult cattle. Small patches of hemorrhage can usually be found in the mucous and serous membranes. A cloudy swelling of the liver, kidneys and heart is typical of the disease. These organs are enlarged and have a bulky appearance.

Ques. 113:—How would you recognize the presence of anaemia in meat which is to be sold for food?

ANS.:—When the disease is pronounced the animals are emaciated, their flesh is pale, soft and watery, and petechiae may be found in certain organs and in the serous membranes. When such conditions are present the carcass should be condemned. Anaemia is generally the result of chronic disease, but may be due to the presence of parasites.

Ques. 114:—What is the effect of giving turpentine or aloes to an animal?

ANS.:—It usually gives rise to a characteristic smell and flavor in the meat which may necessitate condemnation.

Ques. 115:—What is the “kosher” method of slaughtering?

ANS.:—In this method of slaughtering the animal's throat is cut. The animal is thrown on its side and fixed there. This is done by a rope which is attached to the hind legs of the animal; the upper end of this rope is attached to a windlass fastened to the ceiling or wall. The head is then placed so that it rests on the horns and nose, the throat is cut by a very keen-edged knife, all the organs being cut right down to the vertebrae. The meat from such carcasses keeps better than that of animals which have been stunned to death.

Ques. 116:—Tell all you can about “measly” meat.

ANS.:—Measly meat is meat which contains parasites that may be transmitted to man by eating the meat. *Cysticercus bovis*, or the beef bladder-worm, is recognized as small whitish spots in the substance of meats. This parasite is chiefly found in the masticatory muscles and heart. *Cysticercus cellulosae* is found in the muscles of the pig. Similar to *cysticercus bovis*.

Trichina spiralis is found in the muscles of the pig.

These three parasites are the cause of measly meat.

Ques. 117:—How would you determine whether or not a forequarter of beef was fit for human food?

ANS.:—I would inspect the muscular tissue; it should be bright red in color; it should be elastic to the touch and more or less dry after being exposed to the atmosphere. It ought to possess a pleasant odor, be marbled with fat, the graining of the muscles on transverse section should be fine. The connective tissue should glisten and be moist, but fluid should not come from it.

The fat should be examined—it should not be emaciated.

Look on the external surface for hemorrhage, tumors, parasites or fluid in the tissues.

Cut into hemorrhagic patches and determine if they are merely superficial or extend deeply into the meat.

Look on the inside of the quarter for evidences of tuberculosis or inflammation.

Ques. 118:—In a freshly slaughtered steer where would you look for evidence of tuberculosis?

ANS.:—Look for evidences of tuberculosis in the lymphatic glands, the peritoneum, in the bones, the vertebral column, the ribs, the udder in cows, the kidneys, spleen, liver, lungs and other organs, with their lymphatic glands.

Ques. 119:—What diseases are usually found in pork? Give a full description of each.

ANS.:—Swine Fever. Sometimes called hog cholera, pig typhoid, enteric "red soldier" or "purples." It is usually evidenced by an eruption of the skin and is frequently accompanied by consolidation of the lungs. There is a bluish-red discoloration of the skin on the ham, ears and under surface of the abdomen.

Swine Erysipelas. A dark-red colored rash appears first on the ears, snout and hocks, after which it spreads all over the body. After slaughter the muscles are found paler than normal, with hemorrhages in their substance.

Urticaria, Nettlerash of Pigs, Diamonds. Diamond-shaped patches of a red or dusky color appear on the skin and are caused by hemorrhages under the skin. There is an inflammation of the lungs and patches of inflammation on the mucous membrane of the intestines.

Ques. 120:—Tell all you can about wooden tongues.

ANS.:—This condition is produced by a parasite (actinomyces). The tongue becomes enlarged and very firm and unyielding in consistence. Tumors may also be found on the tissues of the tongue. Such tongues should be condemned.

Ques. 121:—Explain how ordinary pork sausages are made, naming the various ingredients, showing the proportion of each.

ANS.:—The pork is first chopped in a chopping machine. The chopped meat is then mixed with meal, rice, flour, chopped biscuit, bread or sausage-meal, and the whole seasoned with salt, pepper and other condiments. It is then put into the barrel of a sausage filler or stuffer and forced by the plunger through the nozzle into the skin placed ready to receive it.

Ques. 122:—What are the common diseases of mutton? Define each.

ANS.:—Braxy. This is a disease which attacks the peritoneal cavity and blood. The carcass becomes rapidly blown up with gas, mostly in the peritoneal cavity. The flesh is greatly blood-stained.

Sheep Pox. It is an epidemic among sheep. It is indicated by a very putrid odor.

Sheep Scab. This is a disease which attacks the skin of the sheep. Flesh is emaciated and watery.

Husk or Hoose. This is a form of bronchitis due to worms in the air passages.

Foot-Rot. An inflamed condition of the parts contained within the hoof.

Louping-ill or Trembles. A disease of sheep caused by a rod-shaped germ in the intestine and peritoneal liquid. The carcass has gas in the stomach; there are hemorrhages along the intestine.

Ques. 123:—How can the existence of fever in an animal, at the time of slaughtering, be detected in the dressed meat?

ANS.:—The flesh is darker in color than normal, with small hemorrhages scattered

throughout its substance. The flesh may be "soapy" to the touch.

Ques. 124:—How is the temperature of a living animal ascertained?

ANS.:—If the hand be run over a healthy animal it will be found that the trunk feels warmer than the hoofs, the points of the horns and the ears, which are comparatively cold. In fevered animals these feel warm. To get the accurate temperature, put a thermometer into the bowel and tie it to the tail. In cattle the normal temperature is 101.5° F.

Ques. 125:—What is meant by cattle plague or rinderpest?

ANS.:—This is an infectious disease found in oxen. The mucous membrane of the stomach is swollen and congested. "Zebra markings" may appear in the rectum. The kidneys may be congested; the liver is swollen and its surface dull. The flesh of the diseased meat may be very dark in color. The carcass should be destroyed.

Ques. 126:—How would you detect black leg in cattle?

ANS.:—The disease also goes by the name of murrain, quarter ill and black quarter. This disease is mainly found in young cattle, but is sometimes present in goats and sheep. Crackling tumors appear in the fore and hind quarters under the skin, due to gas formed by the bacteria. On cutting into such swelling the gas escapes. The tissues are full of a bloody serum and the muscles of the diseased parts are dark-red in color. A rancid odor is given off, which is increased on warming the diseased portions. The whole carcass should be condemned.

Ques. 127:—State the common terms applied to diseased or unfit veal and define each term.

ANS.:—"Slink Veal." The flesh of newly born or unborn calves. It has a gelatinous appearance, of pale bluish-red color, and is watery. This meat is very dangerous to health and should not be sold.

Navel Ill (umbilical pyaemia). This is a condition where the navel or the surrounding flesh of the calf is infected with pus. It is accompanied by a swelling of the joints; when these joints are opened a yellowish fluid is found.

Ques. 128:—How would you detect internal decay in meat?

ANS.:—Push a clean knife blade, or any metallic instrument, into the bone, and any internal softening will be detected by lessened resistance, and the smell of the blade will reveal decay.

Ques. 129:—What is pleuro-pneumonia and what animals are subject to that disease?

ANS.:—This is a disease of the pleurae; they are affected by fibrinous pleuritis; they are thickened, have lost their lustre and their surface is covered by a yellowish

exudate. The disease is generally restricted to one lung and it is the left which is most frequently affected.

The disease occurs principally in cattle.

Ques. 130:—What are the indications of pleuro-pneumonia in animals before and after slaughtering?

ANS.:—Before slaughtering: Difficult breathing, coughing, discharge from the nose, fever. In chronic cases there are very often no indications and it can only be discovered after slaughtering.

After slaughtering: The lungs (usually only the left one) are enlarged and solid and do not make a crackling noise when an incision is made through them, and will not float on water. In the acute stages the flesh is fevered and soapy. It does not set well.

Ques. 131:—How would you determine that a freshly slaughtered steer was infected with tuberculosis and not pneumonia?

ANS.:—Tuberculosis: Tubercles, small "grapelike" growths, appear on the pleura and peritoneum. The bones, too, have these tubercular growths. The ribs should be carefully inspected for the presence of thickening. The udder in cows contains these growths.

Pneumonia. Pleurae are covered with a yellowish exudate.

Ques. 132:—In the inspection of swine immediately after slaughter what are the most important points to be noticed?

ANS.:—The lobes of the lungs are always to be cut into (lung worms); likewise, the lymphatic glands of the lower jaw (tuberculosis).

The muscles of the heart, larynx, pharynx, tongue and abdomen (after the removal of the entrails), neck and loins are always to be examined for taenia, or calcareous deposits.

The skin must be examined for dark red spots (swine plague, swine pneumonia, hog cholera); round, circumscribed, dark red or pale spots (erysipelas); small, circumscribed spots, very often covered with crusts, which upon incision frequently contain a purulent discharge (injuries and bite wounds).

Grayish red thickened masses in the lungs, adhesions of the lungs and diaphragm, inflammation, swelling and ulcers on the mucous membrane of the stomach and intestines (swine plague, pneumonia, hog cholera).

Oily, fishy or buck-like odor of the meat (boar meat, or caused by bad feed).

Ques. 133:—In the inspection of a sheep immediately after slaughter, what important points are to be noted?

ANS.:—Emaciation, watery infiltration or yellowish coloration of the meat and fat (worm disease, jaundice).

Purulent, usually capsuled, masses in the lungs.

Ques. 134:—In the examination of animals during life, what are the points to be noticed?

ANS.:—General nourished condition (emaciation). The Inspector is to inform himself as to whether the animal is free from fever. If indications of fever are present (drowsiness, chills, insensibility, staring look, weakness), then the temperature of the body must be taken with a thermometer, which shall indicate the condition of the body temperature.

The skin is to be examined for the presence of wounds, and it is noted whether they lead into body cavities, articulations or bones, and whether they contain any purulent discharges, or bone splinters.

The visible mucous membrane of the eye should be noted as to whether it is very red and yellowish in color (feverish condition), hemorrhagic (anthrax blood poisoning), or of a light color (pneumonia).

The anus and tail are to be examined as to whether there has been any diarrhoea, or whether the feces indicate any hemorrhage, or strong offensive odors.

The very offensive and purulent discharge of the vagina (soiling of the tail and hind-quarters) are indications of parturition.

Labored or accelerated breathing indicates affection of the lungs. Impaired digestion and a very bloated, or a very emaciated abdomen indicate stomachic and intestinal trouble.

In abnormal locomotor symptoms (lameness, paralysis), careful examination is made of the hoofs (foot-and-mouth disease), then the bones (fractures), and the articulations (indicated by swellings and injuries of the affected parts).

Ques. 135:—In inspecting calves immediately after slaughter, what important points are to be noticed in connection therewith?

ANS.:—The navel and front and hind metacarpal joints are to be examined for the presence of gelatinous discharges, pus formations and discolored secretions (joint disease).

Inflammation, hemorrhage or accumulations on the peritoneum and the serous membrane of the intestines (peritonitis) generally caused by ulcers eating through the stomach.

Inflammation of the intestines, very offensive discharge, and soiled tail (gastro enteritis).

Air spaces between the muscles, especially on the elbow and flank (blown-up meat).

Ques. 136:—What points should an Inspector examine very carefully in a live sheep?

ANS.:—Pale mucous membrane, cold and doughy swelling of the skin at the neck as far as the lower jaw (worm disease).

Uneven fleece, a strong itching sensation with eruption on the part of the head which is covered with wool, pustules and scab with inflammation of the non-fleeced parts of the body (pox).

Lameness is always an indication that a closer examination of the hoof and mucous membrane of the mouth should be made (foot-and-mouth disease).

