

SANITARY and TENEMENT HOUSE INSPECTOR Examination Instruction

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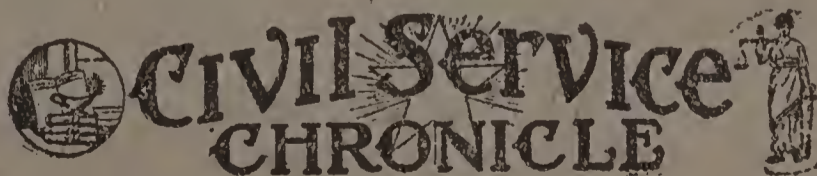
and Specimen Examination Questions for
**INSPECTOR, CHIEF INSPECTOR OF TENEMENTS
AND LAY SANITARY INSPECTOR**
for New York City, New Jersey and Chicago.

History of the New York Tenement House Department and Advice to Inspector Candidates, BY DR. GEORGE M. PRICE—A 1916 Digest of New York Laws and Ordinances Governing the Regulation of Tenements—Amendments to the Tenement House Law from 1912 to 1916, Inclusive—Practice Questions and Answers on Laws and Duties by Experts of the Tenement House Department—Answers to Civil Service Examination Questions and Specimen Questions—Report Writing.

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HISTORY OF THE NEW YORK TENEMENT HOUSE DEPARTMENT AND ADVICE TO INSPECTOR CANDIDATES.

By Dr. George M. Price.

(Written for the Civil Service Chronicle.)

Candidates for the position of Inspector in the Tenement House Department are expected to know the Tenement House Law, housing sanitation, and also to be more or less familiar with the tenement house problem and the various aspects of the housing question.

The law may be studied from the text; housing sanitation may be studied from my various books on the subject. I shall, therefore, limit my talks to the Chronicle readers to the less familiar matter of the past and present status of the housing problem and tenement house inspection particularly.

Years ago, when I had to pass my civil service examination for the position of Sanitary Inspector in the Health Department, I sought in vain for any books or instructors on the subject and would have dearly paid for any glimpse of light bearing on sanitary matters. Now candidates find no difficulty in getting needed instruction from books or schools; moreover, progressive civil service papers go out of their way to assist the candidate and make the task of passing the examination less thorny and difficult. This progress in civil service education cannot but be of great benefit to candidates, also to the civil service, by raising the standard of applicants and creating a more educated and higher class of civil service servants.

I. FIRST EFFORTS IN NEW YORK CITY TO DEAL WITH TENEMENT HOUSE PROBLEM.

New York City enjoys the distinction of being the only city in the world having a separate special city department to take care of tenement house construction and inspection. The conditions which led up to such a distinctive legislative action are peculiar and interesting.

Bad tenement house conditions are not a modern evil. All great cities of antiquity suffered from overcrowded and congested housing, and in Rome especially there were numerous attempts to remedy the evils of bad tenement house conditions by legislative measures, such as the limiting of height of houses by Augustus and appointment of Aedils, or inspectors, to take care of the supervision of the houses in the overcrowded and poor sections of the cities.

Nor is the tenement house problem in New York City a modern product; at least, we find reports by the city inspector in 1831, lamenting the bad sanitary conditions of certain sections of the city due to their overcrowding and the conversion of old dwelling houses intended for one family into multiple tenant houses for the incoming horde of European immigrants. Another report by the Association for the Improvement of the Condition of the Poor complains "of the tenements which are so badly constructed as to preclude a proper supply of air, light and water." This was in 1853.

The first attempt to really inspect all bad tenements in the city was made in 1866 by the Committee on Hygiene, whose report upon the matter is a classic and a most valuable and interesting chapter in the history of city sanitation.

When the Metropolitan Board of Health was established in 1866, the work of tenement house inspection became a part of its duties, and, of course, could not have been done properly and thoroughly, owing to the multiplicity of the activities of the department, absence of legislative action and inadequacy of means and men.

Still the evil was growing, and conditions in the poorer quarters became so appalling that in 1884 a commission was appointed, headed by Professor Felix Adler, to investigate and report upon tenement conditions. Well do I remember Prof. Adler in the old Chickering Hall thundering against the terrible conditions which his committee found all over the city, especially in the then notorious Five Points Mission section and in Cherry Street.

In the winter of 1885, the Sanitary Society of the Tenth Ward was organized with Nathan Bijur, now of the Supreme Court; Prof. E. R. A. Seligman of Columbia; Blumenthal, then Superintendent of the Bureau of Incumbrances; Em. Kursesht and others, as members, with the purpose to investigate and inspect the tenements of the Tenth Ward, which had already then become the distinct ghetto of the city.

I became one of their inspectors—there were but five or six altogether—and during that winter and spring first became officially acquainted with the work of tenement inspection and sanitation. Although still "green," having been in the country less than three years, I had already become interested in the subject through Prof. Ad-

ler's lectures and by myself living in that section of the city.

Twenty-five years ago the Tenth Ward was much different from what it is to-day. There was no Seward Park then, nor were there the big school buildings on Hester, Essex and Broome Streets, and the population then was different, too. The Italians did not come into the district, and beyond Broome Street lived the Germans. Nevertheless the sanitary condition of the tenement houses was very bad, and I remember that in one of my inspections I found a family of nine together with thirteen night lodgers in a three-room flat.

In spite of Prof. Adler's efforts and the investigation of the Sanitary Society, no legislation could be gotten from the Legislature till 1887, when the new tenement house law went into effect and was a progressive measure in comparison with the old law. At that time there were but ten or twelve sanitary inspectors in what is now Manhattan, and by the law of 1887 the force was increased by about fifteen men, so that all the inspection in the city, not only of tenements, but of new buildings (there was no Building Department then), and all the various other factories and establishments in the city, was covered by about twenty-five or thirty men.

That under such conditions no real improvement in tenement conditions was possible is self-evident. Indeed, the evidence of the State Tenement House Commission of 1894, Mr. R. V. Gilder, Chairman, showed that the housing problem was getting very acute in the city. I was one of the inspectors of the Commission, and the data that we gathered showed over 5,000 rooms in the city totally without light and air. We found over 4,000 school sinks in yards in Manhattan, and the sanitary condition of most congested districts was appalling, the infant mortality in one district being over 280 per 1,000.

The legislation of 1895 was the result of the activity of the Gilder Commission, and, among other results, was the increase of the inspectorial force of the Health Department. In 1895 I was appointed a Sanitary Inspector of the Health Department and had ample opportunity to further study the tenement house problem from an official point. It was soon evident that, even with the increased force of health inspectors, fifty or sixty Inspectors were unable to cope with the growing evils of unsanitary tenements, especially as the Inspectors had a great many other duties besides those of tenement house inspection.

In 1900 a new Tenement House Commission was appointed under presidency of R. W. DeForest, with Lawrence Veiller as secretary, and to the activity of this Commission was due the enactment of the new tenement house law of 1901 and the establishment of a separate Tenement House Department.

II. EARLY DAYS OF THE TENEMENT HOUSE DEPARTMENT.

The year 1901 marks a new era in housing legislation. The tenement house legislation of the New York State Legislature in 1901 is not only remarkable for setting new standards for housing, but is absolutely unique in creating an agency for enforcement which is entirely new and is unknown anywhere in the civilized world. I refer to the creation and establishment of a separate municipal Tenement House Department in New York City.

The Tenement Law of 1901.

The Tenement Law of 1901 is also remarkable for the fact that it was a great advance on all previous housing legislation. I shall here mention a few of the essential points of this law.

The main features of the 1901 law are: (1) Increased protection against fire; (2) provision for more light and ventilation; (3) improved sanitary conditions, and (4) moral improvement.

Fire Protection Features.—The following are a few of the essential points of fire protection in the law: Prohibition of certain trades and occupations in tenements; provision for fireproof construction of all houses above six stories in height; introduction of fireproof stairways; provisions about increased number, better constructed and more efficient fire-escapes, etc.

Light and Ventilation.—The provisions for increase of light and ventilation are too numerous to mention. Among the most important are the increased space to be left unbuilt on each lot; the enlarged yards and courts; the vent-ducts, the enlarged hallways, the increased size of windows, halls and rooms, and many similar provisions.

Sanitation.—The sanitary improvement of tenement houses is provided for in the abolition of the school sinks; enclosed water-closets and sinks; by compelling owners to put in separate toilets into each apartment; by the provisions about compulsory cleaning of walls of outside shafts and other parts of house, inside and outside, and by many other similar provisions. The law also provided for the stringent elimination of tenement house prostitution, an evil which was very much in evidence before that period.

The above notable provisions for improved tenement houses would, of course, be very beneficial and salutary, provided—and there is the rub—that the provisions of the law are properly enforced. For it is self-evident that we gain nothing by piling up our statute books with new laws if at the same time no provision is made for their proper execution and enforcement. Hence, the establishment of the Tenement House Department to enforce the provisions of the new Tenement House Law.

Personally, I do not think that it was absolutely necessary to create a new department for enforcement, provided they had a sufficient number of inspectors. It

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was true that the Health Department was NOT doing everything to enforce the tenement laws and that 250 Inspectors, having nothing else to do but take care of tenement houses, would and could do more than sixty Health Inspectors who, besides their tenement house work, were expected to do a lot of other work, from vaccination to mercantile inspection. If the Health Department were given those 250 extra men, and if Mr. Veiller would have been put in as chief in a new Tenement House Bureau in the Health Department, I am sure we could get as good results and at much cheaper rate than by the creation of a separate Tenement House Department with a whole city department organization—commissioner, deputies, chiefs, etc., etc.

However, the powers at that time decided to try a new experiment in municipal sanitation, and the success or failure of that experiment is not within my present task to consider.

Hard Lot of the Early Inspectors.

With the creation of the new Tenement House Department it became quite a problem how to fill the positions of Inspector with suitable material. Sanitary education was very scarce in the city, there being no schools for it, nor is the subject taught at public or private institutions; indeed, as it had been amply proved, the number of those who were qualified to assume inspectorial positions and who were fit for it was infinitesimal.

Until 1901 there was not even a book specially prepared for housing inspectors, with the exception of a very small pamphlet by Dr. Tracy, and of several books on plumbing by Gerhard. My "Handbook of Sanitation" was then just fresh from press, and how welcome it was for the hundreds and thousands of candidates for tenement inspectorships can be vouched for only by those whom it assisted in passing their examination. That the book was well patronized may be vouched for also by its publishers, who were doing a land office business in its sale.

Nevertheless, the difficulty of getting the right kind of Inspectors was very much felt at first. The heads of the department wished to get a "college-trained, philanthropically-inclined" class of applicants, and indeed a few of these were sent to the writer for preparation by the heads of the department. There were about 600 or 700 applicants, if not more, to the first examination, but very few of them succeeded in passing, so that it was necessary to hold three or four civil service examinations during the first year of the existence of the department in order to get the full quota of Inspectors. The percentage of college students, would-be lawyers, philanthropists, and social students among the first batch of appointees was very great, while the number of really practical men was comparatively small.

The class of Inspectors first appointed was, of course, of a very high intelligence,

but the trouble was that not only were they not practical men, but they did not look on their jobs as permanent ones, their idea being but to tarry in them until they got their diplomas as lawyers, physicians, etc. A large number of my students of the first three or four examinations left the department after a year or two and are now professional men, some of them holding high positions as professors in colleges and some enjoying lucrative professional practice.

Nor could this class of Inspectors stand the rigid and military discipline which the department heads deemed wise to inaugurate. So severe was the discipline, so exacting became the various orders, so frequent the "fines" for every petty sin of omission or commission, that a self-respecting man was hardly able to stand it and submit. Whether the policy of the department heads which was inaugurated with the establishment of the Tenement Department was right or wrong, I shall not here discuss; sufficient is it here to note the ungenial fact that many Inspectors were discouraged, many resigned and still more were dismissed for trivial and, seemingly, petty offenses.

Since that time the personnel of the inspectorial force had been constantly changed, the number of practical men increased, the percentage of builders, plumbers, carpenters and other mechanics increased, and the discipline somewhat, although but slightly, relaxed. The number of those succeeding in passing the various examinations was also on the increase, I myself passing over two hundred candidates during the eight examinations from 1901 till 1908, and a great many, of course, passing by the aid of my books, or with the help of some schools which had sprung up since then.

III. INELIGIBLES, ELIGIBLES AND HOW TO PREPARE.

It is surprising how many persons there are in this great city who are perfectly willing to "sacrifice" themselves by "accepting" a city position like the tenement house inspectorship. What is still more surprising is that all these people are so confident that they are perfectly fit for the position. People who have no earthly idea of the matter of tenement house inspection and whose sole knowledge of the subject is that they live in a tenement house, as well as people who are totally unfit for any similar position, are clamoring to get such a "job" in the erroneous idea that anyone with a strong pull may get any municipal position. This reminds me of a janitor who once applied to me for instruction in tenement house inspection. He had no inkling of what the position requires and was hardly able to write his name.

Drivers, conductors, street cleaners and bricklayers are but a few of those who frequently applied to me for instruction and

were very much astonished when they were told that the position requires quite some education, at least a good knowledge of English and arithmetic, besides many other subjects. No wonder that of the 1,500 to 1,600 candidates who were coming up to each examination, there were but 100 to 200 who succeeded in passing the very easy examinations held in the past. No wonder that of those who did pass, a great many were rejected by the Commissioners as totally unfit for the position. There is some deep-rooted conviction among New Yorkers, probably due to past—long passed—political traditions, that all one needs to get a position in any city department is to have the backing of his "leader."

As a matter of fact, the position of Tenement House Inspector is not only one of great importance, but of much difficulty to fill, and requires quite a high educational standard as well as the knowledge of several special subjects, besides special training.

Let us see what the duties of a Tenement House Inspector are.

A Tenement House Inspector may have to make inspections of new buildings, buildings in the process of construction. He may have to compare the architect's plans with the actual construction. He may have to measure and calculate the percentage of the lot built upon and that left unbuilt. He may have to pass on the manner of "damp-proofing" the foundation and cellar. He may have to make a "water pressure" test upon the installation of the plumbing. He may have to pass upon the construction of the whole house before a "license" is granted to the builder to permit him to rent the house to tenants.

The Inspector is also supposed to make "house to house" inspections on the so-called "I" card which require a most thorough and searching examination of all the parts of the house: Construction, condition, ventilation, illumination, heating and plumbing of the house.

The Inspector is supposed to be able to detect the tricks of trade practiced by dishonest builders, the "jokers" of some plumbers and the other defects likely to be found in "skin" and "jerry" buildings.

The Inspector is also supposed to be able to measure the "angle" of the inclination of the fire-escape stairway, to know the various sizes and kinds of pipes and iron used in plumbing and fire-escapes, and he must also be able to make a "smoke" or "peppermint" test on plumbing.

Besides all the foregoing, the Inspector is especially required, not only to make inspections, but also to REPORT upon them. Now, to make a proper report sometimes requires more skill than to make the inspection itself. The Inspector therefore must have a good knowledge of the English language, and be capable of making a perfect report of his inspections and proper recommendations to his superiors.

From the above it may be inferred that it takes some educational and practical

knowledge to become an efficient Inspector and that not every Tom, Dick and Harry out of a job can successfully fill the position. As a rule, persons who had a practical training in building construction are the most fit for inspectorships, and builders, plumbers and carpenters, provided they possess the necessary degree of education, are the best practical inspectors. I do not mean to say that the above-named artisans are the ONLY persons fit for inspectorships; any man with sufficient intelligence and education MAY become an efficient inspector, and indeed, many clerks, bookkeepers, insurance agents, etc., are known to me who became very good Inspectors.

One may also infer from the above remarks the kind of special knowledge a Tenement House Inspector should have, or rather the knowledge of a civil service candidate for inspectorship is required to have for a successful passing of the examination.

Subjects Suggested for Study.

The subjects to study are the following:

(1) Building Construction. This embraces the following: Building materials, frame construction, fire and damp-proofing and general construction.

(2) Ventilation, Illumination, Light and Heating. These embrace the following subjects: Air, methods of ventilation, devices for improved ventilation, natural light, artificial light, methods of heating, etc.

(3) Water Supply and Drainage. These subjects include the composition of water, sources of same, impurities; methods of sewage disposal—immediate and final.

(4) Plumbing. This subject is very important and embraces the whole matter of installation of house plumbing, materials, joints, traps, fixtures, water-closets, defects and various tests.

(5) TENEMENT HOUSE LAW. This is by itself the most important subject, because a candidate must know the law in all its minute details and must understand its technicalities and intricacies. The study of the law is also the most difficult part of the student's task, because the law is written by lawyers, for lawyers, and it seems as if it was made purposely obscure and unintelligible to the average lay reader. I found in my experience of teaching that the students fail mostly on the law because they study it by wrong methods, and have therefore devised an original method of its study simplifying the whole law and reducing it to about fifty simple rules easily learned and easily retained by the memory.

IV. HOW TO INSPECT A TENEMENT HOUSE.

The question of how to properly inspect a tenement house is an important one, because one may know all about houses without knowing the art of inspection, and be-

cause it takes years of experience to do the work properly.

With the various inspection cards and schedules as are at present given by the Tenement Department, it is comparatively less difficult to make a good inspection than it was in olden times in the Health Department, where one had to make the inspection without any cards, state all violations found and make the proper recommendation. Now all the Inspector needs to do is to fill out "yes" or "no" to a lot of questions without bothering himself about order or sequence or making recommendations, which are filled out by special clerks.

Nevertheless the inspection of a house is a matter which even now takes some time to grasp and to learn all the details and fine points.

Let us, for example, go through the inspection of an ordinary tenement house without limiting ourselves to the printed cards.

Inspection Begins Before Entering the House.

The inspection of the house begins as soon as the Inspector approaches the premises. There are quite a few items to note before ever entering the house. Note first the height of the house, number of stories, material of which it is built, the presence of fire-escapes on the front of house, their material, and whether the balconies are obstructed or not.

Inspect the condition of the sidewalk to see that there are no sunken pieces of stone, no broken parts of curb; also if the fresh air inlet is not obstructed, as is usually the case.

Inspect also the condition of the railings on the front area, the condition of steps into the area, the state of stairs to the house, as well as the paving, grading and draining of the front area.

Another point of importance to inspect before ever entering the house is the kind of business in the basement and store floors, as all these items bear an important part in the house inspection and are covered by the Tenement House Law. Here, then, are quite a number of points which are to draw the attention of the Inspector before entering the house.

Inspection From the Yard and In the Yard.

On entering the house it was my practice to go through the hall and, if there was a yard, make no immediate inspection of the house, but pass out into the yard.

Here a large number of facts must be noted. In the first place, one must look up to the rear of the house and note the following: The condition of rear wall, the presence of fire-escapes, their material, condition and positions of drop-ladders; the material, size and condition of the rain leaders; the conditions of the rails of rear areas; the paving, grading and draining of these

areas, and the condition of the steps leading from house into yard.

Next comes the inspection of the yard itself and of those fixtures which are there. Here one must notice size of yard, material of pavement, kind of grading and how yard is drained, and whether there are stagnant pools of water in the sunken places therein. One must also note the condition of the fences surrounding the yard as well as of the various woodsheds, etc., which sometimes encumber such yards; also of the presence or absence of rubbish and dirt in the yard.

The fixtures which are at times found in the yard are the various toilet accommodations. These are often of the type so often found in olden times: The so-called "school sinks," a nasty form of trough water-closets which have been condemned by all sanitary authorities and have been legislated out of existence by the Tenement House Law of 1901, but of which you will still find about 2,000 in Manhattan Borough alone. Nor are the yard hopper-closets of the old style much better than the "school sinks." In the words of the German poet, "die alle beide stiken," and should be condemned wherever found.

It is therefore noted that there are quite a large number of items to inspect and points to be noted and put down in your cards and note books before you ever go into the house itself.

The Cellar.

Next in order of inspection is the cellar, and this is probably the most important part of the house, as far as the Inspector is concerned, and as far as the points to be examined by the Inspector are concerned.

The points to be examined in the cellar are the following: The occupation of the cellar by storage or prohibited businesses; the construction of the walls and ceilings; the kind and condition of floor; the presence of dampness; the proper ventilation by grating and windows; the lighting by day and illumination by night; the presence of rubbish and dirt; the plastering of ceilings to decrease dangers from fires; the condition of the entrances and exits, and separation from the upper floors of the house.

An important part of the cellar inspection is the searching for evidence that it is occupied for living and sleeping purposes, as is frequently the case in cellars of common tenement houses which harbor not only janitors in cellars, but also are the abode of a tramp or two.

But, of course, the most important part of the cellar inspection lies in the plumbing of the house, the greater and very important part being in the cellar.

The whole length of the house drain, the main feature of house plumbing, lies within the precincts of the cellar, either under the floor, or on the floor, or above the floor. The house drain must be followed up from

wall to wall and carefully examined as to the material, size and tightness and condition of its joints; also of its pitch or fall, and of the covers on the many handholes in the drain. Especially must one be careful to examine places at connection with the vertical soil, waste and rain leader pipes, and to see if these are properly connected and tight. The house drain main trap, as well as the connection of the fresh air inlet, must be looked into. The condition of the soil and waste pipes, as well as the presence or absence of a trap on the rain leader, must be examined. The presence of disused water-closets or sinks in the cellar must be noted, as these are a nuisance and fill the cellar with sewer air, which is drawn into the whole house from the cellar. The various water pipes and gas pipes may also be worthy of attention in the cellar while one is there. In examining the various wood and coal sheds found in cellars, do not poke a match or candle into them when they are closed. I once did it, and was nearly undone by a beautiful little fire which I started, and I had the time of my life to extinguish it without alarming the whole house and bringing in the Fire Department.

The Halls and Stairs.

The Inspector next ascends the stairs and comes into the main hallway. Here are a number of points to inspect. The width, height and ventilation of the entrance hall, the material of the floor, its condition and the condition of the walls and ceilings, the illumination of the halls at night, the presence of any plumbing fixtures in the halls—all are objects of inspection and should be carefully noted.

The stairs, their material, the condition, presence of handrails and security of banisters, the lighting of stairway and the condition of the treads should be next inspected.

From each hall the Inspector is supposed to enter the living apartments and here proceed with his inspection of the size of the rooms, the material of walls, ceiling and floors, the ventilation of rooms by windows and the presence of plumbing fixtures and pipes within the rooms. Especially is it important to inspect the condition of the water-closet apartments and water-closets, which are the principal fixtures of the plumbing and are very often in bad sanitary condition.

The Inspector is likely to find some peculiar fixtures in some tenements. He may find some old time "pan water-closet," or old "long Philadelphia" hopper, both of which are a nuisance and should be ordered out whenever found. Of the modern closets, the "washout" is the worst form, while the "siphon" is the best. The traps under fixtures are often defective by having holes in them, poked through by ignorant janitors who try to clean a fixture by cutting a hole in a trap and then putting it up, or tying rags around it.

The inspection of the house is finished when the Inspector reaches the roof. Here he has to note a number of things, especially the material of roof and its condition; the extension of the vertical pipes, their size and manner of protection; the chimney and its condition; the eaves gutter and mouth of the rain leader; the attachment of goose-neck ladder, etc.

It is evident, therefore, that an inspection of a house, if made properly, takes time, thought and experience and also some art, and that house inspection is not only a science but an art.

The method of inspection of tenement houses must, of course, be varied, according to circumstances. Some Inspectors begin their inspection, as I indicated, from the bottom, and work up to the roof; others go first up to the roof and make their inspection coming down.

The Inspection Blanks.

In the Tenement House Department the Inspector has it comparatively easy, for the department furnishes the Inspector with printed inspection schedules, which embrace all items and points of inspection, and all the Inspector has to do is to fill in the blanks after each item. The blanks, copies of which are reprinted in my various books, are variously named, according to the special inspections they are designed to cover. Thus there are the following cards: "I," "U," "B," "F," "S," etc. The "U" and "I" cards require a thorough inspection of the house, the "B" cards concern bakeries, "F" cards mean an inspection of fire-escapes, and the "S" cards are a general sanitary inspection, made by the Inspector without reference to items printed on card.

The Tenement House Department requires the Inspector simply to state what he finds in the house; otherwise to simply state "facts" as they are. The Inspector is not required to give his opinions of conditions, but exact facts and conditions as he finds them at time of inspection. The department considers the Inspector as one of its "eyes," and requires him to see without prejudice, and report things as he sees them, leaving all conclusions and formulations of opinions to his superiors. The orders which the department sends out to the owners and agents of the inspected houses are based upon the facts as reported to the department by the Inspector. And woe to the Inspector if the facts, as he reported them, are not exactly as they are, for the owner, being touched on the most sacred strings of his soul, viz., his pocket, will surely make a big "kick" with a capital "K," and if the Inspector's facts do not correspond with real conditions, the Inspector will find himself in what is vulgarly known as the "soup."

If the Inspector is certain of his facts he will, of course, not care how the owner kicks, for the facts will back him up if a supervisor is sent for reinspection and to verify the inspection of the first Inspector.

I remember once having been caught myself with "the goods" in a thorough inspection I made of a house. Not only did I make a careful inspection of the house, but my report was what I considered a "work of art," long and drawn out, embracing some fifteen or twenty various serious violations with some beautiful recommendations to rip up the house generally. The report was all right, and the facts were all right, the only trouble was that . . . house number was wrong! Instead of reporting on 69 East 70th Street, the house complained of and the house I actually examined, I made out a report on 70 East 69th Street, a house in pretty good condition, and which happened to belong to the same owner as the other house. Of course I "got it in the neck," figuratively speaking.

Don't Talk When Making Inspections.

There is one special precaution an Inspector must take and a precaution which cannot be emphasized too often and too much; and that is, to talk as little as he can, in fact to be dumb and deaf when making his inspections. The Inspector should not say one word to the janitor or to the owner of the house he is inspecting, not one word more than to state his business, show his authority and then proceed with his inspection. If the owner asks him for his opinion of the condition of the house, or of his findings on inspection, it is best to

refer him to the office—"Let George do it!" And I did it once, too, and got the finest roasting I ever got in my life. For the Inspector may be sure that whatever he says to the owner will be twisted and paraphrased and reported to the office, with the result that Inspector will find himself in a "hole."

You will find on inspection all kinds of animals called tenement owners. Some are bullies and will try bulli-ragging tactics with you, bluffing and boasting of their "pull" and their ability to "bounce" you if you send in an unfavorable report, or make a big order on the house. Others are whining curs, crying and complaining of bad times, insisting that they lose money on their houses and that they will be bankrupted if you send in a bad report. Then again there are others, the "good fellows," the bluff and hale and hearty fellows who will almost shake off your paw, they love you so. They will offer to treat you at the corner saloon, or treat you with their best cigars, or offer to introduce you to the big leader of the district, etc. Beware of these; they are the worst of the lot; for while you may laugh at the "bluffer," have but contempt for the "whiner," you cannot very well escape the blandishments of the "hand-shaker," and woe to you if you do accept his cigar, or drink! After many a bitter experience with all kinds of owners and agents of tenements I came to the conclusion that it is best for the Inspector not to trust any of them, and do the work and be "mum."

A 1916 DIGEST OF LAWS AND ORDINANCES GOVERNING THE REGULATION OF TENEMENTS.

The following three articles were published in the Record and Guide of October 21, October 28 and November 4, 1916, and are here reproduced by kind permission of the Record and Guide Co. They constitute a valuable ready reference to the laws and ordinances relating to tenements.

NOTE:—Owing to the fact that these articles were written for the benefit of builders, owners, etc., there are some phases of the law not covered which are desirable to cover for the benefit of Tenement House Inspector candidates. The publishers have submitted these articles to Mr. John L. Pleines of the Tenement House Department, who has edited the contents of this book, and Mr. Pleines has made a number of insertions. He has also made a correction or two where the wording was found a little loose. No changes have been made in Mr. Ackerman's articles, and Mr. Pleines' insertions are distinguished by being placed in italic type.

BY HARMON ACKERMAN,
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PART I.

With a view of setting before the tenement house owners and managers, laws governing the regulation of tenement houses and to acquaint them with such rules and regulations, the following digest has been prepared. The statutes have been followed as closely as possible and all legal superfluity has been disregarded and the statutes rewritten in simple language. It was not thought necessary to include the laws affecting new buildings, alterations or extensive repairs, as plans for such work must first be submitted to the Tenement House Department or the Building Department before the work can be started. The laws

with reference to Water Supply, Gas and Electricity Departments have also been omitted.

It is needless to say that the burdens of tenement house owners are becoming more and more onerous every day; it is, therefore, incumbent upon owners to devise some method by which tenement houses will once more appeal to the general public for investment. All tenement house owners must awake to the fact that they must play with team work; all must share the burdens, and all must work for a common purpose with the utmost amount of zeal. "Unison" should be their byword.

Doubtless new laws will be introduced to regulate further tenement houses. If the law is a good one and will not impose upon landlords a hardship, then no opposition should be encountered, and on the other hand all should give aid in seeing it approved. It is only when a law is proposed that would impose a hardship on owners that any opposition should be made, and this opposition should be decisive. In this way the popular opinion of tenement house owners will eventually be changed and co-operation between tenant and landlord will ultimately come to pass.

Some of the troubles which heap upon the heads of tenement house owners are as follows:

(1) The custom of leasing entire buildings to irresponsible people, whose only desire is to mulct the building and leave it a wreck.

(2) Building tenement houses for speculative purposes and the system of building loans for that purpose, the building being necessarily erected with the cheapest materials, causing unnecessary annoyance and continuous repairs, costing an amount equal to rebuilding.

(3) The numerous small and petty violations that are filed against tenement houses because the owner is penny-wise and pound-foolish.

(4) The habit of leaving the entire premises in charge of janitors, who have all the work they can possibly do in merely seeing that the house is kept in a clean and sanitary condition. The collection of rents, receiving of complaints and making repairs should be the duty of the landlord or his representative.

(5) The lack of attention given by owners to the needs of the building and the infrequent visits by them to see whether or not the property is in good condition. It should be the duty of every tenement house owner to visit his building from top to bottom at least twice a month and make certain that everything is in ship-shape condition. It is questionable whether the average owner would know whether conditions are as they should be, and therefore the really safe way is to employ some capable managing agent to look after the property.

(6) The landlord generally blames the tenants for all his troubles, and vice versa. There is no doubt the tenants imagine that the landlord should fix every tiny hole,

paint and paper the rooms once a month, and make a four-room apartment a palace, all for a rental less than it would cost to rent a room in a second class hotel. The only way to relieve this condition, in part, is for the owner to run his house in the same way that he would conduct his business—in a systematic manner.

The digest follows:

Areas.—Areas opening at the top must be properly protected with suitable railings and mounted with gates opening inwardly. (C. O., Chp. 23, Art. 14, Sec. 161.) (C. O., Chp. 5, Art. 21, Sec. 450.) *Areas shall be properly graded and drained and connected with the street sewer so that all water may pass freely into it.* (T. H. L., Sec. 91.)

Chimneys and Fireplaces.—Buildings must be provided with adequate chimneys running through every floor, and connecting every apartment with an open fireplace or grate, or place for a stove. (T. H. L., Sec. 78.)

Chimney and Flues.—If any chimney, stove-pipe or flue takes fire the owners are liable to a penalty of \$5.00, unless tenant occupies entire building. (C. O., Chp. 12, Art. 2, Sec. 29.)

ELEVATOR.

Fireproof Shafts.—In every non-fireproof building all elevators not enclosed in fireproof shafts must be so enclosed. (C. O., Chp. 5, Art. 18, Sec. 373.)

Inspection and Regulation.—Superintendent of Buildings must inspect passenger elevators and those used for employees every three months. He can require any repairs necessary. If dangerous, he can stop use until orders complied with. (C. O., Chp. 5, Art. 27, Secs. 565-568.)

Elevator Runners.—Elevator runners must have qualifications prescribed by Superintendent of Buildings. They must not be less than 18 years of age and must have at least one month's instructions from a competent person. (C. O., Chp. 5, Art. 27, Sec. 566.) (Building Department Regulations, Sub. 5.)

Freight Elevators.—Freight elevators must contain sign: "This is not a passenger elevator. It is unlawful for any person other than the operator or those necessary to handle freight to ride on this elevator." (C. O., Chp. 5, Art. 27, Sec. 566.)

Passenger Elevators.—Every passenger elevator is now given a serial number which must be posted in the elevator car. (C. O., Chp. 5, Art. 27, Sec. 564.)

Accidents.—The owner, lessee or person in charge of elevator must immediately notify Superintendent of Buildings of any accident to person or damage to apparatus. (C. O., Chp. 5, Art. 27, Sec. 568.)

EMPLOYEES.

Employment of Children.—Children under sixteen cannot be employed in apartment houses more than 48 hours a week or six days of eight hours. They are not per-

mitted to work before 8 a. m. and after 7 p. m. (163) Children under 14 not allowed to work in an apartment house under any condition. (Labor Law, Secs. 161-163.)

Injury to Employees.—Where an owner of a building employs an engineer, fireman, elevator attendant or operator, electrician, carpenter, painter or other repair men, he is liable for an injury sustained by the employee arising out of and in course of the employment, without regard to fault to anyone, except where the injury is wilfully caused by the employee or another, or he is intoxicated while on duty. (Workmen's Compensation Act, Art. 2, Sec. 10, Art. 1, Group 12-22 and 42.) The article does not apply to cases where the workmen are employed to do a certain job at a fixed compensation for the work. It refers to regular employees.

FIRE PROTECTION.

Fire Extinguishing Appliances.—Fire Department or Police Department may require adequate means and appliances to be installed for the prevention and extinguishing of fires; also for the communication of alarm of fire, accident, or danger to the Police or Fire Department. (C. O., Chp. 12, Art. 2, Sec. 20.)

Water tanks on roof or in cellar, standpipes, automatic sprinklers, hose, nozzles, wrenches, fire extinguishers, hooks, axes, and such other appliances may be required by the Fire Department.

On buildings 85 feet in height, or exceeding 13,000 square feet in area, a 3-inch or larger vertical pipe already installed, is a compliance with this section. (C. O., Chp. 5, Art. 28, Secs. 580-581.)

Bakery.—No bakery is permitted where the building is not fireproof unless the bakery is made fireproof and there shall be no openings of any kind between the bakery and other parts of the building. (T. H. L., Sec. 40.) Nor shall any bakery be permitted in a cellar unless the bakery is at least ten feet in height from floor to ceiling and, if bakery is intended to be located entirely in the front part of the building, the ceiling throughout shall be at least four feet six inches above curb level of street in front of building; or if bakery is to be located at the rear of building or to extend from front to rear, the ceiling shall be not less than one foot above the curb level.

This does not apply to a cellar used and operated as a bakery at any time within one year prior to July 24, 1913; or, in course of construction May 9, 1913; or, construction of which was begun Jan. 1 and completed May 9, 1913, and used and operated as a bakery prior to Jan. 1, 1914. (Sec. 116, Article 8, Labor Law.)

Combustible Materials.—Storing, keeping or handling any combustible articles without permit from Fire Department is prohibited. (T. H. L., Sec. 39.) The storing and keeping of any combustibles in excess of amounts allowed by Fire Department permit is also prohibited. (City Charter, 1341b.)

Doors.—Doors leading into the hall where paint, oil, spirituous liquors or drugs are stored must be made fireproof. (T. H. L., Sec. 41.)

Dumbwaiters.—All doors opening into halls from any portion of a tenement house where paints, oils, spirituous liquors or drugs are stored, must be made fireproof. (T. H. L., Sec. 41.) See Wire glass, etc.

Exits.—Every building which is not provided with exit facilities prescribed for new buildings, and in which the exit facilities are inadequate for the safety of occupants, shall be provided with sufficient fire escapes, stairways or other means of egress in case of fire, as shall be directed by the Superintendent of Buildings. (C. O., Chp. 5, Art. 8, Sec. 161.) Should read: "As directed by the Tenement House Department." (Laws 1916, Sec. 14, Chap. 503.)

Fat Boiling.—No place of business in which fat is boiled is permitted in a non-fireproof building, unless the place in which the fat is boiled is made fireproof. No opening of any kind shall be permitted in walls between place where fat is boiled and the other parts of the building. (T. H. L., Sec. 40.)

Fire Escapes.—Buildings erected prior to April 18, 1912, must be provided with fireproof outside stairways or with fire escapes directly accessible to each apartment without passing through a public hallway, which must be kept in good order and repair. When rusty, must be painted with two coats of paint. (T. H. L., Sec. 16.)

Inspection of Fire Appliances.—Person in charge of building must once a month inspect all fire appliances, and see that they are in perfect working order. (C. O., Chp. 5, Art. 28, Sec. 585.)

Pumps and Elevator.—Building exceeding 100 feet in height must have steam or electric pumps, and at least one passenger elevator, which must be kept in readiness for immediate use by Fire Departments night and day. (C. O., Chp. 5, Art. 28, Sec. 583.)

Standpipes Necessary.—Buildings exceeding 85 feet (or exceeding 10,000 square feet in area) in height must have standpipes unless already provided with a 3-inch or large vertical pipe. (C. O., Chp. 5, Art. 28, Sec. 581.)

Wainscoting.—When wainscoting sheathing or any other covering is to be placed in building, (should read "over"), the surface of the walls, ceilings or partitions of a tenement, the ceilings, wall or partition behind it must first be plastered (down to the floor line) (eliminate words in parenthesis—Editor), and any intervening space between plastering and sheathing or wainscoting must be filled in solid with incombustible material. In the case of walls and partitions the plastering and filling must extend down to the floor line. (T. H. L., Sec. 37.)

PART TWO.

HALLS AND STAIRS.

Light in Hallways.—In tenement houses four stories and over, where the public hall

is not light enough so that one can read without artificial light, wooden panels in doors located at the end of the halls, and opening up into rooms must be removed, and ground wire or translucent glass not less than four square feet must be substituted. In lieu thereof sash windows of wire glass not less than five square feet in a partition connecting a room directly opening on a street, yard, court or shaft, may be provided, or a window, the plans of which must be at right angles to the axis of hall, which window must open on street, yard, court or shaft.

If public hall and stairs have no windows opening on street or yard, and if in the opinion of the Tenement House Department the light is not sufficient, it may order that a light be kept burning in the hallway near the stairs, on each floor, from sunrise to sunset. (T. H. L., Sec. 74.)

Proper light must be kept burning in the public hallways near the stairs upon the entrance floor and second floor above the entrance floor every night from sunset to sunrise, and on all floors from sunset until 10 P. M. (T. H. L., Sec. 76.)

Public Halls and Stairs.—In buildings built prior to April, 1901, the public halls and stairs must have skylights, ventilators, windows in bulkheads, or other means of light or ventilation which may be deemed practicable by Tenement House Department. (T. H. L., Sec. 77.)

Cellar Stairs and Fireproof Walls.—When it is necessary to construct new stairs from the first story to the basement or cellar, it must be entirely enclosed with brick walls and fireproof self-closing doors at both top and bottom. (T. H. L., Sec. 35.)

Banisters and Railings.—Building must be provided with proper banisters and railings, which must be kept in good repair. (T. H. L., Sec. 35.)

Cellar Steps.—Every entrance or flight of steps projecting beyond line of street, and descending into cellar or basement story, if not covered, must be enclosed with a permanent railing on each side from 3 to 3½ feet high, with a gate to open inwardly or with two iron chains across front of entrance—1 near top, other in center, to be closed during night, unless there is light burning. For a violation of this Section, a penalty of \$150 is imposed. After receipt of notice of violation it can be altered within ten days. If not complied with after notice is received, the penalty is \$250. (C. O., Chp. 23, Art. 14, Secs. 164-170.)

PENALTIES.

Violation of Fire Prevention Law.—Upon conviction for a violation or a refusal to comply with any provision of Chapter 12 of the Code of Ordinances, called Fire and Fire Prevention, a fine of \$500, or six months imprisonment, or both fine and imprisonment is imposed. A penalty of \$250 in a civil action can also be recovered. (C. O., Chp. 12, Art. 2, Sec. 30.)

Violation of Building Code.—For a violation of the Building Code, Chapter 5 of the Code of Ordinances, a fine of \$50 is imposed. If notice of violation is received, and it is not complied with within ten days, the penalty is \$250. (C. O., Chp. 5, Art. 32, Sec. 654.)

Violation of Labor Law.—Penalty for violation of the Labor Law is as follows:

Fine not less than \$20 nor more than \$50 for the first offense.

30 days imprisonment, or fine not less than \$50 nor more than \$200, or both, for second offense.

60 days imprisonment, or fine not less than \$250, or both, for third offense. (Penal Law, 1275, Sub. 6.)

Violation of Sanitary Code.—Owners, lessee and tenants, where a nuisance exists or for a violation of the Sanitary Code, Chapter 20 of the Code of Ordinances, are jointly and severally liable in so far as they respectively have the power of prevention. (C. O., Chp. 20, Art. 4, Sec. 51.)

Violation of Tenement House Law.—Every person who violates or assists in violation of any provision of the Tenement House Law, is guilty of a misdemeanor, punishable by imprisonment for ten days for each and every day the violation continues, or not less than ten, nor more than one hundred days if the violation is not wilful. If the offense is wilful, then the penalty is \$250 fine, or not less than 10 and not more than 100 days, or both fine and imprisonment. (T. H. L., Sec. 124.)

For not filing name of owner with the T. H. D., a fine of \$50 is imposed. If notice to file same is given and not complied with, a civil penalty of \$250 may be recovered, and as a lien against the property. (T. H. L., Sec. 124.)

The owner of a tenement house or any part thereof, who violates or assists in violating any chapter of the T. H. L., or where a nuisance is liable to a civil penalty of \$50, besides costs and disbursements of the action. (T. H. L., Sec. 124.)

Prostitution in Tenements.—Tenement houses are subject to a penalty of \$1,000 if it or any part is used for the purpose of prostitution or assignation of any description with permission of owner thereof or his agent. Penalty when recovered is a lien against the property. (T. H. L., Sec. 151.)

Violation of Code.—If a specific punishment is not provided for a violation of a provision of the Code of Ordinances, the punishment or conviction is a fine of not more than \$10, or imprisonment not exceeding ten days, or both fine and imprisonment. (C. O., Chp. 27, Sec. 10.)