Ques. 137:—What are the special symptoms to be noted in the inspection of swine before slaughter?

ANS.:—Animals unconscious of surroundings, hiding in the straw, dropping of the tail (general symptoms of disease).

A dark red color of the skin, neck, ears, abdomen and inner surface of the thigh (swine plague, pleura pneumonia, hog cholera); dark or light red, sharply outlined spots on the skin (erysipelas).

Very loud squeals when aroused and hemorrhage of the hoofs indicate that an accurate inspection should be made of the hoofs. Froth at the mouth indicates the necessity of careful examination of the mucous membrane of the mouth and tongue (foot-and-mouth disease).

Very offensive grayish red or yellow feces (gastro enteritis); coughing and accelerated breathing (inflammation of the lungs, hog cholera).

Swellings of the joints (tuberculosis or effects of swine plague or hog cholera); swellings of the head, neck and ears (quinzy or bite wounds).

Ques. 138:—What special symptoms are to be noted in the inspection of calves before slaughter?

ANS.:—Soft, offensive smelling navel, containing pus, and swollen joints of both front and hind limbs with lameness (joint disease).

Flanks drawn up, a very offensive feces, which soils the tail and hindquarters (peritonitis or gastro enteritis).

Ques. 139:—In the inspection of live cattle what symptoms are to be given special examination?

ANS.:—Very warm swellings in different parts of the body (anthrax and blackleg); cold swellings on the abdomen in connection with accelerated breathing (protruding of foreign bodies from the stomach into the breast cavity); prominent protrusion of the flanks (bloat); punctures of the left flanks (puncture for bloat).

An excess of salival fluid, or soiling of the tongue, ulcers on the mucous membrane of the mouth and tongue (foot-and-mouth disease); swellings on the tongue and jaw (actinomyces); discharge from the nose with ulcers, watering of the eye (malignant catarrhal fever).

Swelling and inflammation of the vagina or vulva ("oestrum"); a purulent or mixed-colored, very offensive discharge of the vagina, soiling of the tail and hindquarters, sinking of the muscles of the pelvis (parturition trouble).

On the udder: Vesicles (foot-and-mouth disease); non-sensitive nodules with enlargements of the glands (tuberculosis); general swelling, often combined with lameness (acute inflammation of the udder);

non-sensitive, thickening and enlargement (chronic ulcers); a full udder with distinctly marked blood vessels (a fresh milker).

Lameness is always an indication that a thorough examination should be made of the hoofs (foot-and-mouth disease).

Ques. 140:—In examining cattle immediately after slaughter, what inspection is necessary in order to thoroughly examine the fitness of the carcass for food?

ANS.:—The pleura is examined for tubercular adhesions and growths. The lung is palpitated to ascertain whether there are nodules (tubercular, pus cavities, inflammation of the lungs, bladder worms). The bronchial and mediastinal glands are to be cut into (tuberculosis). There is to be noticed further the dark coloration, and the uniform red coloration of the blood (the gravitation of the blood after death to the deep-seated parts); the red coloration of certain lobes (entrance of the blood due to the puncture); a gelatin-like or grayish red color (presence of water); abnormally large lungs, especially the posterior lobes, and air vesicles under the pleura and between the lobes (blown-up lung). Finally the lung is to be cut into lengthwise (lung worms, food stuffs in the bronchial tubes).

The pericardium is to be cut into and examined to ascertain whether it is adhered to the lungs, or heart, and whether it contains a gelatinous or pus-like substance (foreign growths). The heart chambers are to be cut into. The left chamber filled (poor bleeding); hemorrhage on the outer and inner surface of the heart (blood poisoning); enlargement or a streaked gray coloring (foreign growths). Finally the muscles of the heart are to be examined for taenia.

The diaphragm and the parts that are cut out with the viscera are to be examined for growths or pus-cavities (foreign bodies from the stomach); also for tubercular nodules.

The liver must be examined for swellings (rounding of the borders); grayish yellow, or dark red coloration, adherence to other organs, pus cavities (foreign bodies from the stomach); tubercular nodules on the serous membranes. The liver is to be palpated (pus, tubercular nodules, bladder worms and thickness of the gall ducts). Incisions are to be made at the posterior surface of the liver into the left half and the spigelian lobe. By pressure upon the gall ducts examination is made for the presence of the liver fluke. The lymphatic glands of the liver are to be cut into (to distinguish between decalcified bladder worms and tuberculosis).

The spleen must be examined for swellings (rounding of the borders); dark red coloring, softening (anthrax and blood poisoning); the spleen must be thoroughly palpitated (tubercular nodules, pus cavities, or bladder worms). If the presence of tubercular nodules is detected it must be determined whether they are present within

the spleen or upon the serous coat of the same.

In the head the tongue is to be cut at the base and an examination made for vesicular eruptions, ulcers and marked redness of the mucous membrane of the mouth, gums and tongue (foot and mouth disease, rinderpest). The bones of the jaw and also the tongue are to be felt (actinomycosis). The muscles of the jaw are to be cut into (taenia); likewise the lymphatic glands of the pharynx and lower jaw (tuberculosis, actinomycosis).

The external and internal surfaces of the gastro-enteric canal are especially examined.

(a) On the outer surface, grapelike or membranous nodules are to be looked for, clusters of which may be very numerous (tuberculosis and peritonitis); general and small circumscribed hemorrhages (anthrax, blood poisoning and gastro enteritis); and perforations leading to the exterior (foreign bodies, ulcers).

(b) On the inner surface: inflammation, hemorrhage, marked folds, ulcers, membranous adhesions, gelatinous discharge (gastro enteritis, anthrax and blood poisoning); thickening of the abomasum and the rectum (foreign growths); growths, perforations, formation of pus, putrefaction on and between the stomach and the stomach divisions, especially of the riticulum (perforations by foreign bodies).

The mesentery and omentum are to be examined for hemorrhages and purulent discharges on the outer surface of the intestines. The mesenteric glands are to be cut into (tuberculosis and flukes).

The uterus is to be examined and its fullness and distension noted (pregnancy, or the accumulation of purulent matter). The uterus and the vagina are to be cut into for the examination of purulent discharges, ulcers, or the accumulation of pus, and perforations (purulent inflammation of the uterus, tuberculosis, undeveloped or decayed embryos).

The meat (both sides) is now examined as to its condition (leanness or emaciation); and then for the yellow color (jaundice, or yellow fat caused by grass); watery infiltration, gelatin-like discharges, hemorrhages, colorations, and besides the smallest hemorrhages are to be cut into (fractures, bruises, wounds, purulent discharges). The gloss, the color and the consistency of the fat and of the meat are to be closely examined, also the visible bones (vertebrae, breast bone); and the tendons and joints (tuberculosis and purulent discharges); the muscles of the neck, are to be examined for taenia. Upon the detection of tuberculosis on either of the foregoing organs, the lymphatic glands of the body (elbow and flank glands) are to be cut into.

The kidneys are to be palpated (nodules, parasites), and the lymphatic glands of the kidney are to be cut into (tuberculosis, hemorrhage, enlargements). If the lymphatic glands of the kidneys are not altered,

then it is not necessary, as a rule, to cut into the kidneys. The suprarenal capsules are to be cut into.

The inner surface of both sides must be examined for inflammation, hemorrhage, especially on the inner side of the pelvis, swelling and hemorrhage on the inner side of the sacral bones (fractures of the pelvis, parturition trouble); membranous adhesions, foul smelling or suppurating condition of the pleura and peritoneum. Perforations through the digestive canal (foreign bodies, puncture wounds of the breast and abdomen caused by operation for tympanitis). In the examination of the pleura it is necessary to lift up the diaphragm.

Ques. 141:—Give in detail the process of curing a ham from the time it is trimmed until it is ready for shipment?

ANS.:—All meat intended for pickling must be absolutely cold; the animal heat must have entirely left it. Salt, sugar and saltpeter are now placed into the pickle solution which is to be used for curing. For determining the exact solid content of the brine a "salometer," constructed on the principle of a hydrometer, is employed. All pickles lose strength when fresh meat is immersed in them; thus a pickle of say, 85 degrees may, in ten days after being put into the cask along with fresh meat, register as low as 73 degrees when tested with the solometer. Pickle thus reduced in strength must never be left in contact with meat for any length of time after it is fully cured, otherwise the meat becomes "pickle-soaked" and the pickle turns sour. When meat is pickled in barrels it is customary to roll them frequently, in order to facilitate the cure.

Ques. 142:—How shall offal or butcher's refuse be conveyed through the streets or over the ferries?

ANS.:—A permit must be obtained from the Board of Health and when so conveyed must be in tight boxes, barrels or receptacles, and tightly covered so that no odor shall escape therefrom. No offal or butcher's refuse shall be brought into the city.

Ques. 143:—May horse flesh be kept or offered for sale?

ANS.:—It shall neither be kept nor sold for food, and the slaughtering of horses for food is prohibited. Horses may, however, be slaughtered for other purposes, if a permit is first obtained from the Board of Health.

Ques. 144:—What disposition shall be made of the blood of slaughtered animals?

ANS.:—It must not be allowed to flow into the sewer or river, but while still fresh must be treated so as not to become offensive.

Ques. 145:—What disposition shall be made of all offensive odors arising from the handling of meat?

ANS.:—It shall be cared for by destruc-

tion or condensation and not allowed to escape into the outside air.

Ques. 146:—How shall the floors of a slaughter-house be kept?

ANS.:—All floors where any meat, refuse, offal, fertilizer or any other materials, derived directly or indirectly from slaughtering of animals, are treated or handled, must be made water-tight, properly drained and sewer-connected, and the walls of the killing, meat dressing and cooling rooms must be covered to the height of six feet above the floor with some non-absorbent material.

Ques. 147:—How shall the yards be constructed?

ANS.:—The yards, other than where cattle are kept, must be cemented or paved so as not to absorb liquid filth, and be so graded as to permit the same to flow into the sewer opening.

Ques. 148:—How must the woodwork be kept?

ANS.:—All woodwork except floors and counters must be painted or whitewashed.

Ques. 149:—How shall slaughter-houses be kept?

ANS.:—No building occupied as a slaughter house or any part thereof, or any building on the same lot, shall be occupied at any time as a dwelling or lodging place; and every such building shall at all times be kept adequately and thoroughly ventilated.

Ques. 150:—Before a building shall be erected or converted into or used as a slaughter house, what is it necessary to do?

ANS.:—Submit the plans to the Board of Health and have same approved in writing.

Ques. 151:—Where shall the business of slaughtering cattle, sheep, swine, pigs or calves be conducted in the Borough of Manhattan?

ANS.:—On the west side, between the north of the middle line of the block between West Thirty-eighth and West Thirty-ninth streets and the south side of West Forty-first Street, Eleventh Avenue and North River, inclusive, and the slaughtering of cattle, sheep or calves on the east side shall be between the north of the middle line of the block between East Forty-second and East Forty-third streets and the south side of East Forty-seventh Street, First Avenue and East River, inclusive.

Ques. 152:—Under what conditions may animals be killed or dressed in the City of New York?

ANS.:—The business of slaughtering cattle, sheep, swine, pigs or calves shall not be conducted in the city without a permit from the Board of Health. Nor shall such business be conducted unless the same shall be in buildings located on or near the

waterfront, and all buildings shall be constructed so as to receive all stock deliverable thereat from boats, cars or transports, and to secure the proper care and disposition of all parts of the slaughtered animals upon the premises, or the immediate removal thereof by means of boats.

Ques. 153:—In what manner shall animal food be prepared and kept?

ANS.:—No person shall kill or dress any animal or meat in any market, and the keeping and slaughtering of all cattle, and the preparation and keeping of all meat and fish, birds and fowl, shall be in that manner which is, or is generally reputed or known to be, best adapted to secure and continue their safety and wholesomeness as food.

Ques. 154:—May cattle swine, or sheep, geese or goats be kept or yarded within or adjacent to the built-up portions of the city?

ANS.:—Yes, but only with a permit from the Board of Health.

Ques. 155:—When may cows be kept in the City of New York.

ANS.:—When a permit is obtained from the Board of Health.

Ques. 156:—How must stables be kept where cows or other animals may be?

ANS.:—In a cleanly and wholesome condition, and properly ventilated, and no person shall allow any animal to be therein which is infected with any contagious or pestilential disease.

Ques. 157:—What care must be taken of cattle?

ANS.:—No cattle shall be kept in any place where the ventilation is not adequate and the water and food are not of such quality and in such condition as to preserve their health, safe condition, and wholesomeness for food.

Ques. 158:—What does the law require of one who wishes to drive cattle, swine or sheep through a public street in the Borough of Brooklyn?

ANS.:—He must have a permit from the Board of Health in writing and he must drive subject to the conditions thereof.

Ques. 159:—How should a butcher or dealer keep his icebox or refrigerator?

ANS.:—It shall be lined with some proper metallic substance, so as to be watertight.

Ques. 160:—How should meat be prepared before it is offered for sale?

ANS.:—No meat or dead animal above the size of a rabbit shall be taken to any public or private market to be sold for human food until the same shall have been fully cooled after killing, nor until the entrails and feet (except of poultry and game, and except the feet of swine), shall have been removed.

Ques. 161:—How is meat to be carried or carted through the streets?

ANS.:—All meat which is to be used as

human food, shall not be carted or carried through the streets unless it be so covered as to protect it from dust and dirt.

Ques. 162:—Where is it unlawful to expose food for sale and what food may not be exposed?

ANS.:—No meat, poultry, game or fish shall be hung or exposed for sale in any street or outside of any shop or store or in the open windows or doorways thereof.

Ques. 163:—What cattle may not be killed?

ANS.:—No cattle shall be killed for human food while in an overheated, feverish or diseased condition; and all such diseased cattle in the city, and the place where found, and their disease, shall be at once reported to the Department of Health by the owner or custodian thereof, that the proper order may be made relative thereto, or for the removal thereof from the city.

Ques. 164:—What is the best time for meat inspection?

ANS.:—Meat inspection should be done in daylight. In cases of emergency the examination of the living animal may be done in the evening with plenty of light, but the final inspection should never be made by artificial light.

Ques. 165:—How would you recognize meat inflation? Why is it done and what are the objections thereto?

ANS.:—Inflation of meat is practiced mostly on calves, sheep, seldom cattle, and also on the lungs for the purpose of imparting a better appearance to the meat or organs than they naturally possessed. It is done either with the mouth or bellows in the following way: The air is blown down the trachea into the lungs. In calves the skinning process is sometimes performed by blowing air under the skin through a small puncture. The hole is closed and the inflated part is struck with the hand in order to drive the gas along under the skin.

The shreds of the muscles are filled with air; so also with the space between the tissues and the muscles.

Where the meat is blown by use of the mouth there is danger of germs entering the meat from the mouth of the person inflating the meat.

Ques. 166:—Describe a modern method of making lard on a large scale.

ANS.:—Lard is made by applying steam to the fat of swine. The steam may be applied in a closed kettle in the form of a jacketed arrangement or introduced directly into the kettle. The residues which remain after the steaming is completed and after the lard has been drawn off are withdrawn from the conical lower portion of the kettle which can be opened for the removal of these residues.

The fragments of meat to be rendered are dropped into the top of the kettle,

which is long and cylindrical in form; the top of the kettle is closed when it is full. Steam is admitted to the kettle at the bottom by means of a pipe which runs into the tank. This pipe has a valve on it so that the steam can be adjusted. The condensation which is produced at first by the cold contents of the tank is drawn off through a water pipe, also situated at the bottom of the tank, opposite the steam pipe. After the tank is thoroughly heated and the fat begins to separate, the lard will rise above the water and the solid fragments and at the end of the process will fill the upper part of the tank. By means of cocks, situated about one-third the distance up from the bottom of the tank, it can be determined to what depth the tank is filled with lard and the lard can be drawn off through these cocks until water begins to flow. The bottom of the tank can then be opened and the residues withdrawn, dried and ground for tankage.

Ques. 167:—How would you differentiate between meat that is aging and meat that is decomposing?

ANS.:—Meat that is aging would be more or less dry and elastic to the touch; meat which is decomposing will be soft and emit a disagreeable odor. Decomposing meat will be discolored; aging meat will still retain the light-red color.

Ques. 168:—How shall fat, tallow or lard be smelted or rendered?

ANS.:—Only when fresh from the slaughtered animal; and taken directly from the place of slaughter and in a condition free from sourness or taint and free from all other causes of offense at the time of rendering; and all melting and rendering are to be in steam-tight vessels; the gases and odors therefrom to be destroyed by combustion or other means equally effective.

Ques. 169:—How would you detect boric acid in sausages?

ANS.:—A small sample should be rubbed thoroughly with a little water, which dissolves a large part of the preservative and the liquid should then be filtered to remove the solid matter.

Take a tablespoon of this liquid and add five drops of hydrochloric acid. A strip of tumeric paper is dipped into the liquid and afterward removed and held in a warm place until dry. If boric acid or borax be present the tumeric paper assumes a bright, cherry-red color on drying. If a drop of ammonia be now added, the red color changes to dark green—or greenish-black.

Ques. 170:—How would you detect the presence of starch in sausages?

ANS.:—Place a drop of iodine solution on the top of the suspected sausage. If starch is present, the sausage will turn decidedly blue.

New York, Nov. 18, 1912.

Mr. William Jones,

Chief Inspector, Bureau of Food Inspection,
Department of Health,
Walker and Centre Streets, City.

Dear Sir:

On November 14th, I inspected the cold-storage plant of Roberts Bros., at 416 East 44th Street, and I herewith submit my report:

This plant connects with a slaughterhouse. Along the ceilings of the hallways there is a sliding pulley, by means of which the beef animal hanging from a gambrel furnished with a long hook may be drawn up and transported wherever desired.

As soon as the cattle have been slaughtered at the different killing places they are immediately transported to the opposite side of the slaughtering hall by means of the sliding pulley in order to remove them from malodorous material. They are then let down on tracks which run longitudinally along the hall, and are transported to the cooling room.

The meat is then transported on cars to the cold storage room, where it is hung up on a hook. These cold storage rooms are cooled by a system of pipes.

Fluid ammonia is forced under high pressure into these wrought-iron coiled tubes, the so-called vaporizer. It is here vaporized under low pressure and thereby absorbs the latent heat necessary for vaporization from the surrounding material, air or a fluid (salt water or chloride of lime water). The latter is thereby greatly cooled. From the system of tubes in the vaporizer the gaseous ammonia is then drawn into a peculiarly shaped suction and force pump, the so-called compressor. Here it is changed under pressure into a fluid condition and is then forced into a second system of coiled tubes, the condenser, in which the heat which has been developed, is carried away by flowing water. The fluid ammonia is again conducted through a connecting tube to the vaporizer and the cycle of changes begins over.

The cold storage room is divided in compartments—the cattle slaughtered each week being kept in a separate compartment. The walls of the compartments are made of smooth zinc and the floor of concrete. The carcasses are kept here about a month.

Respectfully submitted,

JOHN DOE.

Ques. 171:—In establishments for manufacturing sausages or for smoking or preserving meat or fish, how should the floors be constructed?

ANS.:—They should be constructed of cement, properly graded to sewer-connected drain.

Ques. 172:—How should the side walls of such places be constructed?

ANS.:—The side walls must be constructed of smooth cement upon which must be applied three coats of white paint and one coat of white enamel to a height of eight feet from the floor.

Ques. 173:—How should such side walls and floors be kept at all times?

ANS.:—They must be kept in a clean and sanitary condition at all times and under all conditions.

Ques. 174:—How should tables in such establishments be constructed and kept?

ANS.:—The tables, with the exception of the cutting tables, must have iron frames and marble or stone tops, and shall be so placed as to be accessible at all times for the purposes of cleaning.

Ques. 175:—How should such places be illuminated?

ANS.:—No room in which artificial illumination is required should be used for the preparation of meat and fish. All such rooms must be directly lighted from the outside and directly ventilated by means of windows to the external air.

Ques. 176:—Where is it unlawful to locate such establishments?

ANS.:—Below the level of the street.

Ques. 177:—What care should be taken of all machinery, tables, containers and utensils in such establishments?

ANS.:—They must be cleaned at least once each day with hot water and soap.

Ques. 178:—How would you detect bad meat in sausages.

ANS.:—I would look for a discoloration of the sausages; if the sausage has a disagreeable odor it should be condemned. I would examine carefully a highly colored sausage.

Ques. 179:—Write a letter to the Chief Inspector showing how meats are handled and kept under modern methods of cold storage. Sign this report "John Doe":

INSPECTION OF POULTRY.

Ques. 180:—What is the comb of a fowl?

ANS.:—The fleshy crest or projection on top of a hen's head; it is usually upright and notched or serrated.

Ques. 181:—What is the wattle of a fowl?

ANS.:—The red fold of skin on the throat or neck. It is very pronounced on the turkey.

Ques. 182:—What fish, birds or fowl is it unlawful to sell, or offer for sale?

ANS.:—No meager, sickly or unwholesome fish, birds or fowl shall be brought into the city, or held, sold or offered for sale for human food.

Ques. 183:—Under what conditions may fowls and small animals be kept in the City of New York?

ANS.:—No live chickens, geese, ducks or other fowls, shall be brought into or kept or held, or offered for sale, or killed, in any yard, area, cellar, coop, building premises or part thereof or in any public market or on any sidewalk, except upon premises used for farming in unimproved sections of the city, without a permit from the Board of Health and subject to the conditions thereof and obtained in accordance with the rules and regulations adopted by the Board of Health.

Ques. 184:—What are the characteristics of a healthy fowl?

ANS.:—Eyes bright, movements active, feathers glossy, nostrils free from discharge, combs and wattles firm and bright in color.

Ques. 185:—What facts would you note in the inspection of poultry?

ANS.:—The flesh should be of a yellow or pink color; no odor should be emitted from it; it should be firm and elastic and plump and the breastbone should be unbroken. If there is any discoloration it generally appears on the back before it does on the breast. The feet should be limp and pliable. Stiff, dry feet belong to a stale bird. Where the bird has been plucked, the skin should not be discolored.

Ques. 186:—What are the common diseases of poultry, and how are they detected?

ANS.:—Tuberculosis, chicken cholera, fowl enteritis, gape, "roup" or diphtheria of fowls.

Tuberculosis—the liver and spleen are generally attacked. The bird is generally found in an emaciated condition.

Chicken Cholera—the birds suffer from diarrhoea, the excretions being fluid and of a greenish color. They, as a rule, pass

into a sort of stupor and set with their feathers ruffled. Convulsions follow, which finally bring death. After death the flesh is found redder than normal; the intestines contain a greyish-yellow fluid, sometimes slightly blood-stained.

Fowl Enteritis—There is diarrhoea, but no stupor. After death the liver and spleen are found enlarged and congested; the intestines are also congested.

Gapes—The lungs are affected; it is generally found in young birds, and gives rise to much distress. The cause is the presence of a round-worm in the trachea.

"Roup"—The lungs are inflamed, also the eyes and alimentary tract. The affected parts become much reddened and covered with a whitish deposit. Small growths may appear on the featherless parts of the body.

Ques. 187:—What diseases of poultry make them unfit for food?