PROHIBITED USES.

Uses.—A resolution adopted by the Board of Estimate and Apportionment July 25, 1916, regulating and restricting the location of trades and industries and the location of buildings designed for specified uses and establishing the boundaries of districts for the said pur-

poses applies as much to tenements as it does to other classes of buildings.

Keeping of Animals.—No horse, cow, calf, swine or goat is permitted to be kept on the premises. (T. H. L., Sec. 109.)

Detrimental to Health.—Storing, keeping or handling hay, straw, excelsior, cotton, paper stock, feathers, rags or anything dangerous or detrimental to life or health is prohibited. (T. H. L., Sec. 39.)

Storage of Combustibles.—Storage of combustible fibres is not permitted. (C. O., Chp. 12, Art. 2, Sec. 24.)

Gambling.—Where owner knows building is used for gambling purposes, he is guilty of a misdemeanor. (Penal Law, Sec. 973.)

Liability of Landlord.—One knowingly leasing or giving possession or permitting use of building for illegal trade, manufacture or other business, is liable for any damage resulting from said use. (Real Property Law, Sec. 231.)

Selling Liquors.—If part of premises are rented for sale of liquor and notice forbidding the selling or giving of liquors to a designated person is given to the owner or his agent, and the designated person subsequently becomes intoxicated, because of such selling or giving away, the owner can be sued for all damages resultant therefrom. If the notice is sent to the tenant only, then the liability of the landlord is joint with that of the tenant. (Liquor Tax Law, Sec. 41.)

Lodging, Stable, Storage of Rags.—No tenement house is permitted to be used for a lodging house, stable or for the storage of handling rags. (T. H. L., Sec. 109.)

Lottery.—One knowingly letting building or any part thereof for lottery purposes is guilty of a misdemeanor. (Penal Law, Sec. 1381.)

Where owner knows building is used as a place for the sale of lottery policies, he is a common gambler, and if no steps are taken to oust tenant, a penalty of one thousand dollars (\$1,000) fine or two years' imprisonment or both attaches. (Penal Law, Secs. 974-976.)

Manufacturing.—Tenement houses are not to be used for purpose of manufacturing, altering, repairing or finishing any articles whatsoever, except for sole and exclusive use of person using part of tenement or members of household, without a license, except the manufacture of collars, cuffs, shirt and shirtwaists made of cotton or linen fabrics.

Applications for license for manufacturing must be made to Labor Department, who, after investigation, will grant same.

This section does not apply to shop on main or ground floor with separate entrance to street and unconnected with living rooms and not used for sleeping or cooking purposes. (Labor Law, Sec. 100.)

An owner of a tenement house must prevent his building being used for the purposes mentioned in the foregoing paragraph. On receipt of notice that it is so being used, he must comply with it in ten days or

start proceedings in fifteen days to oust the tenant. (Labor Law, Sec. 105.)

Nuisance.—One knowingly letting a building for committing or maintaining a public nuisance is guilty of a misdemeanor. (Penal Law, Sec. 1533.)

Anything that annoys, endangers or injures the comfort, repose, health, or safety of any considerable number of people, or offends public decency or unlawfully interferes with, obstructs a public park, square, street or highway is a nuisance. (Penal Law, Sec. 1530.)

Theatricals.—Where owner knowingly lets his property to be used for theatrical or other performance on Sunday, he is guilty of a misdemeanor. (Penal Law, Sec. 2152.)

Opium.—One knowingly letting a building for the sale or giving away of opium is guilty of a misdemeanor. (Penal Law, Sec. 1533.)

Pool Selling.—Pool selling, book selling, bet and wagers are not permitted, and where owner has knowledge that the building is being used for that purpose, he is guilty of a misdemeanor. (Penal Law, Sec. 986.)

Prostitution.—Where owner knows that a tenement house is used for prostitution he is guilty of a misdemeanor. (Penal Law, Sec. 1146.)

No tenement house is permitted to be used for the purpose of prostitution or assignation. (T. H. L., Sec. 109.)

If summary proceedings are not commenced within five days after receiving notice by Board of Health that building or part thereof is used for prostitution, it is deemed that it was so used with permission of owner and lessee. Two or more convictions of persons using tenement house for prostitution within a period of six months are deemed * * * conclusive to hold the premises were used for such purposes with the permission of the landlord and lessee. (T. H. L., Sec. 154.)

General reputation of the building is competent and presumptive evidence that the building was used for prostitution. (T. H. L., Sec. 154.)

Slot Machines.—Keeping a slot machine on premises is a misdemeanor. (Penal Law, Sec. 982.)

PART THREE.

ROOFS.

Bulkhead and Scuttles on Roof.—Buildings built prior to April 10, 1901, must have bulkheads or scuttles not less than 21 inches by 28 inches; after that date they must be 2 feet by 30 inches. Scuttles must be covered on the outside with metal; also must be provided with stairs or stationary ladder leading thereto and easily accessible to all tenants. Scuttles must be in ceiling of public hall. Access through scuttles to the roof must be direct and uninterrupted. Scuttles must be hinged so as to readily open.

Every bulkhead must have stairs with hand rail to roof.

Door leading to roof must not be locked with a key, but may be fastened on the inside by movable bolts or hooks. (T. H. L., Sec. 32.)

Leaky Roofs, etc.—Roofs, skylights, walls and windows must be kept in a very good condition of repair so that rain water does not enter building; all rain water must be drained. (C. O., Chp. 20, Art. 4, Sec. 59; T. H. L., Sec. 102.)

Water Tanks on Roofs.—Water tanks must be kept covered and ventilated. When used for holding drinking water or for domestic use they must be cleaned at least once a year or as often as the Department of Health directs. (C. O., Chp. 20, Art. 4, Sec. 61.)

ROOMS.

Rooms, Lighting and Ventilation.—In building built prior to April 10, 1901, no room can be occupied for living purposes unless it has a window opening directly upon the street, or upon a yard not less than four feet deep or above the roof of an adjoining building, or upon a shaft or court not less than 20 square feet in area open to the sky without roof or skylight, unless on the top floor, where the room is adequately lighted and ventilated by a skylight opening directly to the outer air.

If the room does not comply with the foregoing it must be provided with a sash window opening into an adjoining room in the same apartment which latter room opens directly on a street or yard not less than four feet deep or it is connected with a similar sash window or series of windows with such an outer room.

Sash windows to be vertically-sliding pulley-hung, sash, not less than 3x5 feet between stop heads.

Both halves of window must open easily; the lower half must be glazed with translucent glass.

If windows of the prescribed width cannot be constructed, the department may prescribe some other method.

An alcove of no less dimensions than sash windows, in addition to the usual door opening, is deemed a compliance with the law.

If the rooms do not open directly on the street the department can require that they be painted white or kalsomined white. (T. H. D., 73.)

Basement and Cellar Rooms.—No rooms in basement or cellar can be occupied for living purposes without written permit from department. In buildings built prior to April 10, 1901, before the permit will be issued, the following requirements must be met: Room must be at least seven feet high, ceiling must be two feet above surface of street; there must be appurtenant thereto the use of a water-closet; there must be outside and adjoining the room an open space of two feet six inches which must be well drained. One room at least must have

window opening directly to street or yard of 12 square feet in size and readily opened for ventilation. It must have sufficient light, be well ventilated, well drained and dry and fit for human habitation. (T. H. L., Sec. 95.)

Floors of Basements and Cellars.—Floor or cellar or lowest floor of every tenement house must be free from dampness and, when necessary, shall be concreted with four inches of concrete and with a finished surface. (T. H. L., Sec. 100.)

Cellar Ceilings.—Cellar ceilings must be plastered when required except when it is well sheathed with matched boards or covered with a metal ceiling, or where first floor above cellar is constructed of iron beams and fireproof filling. (T. H. L., Sec. 100.)

Boiler Room Protection.—Boilers which supply power to passenger elevators and steam or electric pumps, if location is in the lowest story, must be surrounded by a dwarf brick wall laid in cement mortar, or other waterproof construction, so as to exclude water to depth of two feet above floor level, preventing the flow of water into the ash pit boiler. (C. O., Chp. 5, Art. 28, Sec. 584.)

Cellar Walls and Ceilings.—Cellar walls and ceilings must be whitewashed or painted a light color; same to be renewed when necessary or as may be required by Tenement House Department or Board of Health. (C. O., Chp. 20, Art. 4, Sec. 60; T. H. L., Sec. 101.)

Overcrowding and Ventilation of Rooms.—Four hundred cubic feet of air is required for each adult, two hundred feet for each child under twelve years of age. This is to prevent overcrowding in tenement houses. (T. H. L., Sec. 111.)

Wall Paper.—No wall paper shall be placed on wall or ceiling unless the old paper is removed and walls and ceilings are cleaned. (T. H. L., Sec. 107.)

Damp Cellar or Room.—If cellar or any room is damp or penetrated by gas smell or exhalation, prejudicial to health, it cannot be rented, hired or allowed to be used for place of sleeping or residence. (C. O., Chp. 20, Art. 3, Sec. 54.)

SHAFTS AND COURTS.

Shaft and Inner Court.—At the bottom of every shaft and inner court a door must be provided so that it may be cleaned. If a door or window is already installed, it is a compliance with the statute. If the shaft or inner court is not in compliance in size with the Tenement House Law a fireproof self-closing door must be provided. (T. H. L., Sec. 105.) *All shafts and courts shall be properly graded and drained and connected with the street sewer.* (T. H. L., Sec. 91.)

Wall of Yard Courts Painting.—Walls of all yard courts, inner courts and shafts, unless built of light colored brick or stone, must be whitewashed or painted a light

color; to be renewed when necessary or required. (T. H. L., Sec. 105.) (Sec. 106.)

Dumbwaiter Shafts.—Dumbwaiter shafts which extend into the cellar or lowest story, except such as do not extend more than three stories above the cellar or basement in dwelling houses, must be inclosed in the cellar or lowest story with walls of brick eight inches thick, unless already inclosed in some form of construction conforming to the requirements prescribed for new dumbwaiter shafts. (C. O., Chp. 5, Art. 18, Sec. 373, Sub. 8.) *The Tenement House Department requires that all dumbwaiter doors be equipped with self-closing devices.*

In bakeries where no fat boiling is done a dumbwaiter shaft communicating between a bakery in a cellar and the store above will be permitted if same is constructed entirely of brick and has no other openings than the one in store and the one in bakeshop, each provided with a fireproof door so arranged that when one door is open or partly open the other is entirely closed. (T. H. L., Sec. 40.)

SIDEWALKS.

Repair of Sidewalks.—Sidewalks must be paved and kept in good repair; also curbs and gutter of street in front of building must be kept in good repair. (C. O., Chp. 23, Art. 15, Sec. 181.)

Obstruction and Nuisance.—Sidewalks, flagging and curbstones in front of building must be kept free from obstruction and nuisance of every kind or anything that may be dangerous or prejudicial to health.

Snow and Ice.—Four hours after snow ceases to fall it must be removed. The hours between 9 p. m. and 7 a. m. are not included in the four-hour period. A penalty of \$3 and costs is imposed for violation of this section. (C. O., Chp. 22, Art. 3, Sec. 21.)

Vault Covers.—If vault covers present a slippery surface, thirty days' notice to substitute one that can afford secure footing is given. If notice is not complied with a penalty of \$100 can be imposed. (C. O., Chp. 23, Art. 17, Secs. 243-244.)

Water.—Water or other liquid is not permitted to run from or out of building upon or across sidewalk or curbstone. Ice accumulation is also prohibited. (C. O., Chp. 20, Art. 14, Sec. 271.)

SINKS.

Public Sinks.—Woodwork enclosing sinks in public halls or stairs must be removed and spaces underneath sinks must be left open. They must be kept in good repair, well painted with light colored paint. (T. H. L., Sec. 98.)

Water Supply.—*Proper and suitable tanks, pumps or other appliances must be provided to supply water in sufficient quantity at one or more places on each floor, occupied by one or more families, at all hours of the day or night at all times of the year. (Eliminate the paragraph on "Tanks and Pumps" which follows.)*

Tanks and Pumps.

Tanks and Pumps.—At one or more places on each floor tank pumps or other appliances are necessary to receive and distribute a sufficient and adequate supply of water all times of the year, night and day. (T. H. L., Sec. 103.)

WATER-CLOSETS.

Water-closets.—Adequate privies or water-closets must be maintained, well lighted and ventilated. (C. O., Chp. 20, Art. 14, Sec. 284.) *In tenement houses existing on April 11, 1901, there must be one water-closet for every two families.* (T. H. L., Sec. 99.)

Woodwork in Water-closets.—Woodwork enclosing all water-closets must be removed from the front of said closets and the space underneath the seat shall be left open. *The floor or other surface beneath and around the closet shall be maintained in good repair, and if of wood shall be kept painted with light colored paint.* (T. H. L., Sec. 97.) *(Eliminate the remaining three lines of this paragraph.)* They must be kept in good condition and repair, well painted with light-colored paint. (T. H. L., 97.)

Water-closets.—Water-closet accommodation in building built after April 10, 1901, must have separate compartments and must have a window opening on street or upon yard, court or vent shaft. In buildings built prior to April 10, 1901, the compartment must have a window opening on street or yard not less than four feet deep, or court or shaft not less than 25 square feet in area, open to the sky without roof or skylight. Window must be not less than one foot by three feet between stopheads and must readily open.

No water-closet can be maintained in a cellar without special permit in writing from the Tenement House Department. When water-closets are situated on top floor and lighted by skylight or situated at bottom of shaft or court covered by a skylight containing 3 square feet of glazed surface and can be readily opened, no windows necessary. (T. H. L., 93.)

WINDOWS.

Projection of Windows.—Bay-windows, oriel windows and show windows are not permitted to project more than one foot beyond building line. (C. O., Chp. 5, Art. 21, Sec. 449.)

Wire Glass, Transoms and Windows.—All transoms and windows opening into hall where paint, oil, spirituous liquors or drugs are stored, must be glazed with wire glass or be removed and closed up as solidly as the rest of the wall. (T. H. L., 41.)

MISCELLANEOUS.

Alterations.—Before alterations are commenced a detailed verified statement and plans of the alteration must be submitted to the Tenement House Department.

(Forms furnished by the Tenement House Department.) (T. H. L., 120.)

Ashes, Cinders and Rubbish.—Dirt must be removed and not left to accumulate. Dust, gas, steam or offensive odors are not permitted to escape or be discharged to the detriment or annoyance of any person. (C. O., Chp. 20, Art. 12, Sec. 212.)

Cleanliness of Building.—Buildings must be kept in a condition of cleanliness satisfactory to the Board of Health. (T. H. L., Sec. 104.)

Dangerous Buildings.—Any building or part of building becoming dangerous or unsafe may be taken down and removed or made safe. Before doing so, the owner must first receive notice and he has until one o'clock the next day after receipt of notice to commence remedying the defect. (C. O., Chp. 5, Art. 31, Secs. 630, 631, 632.)

Encroachments.—Such parts of buildings which already project beyond the building line may be maintained as constructed until their removal is directed by the Board of Aldermen or Board of Estimate and Apportionment. (C. O., Chp. 5, Art. 9, Sec. 173.)

Definition of Tenement House.—A tenement house is any house or building or part thereof which is either rented, leased, let or hired out to be occupied, or is occupied, in whole or in part, as the home or residence of three families or more living independently of each other and doing their cooking upon the premises, and includes apartment houses, flat houses and all other houses so occupied. (T. H. L., Sec. 2.)

Janitor.—When there are more than eight families living in a building the Tenement House Department may require the janitor to live on the premises. (T. H. L., Sec. 110.)

House Numbering.—Proper street number of building must be placed or affixed on fanlight or on inner door of building.

A penalty of \$10 attaches if it is not complied with within thirty days after receipt of notice. (C. O., Chp. 23, Art. 10, Sec. 110.)

Filing of Names of Owner.—Every owner, every lessee of whole house or other person having control must file in the Tenement House Department a notice containing his name and address, a description of the property by street number or otherwise; number of apartments in each house, number of rooms in each apartment, and number of families occupying same.

Within thirty days after transfer of building the name of the new owner must be filed by the grantee.

Thirty days after the death of owner or probate of will of owner the name of those who succeeded to his interest and stating death of deceased owner must be filed with the Tenement House Department. (T. H. L., Sec. 140.)

Plumbing.—Plumbing must be kept in good order and repair. (C. O., Chp. 20, Art. 14, Sec. 277.)

Receptacles.—Separate receptacles made of metal for holding ashes, garbage and liquid waste substances must be provided. (C. O., Chp. 20, Art. 13, Sec. 248; T. H. L., Sec. 108.)

Repair.—All parts of house must be kept in good repair. (T. H. L., Sec. 102.)

Shut-off Valves.—Where building is supplied with gas, vapor or fluid from an outside source, it must be provided with a stopcock or other device fixed to the supply pipes leading into the building, at a place outside of the building, so arranged as to allow the supply to be shut off. Such device must be marked to indicate either the contents or purpose of the supply pipe or the company to which the device belongs. (C. O., Chp. 5, Art. 29, Sec. 601.)

When Building Can Be Rented.—Before owner can lease or rent building it must be light, ventilated, clean and wholesome in all respects. (C. O., Chp. 20, Art. 4, Sec. 54.)

AMENDMENTS TO THE TENEMENT HOUSE LAW FROM 1912 TO 1916, INCLUSIVE.

The following is a summary of 19 new amendments to the Tenement House Law which went into effect in April, 1912. The summary is furnished by the Allied Real Estate Interests, which had a good deal to do with securing the amendments:

Amendment 1.—Fire-escapes may be located in an unenclosed recess in the front of the building, to wit: recessed. Up to the present time the law did not cover this question, but the Tenement House Department has permitted the recessing of fire-escapes, and it was desired to make the law more clear on the subject.

Amendment 2.—Offsets in exterior courts will hereafter be allowed either at right angles or along the line of the court itself, provided the length of such offset does not exceed its width, and that there shall be only one offset.

Amendment 3.—All stairs shall hereafter extend from the entrance hall to the roof in all tenement houses, and each apartment shall be directly accessible at each story to such stairs and public halls, and in the case of duplex apartments, each story of such apartment shall be so accessible except that one story of a duplex apartment may be accessible to a tower fire-escape or interior stairway as hereinafter provided for.

Up to the present time there need be only one pair of stairs in tenement houses to the roof. The amendment will compel all stairs to run to the roof, making better access in case of fire. At the present time only one story of a duplex apartment need be connected with the stairs. This amendment will provide access from either floor of a duplex apartment directly to a stairway.

Amendment 4.—Winding stairs will hereafter not be permitted except in a fireproof tenement house with power passenger elevator. Where such stairs are used, the radius of such stairs is designated.

Amendment 5.—All windows in each stair hall shall be fireproof and glazed with wire glass.

Amendment 6.—In fireproof tenement houses hereafter erected, stairs to the basement may be located inside the building, but not directly underneath the stair leading to the upper stories, but this prohibition shall not apply where the basement is the main entrance floor of the building. All such basement stairs shall be entirely enclosed in brick walls or fireproof partitions and have fireproof self-closing doors at the openings.

Amendment 7.—Modifies the law as to the height of buildings to read as follows:

The height of any tenement house here-

after erected shall not exceed more than one-half the width of the widest street upon which it stands. The height shall be the perpendicular distance measured in a straight line from the curb level to the underside of the roof beams, but if the cornice shall exceed one-tenth the height of the building, the measurement shall be taken to the top of the cornice. Where bulkheads occur exceeding an area of more than 10 per cent. of the roof, the measurement shall be taken to the top of the bulkhead, but this shall not apply to elevator bulkheads that do not exceed twenty-three feet in height, nor to open pergolas or similar open ornamental treatment for roof gardens or play grounds. The measurement for height in all cases shall be taken through the center of the facade of the house, and in buildings fronting on more than one street or avenue the heights shall be measured through the center of the facade on the street having the greatest grade.

In all fireproof tenement houses hereafter erected, in which one or more passenger elevators are provided and operated, pent houses may be erected on the main roof, but these pent houses, including all bulkheads for elevators or stairs or any other purpose, shall not cover more than 50 per cent. of the area of such roof. Such pent houses shall not be used or rented as apartments; their use shall be limited solely to laundries, store rooms or to servants' and janitors' quarters. Such pent houses must be set back at least ten feet from both the front and rear walls of the building and at least three feet from any court wall and shall have finished ceilings inside all rooms of not less than nine feet and shall not be more than twelve feet in height from the high point of the main roof to the high point of the pent house roof. Such pent houses shall not be deemed as affecting the measurement or height of the building as described in the first part of this section, and shall be built entirely fireproof including floors, walls, trim, doors, etc.

By measuring the height of the building to the underside of the roof beam instead of to the highest point, it permits the strutting up of the roof beams to obtain a pitch to the roof instead of the present method of roof fill and grade, and also increase by some seven to nine inches the height of a nine-story building on a sixty-foot street.

The increasing of the area of pent houses from 10 per cent. to 50 per cent. of the roof is a much needed improvement, as all high-class apartment houses to-day require adequate quarters for men servants which are separated from the servants' quarters in an apartment, and for laundry rooms, both of which accommodations can be pro-

ly provided for in the basement, due to inadequate light and ventilation. The setting back from the building line and court lines is a protection against fire, and the compelling of the entire pent house to be entirely fireproof is a step forward.

Amendment 8.—An open slat bridge or platform may hereafter extend across the yard from the roof of one tenement house to the roof of an adjoining building to furnish roof egress, provided the bridge or platform does not exceed four feet in width. At the present time there is no provision of the law which permits this very desirable additional means of escape from one building to another in case of fire.

Amendment 9.—In fireproof tenement house hereafter erected in which one or more power passenger elevators are provided and where such tenement house runs through from one street to another street, the two portions of the building may be connected and the yard between said portions built upon, but not above the level of the second tier of beams, nor so as to convert any unoccupied portion of such yard into a court less in size than the minimum size prescribed by sections forty-eight and fifty-nine of the law. Up to the present time this connecting of one building running through from street to street has been impossible, and this added provision of the law is of great importance and value to property owners and will make available for proper and desirable improvement, many plots of ground whose frontage on one street is too small to be desirable, but which when connected through to the street in the rear, makes a building in size large enough to be profitable when operated as one building.

(EDITOR'S NOTE:—This section has been further amended (April 26, 1916) by the addition of the following clause: "Nothing contained in this section shall be construed so as to require a yard for tenement houses hereafter erected upon lots running through from street to street in a gore-shaped block when the average width of the block measured parallel with the side lot lines of the lots which run through from street to street is not more than seventy feet.")

Amendment 10.—This amendment permits the cutting off of the corners of courts where the angle does not exceed six feet without compelling the placing of windows at such angles, making it possible hereafter to install chimneys at such points, which has heretofore been prohibited. This same section is further amended to clarify the law on the question of area and dimensions of air intakes to courts and as to the portion of such courts that may be built on.

Amendment 11.—Transoms may be omitted hereafter in rooms which have two windows, if each window contains twelve square feet of area between stopheads, or

where a mullioned window contains twenty-four square feet.

Amendment 12.—This amendment provides that hereafter in no tenement house shall any room be less than seven feet wide in its least horizontal dimension except that in a fireproof tenement house, where it is provided with power passenger elevators; servants' bedrooms may not be less than six feet in their least horizontal dimension. This modification will prevent the designing of long, narrow rooms, which have the requisite square area, as provided by law, but which are susceptible, by reason of their shape, of being divided into two rooms, each too small, and one probably without ventilation.

Amendment 13.—This amendment provides that the public halls in tenement houses over four stories in height shall have at least one window opening directly upon a street, yard, or court, and that such windows shall be at the end of the hall with a natural direction of the light parallel to the axis of said hall, and if the hall be more than sixty feet in length, there shall be one additional window for each additional thirty feet of hall or fraction thereof. If the window is not located at the end of the hall, there shall be at least one window opening directly upon a street, yard, or court in every twenty feet in length or fraction thereof in each hall. This makes a much needed amendment to the law to provide better lighting in public halls.

Amendment 14.—This amendment provides that in fireproof tenement houses where elevators are provided, that elevator vestibules will be permitted without a window, provided they are completely shut off by fireproof partitions and fireproof self-closing doors, except that the elevator vestibules may be ventilated by means of vent flues not less than twelve inches by twelve inches in size, and also provided that such vestibules are equipped with both gas and electric light, and are kept properly lighted by electricity at all times. The amendment further provides that such vestibules may be twice the size of the elevator shaft which they serve and that the minimum width in either direction shall not be less than five feet, and that these vestibules may also open upon a stair hall or public hall, provided access to such hall is through a fireproof self-closing door set in fireproof partitions.

At the present time elevator vestibules are too small and are not ventilated.

Amendment 15.—This amendment provides that on the top story of stair halls a ventilating skylight will be accepted in lieu of a window for ventilating that stair story.

Amendment 16.—In fireproof tenement houses hereafter erected in which passenger elevators are provided and operated, water-closets and bathrooms which are supplementary to those required by law and which

are not intended for the use or used by servants, may be ventilated by individual vent flues extending from such closet or bathroom independent of any other flue up to and above the roof. These flues must be not less than three square feet in area, finished on the inside with even surface, to be uncovered at the top except with a hood or louvre. Such water-closets and bathrooms shall be equipped with both gas and electricity and shall be kept properly lighted by electricity. Up to the present time all toilets and bathrooms must be ventilated by a window opening directly on a court, shaft, street, yard, or upon a vent shaft.

Vent shafts will hereafter be abolished and vent flues, as above described, substituted, the difference being that one shaft was permitted to ventilate all bathrooms and toilets opening on it no matter how many, whereas a vent flue must be provided for each bath or toilet.

Amendment 17.—In fireproof tenement houses hereafter erected, where power passenger elevators are operated, tower fire-escapes or stairways which are supplementary to the stairways required by law may be built without complying with the provisions regarding stairways of this chapter. Such tower fire-escapes shall be shut off from all other parts of the building by fireproof partitions with self-closing fireproof doors at all openings, and shall be constructed with such supplementary regulations as may be adopted by the Tenement House Department. Such tower fire-escapes shall not be designed for or used as service stairs and they shall be kept adequately lighted at all times by electricity, with gas provided for emergency and kept free from encumbrances.

This addition to the law provides a much needed and desirable means of interior fire-escape which shall be planned and used only as such, and as the law clearly states, supplementary to the regular stairways. This will make it possible, particularly in duplex apartments, to provide satisfactory means of egress from all floors of such apartments.

Amendment 18.—This amendment provides that all windows hereafter situated on the lot line, except when facing the street, shall be entirely fireproof and glazed with wire glass. At the present time this requirement is not enforced except where these windows occur less than fifteen feet above the roof of an adjoining building.

Amendment 19.—This amendment provides that all stairs and stair halls in all tenement houses shall be completely separated from every other stair and from all elevators by brick walls or terra cotta blocks with fireproof self-closing doors at all openings.

OTHER AMENDMENTS.

By John L. Pleines.

The following are other amendments made between January 1, 1912, and December, 1916:

Article 2, Sec. 3—Buildings Converted or Altered.—Did read: "A building not erected for use as a tenement house, if hereafter converted or altered to such use, shall thereupon become subject to all the provisions of this chapter affecting tenement houses hereafter erected."

The words "erected for use" were stricken out in the amendment because the owner of tenements which had been converted to business buildings wanted to reconvert them to tenements, but not subject to the requirements of new-law tenements.

Article 4, Sec. 52.—Has been amended to permit bridge fire-escapes to extend across above the yard from the roof of a corner house to the roof of one adjoining or abutting on it.

Article 4, Sec. 54a.—Permits the erection of retaining walls in yards or courts without having such walls considered as reducing the minimum sizes of the yards and courts.

Article 5, Sec. 109.—An additional clause has been added to this section (April 26, 1916) which reads as follows: "In case the fire limits as they existed on April 10, 1901, are extended, an existing stable permitted under this section may be continued in accordance with such provisions."

Article 6, Sec. 120.—(April 26, 1916) A new clause has been added to this section which allows the Department to issue a permit for the erection of cellar walls only, if plans have been filed.

Article 6, Sec. 124.—(April 26, 1916) That portion of this section which related to fines that could be imposed for encumbering fire-escapes has been changed from a fine of ten dollars to a fine of two dollars; and the words "which the nearest police magistrate shall have jurisdiction to impose" have been eliminated.

Section 1341 of the Greater New York Charter as amended by Section 14 of Chapter 503 of the Laws of 1916.

(Effective October 1, 1916.)

Transfer of powers of other departments. Sec. 1341.—Such rights, powers and duties as are now possessed by the fire department and police department of the City of New York with respect to the prevention of incumbrance or obstruction of fire escapes on tenement houses are hereby transferred to and conferred upon the tenement house department. All rights, powers and duties now possessed by the bureaus of buildings and the department of health of the City of New York with respect to the light and ventilation of tenement houses, and with respect to the equipment of completed tenement houses with fire escapes, are trans-

ferred to and conferred upon the tenement house department. All rights, powers and duties now possessed by the department of health of the City of New York with respect to the construction of and structural changes in bakeries and confectioneries in tenement houses are transferred to and con-

ferred upon the tenement house department. Nothing in this act contained shall be construed to abridge, restrict or diminish the jurisdiction or powers of the tenement house department as they existed prior to January first, nineteen hundred and sixteen.

PRACTICE QUESTIONS AND ANSWERS ON LAWS AND DUTIES, BY EXPERTS OF THE TENEMENT HOUSE DEPARTMENT.

NOTE:—The following Questions are framed by experts of the Tenement House Department, and the Answers are based on years of experience.

Ques. 1:—What do you understand the duties of an Inspector in the Tenement House Department to be?

ANS.:—The principal duties of a Tenement House Inspector are the following: Supervise the construction of all tenement houses being erected and the alteration of all existing tenement houses and all buildings altered or converted into tenement houses; see that they comply with the Tenement House Law. Such buildings must receive a permit from the Tenement House Department before they can be occupied. See that no building not recorded as a tenement house is used as such without a certificate from the Tenement House Department. Report any dangerous or specially unsanitary condition which would make a building uninhabitable, so that said building may be vacated at once. Make periodic inspections of the plumbing and sanitary conditions of all tenements in the district assigned him, and report the facts and all violations of law to the department. Investigate all complaints of citizens, and report violations of law where they may be found.

Ques. 2:—Define a tenement house.

ANS.:—A tenement house is any house or building, or portion thereof, which is either rented, leased, let or hired out, to be occupied, or is occupied, in whole or in part, as the home or residence of three or more families living independently of each other and doing their own cooking upon the premises, and includes apartment houses, flat houses and all other houses so occupied.

Ques. 3:—In general, what improvements in tenement houses are provided for in the Tenement House Law?

ANS.:—The law provides for the adequate lighting and ventilation of all public halls and all rooms in both new and existing tenement houses; for the concreting and improving of all cellars, yards, courts and shafts; for the fireproofing of all new

tenements over six stories in height; for providing adequate fire-escapes in all tenement houses; for all plumbing to comply with the plumbing rules and regulations; for cellars and basements to be occupied only under certain conditions; for only a certain percentage of a tenement lot being occupied; for special regulations for bakeries and all dangerous businesses.

Ques. 4:—What is the principal thing to be done before the construction or alteration of a tenement house is commenced?

ANS.:—Plans must be filed with and approved by the Tenement House Department.

Ques. 5:—State in general the precautions required in the Tenement House Department to secure protection against and in case of fire.

ANS.:—All new tenement houses over six stories must be made fireproof throughout on each floor. In buildings five stories or more in height, non-fireproof or fireproof, the first tier of beams must be of iron or steel, with fireproof flooring. In non-fireproof buildings less than five stories in height, where the first tier is non-fireproof, the cellar must be covered with fire-resisting material. There must be a scuttle opening in the roof. Egress from yard or court, if fire-escapes are not on front of building. Where materials are stored in a room or store open to the public, such parts of buildings must be fireproofed. No such materials can be stored in cellars or public parts of buildings. No wooden tenements or wooden buildings on same lot as a tenement may hereafter be erected within the fire limits.

Ques. 6:—(a) What percentage of a corner lot may be occupied by a tenement house? (b) What percentage of an inside lot?

ANS.:—(a) Not more than 90 per cent. (b) Not more than 70 per cent.

Ques. 7:—What limits the height of a tenement house?

ANS.:—No tenement hereafter erected (or increased in height) shall by more than one-half exceed the width of the widest

street upon which it stands. There must also be compliance with the new height limits recently adopted by the Board of Estimate.

Ques. 8:—Name three causes of complaints on tenement houses.

ANS.:—1. Defects in construction. 2. Defects in maintenance. 3. Defects in condition.

Ques. 9:—Who are responsible for the above? Answer in the order given.

ANS.:—1. Real estate men and builders. 2. Owner of house, agent or housekeeper. 3. Tenant or occupant.

Ques. 10:—In inspecting the roof of a tenement house, what would you look for?

ANS.:—The roof proper should be free from defects and leaks. Gutters on same should be in good repair and tight. The chimney, pipes, bulkheads, scuttles and tank on roof should be clean and in good order.

Ques. 11:—In regard to water tanks in tenement houses, what regulations should be enforced?

ANS.:—They should be properly constructed, accessible, well covered, water-tight, easily cleaned and must be often emptied entirely, scraped and cleaned. The overflow from the tank should not discharge into the leaders or other house pipes, but should be let down into the cellar by separate pipe to discharge into the sink. The washers on the water faucets should be renewed once in a while to prevent leakage.

Ques. 12:—In what manner must the stair-halls of tenements four stories in height be enclosed? What may be the construction if the tenement does not exceed three stories?

ANS.:—Tenements not exceeding four stories in height shall have stair-halls enclosed in all with brick walls OR with partitions of angle iron and fireproof blocks not less than four inches thick.

Three-storied buildings may have stair-halls enclosed with wooden stud partitions covered on both sides with metal lath and plaster or with one-half inch plaster boards; the space between the studs to be filled in with brick to the height of the floor beams.

Ques. 13:—Under what conditions may a house drain be connected to two buildings?

ANS.:—House drains cannot be connected to two buildings.

Ques. 14:—Answer the following question with "yes" or "no": (a) Is a cellar with ceiling three feet above the curb level a story? (b) May paint be stored in a fire-proof building? (c) Is a yard required for a tenement house on a corner lot? (d) Does a room 5 feet by 14 feet floor area comply with the law? (e) May four adults and a child under 12 years old occupy a room 20 feet long, 10 feet wide and 9 feet high?

ANS.:—(a) Yes. (b) Yes, under permit from Fire Department. (c) Yes. (d) Yes. (e) Yes.

Ques. 15:—What is the remedy in each of the following cases? (a) A tenant in an apartment house is annoyed by odors arising from the garbage and stagnant water in an adjoining vacant lot? (b) The noise of machinery in a printing establishment disturbs the rest of the tenants in adjacent houses?

ANS.:—(a) The Department of Health must be notified, and they will compel the owner of such lot to clean lot of garbage and water and disinfect site. (b) This is also a case for Department of Health. The Department will compel them, if in day time, to use appliances so that as little noise is made as possible. If between 10 p. m. and 6 a. m., if noise is very bad and cannot be modified to a considerable degree, it must be discontinued entirely.

Ques. 16:—What do you understand by the term "trap" when used in plumbing?

ANS.:—A trap is a bend in a pipe so constructed as to hold a certain volume of water, this water being called the water seal, which serves as a barrier to prevent air and gas from the sewer entering the house.

Ques. 17:—In a new tenement house a room is 20 feet long, 7 feet 6 inches wide and 8 feet high, with a flat ceiling. Does it comply with the law? (b) What should be the window area?

ANS.:—(a) No; it should be at least 9 feet high. (b) Fifteen square feet.

Ques. 18:—(a) If the height of a tenement house exceeds 60 feet, what changes must be made in the unoccupied portion of the lot? (Exact figures are not required.) (b) Name the portions affected.

ANS.:—(a) Yards and courts must be increased in size in proportion to the increase in height of tenement house. (b) Yards, inner and outer courts.

Ques. 19:—What is the difference between a yard and a court?

ANS.:—A yard is an open unoccupied space on same lot as the tenement, between extreme rear line of house and the rear of the lot. A court is an open unoccupied space, other than a yard, on same lot as a tenement house.

Ques. 20:—What is the difference between an Outer and Inner Court?

ANS.:—A court extending to the yard or street is an Outer Court. A court not extending to the yard or street is an Inner Court.

Ques. 21:—What are the principal provisions of the Tenement House Law in reference to windows in living rooms of tenements for purposes of light and ventilation?

ANS.:—Windows in new tenements must contain 1-10 of superficial area of room but not less than 12 square feet between stop beads; must open on a street or legal yard or court. Top of such windows shall not be less than 7 feet 6 inches above the floor, and the upper half shall be made so as to

open the full width. In old houses there shall be windows of 12 square feet opening on street or yard not less than four feet deep, or above roof of adjoining building, or upon a court or shaft not less than 20 square feet in area open to the sky without roof or skylight, or have a 3 foot by 5 foot pulley-hung sash window opening to another room which opens to street, yard, etc., or itself connects by a similar window or series of windows to such out-room.

Ques. 22:—(a) Where and how must concrete be used in tenement house construction? (b) What constitutes good concrete?

ANS.:—(a) Concrete used in paving cellars, yards, courts, shafts, etc., should be 4 inches thick with a finished surface. (b) Good concrete is a mixture of sand, broken stone and cement in proper proportions; generally one part cement, three parts sand and five parts broken stone mixed with proper percentage of water.

Ques. 23:—Describe a pan water-closet?

ANS.:—A pan closet is constructed as follows: A basin of china, round, of about 18 inches diameter, is fitted into a wooden seat under which is a 6-inch copper pan. These are placed in a large iron container and a "d" trap attached to the container. A lever and pull is attached to the pan, which when pulled empties the contents of the pan into the container and trap.

Ques. 24:—What objections, if any, do you see to the pan closet?

ANS.:—There are a number of objections to the use of the pan closet, among which are the following: There are a number of parts and mechanical contrivances which frequently get out of order, and as the bowl is set into the container it is not being readily inspected and is very dirty underneath; and as the container is larger, fecal matter frequently adheres to its sides and the iron becomes corroded and gutted with filth. Also foul air enters the house whenever the handle is pulled. The pan breaks easily and often gets out of order. They are a very bad type of water-closet and their use is prohibited by the Tenement House Department and by the plumbing rules and regulations.

Ques. 25:—How would you test a trap with a view of finding out whether its seal is lost or not?

ANS.:—By sounding it; if it gives off a dull heavy sound, it is full. By holding a candle to inlet of pipe or fixture above trap; if candle blows inward toward trap, seal is lost; if it remains undisturbed, trap is full.

Ques. 26:—What is meant by siphonage?

ANS.:—Siphonage is the emptying of the seal in the trap by the water in the trap being drawn downward, caused by the sudden rush of the water and air in the pipes connected with the trap.

Ques. 27:—Describe a sink.

ANS.:—A sink is a receptacle for the disposal of waste water in kitchens and other places.

Ques. 28:—What do you understand by the term "back pressure"?

ANS.:—Back pressure is the fouling or unsealing of the trap from behind caused by undue pressure of the air in the pipes which may have been expanded by heat, water, etc.

Ques. 29:—How are siphonage and back pressure guarded against?

ANS.:—By ventilating all traps with branch vent pipes connected to the main vent. This main vent ventilates the drainage system of the house and should be extended above the roof.

Ques. 30:—The water supply in a five-story tenement house on the upper floors is found inadequate. Pipes are of regulation size and in good condition. What would you recommend to remedy the defect in the condition?

ANS.:—A properly covered house supply tank should be provided, with pumps to supply pressure, if necessary.

Ques. 31:—How should sinks be constructed?

ANS.:—Sinks must be set level and provided with a strainer at the outlet to prevent large particles of kitchen refuse from being swept into the waste pipe and obstructing it. The sink must be connected to the house drain by a properly trapped waste line. If possible, the back and sides of the sink should be cast from one piece. The back and sides, if of wood, should be covered by non-absorbent material, sheet-metal, to prevent the wood from becoming saturated with waste water. No woodwork should enclose sinks; they should be supported on iron legs and be open beneath and around. The trap of the sink is usually two inches in diameter, and should be kept in good condition. A branch vent pipe should be connected to the trap.

Ques. 32:—Name two parts of a tenement house which must be painted in light colors, giving the reasons.

ANS.:—The cellars, shafts, courts, etc. Light paint helps to make lighter the rooms facing on same, as the light is more easily reflected from a light color.

Ques. 33:—What are the principal objections to earthenware house drains?

ANS.:—They are porous and therefore not gas-tight, easily broken, and are inaccessible for cleaning, as they are generally underground.

Ques. 34:—(a) Can two buildings be connected by one plumbing system? (b) Are cesspools and privy vaults allowed within the city limits?

ANS.:—(a) No. (b) Only where there is no sewer connection in the street.

Ques. 35:—What are the plumbing regulations in regard to installing new house drains in tenements?

ANS.:—New house drains must be of extra heavy cast-iron and should be placed

above ground if possible. The size should be at least four inches in diameter and they should be provided with a house or main disconnecting trap and a fresh air inlet. They should be supported at intervals of ten feet and be provided with an arched or other proper opening in the wall where the drain enters same, so as to prevent damage by settling. They should be set at proper pitch.

Ques. 36:—Compare, from a sanitary standpoint, a long hopper and short hopper closet.

ANS.:—The trap should be placed as near the fixture as possible, which you will find in the short hopper. The long hopper has its trap several feet from the bowl, under the floor, and is used mainly in water-closets in yards, or where the trap is liable to freeze.

Ques. 37:—What is meant by: House drain, house sewer, private sewer and street sewer?

ANS.:—The house drain is the main horizontal pipe of the building, beginning at the termination of the vertical pipes and connecting to the house sewer two feet outside of the walls of the building. The house sewer begins at a point two feet beyond the outer wall of the building and connects with the main street or private sewer. A private sewer is a street sewer not constructed under the supervision of the Bureau of Sewers, but is constructed by private enterprise where there is no public sewer. A street sewer is the main city sewer which receives the flow from all buildings and empties into the place of discharge.