ANS.:—Tuberculosis—As long as the disease is confined to the spleen the birds remain plump and in good condition. When the liver becomes affected it is unfit for food.

Chicken cholera makes the birds unfit for food.

Fowl enteritis makes the fowl unfit for food.

Roup makes the chickens or pigeons unfit.

Ques. 188:—What are the indications that poultry has begun to spoil?

ANS.:—Stiff, dry feet; discoloration of the skin; odor. Flesh turning blue and soft and limp. Skin breaks readily.

Ques. 189:—What are the indications of gapes in poultry?

ANS.:—Small worms are attached to the lining of the trachea or windpipe. Gapes is usually found in young chickens.

Ques. 190:—How would you detect roup in a fowl?

ANS.:—Inflammation of the breathing organs, the eyes and the swallowing organs. Very red and covered with a whitish deposit. Fowl is emaciated and internal organs swell out. Small growths on the featherless parts of the body.

Ques. 191:—What is the appearance of a fowl affected with pip?

ANS.:—Emaciated, has a bluish color. The tongue is dry, hard and scaly, especially about the tip.

Ques. 192:—You are sent to a poultry store where you find for sale fowls which are unfit for food. Make out a report to

the chief inspector, assuming the conditions above.

ANS.:—Address 423 3rd Ave., Borough of Manh.

Department of Health,
The City of New York.
Division of Food Inspection.

November 15, 1912.

Owner, William Cole. Owner's address, 423 Third Avenue. Character of store, butcher shop. Store is two feet above street level. Store is free from overcrowding of goods. Adequate means of ventilation is provided. Atmosphere of store is not free from offensive odors. Merchandise is kept in clean, orderly condition. Floors are clean. Walls, ceilings, shelves, ledges are free from dust, dirt and rubbish. Store is adequately lighted. Proper washing facilities are provided for all necessary purposes. Store does not connect with a stable or living room. Store does connect with water-closet apartment, which is vestibuled and which vestibule is properly ventilated.

I found as follows: On the rack in the front window, among other fowls which were for sale, twelve fowls which emitted a disagreeable odor, putrid, decaying and unfit for human food. I seized and condemned these unwholesome fowls, sprinkled them with carbolic disinfectant and caused them to be removed to the public offal dock for destruction. I would respectfully recommend that William Cole be warned in writing not to sell or keep such ill-smelling poultry.

Respectfully submitted,
.....
Inspector of Foods.

Ques. 193:—You are sent to inspect a poultry store where you found poor ar-

rangements. Assume such facts as you please and make out a report to the chief inspector?

ANS.:—Address, 469 Amsterdam Avenue. Borough of Manhattan.

Department of Health,
The City of New York.
Division of Food Inspection.

Date, November 15, 1912.

Owner, J. Benjamin. Owner's address, 469 Amsterdam Avenue. Character of store, poultry.

Store is three feet above street level. Store is free from over-crowding of goods. Adequate means of ventilation is not provided. Atmosphere of store is not free from offensive odors. Merchandise is not kept in clean, orderly condition. Floors are not clean. Walls, ceilings, shelves, ledges are not free from dust, dirt and rubbish. Store is not adequately lighted. Proper washing facilities are provided for all necessary purposes. Store does not connect with a stable or living room. Store does connect with water-closet apartment, which is vestibuled and which vestibule is properly ventilated. I found as follows:

Chickens thrown on the floor among feathers and sawdust; walls unclean and in need of painting; odor of poultry; poor ventilation. I ordered the poultry hung up; the floor cleaned; windows opened and the walls painted.

I would respectfully recommend that Benjamin be sent a written order to have a transom put above door for ventilating purposes, and that his walls be painted.

Respectfully submitted,
.....
Inspector of Foods.

INSPECTION OF FISH.

Ques. 194:—What objections are there to exposing fish for sale in the open air?

ANS.:—Dust and dirt are liable to accumulate on the fish and these may contain the germs of disease, thus making the fish unfit for food. By exposure the process of decomposition is hastened.

Ques. 195:—May oysters be kept or sold without a permit?

ANS.:—No. Oysters shall not be held, kept, or offered for sale without a written permit from the Board of Health and subject to its rules.

Ques. 196:—Name five varieties of oysters usually on sale in New York, specify the manner in which the different types may be

distinguished and name the waters in which each variety is raised?

ANS.:—Blue Points, a small variety distinguished by a blue color on the inside of the shell, very white flesh, small eye. Real blue points come exclusively from the Great South Bay.

Rockaways:—This is a larger type of oyster than the Blue Points. They grow along Rockaway Inlet near Canarsie.

Peconic Bays:—Very salt, medium in size. Slight greenish tint in the flesh of the oyster. Come from Peconic Bay, near Greenport.

Cape Cods:—A "count" (large size); fine flavor; resembles a blue point in the matter of meat. Come from the bays of Massachusetts.

Lynnhavens:—A large oyster. Come from Lynnhaven Bay.

Ques. 197:—What are the characteristics of a healthy oyster?

ANS.:—It should be either tightly closed, or, if apart, the shells should, when the oyster is held flat between the finger and thumb, be felt to be gripped together by means of the powerful adductor muscle with which the oyster is provided. If the shells gape, and do not at once and vigorously close on handling, the oyster should be rejected.

Ques. 198:—Explain the danger that may result from the process of fattening oysters?

ANS.:—The danger is that the shellfish may become polluted by growing or being fattened in impure water, handling under unsanitary conditions, or packing in unclean receptacles.

This process of fattening is considered an adulteration unless labelled, "fattened" or "floated."

Ques. 199:—Describe the method of fattening oysters?

ANS.:—The oysters either in their shells or after shucking are placed in fresh or brackish water or else shipped in direct contact with lumps of ice. This causes the shellfish to greatly increase in size, owing to the absorption of an undue amount of water.

Ques. 200:—What course would you follow if you discovered many dead clams in a boatload?

ANS.:—If the majority of the clams were dead, I would order the whole boatload dumped into the river. If only a portion were dead, I would order the dead clams culled out and thrown into the river.

Ques. 201:—In inspecting a boatload, tell how you would distinguish dead clams from live ones?

ANS.:—The dead clams are open and usually emit an odor. If open and touched on the muscles which hold the shell, they will close if alive and remain open, if dead.

Ques. 202:—Describe the methods of using chemicals, employed for the purpose of giving fish a natural appearance?

ANS.:—Carmine and cochineal are placed on the fish gills to give them a very red color, which would indicate freshness.

Ques. 203:—Why is it important to know the seasons of the different fish?

ANS.:—Because they are best when they are in season. Just before spawning they are in the very best condition; after that they become poor, watery, thin and are usually unfit for food.

Some fish, for instance shad, are at their best during the spawning season, while others should not be eaten during this period.

Ques. 204:—In inspecting fish, state precisely to what points you would direct your attention and what indications would, in your opinion, show that the fish were unfit for sale.

ANS.:—I would see if the flesh adheres to the bones; if it doesn't the fish is stale; I would observe the flesh to which the bone has been attached, if a brown discoloration is left, like rust, after separating the bone, the fish is not fresh. I would feel the flesh; if fresh it should be hard, if not fresh the flesh is soft and flabby. I would then observe the eyes; if they are sunken, it is an indication of staleness. Examine the gills; if they are discolored, the fish is decaying. Smell the fish; if not fresh it will emit a bad odor. Any one of these tests is not sufficient, but they should all be taken together in judging the quality of fish. Bruised and knocked-about fish should be examined very carefully as they are most likely to go bad very quickly.

Ques. 205:—How would you determine that a frozen fish was good for food?

ANS.:—By the odor; smell the gills, and if they emit an unpleasant odor the fish is not good; the gills should not be discolored. See that there are no bruises on the fish. The flesh must be hard and plump. If it is hard (from freezing) and emaciated, it would indicate decay.

Ques. 206:—What are the characteristics of a fresh fish?

ANS.:—The eyes are full, not sunken in their sockets; there is no unpleasant smell; if the fish be held in the horizontal position by the head, there is no drooping of the tail. The fish should be firm to the touch, solid, and opaque, not soft or jelly-like or watery. The flesh should hold firmly to the bones; the scales should be intact. The gills should be bright and not discolored. If the fish be pressed firmly between the thumb and forefinger the flesh should not separate from the skin. In flat fish like flounders, fluke, etc., the skin should be smooth, moist, and hold firmly to the flesh; the skin should not be blistered. A good fish ought to be broad across the back; it should be broad rather than long.

Ques. 207:—How would you test canned fish and oysters without opening the cans?

ANS.:—As a rule, when a can is spoiled, it is usually in the condition termed "blown," i. e., with its end convex, instead of normal or concave.

Sound the cans by striking them. If the contents are sweet, a peculiar note is produced when the can is struck, readily distinguishable from the dull tone of the unsound can by any one familiar with the work.

Ques. 208:—How may you test the fitness of a salmon as an article of food by placing it in the water?

ANS.:—Stale salmon will float, while fresh salmon will sink in the water.

Ques. 209:—Describe a method of preserving salmon in addition to the canning process?

ANS.:—Smoking: The fish is first thoroughly cleaned and scaled; then it is salted; then it is smoked; this smoke possesses certain antiseptic qualities due to the presence of certain acids, creosote, etc.

Ques. 210:—How may you test the fitness of a salmon as an article of food by simple inspection?

ANS.:—I would smell it and if there is a disagreeable odor it is stale. I would hold the fish up (if not too large) by the head, the tail should not droop. The eyes should not be sunken. The flesh should be solid and not watery. If still unconvinced, I would tear away the flesh from the bone; if this can be done easily and if the bone leaves a rusty color on the flesh—the salmon is unfit for food.

Ques. 211:—In putting up salmon in cans, what precautions must be taken so that the fish may continue sound and wholesome for as long a period as possible?

ANS.:—The can should be absolutely airtight. All the air should be exhausted before the can is sealed.

No solder should be allowed to drop into the can, as the juices of the salmon would act on it and cause decomposition to set in. In order to obviate the difficulty of solder dropping into the salmon in the process of closing the "vent" hole, there should be a small cup-shaped piece of tin attached to the under surface of the lid in such a manner as to allow the can to exhaust all air but to catch any solder that might drop through.

The salmon should be first partially cooked in an open boiler before being placed in the can.

The cans should be sterilized before they are soldered.

Ques. 212:—How may you test the fitness of a salmon as an article of food by handling it?

ANS.:—Hold it up by the head in a horizontal position. If the tail droops, it is unfit for food.

Ques. 213:—In what way would you find out whether or not a boiled lobster was fit for food?

ANS.:—There should be no signs of decomposition. This is usually determined by the odor. The lobster should have been placed in boiling water while alive. This is determined by the tail test described elsewhere.

Ques. 214:—In inspecting cooked shell fish, state what points you would notice and what indications would show that the fish are unfit for sale.

ANS.:—Lobsters: There should be a stiffness in the tail which, if gently raised, will return with a spring. There should be no disagreeable odor. Soft-shell crabs should be a good weight for their size,

should emit no disagreeable odor. Oysters and clams: Should not be watery and should not emit a decaying odor. The best test is to taste them.

Ques. 215:—How would you determine whether, in a lobster it was placed in the hot water alive or dead?

ANS.:—A lobster which has been cooked alive, will have a stiffness in its tail, which if gently raised will return with a spring.

Ques. 216:—How would you inspect uncooked shell-fish? How would you detect the sign of unfitness in them?

ANS.:—Clams and oysters should be closed, or if open should close on being handled. They should not have an unpleasant odor. If the closed shell is struck with a knife, it should not give a hollow sound. Lobsters and Crabs: They should be heavy for their size; very small lobsters should not be sold; they should be alive. There should be no odor of decomposition from them. Crabs should not have spawn attached to the tails. Crabs and lobsters should be dark brown or brown-black in color. A red color indicates death and unfitness.