Ques. 38:—How is the water test applied to the plumbing system?

ANS.:—The water test is applied by the closing of the lower end of the main house drain and filling the pipes with water to the highest opening above the roof. It should include all vertical and horizontal pipes in all branches and all branches to the point above the floor line. When the pipes are filled each separate line should be followed from its highest point to the drain and also the drain to the main trap. All pipes should be followed closely to look for openings or defective joints which may be detected by water or dampness on the pipe.

Ques. 39:—(a) What is the composition of mortar for building purposes? (b) What are metal laths?

ANS.:—Mortar is a composition of slaked lime, sand and water. (b) Metal laths are narrow strips of metal of different compositions, such as tin, zinc, brass, copper. They are used to support plaster. The metal laths are used when fireproofing is required.

Ques. 40:—What is the best form of trap for sink waste pipes?

ANS.:—"S."

Ques. 41:—What is the best form of trap for house drains?

ANS.:—Running.

Ques. 42:—What is required by the law as to refrigerator drains?

ANS.:—They must not be connected directly to the sewer or plumbing of house, but must empty into properly trapped, sewer-connected, water-supplied open sink.

Ques. 43:—What are the requirements of the Tenement House Law in regard to the maintenance of public sinks in existing tenement houses?

ANS.:—The woodwork enclosing sinks located in the public halls or stairways shall be removed and the space underneath said sinks be left open. The floors and walls beneath and around the sink shall be maintained in good order and repair, and if wood kept well painted with light colored paint.

Ques. 44:—What are the regulations of the Tenement House Department in regard to ventilating water-closet new compartments in existing tenement houses?

ANS.:—Such compartments shall have a window opening directly upon the street or yard, not less than four feet deep, or a shaft or court not less than 25 square feet in area, open to the sky, without roof or skylight. Such window shall be at least 1 x 3 between stop beads, except when located on top floor or at the bottom of the shaft or court of lawful size and is lighted and ventilated by a skylight containing three square feet of glass. Such compartment shall have means for lighting at night.

Ques. 45:—What material would you consider best in a tenement house for the following named purposes: Leaders, tubs, sinks, and vent pipes?

ANS.:—Leaders: If inside the building, cast-iron; if outside, they can be of sheet metal. Best materials for tubs: porcelain and stone. Best material for sinks: porcelain and cast-iron. Best material for vent, soil and waste pipes: extra heavy cast-iron.

Ques. 46:—Name four sources of water in cellars.

ANS.:—Tide water, coming from oceans, rivers and bays when houses are near waterfront; water from leaky mains and drains; sub-soil water from underground streams, springs, etc., and water from ice refrigerators and mineral water factories.

Ques. 47:—What points would you observe when inspecting a water-closet?

ANS.:—It should not be used by more than two families. Its trap should be above the floor, unless exposed to freezing. All pipes and connections should be gas-tight. It should have a proper flush, and said flush should effectively clean the bowl at each discharge. Compartments should be properly lighted and ventilated. The sides, floor underneath water-closet, walls of compartment and the bowl of water-closet should

be clean and in good order. There should be provision for lighting at night.

Ques. 48:—What defects would you look for when inspecting iron pipes in a building?

ANS.:—Would look for openings in the pipes. Would see that each fixture was separately trapped and that there was no other trap from the fixture to the main house trap. Where not more than three wash trays were connected to a single trap or into the trap of an adjoining sink, if the sink were nearest the waste line and the waste outlets of all of the fixtures were on the same side of the waste lines, separate traps for each fixture would not be necessary. Would see that all hubs and connections were properly caulked and that traps had proper seals; also that there were no open hubs, or open disused pipes. Where pipes are being installed, I would see that they were of proper weight, as called for in the plumbing regulations. All waste, soil and vent pipes or combinations should be extended above the roof well away from any window or an adjoining building.

Ques. 49:—How would you judge the value of a plumbing trap?

ANS.:—On the strength, depth and permanency of the water seal; on its uniformity, simplicity, accessibility and self-cleaning character.

Ques. 50:—(a) How would you determine when it is necessary to have damp-proofing in tenement construction? (b) Mention the materials principally used in damp-proofing, and describe the way in which they are used.

ANS.:—(a) This depends on the condition of the soil and location of the building. If the soil is dry and there is no danger of tide waters and there are no underground streams, or other sources of causing the walls and foundations to be damp, damp-proofing is unnecessary. (b) Materials are tarred-felt and burlap. They should be laid in alternate layers and project six inches inside and six inches outside the walls; also on the outside of the walls there should be two-ply tarfelt laid in hot pitch, extending up to the soil level.

Ques. 51:—Name three materials which may be used for water-proofing the floor of a properly constructed water-closet, giving a brief description of each.

ANS.:—Tile, asphalt, slate or any natural stone. Tile is baked clay cut into small shapes. Asphalt is a variety of pitch found in the earth. Slate is a natural stone with a smooth surface and little thickness.

Ques. 52:—What are the regulations of the Sanitary Code as regards the use of well-water in tenement houses?

ANS.:—Water from wells other than the public water supply should not be used in a tenement house without a permit from the Board of Health.

Ques. 53:—What is wired glass, and for what is it mainly used?

ANS.:—Wired glass is a thick double-plated glass, threaded inside with wire, used mainly for fire protection in transoms over doors and panels, as it is not easily broken and is a fire retardent.

Ques. 54:—Describe sewer, and describe what materials made of.

ANS.:—A sewer is a conduit of pipe intended for the passage of sewerage, waste and water. Sewers are made of iron, brick, cement and vitrified pipe.

Ques. 55:—Define soil pipe and main waste pipe.

ANS.:—Soil pipe is a vertical pipe or pipes receiving sewerage matter from the water-closets in the house. The main waste pipe receives waste water from any fixture except the water-closet.

Ques. 56:—What should be done in regard to areaways and courts?

ANS.:—They should be properly graded, drained and kept clean.

Ques. 57:—In what way must openings in pipes be closed after a fixture has been removed?

ANS.:—All open iron hubs and ends must be closed with an iron plug and caulked around. Lead branches should be removed.

Ques. 58:—How must joints in iron drain pipes be connected?

ANS.:—The end of one length must be fitted into the hub end of the other length, the opening filled with oakum and lead, and caulked to make same gas-tight.

Ques. 59:—In what manner must connections of lead pipe be made with iron pipes?

ANS.:—Connection is made by a brass ferrule which is connected to the iron pipe by a lead caulked joint and to the lead pipe by a wiped or overcast joint.

Ques. 60:—How must connections of lead waste pipes be made?

ANS.:—By wiped or overcast joints, i. e., the lead is melted and wiped around the connection of lead pipes, making same gas-tight.

Ques. 61:—In a bathroom it is proposed to place a trap three feet away from a water-closet, that it may be connected with the waste pipe from a bathtub. State whether this is permissible, giving your reasons.

ANS.:—Not permissible; traps must be placed as close to the fixture outlet as possible, but not more than two feet away. Also, each fixture must be separately trapped.

Ques. 62:—In yards of tenement houses which are built in rows, what sanitary regulations would you insist upon?

ANS.:—Yards should be properly flagged or cemented, and so graded that the surface water, if any there be, is discharged into properly trapped sewer-connected drain. Yards should be swept clean and kept free from rubbish.

Ques. 63:—Are earthenware house drains permitted in a tenement? Why?

ANS.:—No. They are not absolutely gas-tight, being slightly porous. They are easily broken, large, and not readily cleaned, being underground and not accessible.

Ques. 64:—How are rain leaders attached to sewers?

ANS.:—Metal leader discharges into a 4-inch extra heavy cast-iron drain pipe, extending 5 feet above the ground, which is trapped and connected to drain.

Ques. 65:—How would you make a peppermint test?

ANS.:—First, inspect thoroughly plumbing of house and note position of all pipes and traps; make fresh air inlet air-tight by plugging; see that all doors and windows and openings to air are closed tightly; order tenants not to use fixtures; secure pail of hot water and go to roof; seal all pipes at roof except main soil. Pour the pail of peppermint into soil pipe followed by hot water; follow course of water through soil, waste pipes and house drain, noting any odor of escaping peppermint. Wherever such odor is noted, look for a break in the pipe.

Ques. 66:—Give briefly the provisions of the Tenement House Law in regard to railings of fire-escapes.

ANS.:—Top rails shall be of wrought iron $1\frac{3}{4}$ inches by $\frac{1}{2}$ inch, or $1\frac{1}{2}$ inches by $\frac{1}{4}$ inch angle iron, and shall go through wall at each end, and be secured by nuts and 4-inch square washers, $\frac{3}{8}$ inch thick. Bottom rails shall be of $1\frac{1}{2}$ inches by $\frac{3}{8}$ inch wrought iron, or $1\frac{1}{2}$ inches by $\frac{1}{4}$ inch angle, leaded or cemented into wall.

Ques. 67:—What is meant by each of the following: "Filling in bars or standards," "angle iron," "cast iron"?

ANS.:—Filling in bars or standards are round or square wrought iron bars $\frac{1}{2}$ inch square, extending from top to bottom rails entirely around balcony of fire-escape. Angle iron is wrought iron bent and shaped to form a right angle. Cast iron is iron melted and cast in a mold.

Ques. 68:—What ventilation is required in the new skylight placed in a tenement house?

ANS.:—All new skylights should be provided with ridge ventilators having a minimum opening of 40 square inches, and with either fixed or movable louvres or with movable sashes.

Ques. 69:—Where and under what restrictions can new wooden tenements be erected?

ANS.:—No tenements can hereafter be erected of wood within the fire limits. Outside of the fire limits they may be erected not more than three stories and not more than 40 feet in height, and contain no more than four families, two on each floor, if two stories in height, or three families, one on each floor, if three stories in height.

Ques. 70:—In existing tenements what egress to the roof is required?

ANS.:—Existing tenement houses shall be provided with either bulkhead or a scuttle in the roof above a public hall. Scuttles shall not be less than 21 inches by 28 inches, metal covered on the outside and provided with stationary ladder. Bulkheads shall be provided with stairs with a hand-rail leading to the roof. Bulkhead doors and scuttle covers shall contain no locks, but may have hooks or bolts, and should not be fastened or encumbered in any way. Scuttle covers, if large and heavy, should be provided with hinges.

Ques. 71:—Can wooden tenements be increased in size within the fire limits, or outbuildings or extensions added to a wooden tenement when on the same lot?

ANS.:—No wooden tenement can be increased in size, enlarged, extended or raised within the fire limits, and no wooden extension or outbuilding can be placed on the same lot as a tenement within the fire limits, except that water-closet extensions may be added thereto, provided that they do not exceed 70 square feet total area and are used only for bathrooms or water-closets.

Ques. 72:—What does the Tenement House Department require in the case of bakeries and places where fat is boiled?

ANS.:—No bakery or place of business in which fat is boiled shall be maintained in a non-fireproof tenement house, unless the ceiling, side walls and all exposed iron or wooden columns or girders within the bakery are properly fireproofed. There can be no doors, windows, shafts or other openings between said bakery (or place where fat is boiled) to any other part of the building; except that in bakeries where no fat is boiled a properly fireproofed dumbwaiter is allowed from the bakery to the story above.

Ques. 73:—What does the Tenement House Law require in regard to alcoves and alcove rooms in new tenement houses?

ANS.:—They should be separately lighted and ventilated by windows as required for other rooms and be not less than 70 square feet in area. No part of such room shall be enclosed or subdivided by a curtain, portiere, partition or other device, and should be separately lighted and ventilated.

Ques. 74:—The law requires that stairways on the fire-escapes shall be placed at an angle of not more than 60 degrees. From what line is this angle determined?

ANS.:—From the floor line of the fire-escape balcony.

Ques. 75:—What is the distinction between courts on the lot line and other courts as to size?

ANS.:—Courts not on the lot line are required to be just twice the size of courts on lot line.

Ques. 76:—Define the following words used in a fire-escape connection: "Battens," "clear headway," "tread," "strings," "brackets."

ANS.:—"Battens" are wrought iron cross-pieces placed crosswise and riveted to the floor-slats of the balcony and separating them to keep them in proper position.

"Clear headway" is the term used to indicate the amount of space between the floor of balcony and the brace of the string of the stairway, which should be over seven feet from the floor, so that a person may have clear headway or sufficient room to pass underneath same without striking.

"Treads" are the steps of the stairway or ladder between fire-escape balconies.

The "string" is the upright iron piece to which treads are fastened.

"Brackets" are long, solid wrought iron bars extending underneath and across the fire-escape balcony, supporting the same and running into the wall where they are fastened. These iron bars are supported in turn by heavy iron braces to the wall.

Ques. 77:—(a) How deep must a yard be for a tenement house 75 feet high built on an interior lot? (b) Where is the measurement taken?

ANS.:—(a) 14 feet. (b) From the extreme rear wall of the house to the rear line of the lot.

Ques. 78:—What must be the minimum area of a vent flue in a new tenement house in which passenger power elevators are operated?

ANS.:—Three square feet is the minimum area.

Ques. 79:—What must be the minimum size and area for a shaft used to light and ventilate rooms used for living purposes in an existing tenement, and under what conditions may this be reduced?

ANS.:—Not less than 4 feet in width in any part, nor less than 25 square feet in area. Cannot be reduced.

Ques. 80:—What rooms may have windows opening into vent shafts?

ANS.:—Bathrooms and water-closets.

Ques. 81:—Is there any difference between the expression "3 feet square" and "3 square feet"?

ANS.:—Yes; 3 feet square is 3 feet by 3 feet, or 9 square feet. Three square feet is the area of 1 foot by 3 feet, or any combination making 3 square feet; therefore the difference is 6 square feet.

Ques. 82:—What do you mean by the term "percentage" in the expression "65 per cent. of the lot surface"?

ANS.:—Percentage of lot is the portion of the lot computed on a basis of one hundred; therefore, 65 per cent. is 65 one-hundredths of the lot surface.

Ques. 83:—Give your definition of a fresh air pipe and the proper connections to make it most effective.

ANS.:—The fresh air pipe or inlet is the pipe used to ventilate the house drain. It is connected on the house side of the main trap and runs through the wall of the building to the outer air, where it should be extended above the court or area and fitted with a return bend. It should be made of extra heavy cast-iron and should not be obstructed in any way.

Ques. 84:—What is the difference between vent shafts and air shafts?

ANS.:—A vent shaft is one used to ventilate or light a water-closet compartment or bathroom. An airshaft is a shaft used for bedrooms or living rooms.

Ques. 85:—What are the requirements for soil pipes in tenements, how should they be supported, how terminated at top, and how attached to house drain?

ANS.:—The soil pipes should be at least 4 inches in diameter, of extra heavy cast-iron, and if tenement is five or more stories it should be 5 inches. It should run as directly as possible. It should be supported by heavy iron hangers at intervals of not more than 10 feet. It should be extended above the roof and fitted with wire basket. It should never be fitted with a cap or cowl or have a return bend. It should be attached to the house drain by an 8th or 16th bend and caulked into the hub of drain.

Ques. 86:—What kind of tenements must be fireproof? What are the most common fireproof materials? Describe how these materials are to be used in floor construction, partitions, and the casing of posts, girders, trusses, etc.

ANS.:—Every tenement house hereafter erected more than six stories in height shall be fireproofed, or any tenement altered to more than six stories. Fireproof materials are hardburnt clay, terra cotta, metal laths, slate and stone. Floors shall be of iron or steel beams with fireproof filling. Partitions shall rest directly on the fireproof floor construction and extend to the fireproof filling above. Post girders and trusses shall be enclosed with hardburnt clay or porous terra cotta, or in the case of hollow iron posts they may be filled with such material.

Ques. 87:—Name the principal vertical and horizontal pipes in the plumbing system of a tenement house and their uses.

ANS.:—The principal vertical pipes are main waste, main soil and main vent. The waste pipe carries away the water from the sinks, wash tubs, bath tubs, etc. The soil pipe, from water-closets, with or without other fixtures. The vent pipe is used to ventilate the plumbing system and connects to main wastes and soils. Principal horizontal pipes are house drains and house sewers. The house drain receives sewerage from main waste and soil, and two feet outside walls of building connects to house sewer, which in turn connects to street sewer.

Ques. 88:—What is a trap? State several kinds of traps. Tell which are best, and why.

ANS.:—A trap is an arrangement in a pipe which holds and locks a certain amount of water within itself, causing a water seal and preventing air from passing through. Different traps are "S," "running," "D," "Bell," "bottle" and "mason's cesspool." The best are "S" and "running," which are simple, easily cleaned and contain no interior mechanisms to get out of order.

Ques. 89:—What is a gooseneck ladder? A drop ladder? When required?

ANS.:—A gooseneck ladder is one which extends from the top balcony of a fire-escape, to and above the roof. A drop ladder is a ladder reaching from lowest balcony to ground. A gooseneck ladder is required on all fire-escapes erected on rear of building. A drop ladder is required on all.

Ques. 90:—What is the difference between a basement and a cellar?

ANS.:—A basement is a story partly, but not more than one-half, below the level of the curb. Cellar is a story more than one-half below the curb.

Ques. 91:—Name five of the most common types of water-closets and state which are permissible to be placed in rooms of a tenement house and in yard of a tenement house.

ANS.:—Types of water-closets are washout, long hopper, short hopper, pan, offset and siphon. Washout and siphon are permitted in houses. Long hoppers in yard.

Ques. 92:—What is the difference between long and short hoppers, and why are not short hoppers permitted in yards?

ANS.:—Long hoppers have traps under floor, and short hoppers above floors. Long hoppers are necessary in yard in order to prevent freezing of trap.

Ques. 93:—(a) What is a privy? (b) A cesspool?

ANS.:—(a) A privy is a brick-lined iron trough dug into the ground to receive fecal matter. Above this trough a wooden compartment is erected, with seats. The trough generally has an outlet, through which arrangement the contents of the privy can be removed. (b) A cesspool is a brick trough dug into the ground to receive the waste water discharged from the house sewer.

Ques. 94:—When a privy is to be removed, what is the method to be pursued?

ANS.:—Privy is to be cleaned and disinfected, vault removed, bricks tumbled into pit and pit filled with fresh earth and steam ashes.

Ques. 95:—What are the sanitary requirements as to walls and ceilings of public halls and rooms of tenements?

ANS.:—They shall be kept clean at all times, whitewashed or painted with a light colored paint, and if covered with old dirty

or torn paper, said paper shall be removed before painting. The new wall paper shall not be placed over old wall paper, and defective paper should be first removed.

Ques. 96:—In inspection of stables, what conditions would you note in making your report?

ANS.:—The cleanliness and condition of the stalls and floors of stable; the material of said floor; removal of all manure. Would see whether there were proper valley drains, and if they were properly trapped and sewer connected. The distance of stable from any building used for living purposes.

PRACTICE QUESTIONS BY A TENEMENT HOUSE INSPECTOR.

Ques. 97:—Does the law permit a tenement house to be built on a lot the rear of which is already occupied by a tenement house? State the law affecting this.

ANS.:—The law provides that no separate tenement house shall be erected upon the front of any lot the rear of which is already occupied by a tenement.

Ques. 98:—Upon what floors shall a light be kept burning at night, and by whom?

ANS.:—From sunset to sunrise a proper light shall be kept burning on the entrance hall and on the second floor above the entrance hall, near the stairs, and upon all other floors from sunset until 10 o'clock in the evening, by the owner of the tenement.

Ques. 99:—As an Inspector you are sent to examine a building the lowest floor of which is below the level of the curb. How would you report the same, and how would you ascertain whether to report it a "basement" or a "cellar"?

ANS.:—I would measure such lower floor to ascertain the height from floor to ceiling, and then the depth of the floor below the curb level. If the floor is more than half below the curb level I would report it a "cellar"; if less below and more above, I would report it a "basement."

Ques. 100:—Define a shaft.

ANS.:—A shaft includes exterior or interior shafts, whether for air, elevator, dumbwaiter, light or any other purpose.

Ques. 101:—Does the law provide for the minimum window area of a room? If so, what?

ANS.:—In new tenements the law provides that the total window area in each room, except water-closet and bathroom compartments, shall be at least one-tenth of the superficial area of the room, but no such window shall be less than 12 square feet in area between stop beads.

Ques. 102:—Give dimensions of the smallest room allowed in a new tenement house.

ANS.:—9 feet high from the finished floor to the finished ceiling, and should have at least 70 square feet of floor space.

Ques. 103:—Who are liable in case of a violation in a tenement house which is being built or altered?

ANS.:—The owner, agent, builder, contractor, architect, sub-contractor, superintendent or foreman.

Ques. 104:—While making an inspection you found a violation, and the owner asked you to tell him what you found; what would you do?

ANS.:—I would tell him that I must report my findings to the office first and that it was against the rules to divulge any information.

Ques. 105:—How shall the ceilings be constructed in bakeries?

ANS.:—The ceilings shall be of iron beams and fireproof filling. In tenements existing prior to April 28, 1901, the ceiling may be fireproofed by first applying wire lath and plaster, 1-inch fireproof furring strips on which are placed ½-inch plaster boards properly jointed.

Ques. 106:—What does the law provide as to floors in bakeries?

ANS.:—The floors shall be of good quality cement concrete, covered with hardwood flooring or covered with tiles laid in cement.

Ques. 107:—What provision is made as to height of bakeries?

ANS.:—Bakeries constructed in cellars of tenement houses since May 9, 1913, must be 10 feet in height. Prior to that time 8 feet was the required height.

Ques. 108:—Define a private dwelling.

ANS.:—Every building intended or designed for, or used as, the home or residence of not more than two families and in which not more than 15 rooms shall be used for the accommodations of boarders, and no part of the same is used as a store, is a private dwelling.

Ques. 109:—Define a frame building.

ANS.:—A frame building is one the exterior walls of which or a portion thereof shall be constructed of wood; also buildings sheathed with boards and partially or entirely covered with four inches of brick work.

Ques. 110:—In reporting on a stair-hall, what portions would you include?

ANS.:—I would include the stairs, landings and all portions of the public halls through which it is necessary to pass in going from the entrance floor to the roof.

Ques. 111:—You are sent to examine a building on reaching which you find on the third floor there lives one family and on the second floor one family, each doing their cooking in their apartment. On the first floor there is a Chinese laundry (one person living, cooking and sleeping on the premises). Would you consider this a tenement house? If so, give reasons why.

ANS.:—Yes. The Chinaman is considered as a family, and there being three fam-

ilies, each living and doing their cooking independently, I would report this as a tenement house.

(NOTE:—While this is technically correct, the Tenement House Department does not consider a Chinaman a family.)

Ques. 112:—You are sent to report the height of a tenement house to ascertain whether the same complies with the Tenement House Act. How would you measure the same?

ANS.:—I would measure the perpendicular distance from the curb level to the underside of the roof beams in the center of the house. If the house were on a lot facing two or more streets, I would measure through the center of the side facing the street with the greatest grade.

Ques. 113:—In case of a violation of the Tenement House Act, what power is vested in the department?

ANS.:—If a building is altered or occupied contrary to law, it shall be deemed unlawful and the department may cause it to be vacated.

Ques. 114:—Are any special provisions made for the lowest balcony fire-escape in a new tenement house?

ANS.:—A drop ladder is required from the lowest balcony, which should be of sufficient length to reach from said balcony or platform to a safe landing place beneath.

Ques. 115:—Does the law make any special provision regarding the width of the stairs?

ANS.:—The stairs and public halls from the entrance floor to the roof to be at least 3 feet wide.

Ques. 116:—What is meant by winder?

ANS.:—A stairway in a spiral form.

Ques. 117:—When are "winders" allowed in tenement houses?

ANS.:—"Winders" are permitted only where a power passenger elevator is provided. The treads at the center to be 10 inches wide.

Ques. 118:—Is a transom allowed to open from a stair-hall into an apartment?

ANS.:—The Tenement House Act provides that no transom or movable sash shall open from any stair-hall to any other part of the house.

Ques. 119:—On completion of a tenement house, how soon may the same be occupied?

ANS.:—No tenement house is to be occupied in whole or part until a certificate is issued by the Tenement House Department, which shall be issued within ten days after application in writing for the same is made.

Ques. 120:—What is the penalty in case a new tenement house is occupied before a certificate is issued?

ANS.:—The Tenement House Department may order the same vacated. Also, no rent is recoverable for the period so occupied.

Ques. 121:—What other city department may take action in case of such a violation?

ANS.:—The Department of Water Supply shall not furnish water to such premises. The Police Department may also be called upon.

Ques. 122:—Of what material should the soil, waste and vent pipes be?

ANS.:—Iron, steel or brass.

Ques. 123:—Does the law allow water-closets to be placed outside of a building for special reasons?

ANS.:—Yes; where they are to replace school sinks or privy vaults.

Ques. 124:—Name the styles of water-closets not permitted in a new tenement house.

ANS.:—Hoppers, "pipe-wash" bowls, pan, valve and all other water-closets having an unventilated space or whose walls are not thoroughly washed at each discharge. Long hoppers will be permitted only where there is exposure to frost.

Ques. 125:—Are iron cisterns for water-closets or urinals allowed in new tenements?

ANS.:—No. Wooden cisterns should be copper-lined.

Ques. 126:—Are wooden tubs allowed in tenement house apartments?

ANS.:—No.

Ques. 127:—What must be the cubical contents of an apartment for every person occupying the same?

ANS.:—400 cubic feet of air for each adult person, and 200 for each child under 12 years of age, in a room.

Ques. 128:—A building erected for use of a private family is altered for use as a tenement house. What does the law provide?

ANS.:—The law provides that the same should comply with all the rules and regulations affecting new tenement houses.

Ques. 129:—What should be the depth of a yard behind a tenement 60 feet high on an interior lot?

ANS.:—It should be 12 feet.

Ques. 130:—What is meant by an "old law" tenement and a "new law" tenement?

ANS.:—An "old law" tenement is a building that was used and occupied as a tenement on April 21, 1901. A "new law" tenement is a building erected since that time under the requirements of Tenement House Act.

ANSWERS TO EXAMINATION QUESTIONS AND SPECIMEN QUESTIONS FOR INSPECTOR AND CHIEF INSPECTOR OF TENEMENTS AND LAY SANITARY INSPECTOR, NEW YORK CITY, NEW JERSEY AND CHICAGO.

Municipal Civil Service Commission, N. Y.
LAY SANITARY AND TENEMENT
HOUSE INSPECTOR.

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Answers Written for the Civil Service
Chronicle

BY JOHN J. HALLEY

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Ques. 1:—(a) What use does a trap serve? (b) How is a trap sealed? (c) What forms of traps are you familiar with? (d) How is a trap ventilated? (e) How is a waste pipe ventilated? (f) What causes siphonage?

ANS.:—(a) A trap used in connection with the plumbing system of a building is designed and intended for the purpose of

preventing the escape of noxious or noisome odors and drain air from the main waste, soil or drain pipes entering and pervading the room or apartment in which the fixture is located, and which would tend to contaminate the supply of fresh air in the room, causing same to become deleterious.

For this reason, all sewer-connected plumbing fixtures must be provided with a proper trap located within two feet of the fixture, except that when wash-trays immediately adjoin a sink, the waste pipe of same may be connected with the waste pipe of the sink, or the heel of the trap, on the fixture side; if it is connected on the sewer side of the trap, it would serve as a "bypass," thereby allowing the drain air from the main waste or soil pipe to escape and enter the room through the inlet and overflow openings in the fixture.

(b) Traps of plumbing fixtures are constructed and designed in various forms and shapes, but the main principle is that they be able to hold in the bend of the pipe a sufficient supply of water so as to form a "water seal," thereby preventing the drain

air from passing from the main waste or soil pipe through the inlet of overflow pipe openings of the fixture entering the room and pervading the atmosphere with impure air; same being detrimental to health.

When a sewer-connected fixture is not to be used for any length of time, such as during the summer months when the house is not fully occupied, the fixture traps are sealed by means of a heavier and non-evaporating liquid, instead of water, such as trap oil or glycerine. When the fixtures are required for use again the oil is released for use again by unscrewing the plug at the bottom of same and releasing the oil.

(c) The full S. $\frac{3}{4}$ S. $\frac{1}{2}$ S. Running or House trap with handhole cleanouts, secured GAS-tight by means of heavy brass screw cap ferrules.

Rain leader or deep seal trap.

Bell trap, used for yard, area and stable floor surface drainage.

Mason's cesspool and pot traps.

Grease traps, used in kitchens of restaurants, hotels, etc.

P. Q. and D. traps (the latter used in connection with pan water-closets).

Bottle trap, floating ball, and various styles of mechanical traps. The latter are unsatisfactory for the reason that they frequently get out of order and are easily clogged up with grease and sediment. Any trap or fixture that depends on mechanical parts or interior mechanism for the maintenance of its "water seal" should be tabooed by a Sanitary Inspector. Fixture traps are generally of lead, wrought iron, or brass, nickel-plated, except that modern water-closets of earthenware have interior partitions of same material cast into the fixture which traps a volume of water that acts as a seal.

House, running, leader, bell and D. traps are of cast-iron. Mason's trap is of brick. The others are of lead.

(d) All fixture traps must be protected from siphonage and back pressure by special lines of vent pipes.

Branch vent pipes should be connected not less than six inches nor more than two feet from CROWN of trap, or side of lead bend, and connected with main vent pipe. Branch vent pipes should be above the top of all connecting fixtures, so as to prevent the use of same as waste or soil pipes.

(e) Waste pipes are ventilated by being extended at least one foot above coping of parapet wall of MAIN roof. The waste pipe must be increased in size to four inches at a point at least one foot below surface of roof and be provided with a wire basket securely fastened to the opening. NO COWLS OR RETURN BENDS ALLOWED.

When roofs are to be used for drying purposes or roof gardens, ALL pipes shall be extended to a height of 7 feet above roof. Waste pipes shall be located well away

from all shafts, chimneys or other ventilating openings so as to avoid entering the rooms by a down-draft, and when issuing from air extension or elsewhere which would otherwise open within TWENTY feet of the window of any building must be extended well above the top of any such window.

The waste pipe is ventilated by means of the FRESH AIR INLET, which ventilates all the plumbing pipes of the building; it is connected to the HOUSE DRAIN, just inside of the HOUSE TRAP, and is extended to the outer air in the street, terminating with a return bend, with open end one foot above the grade, well away from all window openings. An automatic device at the opening of the FRESH AIR INLET, approved by the SUPERINTENDENT OF BUILDINGS, may be used when set in a manner satisfactory to him.

No curb box or similar device with grating placed in the sidewalk will be permitted for FRESH AIR INLETS. (Same render the inlet useless, as they easily become obstructed with dirt, snow or ice.)

By means of a FRESH AIR INLET the main plumbing pipes of a building are constantly ventilated of foul odors and drain air, preventing trap siphonage.

(f) Trap siphonage is caused by the discharge of one or more fixtures on an upper floor emptying its contents into the main waste or soil pipe, filling same and forcing the air in the pipe before it in its descent, thereby causing a vacuum to form in behind the line of fluid discharged, which in its turn causes a suction strong enough to "pull the water seal" out of the fixture trap connected with same line on a lower floor if the waste pipe and trap are of smaller diameter than the waste or soil pipe discharging the fluid.

If each fixture is properly trapped and vented above the roof, the suction is not strong enough to pull both the air in the vent pipe and the water seal in the trap.

The air in the vent pipe counterbalances the suction and vacuum in the pipe caused by the discharging fluid.

Fixture traps also "lose their seals" by means of capillary attraction, i. e., a piece of string or lint or other fibrous material may become caught in the bend of the trap, one end of which will hang over into the branch waste pipe and suck the water from the trap, causing the loss of the "water seal."

"Trap seals" are also lost by the EVAPORATION of the water therein. This is the case during the summer months when houses are closed up and the fixtures not frequently flushed.

Rain leaders for this reason are required to be provided with traps having an EXTRA DEEP water seal, so that ALL the water will not evaporate during a period of long continued drought.

Ques. 2:—Give the location and use of each of the following in a building, making rough sketches if you think it necessary: (a) A Leader; (b) Soil pipe; (c) Waste pipe; (d) Vent pipe; (e) Drain pipe; (f) House drain; (g) Overflow. (h) What is a wiped joint?

ANS.:—(a) Every building must be provided with proper metallic gutters and leaders for conducting storm water from all roofs in such a manner as shall protect the walls and foundation from injury, and shall be connected with the house drain by means of a cast-iron pipe extending vertically 5 feet above the grade level, same to be provided with a cast-iron running trap at least 3 inches in diameter, with an extra deep seal, and screw ferrule for handhole cleanouts. Leader pipes, if placed inside a building, must be of cast iron, wrought iron or steel, with roof connections, gas and watertight. Outside leaders may be of sheet metal.

(b) The soil pipe is the main vertical pipe in the plumbing system of a building. It must be of iron, steel or brass, at least 4 inches in diameter. It is used to receive the discharge of water-closets with or without other fixtures, and is connected to the house drain by a long quarter bend. Soil pipes must extend in full caliber 1 foot above roof coping, and without any cap, cowl or return bend, and well away from all shafts, windows, chimneys or other ventilating openings. The pipe opening at top must be provided with a wire basket securely fastened thereto.

(c) Waste pipes are of two kinds. The branch waste pipe is a short line of lead, iron or steel pipe connecting all fixtures, except water-closet, with the main vertical waste or soil pipe. Branch waste pipes must have a fall of at least $\frac{1}{4}$ inch per foot. Branch waste pipes are 1½ and 2 inches in diameter. Main waste pipes must be of iron, steel or brass at least 2 inches in diameter, and receive the discharge of all fixtures except water-closets. They are connected with the house drain and extended above the roof (diameter increased to 4 inches one foot below roof surface), the same as soil pipes.

(d) Vent pipes are also of two kinds, the same as waste pipes; i. e., branch vents and main vents. Branch vent pipes must be connected to the crown of the fixture trap and to the main vent pipe above the top of connecting fixtures to prevent use of same as soil or waste pipes.

Vent connected for water-closets or slop sinks must be made from the branch soil or waste pipe **JUST BELOW THE TRAP** of the fixtures, and so connected as to prevent obstruction.

Main vent pipes, when there are fixtures on not more than six floors, may be connected to the adjoining waste or soil line well above the highest fixture, and connected at the bottom of the main waste pipe or soil pipe. If extended above the roof coping, size must be increased to 4 inches, as required for waste pipes.

Vent pipes are used to prevent trap siphonage and back pressure, and to ventilate the drainage system.

(e) Drain pipes are required for the surface drainage of all yards, areas and courts exceeding 15 square feet in area, and must be drained into the sewer. A shaft open at the top, not more than 25 square feet in area and which cannot be connected back of a leader, yard, court or area drain trap, may be drained into a publicly placed, water supplied, properly trapped and vented slop sink.

Cellar drain may be connected in back of and controlled by a leader, yard, court or area drain trap, which need not be vented.

Floor drains are only permitted when their use is absolutely necessary, and arranged so that a permanent water seal is maintained in the traps.

Drains should be controlled by one trap, the leader trap, if possible.

(f) The house drain is the principal drain pipe of a building. It receives the discharge of all the plumbing fixtures; also the rain leader, yard, area, court and open shaft drain pipes. It is located in the cellar or lowest story, and with its branches must be of extra heavy cast iron pipe, at least 4 inches in diameter, and with a fall of at least $\frac{1}{4}$ inch per foot, and run in as direct a line as possible. It is connected with the **HOUSE SEWER**, at a point 2 feet outside the outer front vault or area wall of the building.

An iron running trap must be placed in the house drain near the front wall of the building, on the sewer side of all connections. Same must be easily accessible, and the house trap must have two handhole cleanouts, with brass screw cap ferrules.

A fresh air inlet pipe of the same diameter must be connected with the house drain, just **INSIDE** the house trap, and extended to the outer air.

(g) An overflow pipe is connected with the overflow outlet of sinks, bathtubs, wash basins or urinals, and the fixture side of the waste pipe or trap thereof. **If connected to the branch vent pipe or sewer side of the fixture trap it would serve as a "by-pass" for deleterious drain air to escape and enter the premises.**

Water supply house tanks on roof must be provided with overflow pipes which can discharge on the roof. If tank is located on top floor of building, the overflow pipe **MUST BE TRAPPED**, and discharge over a properly trapped and sewer-connected, water-supplied open sink, **NOT IN THE SAME ROOM**, but generally in the basement or cellar near the janitor's apartment, or in the engine room, where it acts as a "tell-tale" to shut off the water supply to tank. In no case shall the overflow pipe be connected with any part of the plumbing system.

(h) A wiped joint is used by plumbers when connecting two ends of lead pipe or one end of a lead pipe and a cast iron pipe, by means of a brass ferrule. The hot lead is poured over the joint from the ladle and

wiped all around the joint by the aid of a wiping cloth, forming an egg-shaped mass, leaving the joint gas and water-tight.

Ques. 3:—(a) What types of water-closets are you familiar with?

(b) What types are allowed in tenements?

(c) What excluded types are allowed in yards?

(d) Distinguish the long hopper from the short hopper type of water-closet.

(e) Where is the long hopper permitted and where the short hopper permitted? Why?

ANS.:—(a) Latrines, school sinks, long hopper, short hopper, siphon jet, siphon washdown, washout, pan, plunger, offset-washout.

(b) Siphon jet, washout, short hopper with earthenware flushing rim bowl, and long hopper allowed in basement or cellar under SPECIAL PERMIT.

(c) Long hoppers.

(d) The long hopper water-closet is used where there is exposure to frost; generally in yards and unheated extensions; the trap is placed beneath the floor. The pipe between the hopper and trap is 2 feet or over deep, thereby presenting a large area of surface subject to fouling. The short hopper has an iron "S" trap above the floor, to which is firmly attached an earthenware flushing rim bowl that is easily kept clean.

(e) The long hopper is permitted in basements or cellars under a SPECIAL PERMIT IN WRITING, when existing conditions warrant same. Must have an earthenware hopper, with a flushing rim. The trap and flushing apparatus must be protected from frost. The water-closet apartment must be properly ventilated to the external air and be provided with adequate natural and artificial means for lighting same. Long hoppers are also permitted in yards and extensions to basements or first floor, when provided with an adequate supply of water to thoroughly flush the fixture and same is properly protected from freezing.

Short hoppers are permitted in tenements, but must have an earthenware flushing rim bowl, the space around and under same left entirely open, painted white and kept clean. No drip trays or lead safes permitted.

Ques. 4:—(a) What window space is required in a bedroom 14 feet by 8 feet by 8 feet, flat ceiling, new tenement?

(b) How must living rooms be lighted?

(c) What is the rule as to lighting alcoves?

(d) Also the rule as to alcove rooms?

(e) What rooms may be lighted by vent shafts?

ANS.:—(a) The height of this bedroom (8 feet) is a violation of the Tenement House Law, which says that "no room shall be less than 9 feet high, from finished floor to ceiling." The window area of each room

(except water-closets and bathrooms) shall be at least one-tenth of the superficial area of the room. No such window shall be less than 12 square feet in area between the stop beads. Superficial area means the area of the surface, or floor of the room, which is 14 times 8 feet, or 112 square feet. One-tenth of 112 square feet is 11 1-5 square feet; but the law specifies: "No such window shall be less than 12 square feet between stop beads."

(b) No room in a tenement house erected for living purposes unless it shall have a window opening directly upon a street or upon a yard not less than 4 feet deep, or above the roof of an adjoining building, or upon a court or shaft of not less than 20 square feet in area open to the sky without roof or skylight, unless such room is located on the top floor and is adequately lighted and ventilated by a skylight opening directly to the outer air.

Every room which does not comply with the above provisions shall be provided with a window into an adjoining room in the same apartment, which latter room opens directly on the street or yard not less than 4 feet deep. Such window shall have an area of at least 15 square feet.

In basement or cellar apartments the total window area must be at least one-eighth the superficial area of the room, but in no case to be less than 12 square feet.

In tenement houses erected since April 10, 1901, the total window area in each room shall be at least one-tenth the superficial area of the room, and the top of at least one window shall be not less than 7 feet 6 inches above the floor, the upper half to be made so as to open the full width. No such window shall be less than 12 feet in area between the stop beads, and shall be so located as to properly light all portions of such rooms.

(c) An alcove in any room in a tenement house erected since April 10, 1901, shall be separately lighted and ventilated by means of a window opening upon a street or court or upon a yard at least 4 feet deep. Such window to be at least 12 square feet in area between stop beads.

(d) Alcove rooms shall be lighted and ventilated as stated in answer (c). Such rooms shall be not less than 70 square feet in area, and at least 9 feet in height between finished floor and ceiling. No part of any such alcove room shall be enclosed by a curtain, portiere, fixed or movable partition, sliding door, or other similar contrivance or device, unless such part of the alcove room so enclosed or subdivided shall be separately lighted and ventilated as required for other rooms; that is, by a window at least 12 square feet in area between stop beads, and opening upon a street, court or yard of proper dimensions.

(e) Water-closet compartments and bathrooms.

Ques. 5:—(a) Where must fire-escapes in a tenement be located? (b) How strong should they be? (c) How far should rungs on ladders be apart? (d) How far can fire-escapes project from the building? (e) Under what circumstances can they be placed in a court? (f) What should be the width of fire-escape balconies?

ANS.:—(a) All fire-escapes shall open directly from at least one room or private hall in each apartment at each story above the ground floor. Such fire-escapes may be located on the front or rear wall of the building or in an outer or inner court.

Fireproof tenement houses, erected from plans filed after April 18, 1912, and in which there is a power passenger elevator, shall have tower fire-escapes or stairways, fireproof and smokeproof throughout.

Non-fireproof tenements less than four stories in height and which do not contain accommodations for more than four families in all, may be equipped with approved iron, steel or wire-cable fire-escapes capable of reaching from the top floor to the ground and accessible to one window in each apartment opening on the street or yard, except a water-closet, bathroom or public hall window.

Wire-cable fire-escapes must be provided for each separate apartment above the ground floor, and must be securely fastened to the floor and base of the window opening. Such fire-escapes must not be located directly over each other.