Ques. 217:—You are sent as an inspector to visit a fish store where fish is offered for sale which is not fit for food. Write a report to the chief inspector giving the results of your inspection.

ANS.:—Address..... Borough.....

Department of Health,

The City of New York.

Division of Food Inspection.

Date.....191..

Owner..... Owner's address..... Character of Store, fish. Store is 3 feet above street level. Store is.....free from overcrowding of goods. Adequate means of ventilation isprovided. Atmosphere of store is not free from offensive odors.

Merchandise is.....kept in clean, orderly condition. Floors are.....clean. Walls, ceilings, shelves, ledges are.....free from dust, dirt and rubbish. Store is.....adequately lighted. Proper washing facilities are.....provided for all necessary purposes. Store does not connect with a stable or living room. Store does connect with water-closet apartment, which is vestibuled and which vestibule is.....properly ventilated.

Found—18 mackerel exposed on a fish counter with a vile odor—not on ice—gills discolored—and flesh soft and watery.

Ordered—Condemned, sprinkled same with lime and had putrid fish removed to public offal for destruction.

I would respectfully recommend that owner be warned to keep all fish thoroughly packed with ice and to immediately dispose of all offensive smelling fish in order to render the store free from odor.

Respectfully submitted,

.....

Inspector of Foods.

INSPECTION OF FRUITS AND VEGETABLES.

Ques. 218:—How may diseased or decayed fruit be recognized?

ANS.:—By softening, change of color and external mould.

Ques. 219:—How would you recognize unripe fruits?

ANS.:—The pulpy substance of unripe fruits is often hard and tough and the juice strong and sour. When fruits, in this condition, are eaten, they cannot be digested, and both pulp and juice cause irritation and often inflammation of the digestive organs. Fruits are made wholesome by ripening and by cooking.

Ques. 220:—May vegetables greened with copper salts be sold? What vegetable is usually so colored?

ANS.:—Vegetables greened with copper salts, but which do not contain an excessive amount of copper and which are otherwise suitable for food, may be sold, if the label bears the statement that sulphate of copper or other copper salts have been used to color the vegetables.

Imported French green peas are usually colored green with copper salts.

Ques. 221:—Is there any special care to be taken in inspecting fruit offered for sale on the street? If so, what?

ANS.:—If the fruit is exposed in such a way that flies and other insects can attack it, the fruit should be ordered cleaned off and covered.

The inspector should not merely take fruit from the top, he should go right into the centre of the pile, even to the bottom, and examine the fruit there.

The place where the fruit is kept should be clean and not in a place where it is likely to suffer from unsanitary surroundings. Sliced fruit should be kept covered.

Ques. 222:—State fully the proper arrangements and appliances of shops where fruit and vegetables are on sale.

ANS.:—The store should be on the street level or above. It should not be in a cellar where it is likely to be damp.

The fruits and vegetables should not be overcrowded. This would prevent the spoiling of good fruit and vegetables by contact with the decomposed and it also insures sufficiency of air space.

The place should be airy; there should be adequate means of ventilation so that no germs can be harbored in dark corners. For a like reason, the place should be absolutely clean. This is very important.

The atmosphere of the store should be free from offensive odors, as these often become imbedded in the fruits and vegetables.

The fruits and vegetables should be kept in a clean, orderly condition.

The floors should be kept clean.

The walls, ceilings, shelves, ledges are to be kept free from dust, dirt and rubbish.

The store should be adequately lighted.

There should be proper facilities for washing fruits and vegetables in clean water and ample receptacles (covered) for disposing of unfit fruit and vegetables.

The place should not connect with a stable or living room or water-closet apartment which is not vestibuled, and which vestibule is not properly ventilated.

There should be covered cases for cut pineapples, watermelons, berries, etc.

Ques. 223:—You are sent to a fruit store where you find food not fit for use. Write a report to the chief inspector giving the results of your inspection.

ANS.:—Address..... Borough.....

Department of Health.

The City of New York.

Division of Food Inspection.

Date.....191..

Owner..... Owner's address
..... Character of store, fruit.
Store is two feet above street level. Store is not free from over-crowding of goods. Adequate means of ventilation is.....provided. Atmosphere of store is not free from offensive odors. Merchandise is not kept in clean, orderly condition. Floors are not clean. Walls, ceilings, shelves, ledges are not free from dust, dirt and rubbish. Store is.....adequately lighted. Proper washing facilities are.....provided for all necessary purposes. Store connects with living room. Store does connect with water-closet apartment, which is vestibuled and which vestibule is.....properly ventilated.

Found—Baked bananas—opened some and found them decomposing.

Ordered—Thrown in garbage can and covered with chlorate of lime—saw that order was complied with.

Found—"Specked" pine—soft and decomposing—unfit.

Ordered—Condemned and thrown in garbage can as above.

I would respectfully recommend that owner be warned in writing to keep fruit in an orderly fashion with different kinds separated—that door leading to living room be kept closed to exclude offensive cooking odors—that floor be kept dry and free from

refuse. Walls, ceilings, shelves, etc., be whitewashed.

Respectfully submitted,

.....
Inspector of Foods.

Ques. 224:—You are sent to a fruit and vegetable store where you find bad arrangements—make out a report to the Chief Inspector, giving the results of your inspection.

ANS.:—Address..... Borough.....

Department of Health,
The City of New York.
Division of Food Inspection.

Date.....1911.

Owner..... Owner's address..... Character of store, fruit and vegetable. Store is two feet above street level. Store is not free from overcrowding of goods. Adequate means of ventilation is.....provided. Atmosphere of store is.....free from offensive odors. Merchandise is not kept in clean, orderly condition. Floors are not clean. Walls, ceilings, shelves, ledges are not free from dust, dirt and rubbish. Store is.....adequately lighted. Proper washing facilities are.....provided for all necessary purposes. Store does not connect with a stable or living room. Store does connect with water-closet apartment, which is vestibuled and which vestibule is.....properly ventilated. I would respectfully recommend that different kinds of vegetables be kept separated—that fruit be dusted daily—that all refuse be removed from floors and kept in a covered receptacle.

Respectfully submitted,

.....
Inspector of Foods.

Ques. 225:—You are ordered to take a sample of dried apples for laboratory analysis. Tell fully what you would do?

ANS.:—I would show the owner of the store my badge and tell him that I am an Inspector of Foods. I would inquire if the dried apples are for sale and I would find out who is the owner of the place. I would then take some of the dried apples from different parts of the box and place them in the glass receptacles furnished by the department; fill two or three, labeling each bottle, stating the number of the inspection, date, owner and part of box the apples came from. Make a complete written report.

Ques. 226:—What conditions would tend to cause deterioration in dried apples?

ANS.:—Heat, moisture and exposure to the dust or flies.

Ques. 227:—What appearances and conditions in dried or evaporated apples and

apricots would cause you to reject them for food purposes?

ANS.:—Swelled appearance due to moisture; this brings on fermentation and decomposition. Presence of filth, dust, fly or other insect excretions, worms or mites.

Ques. 228:—What is apple scab?

ANS.:—This is a disease which attacks the skin of apples. There are characteristic spots or scab on the surface of the apple.

Ques. 229:—Tell exactly what you as Inspector would do upon seeing offered for sale black bananas?

ANS.:—I would order the black bananas taken off the stand and cast into the garbage can. These bananas would probably be found full of germs and unfit for food. I would make complete report to my superiors.

Ques. 230:—Describe "baked" bananas. State the cause and means of determination.

ANS.:—These are overripe bananas and are usually black or dark brown in color—they are soft. This is usually caused by carrying the bananas in the holds of ships, where they become ripe before they reach the market. Their condition can be determined by color and condition. If opened they will be found to be decomposed. This usually causes the germs to be very active.

Ques. 231:—How would you detect the coloring of green beans, peas, etc., by the addition of copper?

ANS.:—It is employed for the purpose of giving an intense green color. Add a drop or two of hydrochloric acid, mix thoroughly, and place a bright steel knife blade in the solution. If copper salts are present, copper, easily recognized by its reddish color, will be deposited upon the knife blade.

Ques. 232:—Tell exactly what you as Inspector would do upon seeing offered for sale "nested" string beans.

ANS.:—I would order the beans cast into a garbage pail and covered with a disinfectant. I would warn the dealer not to sell such beans and make a complete report to my superiors.

Ques. 233:—In a physical examination of preserved cherries in glass jars, what would lead you to suspect adulteration?

ANS.:—The chief adulterant of preserved cherries is the addition of artificial color to the cherry, so that the red color may be preserved. Coal tar dyes and cochineal are used for this purpose. The only physical means of detecting this artificial coloring is by the deep red hue of the cherries.

Ques. 234:—Tell exactly what you as Inspector would do upon seeing offered for sale cocoanuts with one eye plugged?

ANS.:—I would condemn the cocoanuts and take one with me. I would get a summons from a Magistrate and have the dealer arrested, as this is a violation of the Sanitary Code.

Ques. 235:—Tell exactly what you as Inspector would do upon seeing offered for sale yellow “cukes”?

ANS.:—I would order them cast into a garbage can and covered with chlorate of lime.

Ques. 236:—Tell exactly what you as Inspector would do upon seeing offered for sale figs exposed to the air and covered with flies?

ANS.:—I would order the dealer to cover the figs and if I found that the upper layer was contaminated by the excretions of the flies, I would order the figs in that layer thrown away.

Ques. 237:—What are the differences in color and other appearances between discolored and “speck” pineapples?

ANS.:—Discolored pineapple is lighter in color at the discolored parts than on the rest of the apple. It is hard and has no decaying odor.

“Speck” is usually darker in color and is soft and gives off a decaying odor.

Ques. 238:—Describe “baked” orange. What is its cause and how would you detect it?

ANS.:—“Baked” orange is an overripe orange. Oranges are picked in a green state and shipped unripe. They are ripened after they reach market. If shipped in a warm or moist place this causes them to ripen too soon. They are very soft and offer little resistance to the touch.

Ques. 239:—How are pickles, olives and capers adulterated? How would you detect these adulterants?

ANS.:—They are colored artificially with copper salts. This gives the pickles, olives and capers a very green color and this should lead the Inspector to suspect the addition of adulterants. A sample should be taken to the laboratory and there a chemical test should be made.

Ques. 240:—Tell exactly what you as Inspector would do upon seeing offered for sale slices of pineapples on a tray?

ANS.:—If the pineapples were just cut I would order the tray covered. If the slices are covered with dust or fly or insect dirt, I would condemn them and have them thrown away. I would warn the owner that all cut fruit must be covered and not left exposed. I would then report to my superiors what I had done.

Ques. 241:—What is “speck” pine? What is its cause and how would you detect it?

ANS.:—“Speck” pine is pineapple which has started to decompose. It is usually due to an injury to the pineapple or the presence of a worm therein. It is detected by its softness in the “specked” part and by a characteristic decomposing odor.

Ques. 242:—What are “pricked” potatoes?

ANS.:—These are potatoes which have

been injured or pierced by the potato hook in the process of gathering.

Ques. 243:—What are the symptoms of “blight” in potatoes?

ANS.:—The most frequent symptoms of potato blight are a scabby appearance, showing patches, apparently of dirt, adhering closely to the potato. If the potato be peeled or cut, brown spots can be seen.

Ques. 244:—If you have a cargo of barrels of potatoes to inspect of a morning, how would you proceed to do so with quickness and accuracy?

ANS.:—I would open a few bags or barrels from different parts of the cargo and examine carefully specimens from different parts of the bags or barrels. I would take a chip of wood out of the sides of some of the unopened barrels and note the condition of the potatoes exposed.

Ques. 245:—How should raisins and currants be kept?

ANS.:—They should always be kept dry; if they become damp they are liable to ferment.

Ques. 246:—In a physical examination of preserved tomatoes in glass jars, what would lead you to suspect adulteration?

ANS.:—If the tomatoes have a highly red color, it would lead me to suspect that cochineal or a coal tar dye had been added to give unripe and unwholesome tomatoes the appearance of good ones.

Ques. 247:—In a physical examination of preserved strawberries or raspberries in glass jars, what would lead you to suspect adulteration?

ANS.:—If the color is very red, it would lead me to suspect that some coloring matter had been used. This could only be positively determined by a chemical analysis. If there is any fermentation at the top, it would also lead me to suspect adulteration.

Ques. 248:—In a physical examination of preserved rhubarb in glass jars, what would lead you to suspect adulteration?

ANS.:—A heightened yellow color would indicate the addition of coloring matter. A chemical test would be necessary to settle the matter positively.

Ques. 249:—What examination would you make of the following vegetables and what conditions would cause you to condemn the same for food: Onions, lettuce, turnips, peas-in-the-pod, cucumbers, spinach, rhubarb, cabbage and green corn?

ANS.:—Onions:—I would see if they are soft or rotten. If they are I would condemn them.

Lettuce:—Look for worms or dust.

Turnips:—Look for soft spots and a decaying odor; also shriveled up, which indicates that they have been kept a long time.

Peas-in-the-pod:—Smell them for a decaying odor; open the pod and see if the pea is developing a stem (an indication that they have been kept in a damp place); look for molds.

Cucumbers:—Look for yellow cucumbers and soft ones.

Spinach:—Worms, dust and foreign matter, manure.

Rhubarb:—Soft stems; dried and withered leaves. Rotting blotches on the stems.

Cabbage:—Worms and decay from being kept too long.

Green Corn:—Decaying odor; worms and soft, decaying spots.

Ques. 250:—How do you test melons without cutting? What do you consider the practical value of the test?

ANS.:—Watermelons are usually tested by their weight. A heavy melon for its size would indicate an abundance of juice. This does not, however, show that the interior is ripe. Take the melon up with one end in each hand and squeeze it. If it gives a crackling sound it is ripe.

The color is often an aid. If the melon is white, it would indicate that it hasn't ripened. This test used in conjunction with the above is usually a good indication of the condition of the melon.

Muskmelons or Cantaloupes:—Usually the color is a guide. A very green color shows that the melon is not ripe. Feel the long ends; if they are soft this would indicate over-ripeness and decay. These tests are not absolutely final, as they often fail. The odor is often a guide.

Ques. 251:—What are the differences in color and other appearances between blistered and speck tomatoes?

ANS.:—Blistered tomatoes are light pink in color. The blisters are due to their ripening in a damp place. Aside from the blistered skin, they are fit for food. Speck tomatoes are usually very red and have soft spots which penetrate below the skin. They usually have a decaying odor and are soft. They are unfit for food.

Ques. 252:—Describe fully your method of judging cocoanuts.

ANS.:—Shake the coconut near the ear and listen for an abundance of coconut milk on the interior. This usually indicates a good nut. See if the eye has been opened (so that fluid can be poured in) and plugged.

Ques. 253:—How would you detect celery which has been freshened?

ANS.:—Where the upper decomposed

leaves have been torn off, the distance of the stem-head from the leaves will be found greater than in the fresh celery.

Ques. 254:—Describe brown rot in potatoes.

ANS.:—The potato has a brown or black discoloration and ultimately there is a complete rotting of the interior.

Ques. 255:—Describe potato scab.

ANS.:—This is a disease which is caused by a fungus. The potato is covered with a great number of scabs which appear like so many clouds on the surface of the affected potato.

Ques. 256:—What conditions, in your opinion, would make potatoes, cabbages and tomatoes unfit for sale and how would you determine these conditions?

ANS.:—Potatoes:—Brown rot, blight or scab or freezing. See that the potato is not soft or shriveled. The potato if cut open must show no brown or black discolorations. The skin should not be covered with scabs. (Conditions of each discussed in another question.)

Cabbages:—Look for worms and rotting of the core and interior leaves.

Tomatoes:—Soft tomatoes, which are overripe and decaying, should not be sold. In either case they will be very red and soft and emit a decaying odor. Worms can sometimes be seen. Damaged tomatoes should be carefully inspected, as they decay rapidly.

Ques. 257:—In what condition should a place be where fruit is offered for sale?

ANS.:—It should be a dry place, as moisture causes mold and decay. The premises should be properly aired, as odors often attach themselves to different fruits. The place should be kept clean. This is important, as it often prevents germs from multiplying in the place. No dust should be allowed to accumulate on the fruit, as this dust is often germ-laden. Natural light is to be preferred to artificial light. The sanitary arrangements, plumbing, toilets, etc., should be in proper condition.

Ques. 258:—What substances added to canned tomatoes are considered adulterations?

ANS.:—The addition of water, sugar, syrup, pulp, tomato juice in excess of the amount present in the tomatoes used.

PREVIOUS EXAMINATION QUESTIONS.

Municipal Civil Service Commission.

MEAT INSPECTOR.

TECHNICAL.

Date: June 25, 1908.

(To be finished by 1.30 p. m.)

1. (a) Give in detail the process of curing a ham from the time it is trimmed until it is ready for shipment. (b) Describe a modern method of making lard on a large scale.

2. (a) Explain how ordinary pork sausages are made, naming the various ingredients, showing the proportion of each. (b) Do the same for frankfurters. (c) How would you detect bad meat in sausages?

3. (a) How would you determine whether or not a forequarter of beef was fit for human food? (b) How would you differentiate between meat that was aging and meat that was decomposing? (c) In a freshly slaughtered steer, where would you look for evidence of tuberculosis and how would you determine that it was infected with tuberculosis and not pneumonia?

4. Tell what you know about each of the following: (c) Stearin; (2) Measly meat; (3) Wooden tongues; (4) Septicemia.

5. What preservatives and coloring matters are used in meats? Which of these preservatives and coloring matters are forbidden for use in New York City by the Board of Health? What appearances or conditions would lead you to suspect that a forbidden preservative or coloring matter had been used?

6. What are the indications that poultry has begun to spoil? What is the appearance of a fowl affected with pip, with roup, with gapes? What artificial methods are used for keeping poultry?

7. How would you recognize meat inflation? Why is it done and what are the objections thereto? How would you be able to distinguish between a lamb and a sheep, if both were cauld dressed and of the same size?

8. Write a letter to the Chief Inspector showing how meats are handled and kept under modern methods of cold storage. Sign this report "John Doe."

9-10. Give the name and describe the condition of each specimen shown you. (The candidate should make notes at times of inspection and afterward write description in full, arranging his answers to correspond with the number of each specimen.)

ARITHMETIC.

(To be finished by 4 P. M.)

Give all the figuring on the ruled sheets.

1. A butcher having 275 lbs. of beef, held it until 3/16 had become mouldy. He then sold the rest at an average of 15 cents a pound. How much did he receive?

2. Add: 7654327654

9876543234

1234567890

6549872345

3243235432

8762187654

4545454545

3876987435

8765432345

5678987657

3. At 16 and $\frac{3}{4}$ cents per pound, how many pounds of pork can be bought for \$4.19?

4. Multiply 68745 by 907.

Municipal Civil Service Commission.

New York.

FISH INSPECTOR.

Technical.

Dated June 24, 1908.

(To be finished by 1:30 P. M.)

1. (a) In putting up salmon in cans, what precautions must be taken so that the fish may continue sound and wholesome for as long a period as possible? (b) Describe a method of preserving salmon in addition to the canning method.

2. (a) In a general way, name the local waters from which oysters may not be taken for sale in New York, giving reasons for the prohibition. (b) Describe the method of fattening oysters, and explain the danger that may result from the fattening process. (c) Name five varieties of oysters usually on sale in New York, specify the manner in which the different types may be distinguished and name the waters in which each variety is raised.

3. How may you test the fitness of a salmon as an article of food (a) by simple inspection; (b) by handling; (c) by placing it in the water?

4. (a) How would you determine whether, in a lobster, it was placed in the hot

water alive or dead? (b) In what way would you find out whether or not a boiled lobster was fit for food?

5. Mention any chemicals you know to be employed for the purpose of giving fish a natural appearance, describe the method of using such chemicals, and explain the injurious effects produced by their use.

6. (a) In inspecting a boat load, tell how you would distinguish dead clams from live ones. (b) What course would you follow if you discovered many dead clams in a boat load?

7. (a) How would you determine that a frozen fish was good for food? (b) How long can fish be left in cold storage without losing their nutritive qualities?

8. Write a report describing the results of an inspection of a quantity of fish which you found on sale in Fulton Market and were obliged to condemn as unfit for food?

Sign this report "John Doe."

9-10. Give the name and describe the condition of each specimen shown you. (The candidate should make notes at the time of inspection and afterward write description in full, arranging his answers to correspond with the number of each specimen.)

ARITHMETIC.

(To be finished by 4 P. M.)

Give all the figuring on the ruled sheets.

1. Add: 8765432323
2498789876
9496954323
1876543456
7865434565
3845676789
6574345676
4534876987
5843456765
6543454345

2. If $\frac{3}{5}$ of a piece of land cost \$12,000, how much would two such pieces cost?

3. How much would $27\frac{1}{2}$ rolls of cloth come to at \$12.75 a roll?

4. Divide 11173080 by 27385.

Municipal Civil Service Commission.

INSPECTOR FRUITS AND VEGETABLES.

TECHNICAL.

Date: June 26, 1908.

(To be finished by 2 p. m.)

1. What fruits picked before ripening will decompose and not ripen? Name the fruits which after being frozen become unfit for food. Tell what you know about the transportation and marketing of pineapples and mangoes.

2. What are "pricked" potatoes? Define potato scab, blight and brown rot. If you have a cargo of barrels of potatoes to in-

spect of a morning, how would you proceed to do so with quickness and accuracy?

3. Tell exactly what you as Inspector would do upon seeing offered for sale: (a) Figs exposed to the air and covered with flies; (b) yellow "cukes"; (c) "nested" string beans; (d) cocoanuts with one eye plugged; (e) black bananas; (f) rice cauliflower; (g) slices of pineapples on a tray.

4. What are the differences in color and other appearances between (a) unripe and rotten red bananas; (b) discolored and "speck" pineapples; (c) blistered and speck tomatoes.

5. What examination would you make of the following vegetables and what conditions would cause you to condemn the same for food: Onions, lettuce, turnips, peas-in-the-pod, cucumbers, spinach, rhubarb, cabbage and green corn?

6. What appearances and conditions in dried or evaporated apples and apricots would cause you to reject them for food purposes? What conditions would tend to cause deterioration in dried apples? You are ordered to take a sample of dried apples for laboratory analysis; tell fully what you would do.

7. In a physical examination of the following preserved substances in glass jars, what would lead you to suspect adulteration? (a) Tomatoes; (b) pickles; (c) cherries; (d) strawberries; (e) raspberries; (f) chow-chow; (g) rhubarb. What does a concave head on a can indicate?

8. A carload of potatoes, crated tomatoes and yellow turnips arrives at the terminal in New York in a frozen condition. Tell what disposition you would order for these vegetables and give your reasons therefor in the form of a report to the Chief Inspector. (Sign this report "John Doe.")

9-10. Give the name and describe the condition of each specimen shown you. (The candidate should make notes at time of inspection and afterward write description in full, arranging his answers to correspond with the number of each specimen.)

ARITHMETIC.

(To be finished by 4 p. m.)

Give all the figuring on the ruled sheets.