(b) Wire-cable, steel or iron fire-escapes must be capable of sustaining two thousand pounds. All fire-escapes must be constructed and erected to safely sustain in all their parts a safe load. The platforms or balconies shall safely sustain in all their parts a safe load at a ratio of four to one of eighty pounds per square foot of surface.

(c) Rungs on vertical ladder or wire-cable fire-escapes, also gooseneck and drop ladders, must not be more than 12 inches apart.

(d) Not more than 4 feet.

(e) Fire-escapes may be placed in an outer court of not less than 5 feet in width, provided that they are located not more than 30 feet distant from the outer end of said court. In an inner court whose least horizontal dimension is not less than 15 feet from wall to wall. Proper and safe means of egress must be provided from such inner court by means of a fireproof passageway at least 3 feet wide and 7 feet high, leading to the street in a straight line and accessible at all times.

Fire-escapes are allowed in inner courts only when there is an apartment having no room fronting on a street or yard, but having a room opening on an inner court.

(f) Fire-escape balconies must be not less than 3 feet, nor more than 4 feet, in width.

Ques. 6:—Point out the defects in the plans and specifications for a proposed five-story tenement house, with five families to each floor, having the following ten provisions:

Answer each subdivision either as "Right" or "Wrong," "Should be."

(1) Wooden cellar beams treated with so-called fireproofing substances.

(2) Cherry wood handrails on stairways.

(3) Oak treads on cellar stairs 2 inches thick.

(4) Risers of hardwood.

(5) Strings of metal.

(6) Treads on stairs above first story of hardwood.

(7) Banisters of stone.

(8) Floors of stair-halls of hardwood.

(9) Floors of building of hardwood.

(10) Hall windows of plate-glass.

ANS.:—(1) Wrong. Should be iron or steel beams and fireproof flooring; and all exposed portion of such beams and the bottom flanges should be entirely encased in hard-burnt clay or porous terra cotta, or with metal lath properly secured and plastered on the under side.

(2) Right.

(3) Wrong. No non-fireproof tenement house to be erected exceeding four stories and cellar in height, or arranged to be occupied by more than two families on any floor, should have inside cellar stairs, but such stairs should in every case be located outside the building; and if enclosed should be constructed entirely fireproof.

(4) Wrong. Should be of metal or stone.

(5) Right.

(6) Right, if at least 2 inches thick.

(7) Right.

(8) Wrong. Should be of iron or steel beams and fireproof filling, with no wooden sleepers or flooring.

(9) Right, if within the apartments above the first story.

(10) Wrong. Should be of good quality wired-glass, set in steel, iron or kalsomined sashes and frames.

**Municipal Civil Service Commission, N. Y.
PROMOTION TO CHIEF INSPECTOR,
New Building Bureau, Tenement House
Department.**

Date: July 14, 1909.

TECHNICAL.

1. What are the requirements regarding the floors and ceilings of cellars of all tenements?

2. State fully the general requirements regarding fire-escapes in new buildings over four stories in height.

3. Give the general requirements concerning vent shafts in new buildings.

4. State fully the requirements as to horizontal dimensions of inner courts which are inclosed on all four sides in new buildings.

5. When the department is satisfied that no material improvement would be had by providing new windows, as specified by the Tenement House Act, in apartments which extend from the street to the yard, under what conditions may such rooms be occupied for living purposes?

6. Describe fully how you would decide whether a three-story private dwelling house which has been altered for the use of several families, should be classed—as a tenement house, a lodging house or a hotel?

7. What is the necessary thickness of brick walls prescribed by the Building Code for apartment houses of various dimensions less than 60 feet in height?

8. What is the use of vent pipes in plumbing? What is the usual size of vent pipes, and how are they usually placed? How would you decide upon the number necessary for a building? Give brief reasons for your answers when necessary.

9 and 10. Assuming such facts as you wish, write a report of not less than 200 words based on the following:

A protest has been made by a taxpayers' association against a vacation notice issue against a tenement house. In your report you will show the necessity of the vacation notice not merely on account of technical violations of the Tenement House Act, but for the safeguarding of the public health.

N. B.—In rating this report consideration will be given not only to the knowledge of the Tenement House Act shown by the candidate, but to the clearness and conciseness of the report itself. Consideration will be given to the reasons advanced showing the necessity of absolutely vacating the premises in question.

11. What are the requisites in New York City of (a) First-class building lime? (b) The best quality of building sand? (c) Concrete for foundations of buildings?

12. Describe briefly, giving all important particulars, two methods of protecting iron columns from fire.

13. What is meant by each of the following:

(a) Curtain wall; (b) Rowlock arch; (c) Inverted arch; (d) Trimmer arch?

14. What do you understand by each of the following terms:

(a) Parallel coping; (b) Stirrup irons; (c) Truss; (d) Scarf joints; (e) Tensile strength?

15. Explain briefly, giving all important particulars, the construction and operation of the ordinary pneumatic caisson used in the construction of foundations of buildings.

16. Give three general rules which should be observed in the construction of joints in timber work.

17. (a) Describe the preparation of cement mortar. (b) What are the necessary tests in New York City for cements classed as (1) Portland cement; (2) Rosendale cement?

MATHEMATICS.

(Give all the figuring in the following.)

18. Compute the area of a triangular lot whose sides are 40, 60 and 80 feet.

19. The parallel sides of an air shaft are 5 and 7 feet. The distance between them 8 feet. The height is 60 feet. Compute

the number of cubic feet of air space in the shaft.

20. A circular plaza has a radius of 150 feet. In laying out the plaza it cut a rectangular plot with a chord of 100 feet, the entire frontage of the lot. The plot was 100 by 120 feet. Compute the area of the remaining part of the plot.

Municipal Civil Service Commission, N. Y. LAY SANITARY INSPECTOR.

SPECIAL PAPER.

Date: October 25, 1907.

1. What kind of tenements must be fire-proof? What are the most common fire-proof materials? Describe how these materials are to be used in (a) Floor construction; (b) Partitions; (c) The casing of posts, girders, trusses, etc.

2. (a) Where and how must concrete be used in tenement house construction? (b) What constitutes good concrete, and describe one way of making it?

3. (a) What are the provisions of the Tenement House Act in reference to windows in living rooms of tenements for purposes of light and ventilation? (b) What is wired glass, and for what is it chiefly used? (c) Name two parts of a tenement house which must be painted in light colors, giving the reasons.

4. (a) What are the principal objections to earthenware house drains? (b) Under what conditions may a house drain be connected to two buildings? (c) In what way must openings in pipes be closed after a fixture has been removed? (d) In setting cast iron drain pipes, it is discovered that several have blow holes. In what manner and under what restrictions may such holes be plugged?

5. (a) How must joints in iron drain pipes be connected? (b) In what manner must connection of lead pipes be made with iron pipes? (c) How must connections of lead waste pipes be made? (d) In a bath-room it is proposed to place a trap four feet away from a water-closet that it may be connected with the waste pipe from a bath tub. State whether this is permissible, giving your reasons.

6. What is the remedy in each of the following cases: (a) A tenant in an apartment house is annoyed by odors arising from garbage and stagnant water in an adjoining vacant lot. (b) The noise of machinery in a printing establishment disturbs the rest of tenants in adjacent houses.

7. (a) How should you test a trap with a view to finding out whether its seal is lost or not? (b) How should the scent or peppermint test for plumbing be applied?

8. (a) Give briefly the provisions of the Tenement House Law in regard of water-closets. (b) Describe a pan water-closet, a hopper closet, a washdown water-closet and a flush tank.

9. (a) What are the requirements of the Tenement House Act in reference to railings of fire-escapes? (b) What is meant by each of the following: Filling in bars or standards, angle iron, cast iron?

10. (a) If an order has been issued by the Tenement House Department that a school sink be removed, state fully what is to be done before the violation is dismissed. (b) Compare from a sanitary standpoint a long hopper and a short hopper closet, drawing a rough sketch of each.

ARITHMETIC.

1. A city lot in the shape of a right-angle triangle has an avenue frontage of 25 feet and a side street frontage of 110 feet. What percentage of the lot is occupied by a building 15 by 35 feet in size? (The third side of lot is 112 feet long.)

2. What will be the cost of building a brick wall 20 feet long, 10 feet high and 2 feet thick with brick at \$8 per 1,000? Assume brick as 8x4x2 inches and disregard allowance for mortar.

3. What will be the cost of carpeting a room 15 by 20 feet in size with carpet 27 inches wide, at \$2 a yard laid?

4. In an apartment of three rooms, each 7 by 10 by 10.5 feet, there live two adults and three children; if the law requires 400 cubic feet for each adult and 200 cubic feet for each child, how many additional adults could lawfully occupy the apartment in question?

REPORT.

A complaint has been made to the Tenement House Department that the water supply in a certain tenement house is inadequate. You are sent to investigate the matter. Assume such facts as you please, make a detailed report of the result of your investigation, give all the essential particulars and make such recommendations as you deem necessary.

Sign this report John Doe.

Municipal Civil Service Commission, N. Y.
LAY SANITARY INSPECTOR.

Date: October 26, 1907.

SPECIAL.

1. (a) In what manner must the stair-halls of tenements four stories in height be enclosed? (b) What may be the construction if the tenement does not exceed three stories? (c) What is the composition of mortar for building purposes? (d) What is metal lath?

2. What are the essential points of differences between brick and terra cotta as regards (a) composition; (b) method of manufacture; (c) uses; (d) durability?

3. (a) How would you determine when it is necessary to use damp-proofing in

tenement construction? (b) Mention the materials most commonly used in damp-proofing and describe the way in which they are used.

4 and 5. Explain briefly but clearly the functions of each of the following: (a) House drains; (b) running traps; (c) soil pipe; (d) vent pipe; (e) main waste pipe; (f) rain leaders; (g) fresh air inlet; (h) house seal.

6. Name five different conditions which would render a house uninhabitable during alterations and necessitate the issuance of a vacation notice by the Tenement House Department.

7. (a) In what manner must the waste pipes of tenements be ventilated? (b) How may an attempt be made by a plumbing contractor to avoid complying fully with this regulation? (c) What test may be made to see that the law is complied with in this respect and how is it applied?

8. (a) What are the most common causes of escaping sewer gas in tenements? How can these be remedied? (b) What is siphonage? How is it caused and prevented?

9. (a) Name five kinds of wood most commonly used in building construction. (b) What is the cause of dry rot in woodwork and in what part of a tenement does this most frequently occur? (c) What recommendations would you make as Tenement House Inspector under these conditions?

10. (a) Draw a rough sketch of a properly constructed water-closet to be erected in the yard of a tenement house. (b) Name three materials which may be used for waterproofing the floor of this closet, giving a brief description of each.

ARITHMETIC.

1. What will be the weight of the water in a tank 7 by 8 by 9 feet in size, if there are 231 cubic inches in a gallon and a gallon weighs 8 pounds, the tank being three-quarters full?

2. A rectangular building has a frontage on an avenue of 25 feet, a frontage on a side street of 150 feet, and a frontage on a rear alley of 25 feet; the avenue frontage of the lot on which the building stands is 29 feet and the rear frontage 27 feet. What percentage of the lot is occupied by the building?

3. What will be the cost of papering the four walls of a room 10 feet wide, 12 feet long and 8 feet high, with paper at 25 cents apiece hung, each piece containing 8 yards? Assume paper three-quarters of a yard wide and suppose one-quarter of wall area to be taken up by doors and windows.

4. How many yards of stair carpet three-quarters of a yard wide will be required to carpet a staircase 12 feet in height, each step being 27 inches wide, 9 inches deep and 6 inches high?

REPORT.

You are sent to investigate the condition of the water-closets in a certain tenement

house, the ground floor of which is occupied as a saloon. Assuming such facts as you please, make a detailed report covering such defects as you may have discovered, and suggest such improvements as the case seems to demand.

Sign this report John Doe.

Municipal Civil Service Commission, N. Y.

INSPECTOR OF TENEMENTS.

TECHNICAL.

1. State clearly, concisely and precisely the conditions of living in New York City which have made necessary the establishment of a separate Tenement House Department.

2. Suppose a fashionable apartment house, five stories high with two apartments on each floor. There are no kitchens in any apartments, but there is a restaurant on the ground floor. Some of the tenants introduce gas ranges in their apartments. Does this action make a tenement house of the place or not? Give reasons with your answer.

3. Explain the meaning of the words "superficial area" in the provision that "the total window area in each room, except water-closet compartments and bathroom, shall be at least one-tenth of the superficial area of the room."

4. State for what purposes (a) a tenement house or a part thereof may not be used for business or storage; (b) for what it may be used under certain restrictions; (c) what these restrictions are; (d) what is "wire-glass" and "fireproof material" as applied to walls and ceilings.

5. Define "cellar" and "basement" and state as precisely as you can all the purposes to which the law allows them to be put and under what conditions.

6. State the laws governing fire-escapes; how they must be constructed; where placed; whose duty it is, apart from the tenants, to see that they are kept clear and in good condition.

7. What is meant by a "trap" in plumbing? Why is a trap necessary in a water-closet? What is the provision of the Sanitary Code as to trapping sinks, etc.? What is meant by "siphoning"; how is it caused, and how best prevented?

8. What are the duties of an owner or tenant with reference to sidewalk upon the premises of which he is owner or tenant? State one instance in which the law governing this matter has been conspicuously disregarded in the past few weeks. Upon what city department does the responsibility of this matter rest?

9. State the reasons why a water-closet flush should not come directly from the supply pipe.

10. Taking in order, tubs, drains, ventilation pipes; state the best materials for each and indicate the objections to other materials sometimes used.

11. State as concisely as possible the conditions in existing tenement houses (a) which are allowed to continue; (b) which must be changed in case of alteration; (c) which must be changed if not altered; (d) which will not be allowed in houses to be hereafter erected; and give briefly your opinion for the reason of the law in each case.

12. You are sent to inspect (a) a tenement house of ordinary character, five years old; (b) a tenement house in process of construction; (c) a tenement house of the so-called "model" character, one year old; state precisely to what points you would direct your investigations, and assuming any facts you please, write a report of your inspection, addressed to the Commissioner. N. B.—Sign this report with your examination number and not your name.

13. Suppose that in case (a) of question 12 you discovered some conditions or violation of the law not of a very serious character, but created by the tenants themselves. What would be your course toward the tenants? Would your course be in any way determined by any of the following: Nationality; length of residence in the city; means of subsistence; comparative ignorance? If so, how and why?

14 and 15. (Questions on a plan, giving dimensions of the rooms and asking whether, under stated conditions, any law was being violated regarding air space, etc.)

Municipal Civil Service Commission, N. Y.

INSPECTOR OF TENEMENTS.

SPECIAL PAPER.

1. Enumerate the evils which are likely to arise from overcrowding in tenement houses.

2. Suppose a fashionable apartment house, five stories high, with two apartments on each floor. There are no kitchens in any apartment, but the occupants take their meals in a restaurant on the ground floor. In the summer the restaurant is closed for several months for repairs. Some of the tenants then prepare their own breakfasts in their apartments. Does this action make a tenement house of the place or not? Give reasons with your answer.

3. Explain the meaning of the following terms: "Gooseneck ladder," "winder," "string," "in stairways," "Louvre."

4. State the principal changes made in the Tenement House Law by the amendment act of 1902.

5. Under what conditions may a cellar be occupied for living purposes?

6. What is the provision of the law as to stairways in non-fireproof tenements to be hereafter erected?

7. If in making an inspection you should find tenants beating a carpet on a roof or hanging it out of windows, what would you do?

8. What are the requirements as to lighting public halls in tenements? (This question refers both to windows and artificial lighting.)

9. In what way is the height of a tenement house determined by the width of the street on which it is built?

10. What restrictions are there as to building rear tenements?

11. Why is it forbidden to connect the waste pipe from a bath tub with a water-closet trap?

12. Why is it required that plumbing work under water-closets should be uncovered?

13. You are sent to inspect three tenement houses of different character. In some instances you find violations of the law as to construction, and in some violations of the Sanitary Code. Assuming such facts as you please, write a report addressed to the Commissioner.

Municipal Civil Service Commission, N. Y.

INSPECTOR OF TENEMENTS.

TECHNICAL.

1. Name the bureaus of the Tenement House Department, and state in a general way the difference in duties of Inspectors attached to the different bureaus.

2. (a) If the owner of a private dwelling desired to add a story to or otherwise enlarge for the use of his family, where would plans have to be filed and permission obtained to make the alterations? (b) In case the owner desired to alter the building to make it accommodate four families, what different steps must be taken?

3. State the difference between yard and court as used in the Building Code; also between cellar and basement; and under what conditions may a cellar be occupied for living purposes?

4. What is the rule as to the height of a new tenement house under the present law and how are height, length and breadth of such a building measured?

5. State fully the requirements as to windows in rooms under the Tenement House Law. What window area would be necessary in a room 13 feet long, 15 feet wide and 9 feet high?

6. What is an "intake" and what is its object? What area must the intake have for a court 13 feet by 26 feet?

7. What are the special advantages of so-called "open plumbing"? Would it be well, in your opinion, to extend the requirements of the law to gas piping? Give reasons for your answer.

8. To what extent has the requirement as to inner courts been changed by recent amendments of the Tenement House Law? Give minimum measurements of such courts under the original law, and as changed by amendment.

9. What advantage is gained by requiring careful registration of agents and own-

ers of tenement houses? How may an owner or agent be considered to have permitted the use of tenement property for illegal purposes in spite of his denial of the same?

10. State clearly the distinctions made in applying the Tenement House Law to buildings already erected and those hereafter to be erected.

11. Under what conditions, if at all, may a tenement house be erected on the rear of a lot on the front of which there is already a tenement house standing?

12. Define a fireproof building, according to the requirements of the present Building Code of New York City. What is meant by skeleton construction, and when must a tenement house be made fireproof?

13. Make a full report of your inspection of three tenement houses, assuming such conditions as must be assumed in each case.

14 and 15. It is proposed to erect a tenement house 57 feet high with the dimensions shown on the plan below. State whether this is lawful or not. Give reasons clearly for opinions. The lot is an interior lot.

Municipal Civil Service Commission, N. Y.

SANITARY INSPECTOR AND INSPECTOR OF LIGHT AND VENTILATION.

Tenement House Department.

TECHNICAL.

1. What evils, sanitary or moral, have existed in the past, not reached by previous city departments, which the Department of Tenement Houses is expected to correct? Answer this question completely, but concisely.

2. Give your opinion as to what makes the difference (a) in general language, (b) in legal terms, between an apartment house and a tenement house.

3. Explain, so that an ordinary person can understand, the meaning of the following requirements of the Tenement House Law concerning fire-escapes: "The platforms or balconies shall be constructed and erected to safely sustain in all their parts a safe load at a ratio of four to one of not less than eighty pounds per square foot of surface."

4. What are the restrictions with reference to bakeries in tenement houses? What do you understand to be the meaning of "fireproof materials" in connection with such restrictions? What are the "other dangerous businesses" as to which there are restrictions, and what is the meaning of the technical term used in the law with reference to them?

5. State clearly the difference between a court and a yard, and also the difference between a cellar and a basement.

6. The law provides that stairways on a fire-escape shall be placed "at an angle of not more than sixty degrees." From what line is this angle determined? Define the following words used in the same connection: "Gooseneck ladder," "battens," "clear headway," "tread," "string," "bracket."

7. Suppose an apartment with a kitchen sink, a water-closet and a wash basin. How many traps are necessary? State reasons for your answer. What, if any, differences in the plumbing arrangements would be necessary if the apartment were supplied with water from the street main or from a roof tank?

8. State the rules or ordinances concerning the location and condition of fire-escapes. If fire-escapes are used as storage rooms, or as places for keeping flowers or the like, whose duty is it, apart from the Tenement House Inspector's, to see that they are kept clear? If you saw such a case, what would you do?

9. What objection is there to enclosing plumbing fixtures with woodwork? In the city of Paris all gas pipes must be exposed. Do you consider this a reasonable rule or not? Give reasons with your answer.

10. Taking the ordinary tenement house, state what materials you consider best for the following named purposes: Leaders, tubs, floors, partitions where there are windows and the windows themselves, drains, and give, in each case, your reasons.

11. State clearly the distinctions made in the application of the Tenement House Law between houses already erected and those to be hereafter erected.

12. Draw up what you consider to be a proper blank form of report for a Tenement House Inspector, and, assuming three different buildings and conditions, make out a full report in each case.

13. How often do you think an inspection should be made? Would the character of the tenants make any difference in this matter? Would the particular points to which your inspection was directed be determined in any way by consideration of nationality, length of residence, means of subsistence or similar considerations? If so, state clearly how and why.

TECHNICAL. (Extra Paper.)

1. There are certain natural forces acting to produce ventilation in buildings; what are they? (Note: This does not refer to windows, ducts, courts, shafts, etc., which are only helps to ventilation.)

2. (a) Define what you mean by ventilation. (b) Can you have proper ventilation without light? (Give your reasons.)

3. (a) State what must be the cubical contents of an apartment for every person occupying the same. (b) What do you understand by an apartment? (c) State the minimum dimensions allowed for a bedroom in a tenement yet to be built. (d) State the same in an existing tenement.