1. If a dealer buys 76 boxes of cherries at auction, paying at rate of \$1.17 $\frac{3}{4}$, and sells them in two lots, 36 boxes at \$1.22 $\frac{1}{2}$ and the remainder at \$1.18 $\frac{3}{4}$, what does he gain?

2. Add: 5432345432
8765434567
8765678987
7654567654
9876789876
8765456765
6765456543
4323432343
2131567650
3935373676

3. If 60 lemons in a box were rotten and the box still had 5/7 of the whole in good condition, how many lemons did the box contain at first?

4. Divide 5445636 by 6748.

INSPECTOR OF FOODS.

September 2, 1903.

Note:—All candidates had to answer questions 1 to 4. After answering all those questions, candidates were allowed to select one of the four divisions offered. No credit was given to a candidate in any division who undertakes to answer questions in more than one division.

SPECIAL.

1. What are the duties of a Food Inspector?

2. To what extent should a Food Inspector acquaint himself with (a) the sources of supply; (b) the seasons at which different kinds of food are offered in the markets; (c) the points at which these supplies are delivered in the city; (d) the distribution of such supplies to the different places of sale?

3. How should an ice-box be connected with the sewer? Draw a plan showing pipes and connections.

4. You are sent as an inspector to visit five different places where food is offered for sale. In some of these places you find the food not fit for use. In some you find bad arrangements. Assuming such facts as you please, write a report to the Chief Inspector, giving the results of your inspection.

I. MEAT AND POULTRY.

5. State the common terms applied to diseased or unfit veal, mutton, pork and poultry and define precisely each term.

6. (a) What is pleuro-pneumonia and what animals are subject to that disease? (b) What are the indications of this disease in animals before and after slaughtering?

7. What is the "Kosher" method of slaughtering?

8. What are the common diseases (a) of hogs; (b) of poultry? How are they to be detected? Which of them makes the animal unfit for food?

9. How can the existence of fever in an animal, at the time of slaughtering, be detected in the dressed meat? How is the temperature of a living animal ascertained?

10, 11, 12. Give the name and describe the condition of each specimen shown you. (The candidate was advised to make notes at the time of the inspection and afterward write descriptions in full, arranging his answers to correspond with the number of each specimen.)

II. FISH.

5. What kinds of fish are found in our markets and at what time of year is each kind offered for sale?

6. Name the principal sources of supply of each kind you have mentioned in your answer to question 5.

7. In inspecting fish, state precisely to what points you would direct your attention and what indications would, in your opinion, show that the fish were unfit for sale. Answer this question fully.

8. Answer the question put in No. 7 with reference both to cooked and uncooked shell fish.

9. How would you test canned fish and oysters without opening the cans?

10, 11, 12. Give the name and describe the condition of each specimen shown you. (See No. 10, Division 1.)

III. MILK.

5. Give the terms in common use applied to milk in its different forms and stages and describe precisely the meaning of each term. State which of these, in your opinion, makes the milk unfit for sale, and state what test you would make of a specimen submitted to you to determine its character.

6. What is a lactometer? Describe it and state how it is used?

7. How would you test canned condensed milk without opening the can?

8. State what, in your opinion, are the necessary arrangements, conditions and appliances of places where milk is kept on sale. What is the proper temperature at which to keep milk in places of sale?

9. Name the most common adulterants of milk; state for what purpose each is used; how you would try to detect it, and in what way, if at all, each is harmful.

10, 11, 12. Examine each specimen shown you and give your opinion of it. (See No. 10, Division I.)

IV. FRUIT AND VEGETABLES.

5. Describe "baked" bananas, "speck" pine, "baked" orange; what causes these imperfections and how are they detected?

6. What conditions, in your opinion, would make potatoes, cabbages and tomatoes unfit for sale, and how would you determine these conditions?

7. State fully the proper arrangements and appliances of shops where fruit and vegetables are on sale.

Describe fully your method of judging coconuts.

9. How do you test canned goods without opening? State fully.

10, 11. State the principal sources of supply and all the seasons of sale of the staple fruits and vegetables in New York City.

12. Is there any special care to be taken

in inspecting fruit offered for sale on the street? If so, what?

13. How do you test melons without cutting? What do you consider the practical value of the test?

14. What are "soaked" canned goods?

ARITHMETIC.

- | | | |
|-------------|---------|---------|
| 1. Add | 789658 | |
| | 937878 | |
| | 659763 | |
| | 976842 | |
| | 768247 | |
| 2. Subtract | 542075 | |
| | 238976 | |
| 3. Multiply | 43087 | by 6098 |
| 4. Divide | 2911767 | by 4789 |

Civil Service Commission,

City of Chicago.

FOOD INSPECTOR.

Division H, Grade II, \$1,080.

SPECIAL SUBJECT.

1. (a) What diseases would you look for in the inspection of slaughtered cattle and hogs? (b) Describe the lesions that would lead you to condemn the whole or part of a carcass. 2. (a) How would you determine that carcass of beef sent in to the city by express was tubercular? (b) How would it appear if the animal had died of tuberculosis? 3. (a) How would you determine that a calf slaughtered for veal was less than two weeks old? (b) Why and when should veal be condemned? 4. What would be your rule as to the condemnation or otherwise of a carcass of an animal that had been accidentally injured so as to render slaughter necessary? 5. What conditions in and around a milk depot may render the milk dangerous and detrimental to health? 6. (a) What diseases of the cow render the milk unfit for food? (b) How is tuberculosis recognized in dairy cattle and what precautions should be taken to prevent the spread of tuberculosis by the milk supply? 7. (a) The milk from what sources is required to be pasteurized by the Chicago ordinance? (b) State in detail what observations should be made in the pasteurization plant to determine its efficiency? 8. (a) Why should ice be inspected? (b) What things or conditions should not be permitted in connection with the making of ice on lakes or artificially? 9. (a) What canned goods are apt to spoil and become dangerous to health? (b) How would you recognize spoiled canned goods and how should they be disposed of? 10. Describe the effect of cold storage on poultry and game.

ARITHMETIC.

1. Compute and give total of the following bill: 15 bbls. flour at \$5.50 per bbl., 868

lbs. of sugar at $.05\frac{1}{2}$ per lb., 48 gals. syrup at $.06\frac{1}{4}$ per gal., 11 lbs. butter at $.28$ per lb., $112\frac{1}{2}$ lbs. lard at $.08$ per lb. 2. A helper receives \$15 per week; he works 49 weeks a year; his expenses are \$396 a year. How many years will it take him to save \$2,712? 3. A wholesale dealer bought 8,270 barrels of sweet potatoes at \$1.75 a barrel; he sold $\frac{3}{5}$ of them at \$2.25 a barrel and the remainder at \$1.90 a barrel. How much did he gain? 4. A can inspect a district in 12 days and B can inspect the same district in 10 days. How long will it take both working together to inspect it? 5. If milk contains $4\frac{1}{2}$ per cent. butter, how many pounds of butter are there in 265 gallons of milk? (1 gal. = 8 lbs.)

EXPERIENCE AND PENMANSHIP.

1. How old are you? 2. What has been the extent of your education? State what schools you have attended, how long and certificates you hold, if any. 3. What experience have you had in handling or dealing with the following food products: (a) meat, (b) milk, and other dairy products, (c) fruits and vegetables, (d) groceries and canned goods? Explain fully in each instance, stating when, where, how long, and the nature of your work. 4. Have you ever had any experience as a food or meat inspector? If so, state when, where, how long. 5. State any other experience or training that you may have had that would tend to fit you for the position of food inspector.

REPORT.

Write a report describing the result of an inspection of a quantity of fish which you found on sale in a market and were obliged to condemn as unfit for food.

Civil Service Commission,

City of Chicago.

MEAT INSPECTOR.

DUTIES.

1. State in detail all the duties that you assume a meat inspector may be called upon to perform.
2. Name the affections on account of which you would condemn as unfit for food, flesh from animals that were slaughtered while suffering from them.
3. On inspecting a freshly slaughtered carcass, why should special attention be paid to the condition of the lymphatic glands?
4. Would you advise butchers to let the interior lining of the chest on the carcass remain? If so, why?
5. Generally speaking, how can the inspector best determine the age of the carcass?

6. What is the general appearance of flesh of an animal that has not been bled?

7. What would be your rule as to the condemnation or otherwise, of the carcass of an animal that had been accidentally injured so as to render slaughter necessary?

8. What disposition would you advise of the carcass of an animal that had become cast in a stall and slowly died of suffocation?

9. Would you pass the flesh of animals that were killed by lightning or electricity?

10. How would you test the truth of a statement that an animal had been "struck by lightning"?

11. What is the effect of death by asphyxia upon the flesh of animals?

12. Would you condemn the carcass of a young pig that you knew had suffered from epilepsy?

13. Discuss the causes and post-mortem conditions of peritonitis.

14. How far may the inspector be guided by the condition of the liver in determining the fitness of a carcass?

15. What are some morbid post-mortem conditions that should lead to the condemnation of the kidneys?

16. In general, give three rules to follow in each of which case the entire carcass ought to be condemned,

6. (a) Name ten foods (aside from spices) which are frequently adulterated, and name the adulterants used in the particular cases. (b) Name five spices and their most common adulterants.

7. State fully how to inspect and detect spoiled fruit or vegetables in cans.

8. (a) What is a common standard egg? (b) Describe fully a practical test to detect spoiled eggs.

9. What is the proper duty and method of procedure of a milk or dairy inspector under each of the following cases: (a) When a diseased cow is found in a dairy? (b) When a case of smallpox is discovered in a house in which there is a milk depot? (c) When a milk dealer refuses admission to his wagon to a city milk inspector? (d) When brewery refuse is found in the possession of a dairyman?

10. Describe fully and in detail the sanitary surroundings of an ice house and lake from which domestic ice may properly be obtained.

11. Assuming that the Chief Food Inspector has charge of restaurant inspectors and is about to instruct his men concerning their duties, state fully what instructions he should give them concerning their work and the matters they, as such inspectors, should especially inquire into.

12. Write a paper of not less than 200 words, discussing the question of cold storage of food, with special reference to the preservation of wholesomeness and nutritive value of same, touching especially on the preparation and proper condition of food which is to be placed in cold storage, the proper care of same while in, and also after removal therefrom, and the length of time foods may properly be kept in same.

13. Assuming that the Chief Food Inspector has under his supervision 15 meat inspectors, 8 dairy inspectors, 5 ice inspectors, 15 milk inspectors, 10 restaurant inspectors, state fully what field organization of such forces he should make so as to get most effective inspections; what reports he would require and what check or supervision he would exercise over his men to get efficient service and a full day's work from each.

14. State fully how the Chief of Bureau of Food Inspection would classify and record the reports and information gathered by his inspectors, giving fully the system of records which should be kept of the work and the information thus obtained.

Civil Service Commission,

City of Chicago.

BUR. CHIEF FOOD INSPECTOR.

SPECIAL SUBJECT.

1. (a) What is the standard analysis of (1) milk, (2) cream, (3) butter, (4) cheese? (b) What practical test should be used to determine whether a firkin exposed in a grocery store contained butter, oleomargarine or renovated butter?

2. (a) Name the domestic food preservatives the use of which is permissible under the Illinois State food law. (b) Name the chemical preservatives the use of which is not permissible under same.

3. Describe in detail the appearance and condition of poultry, game and fish which would warrant the Chief Food Inspector in condemning same.

4. Describe the appearance and condition of fruits and vegetables which would warrant him in condemning same.

5. Describe the appearance and condition of cut meats which would warrant him in condemning same.

RULES RELATING TO EGG BUSINESS, POULTRY, SLAUGHTER HOUSES AND CANNED GOODS.

Dept. of Health, City of New York.

RULES AND REGULATIONS

To Be Observed in Conducting the WHOLESALE EGG BUSINESS.

Section 42, Sanitary Code.

No meat, fish, eggs, birds, fowl, fruit, vegetables or milk not being then healthy, fresh, sound, wholesome, and safe for human food, nor any meat or fish that died by disease or accident, shall be brought into the City of New York, or offered or held for sale as such food anywhere in said city, nor shall any such articles be kept nor stored therein.

For the purposes of this section, any meat, fish, eggs, birds, fowl, fruit, vegetables or milk offered for sale anywhere in the city by dealers in food, shall be deemed to be offered or held for sale as food.

Section 48, Sanitary Code.

No meat, fish, fruit, vegetables, eggs, milk or other food or unwholesome liquid shall be sold, held, offered for sale, labeled or any representation made in respect thereof under a false name or quality, or as being what the same is not, as respects wholesomeness, soundness or safety for food or drink.

Section 48A.

No persons shall break out eggs for sale, or conduct the business of breaking out eggs, to be canned, frozen, dried or used in any other manner in the City of New York, and no eggs broken from the shell, whether canned, frozen, dried or treated in any other manner, shall be received, held, kept, sold, offered for sale, or delivered in the City of New York, without a permit from the Board of Health, and subject to the conditions thereof, and subject also to the rules and regulations adopted by the said Board of Health.

A. No person shall receive, hold, keep, sell or offer for sale, or deliver, as or for food, or to be used in food, in the City of New York, any canned, frozen or dried eggs, or eggs broken from the shell which are adulterated or to which has been added any poisonous ingredients, or any ingredient which may render such eggs injurious to health, or to which has been added any antiseptic, preservative or foreign sub-

stance not evident and not known to the purchaser or consumer, or which shall contain filthy, decomposed or putrid animal matter.

B. No person shall receive, hold, keep, sell or offer for sale, or deliver in the City of New York, any eggs known as "spots," except in cases which shall be plainly and indelibly labeled, at both ends, with the printed words "Spot Eggs," with block letters at least two inches high and one and one-half inches wide, with no intervening mark or lettering between the words or the letters, composing the words, and a record of such eggs and the disposition thereof shall be kept as required by the Rules and Regulations of the said Board of Health.

The terms "spots" and "spot eggs," when used herein, mean all unsound eggs, including those affected by moulds, partly decomposed, broken yolked, blood ringed or veined, partially hatched, sour, or eggs the shells of which are so broken or cracked that the contents are leaking therefrom.

For the purposes of this Section, a case of eggs shall be deemed to be a case of "spot eggs" if 50 per cent. or more of the eggs in the case are "spots," as defined herein.

Abstract from Rules and Regulations.

No person shall wilfully or intentionally crack or check eggs intended for sale in the shell, the shells of which are whole and sound, with intent to make any false representation in respect to the quality thereof or as being what the same are not, as respects wholesomeness, soundness or safety for food. Wilful cracking or checking of eggs to be sold from the shell shall be prima facie evidence of intent to deceive.

Eggs broken from the shell, intended for food purposes, shall be promptly cooled to a temperature not to exceed 50 degrees Fahrenheit, and shall be deemed adulterated for the purposes of this section if the temperature at the time of delivery to the consumer be above said temperature.

No person shall receive, have, hold, sell or offer for sale or deliver in the City of New York any eggs broken from the shell, designed for use in manufacturing processes or for tanning, unless the same shall have been denaturated by some denaturant approved by the Board of Health. The cans or receptacles containing eggs broken from the shell, designed for use in manufacturing processes, or for tanning, shall be plain-

ly and indelibly labeled "For manufacturing purposes—denatured with," to which shall be added the name of the denaturant.

The term denaturize where used herein as applied to eggs, means eggs that are broken into receptacles into which has previously been placed a denaturant, or denaturants approved by the Board of Health, in proportions as may be prescribed, and the mixture thus made thoroughly stirred, or transferred to receptacles promptly after breaking and on the premises where broken to receptacles into which has previously been placed a denaturant or denaturants, approved by said Board in proportions as may be prescribed, and the mixture thus made thoroughly stirred.

By order of the Board of Health.

ERNST J. LEDERLE, PH. D.,
President.

EUGENE W. SCHEFFER,
Secretary.

RULES AND REGULATIONS

to be observed in conducting

POULTRY SLAUGHTER-HOUSES in the City of New York.

1. The floors of these premises must be swept, flushed and deodorized at the close of each day's business.
2. All parts of the walls and ceilings, which are not sheathed with metal, must be cleaned, painted or whitewashed as often as required by the Department of Health.
3. All parts of cages (other than the floor) and gutters must be cleaned or painted as frequently as may be required. The floors of all cages must be scraped and cleaned immediately after emptying.
4. No cage shall be used for the storage of fowl for a longer period than three days, without emptying and cleaning.
5. The sheathed sides of the killing-room, the absorption-box, and the gutter beneath the same must be thoroughly cleaned with a strong solution of soda and flushed at the close of each day's work.
6. Poultry is to be killed in that part of the premises set apart for that purpose, except that, when desired, a galvanized iron water-tight can may be used, provided the blood is properly absorbed by sawdust.
7. Sawdust which has been used, and all other refuse, of any kind whatsoever, must be deodorized and removed from the premises daily.
8. No empty crates may be stored on the premises except in such places as may be approved by the Department of Health.
9. The accumulation of disused barrels, boxes, or other offensive material will not be allowed upon the premises.
10. No poultry are allowed at liberty on the premises.

11. A permit to conduct a poultry slaughter house does not include the privilege of selling live poultry, and no live poultry may be sold from a poultry slaughter house.

Any violation of these regulations will be deemed sufficient cause for the revocation of the permit to slaughter poultry.

By Order of the Board of Health.

ERNST J. LEDERLE, PH. D.,
Commissioner of Health.
EUGENE W. SCHEFFER,
Secretary.

DEPARTMENT OF HEALTH,
City of New York.

Regulations for the Collection of CANNED GOODS.

All wholesalers of foodstuffs in the City of New York will be allowed to indicate one point of collection within the said City of New York for the purpose of the collection of "swelled" and otherwise defective canned goods which have been condemned or held for disposition by the Department of Health of the City of New York.

It is hereby indicated that permission will be given to every wholesaler to retain the goods condemned by this Department for a period of twenty days after said goods have arrived at the distinct establishments indicated above, there to be held this time pending communication of the wholesaler with the manufacturer in order to inform himself regarding said condemnations.

Upon condemnation of goods by an Inspector of the Health Department, the said Inspector will make out a form in duplicate which will contain the following data:

The name of the individual or firm owning, at the time of condemnation, the goods condemned.

The number of cans condemned.

The weight of cans condemned and articles condemned, as well as for what said cans have been condemned.

This is to be signed by the Inspector condemning each lot of goods.

Section 58, Sanitary Code: "Upon any cattle, milk, meat, birds, fowl, fish or vegetables being found by an Inspector or other officer of this Department in a condition which renders them, in his opinion, unwholesome and unfit for use as human food, or in a condition or of a weight or quality in this code condemned or forbidden, he is empowered, authorized and directed to immediately condemn the same and cause it to be removed to the offal or garbage dock for destruction, and report his action to the Department without delay.

"And the owner or person in charge thereof, when so directed by the said Inspector or by an order of the Sanitary Superintendent, or an Assistant Sanitary Su-

perintendent, shall remove, or cause the same to be removed, to the place designated by the said Inspectors or the order of said Sanitary Superintendent or Assistant Sanitary Superintendent, or, to the offal dock, and shall not sell, or offer to sell, or dispose of the same for human food. And when, in the opinion of the Sanitary Superintendent, or an Assistant Sanitary Superintendent, any such meat, fish, fruits or vegetables shall be unfit for human food, or any such animal, cattle, sheep, swine or fowls, by reason of disease or exposure to contagious disease, shall be unfit for human food, and improper or unfit to remain near other animals or to be kept alive, the Board of Health may direct the same to be destroyed as dangerous to life and health, and may order any such animals, cattle,

sheep, swine or fowls to be removed by any Inspector, police officer, officer or agent of this Department to be killed and taken to the offal dock."

Those goods or lots of goods over which a question may arise as to the actual decomposition having taken place in the same, will be analyzed by this Department in order to determine whether the said goods are unfit for human consumption. Those lots of goods containing cans commonly known as "springers" or "flippers" will, upon request, have samples taken and analyses made.

Respectfully,

MARION B. McMILLAN, M.D.,
Assistant Sanitary Superintendent
in Charge of
Division of Food Inspection.

REPORT FORMS OF THE HEALTH DEPARTMENT.

RECORD OF SPOT EGGS.

Gentlemen:

In accordance with the requirements of Section 48a of the Sanitary Code of the Department of Health, City of New York, I herewith beg to submit the following weekly report of Spot Eggs candled out by me during the week ending..... 1911.

..... Cases of 30 dozen each.
..... Tubs of.....dozen (Spots).
..... Tubs of.....dozen (Rots).

These eggs were disposed of:
Spots to.....
Rots to.....
Signature.....
Address.....

NOTE:—This report of egg dealers to be submitted to the Department of Health every Saturday.

RECORD OF SAMPLES TAKEN FOR ANALYSIS.

DIVISION OF LABORATORIES—
CHEMICAL LABORATORY.

Analysis No.....
Date Received.....
Date Reported.....
Received from.....
Marked.....
Reason for Analysis.....
Result of Analysis.....
Analysis approved,
.....

Chemist.

Prosecute—Do not Prosecute.

Assistant Sanitary Superintendent
in charge of
Division of Food Inspection.

Name.....
Address.....
Date..... Time.....
Sample of..... Sample No.....
Amount Purchased.....
Amount Paid.....
Citizens' Complaint.....
Business.....
Years in Business.....
Who in charge.....
Evidence of Sale.....
.....
Date summons procured.....
Held on Bail..... Result of
trial.....
Sample taken and information obtained by
.....

Inspector of Foods.

REPORT OF VIOLATION OF SANITARY CODE.

DEPARTMENT OF HEALTH, CITY OF
NEW YORK.

Name.....
Address.....
To the Assistant Sanitary Superintendent
in Charge of Division of Food Inspection.
Sir:

I have the honor to report that:
On.....1911... I
made an inspection of above premises; said

Date sample was obtained.....
 Time of Purchase.....
 Amount purchased.....
 Amount paid for purchase.....
 From whom purchased.....
 Time delivered at Chemical Laboratory...
 To whom delivered at
 Chemical Laboratory.....
 C.C..... Sample No.....
 Respectfully submitted,

Food Inspector.

ORDER DIRECTING DEALER TO APPEAR IN COURT.

DEPARTMENT OF HEALTH,
 of the City of New York.
 New York.....191

Sir:
 You are hereby directed to meet Inspector
at the
 District Court.....on
at.....
 By Order of the Board of Health.

AFFIDAVIT OF SERVICE OF SUMMONS BY A POLICEMAN DETAILED TO HEALTH SQUAD.

DEPARTMENT OF HEALTH,
 City of New York.

State of New York,)
 City of New York,) ss.
 County of.....)
, being
 duly sworn, deposes and says:

That he is a Police Officer of The City
 of New York, detailed to the Health Squad,
 Police Department of said city.

Deponent further says that on the.....
 day of.....19..., he served the
 summons hereto annexed upon.....
 a.....
 Corporation, by delivering to and leaving
 with.....of said Cor-
 poration at.....in the
 State and City of New York, County of
, a true copy of said summons
 and at the same time exhibiting to him the
 original thereof.

Deponent further says that he knew the
 person served as aforesaid to be.....
of the said Corporation.

Sworn to before me this
day of.....19

.....
 Commissioner of Deeds
 for the City of New York.

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