4. State the difference between 7 square feet and 9 feet square, and show how you obtain it.

5. (a) Would the light radiating from a point be more intense or less intense as you move from it? (b) State the law governing the relative intensity of a light at two differing distances from the light.

6. (a) Is the purity of the air in a room dependent upon the size of the room or the amount of fresh air entering it? State which. (b) If the latter, about how much air should be supplied per minute for each individual occupying the room?

7. (a) State fully and clearly the arrangement and exact dimensions required of a window in an existing tenement. (b) State the law governing the size and arrangement, and the minimum size allowed in tenements yet to be built. (c) State how windows must be measured. (d) State what the windows of every room in a new tenement must open upon. How does this differ from that for tenements now existing?

8. (a) Give an exact definition of the outer courts of a tenement and their sizes; (b) give an exact definition of the inner courts of a tenement and their sizes. (c) Why were the narrow courts previously in use not considered of sufficient size?

9. What provisions are made in the new law for the ventilation and cleanliness of shafts and courts? State fully.

10. A room is 13 feet 10 inches long and 9 feet 6 inches wide. It has one window 2 feet 10 inches wide. How high must the window be to conform to the law for new tenements?

11. (a) A street is 70 feet wide. How high may a new tenement facing upon it be built? (b) State exactly how and where this height must be measured.

12. The law requires for every tenement on an interior lot a certain amount of vacant space not built upon; is this space the same in area as a yard, or of what is it constituted?

13. (a) How many kinds of shafts are provided for in new tenements? (b) Which of these, if any, may be covered, and under what restrictions?

14. (a) What must be the minimum area and least dimension of a vent shaft in a new tenement 48 feet high? (b) What must be the minimum size and area for a vent shaft in an existing tenement, and under what conditions may this be reduced? (c) What rooms may have windows opening into vent shafts?

(A sketch accompanied this.)

It is proposed to build in accordance with plan above, a tenement house 57 feet high. State whether it conforms with the law, and if not, give the points in which it is unlawful; and why.

ARITHMETIC.

1. There is a square lot of land 150 feet to the side. On the sides of the lot there is a house 28 feet deep in the form of a hollow square, leaving a square court in the center. What percentage of the area of the lot is the area of the court?

2. Multiply 70.684 by 89.06.

3. Divide 28.7422542 by 472.89.
4. A is 45 years old. B is older than A by 12 per cent. of A's age. Find B's age, and express the difference of their ages as a percentage of B's age.

Municipal Civil Service Commission, N. Y.

LAY SANITARY INSPECTOR.
TECHNICAL.

1. What are the duties of a Lay Sanitary Inspector?
2. How should the waste pipe of a refrigerator or water tank be connected?
3. What points would you observe when inspecting a water-closet?
4. What defects would you look for when inspecting the iron pipes in a building?
5. When may a cellar be used as a dwelling?
6. What does the Sanitary Code require in the case of privy vaults? Manure vaults?
7. How many cubic feet of air space must be allowed to each person in a sleeping room?
8. Define tenement house.
9. Define lodging house.
10. Define cellar.

ARITHMETIC.

1. Add the decimals .25, .00375, .0125, and change the sum to a common fraction.
2. Multiply 2 feet 8 inches by 376.
3. In a hospital ward 30 feet 6 inches long, 36 feet wide and 18 feet 9 inches high, there are 27 patients. How many cubic feet of space are there for each patient?
4. A corner lot 65 feet and 105 feet has an apartment house built upon it covering 87 per cent. of its surface. How many square feet left unoccupied for yard and areas?

Civil Service Commission of New Jersey.

SANITARY INSPECTOR.

Jersey City.

Salary, \$1,001 per annum at outset. Subjects of examination and relative weights: Experience and personal qualifications, 2; questions on the duties of the position, including administration of the health laws as related to sanitation, plumbing and drainage, ventilations, contagious diseases, etc., 8; total, 10.

EXPERIENCE.

This will cover a general examination on the past experience and education of the applicant.

PERSONALITY.

Candidates were submitted to an examination to test their personal fitness for the

position and were given oral questions to demonstrate their quickness of intelligence, breadth of view of the work to be undertaken and their personal point of view with relation to the more important features of the work.

DUTIES (Paper No. 1).

1. Under the laws of the State, with what duties are Sanitary Inspectors charged?
2. What records, in your opinion, should Sanitary Inspectors or Health Officers keep? Of what use would such records be?
3. What constitutes a nuisance? What legal steps are necessary to procure the abatement of a nuisance?
4. Who is required to report cases of contagious diseases to local Boards of Health, other than the attending physician? What diseases must be so reported?
5. What agencies spread malaria? How may this be prevented in Hudson County?
6. Name eight diseases which may be regarded as preventable, and state the most common method by which these diseases are transmitted.
7. What would you consider to be the proper quarantine of a house in which there are two cases of scarlet fever, the mother assists in the nursing and the father works in a department store?
8. Name the various means by which tuberculosis may be transmitted and state the proper precautions to be taken by a tubercular patient who is living with his family.

DUTIES (Paper No. 2).

9. Name five disinfectants, and state the method of preparation and use of each one named in the disinfection of a room containing 2,000 cubic feet of air space in which a case of scarlet fever had occurred.
10. What diseases are transmitted by means of milk? At what point in the production and distribution of milk is it likely to become infected, and how may this be largely overcome?
11. If an epidemic of typhoid should break out in a certain section of the city, how would you proceed to determine cause, and what general rules would you lay down for preventing its further spread?
12. If an isolated case of typhoid should break out in an apartment house, state in detail what investigation you would make.
13. How would you proceed to test the plumbing system in an old building?
14. Who has authority to prevent the pollution of potable water in the various parts of the State? What inspections must be made of water plants?
15. Describe the proper procedure for filing birth certificates, of death certificates.

Civil Service Commission of New Jersey.
SANITARY INSPECTOR.

Salary, about \$1,400 per year. Subjects of examination and relative weights: Experience and education, 6; technical knowledge, including sanitation, applied bacteriology, plumbing and drainage, heating and ventilation and epidemiology, 30; total, 36.

EXPERIENCE.

This will cover a general examination on the past experience and education of the applicant.

INSPECTION OF BUILDINGS.

1. A sanitary inspection of a classroom in a school building is to be made. The room is 30 feet 6 inches long, 25 feet 9 inches wide, 13 feet high, and has six window openings 4 feet 2 inches by 6 feet 4 inches. The building has a mechanical heating and ventilating system. There are seats for 48 pupils.

Write a detailed report giving definite information on the following subjects: (a) The square feet of floor space per pupil. (b) The cubic feet of air space per pupil. (c) The ratio of light to floor space, and from which direction does the light enter the room in the relation to the arrangement of the desks? (d) The kind of seats and desks in use. (e) The method or system of heating and ventilation. (f) The amount of fresh air furnished each pupil per hour, and how you make the determinations. (g) The temperature of the air in the room, expressed in degrees Fahrenheit, and state at what points in the room temperature readings were made. (h) The relative humidity of the air in the room, and how determined. (i) The amount of CO₂ in the air in the room, and state how you made the determination.

In a brief summary of the results of your inspection, state if the conditions inquired into were found to conform to the generally accepted standard for a classroom in a modernly constructed school building, and, if not, point out wherein they differ.

2. Explain the general principles involved in the operation of the following named systems of ventilation for buildings: (a) Gravity system; (b) plenum or pressure system; (c) exhaust or vacuum, and explain the relative merits claimed for these systems.

3. A three-story public school building has twelve classrooms, and an enrollment of 450 pupils. All grades are represented from the kindergarten to the eighth. State your opinion of where the toilet rooms should be located, with what drainage fixtures and toilet articles they should be furnished, and how these furnishings should be arranged in the room.

4. From a hygienic point, state the relative merits of the following named methods of artificial lighting for a school room: (a)

Kerosene lamp; (b) gas light; (c) incandescent electric light.

5. Describe how a school room and its contents should be disinfected and cleansed following the removal of pupils affected by diphtheria, and state what parts of the room and articles in the room should be given special attention.

6. What work other than cleansing and disinfection should be done to prevent the spread of infection following the occurrence of cases of diphtheria among pupils attending the same classes in school?

Chicago Civil Service Commission.

SANITARY INSPECTOR.

Date: November 26, 1913.

SPECIAL SUBJECT.

1. What conditions render a tenement house unfit for habitation?

2. (a) Name three natural forces which are destructive to germ life. (b) Name three disinfectants in common use.

3. (a) What is the office of soap as a sanitary agent? (b) How may it best be applied?

4. State in detail why a tile or cement floor is better than a wood floor for the cellar of a tenement house.

5. (a) What surfaces and finish are best for the structure of a room in which a bakery is operated? (b) Give your reasons in full for the choices you have stated.

6. (a) Name three principal causes for the pollution of the air in an inhabited building. (b) Why should the city require an air supply to be provided in theaters?

7. (a) Define a nuisance. (b) Name five kinds of nuisances against which the community should protect itself.

8. (a) Name five housing evils common in Chicago. (b) Name five results of bad housing.

9. (a) Name the conditions prescribed by ordinance for a habitable room in a new tenement house. (b) What classes of rooms are exempt from these provisions?

10. What are the causes for the so-called stockyards odors, and to what extent may these odors be done away with?

ARITHMETIC.

1. The growth of population in a city in five years is 20 per cent.; the present population is 8,400. What was the population five years ago?

2. A man sold $78\frac{3}{4}$ acres. How much land was left if the original lot contained 165.9 acres?

3. A man owes a debt of \$495. He saves \$4.95 per week. In what time will he be able to pay the debt?

4. A horse dealer bought 563 horses at \$65 a piece; he sold them so as to make \$1,126 on the transaction. What did he receive per horse?

5. A bankrupt settled with his creditors at the rate of 65 cents on the dollar; what did he owe a creditor who received \$2,265?

REPORT AND PENMANSHIP.

Report on an assumed state of facts in an office building in which three important defects in the plumbing and drainage are found, and frame an order requiring the remedying of these defects.

Report on an assumed state of facts in a tenement house in which four serious sanitary defects occur, and frame an order for remedying of these defects.

EXPERIENCE.

1. (a) How old are you? (b) In what capacity are you now employed? (c) How long have you been so employed? (d) Give the name and address of your employer. (e) If not employed, state where you were last employed and the nature of the work you did.

2. (a) What experience, if any, have you had in sanitary work? Explain fully, stating when, where, how long, salary received in each place and the kind of work you did.

3. State any other experience or training that you may have had that would tend to fit you for the position of sanitary inspector.

REPORT WRITING.

Reports in the Tenement House Department, except in special cases, are made by filling in the blank spaces on various card forms. The cards are ruled off into columns, with questions under various classifications or headings. After each question there is space for a concise answer, such as "yes" or "no" or for figures.

There is no resemblance between the official reports and the letter required in the Report Writing branch at the civil service examination. The report at the examination, while related to the duties of an Inspector, is intended mainly as an intelligence test. In past examinations for Tenement House Inspector the Report question usually has contained a statement of certain theoretical conditions, the candidate being required to write a letter—called Report—on the result of his investigation of those conditions. Usually a knowledge of law is called for, but the Report may involve anything relating to the duties of the position. It does not differ in any essential from any of the other examination questions so far as technical knowledge is concerned.

Report Writing has great terrors for many candidates who do not realize that a civil service examination Report is nothing but a Letter in which the candidate is required to express knowledge which he ought to possess.

Many candidates, however, have difficulty in presenting the facts in an orderly manner, and one of the objects of this branch is to test the ability to do that, and to state facts concisely. A Report should be regarded as a written substitute for a verbal narrative, and, for the sake of economy of time, it should be more brief than a conversation.

Date it. Address it to a proper somebody, according to the instructions on the examination sheet. If there are no instructions, address it to the Chief Inspector or Commissioner. Let the first paragraph

briefly state the subject, as, for example: "Referring to violation at No. 1000 Tenth Street, I respectfully report as follows:"

Then begin at the beginning by stating that you went there on a certain day. Tell what you did and saw. Do this in an orderly manner. If you begin with the cellar, work up from the cellar to the roof and not jump from cellar to roof and back to the cellar, and then to the roof again. To avoid jumping about, lay out a framework of the essential things to cover, and under each grand division have subdivisions, and if necessary under the subdivisions have sub-subdivisions. If called for, close with recommendations. The recommendations should preferably be made in the order in which the subjects were dealt with.

The Reports which follow were devised from official cards used in Tenement House Department by an Inspector of the Department. In the case of some of the Reports, the answers are filled in as would be done on the cards; in other cases, the Reports are presented in letter form.

GENERAL REPORT.

Location.....seven-story, brick and cellar. Owner: Owner recorded in the Bureau of Records, Borough of Manhattan. There are 3 apartments on the first floor, 5 apartments on the second floor, 5 apartments on the third floor, 5 apartments on the fourth floor, 5 apartments on the fifth floor, 5 apartments on the six floor; total 28 apartments.

Garbage Cans.—Suitable. Number: 2. Material: metal. Condition: good. Where kept: in cellar. Adequate.

Ash Cans.—Suitable. Number: 2. Material: metal. Condition: good. Where kept: in cellar. Not adequate.

House Drain.—Free from obstruction. Line and grade: underground.

Lowest Floor.—Cellar.

Floor.—Water-tight; concrete; not defective. Dry. Somewhat dirty. Free from rubbish. Good repair.

Water-closet Compartment in Building.—Some rubbish. Dirty. Free from fecal matter.

School Sink.—None.

Vault.—None.

Cesspool.—None.

.....Inspector.

RECOMMENDATION FOR VIOLATION REPORT.

.....East.....St., 124th District,

Borough of Manhattan.

Violation 5467. Date filed, Feb. 5, 1903. Inspector, John Doe.

400. Thoroughly cleanse the front area of the above premises, etc.

403. Remove the accumulation of fecal matter from the floors of the water-closets in halls on 1, 2, 3, 4 and 5 stories of the above premises, etc.

450 and 451. Provide proper and separate receptacles for ashes and garbage, etc.

64. Repair the present defective paving of the cellar floor.

Out Buildings?—None.

Disinfection Needed?—None.

Saturated Woodwork?—None.

General Remarks.—Violation filed. Painted walls and whitewashed ceilings. Three water-closet compartments. Halls 1, 2, 3, 4, 5, 6, 7 stories dirty. Plaster on walls of three water-closet compartments 1, 2, 3, 4, 5, 6, 7 stories broken and defective. Seat broken, middle water-closet compartment, third story.

PROGRESS OF WORK REPORT.

Date of inspection April 13, date of re-inspection April 27: 2d tier beam measurements O. K. Third story walls. Date of inspection April 29, reinspection May 18: Putting roof on. Date of inspection May 19, reinspection June 8: Flooring. Not working. Measured same. Date of inspection June 8, reinspection June 29. Studding rooms, O. K. Date of inspection June 30, reinspection July 20: White coat going on. Studs set. Measurement O. K. Date of inspection July 27, reinspection Aug. 11: Finishing up. Plastered. Measurements O. K. Date of inspection Aug. 4, reinspection Aug. 17: Finishing up. Violation filed. Date of inspection Aug. 19, reinspection Aug. 31: Apparently completed. Date of inspection Sept. 9. Completed and occupied. Final report made.

REPORTS IN LETTER FORM.

I.

Date.....

Premises,

.....Cherry St.

Chief Inspector, Tenement House Dept.

Sir:—I respectfully report that on the above date I personally inspected the premises herein mentioned, which is 5 stories and a cellar. It is arranged to be occupied by four families on each of the floors and also the cellar. On the day of inspection the following conditions existed:

Cellar.—The flooring is of wood laid over earth, the walls and floor not being water-tight. The rooms are very damp. There are 16 rooms occupied for living purposes, which is contrary to section 95. The ceiling is of plaster, which is broken in many places, exposing the wooden lathing. The walls are very filthy and damp; whitewashing would improve them somewhat. The house drain is of earthenware pipe and is broken in several places, which permits sewerage to leak into and saturate the adjoining earth. The soil and waste line are connected to the house drain with saddle.

Yard, Areas, Courts and Shafts.—The yard is not graded, paved or drained. The walls of court and shafts are dirty and are in need of painting or whitewashing. The retaining wall at rear of yard is cracked and bulging and in need of repairs. The wooden clothes poles in the yard are rotted at the base and leaning at a dangerous angle and liable to fall at any time.

Hall and Stairs.—The paper on walls is torn and soiled. The wooden treads and risers are in many places split and almost worn through. Handrail is very loose; many of the standards between treads and the handrail are missing. The halls are very dark and it is impossible to read without the aid of artificial light. All the doors of apartments have wooden panels and no transoms. The sinks in the halls are enclosed in woodwork which is water-soaked. A very disagreeable odor is apparent. The door in the bulkhead is locked, shutting off egress in case of fire.

Water-closet Accommodations.—The W. C. accommodations consist of a school sink located in the yard with 8 seats for 20 families. The sink is in a foul and unsanitary condition, the brick vault broken and covered with encrustations of fecal matter which causes foul odors to emanate. The same is a nuisance and menace to health.

Plumbing and Drainage.—There are improper saddle V's at the connection of the sink wastes to main waste lines in halls at every story. There are three lengths broken between 1st and 2d stories. The sinks in halls are poorly supported. The cast iron soil pipe is used as a leader to drain roof. The lead traps of sinks in the halls are obstructed.

Roof.—The tar and gravel roof leaks at several points, the gutter is badly corroded and not properly supported.

Apartments.—On each floor, also in cellar there are 8 interior rooms occupied for living purposes, which is contrary to section 73. In most cases the paper on walls and ceiling is torn and soiled.

Fire Escapes.—The rear fire escapes are equipped with wood flooring. There is not provided a gooseneck ladder to the roof. There are no drop ladders for the front or rear fire escapes.

Would recommend immediate action be taken in this case, because in the event of a fire a great loss of life may be expected, and as the warm weather is approaching an epidemic may be started which would be a danger to the community.

Respectfully submitted,

JOHN DOE,
Insp. No. 60.

II.

Date.....

Commissioner of Tenements.

Sir:—I beg to report that on March 29th last I personally examined the premises situated at No.....Eleventh ave., and I herewith respectfully submit the following:

First. The cellar is damp, not concreted and emits a very disagreeable odor. The sidewalks of same are covered with a percolation.

Second. The yards are in bad condition, being piled high, and for about half their surface covered with rubbish of every description. They have never been concreted or properly graded.

Third. The walls of the living rooms are, in many instances, in very bad condition. In some places the plaster has fallen off leaving the lathes exposed. And the remaining plaster is exceedingly dirty, and offensive, and on getting close to same a disgusting odor is apparent.

Fourth. The halls are not sufficiently lighted nor ventilated, there being no window to the outer air, sash, door or skylight.

Fifth. The joints of the soil pipes on the second floor, with which the toilet is connected, are defective; the joint of the soil pipe is filled with cement, and where the connection to the "Y" branch is made, the joint is leaded to iron pipe.

Sixth. The waste pipe for the refrigerators is of wrought iron and connected to the sewer drain.

Seventh. The fire escapes on the top floor of the houses are in all cases obstructed, either with bedding, boards or other obstacles.

Eighth. The chimneys are defective, allowing coal gas and smoke to enter the rooms. This I believe is due to the build-

ings on both sides being much higher than the one examined.

I would therefore recommend:

That the floors of these cellars be concreted and made impervious to dampness, that the side walls be lined with a damp-proof course of brick waterproofed. The cellar should be properly graded so as to drain any water that may accumulate, the drain to be trapped and connected to sewer.

I would also suggest that the yards be thoroughly cleaned, concreted, cemented and properly drained. The drain to be trapped and cemented to sewer in a proper manner.

Also that the plastering be replaced where it has fallen off, and the remaining walls and ceiling to be thoroughly scraped and cleaned. The whole to be whitewashed, kalsomined or painted.

Respectfully submitted,

JOHN DOE.

III.

Date.....

Commissioner of Tenements.

Sir:—In accordance with your request, I respectfully submit herewith a report of my examination of the premises situated at 726 East Street:

This is an old style tenement, basement and 3 stories high. As is the case with all this style of construction the following defects are present:

(1) The halls and stair wells are poorly lighted, with practically no ventilation.

(2) In almost every case the washtubs are directly in front of the fire escapes, making access to these very difficult.

(3) On the 2d and 3d floors the fire escapes are blocked with boxes containing plants, etc.

(4) The bedrooms are so small that hardly enough air is contained therein for the 2 to 4 people who sleep in them.

(5) The living rooms are in very bad state of repairs, the plaster in many places being off so that the lathes can be seen.

(6) The odor of coal gas is noticeable throughout the building; this I traced to the defective chimney.

(7) The cellar floor is very damp and should by all means be concreted. In spots puddles of water collect, showing the necessity for proper grading.

(8) Rags, papers, etc., are strewn all over the back yard, making this spot not only unsanitary but almost an invitation for conflagration at any moment; a match carelessly thrown from a window would effect this.

I recommend that these defects be remedied at once. Respectfully submitted,

JOHN DOE,
Inspector.

IV.

Date.....

Commissioner of Tenements.

Sir:—I beg to recommend that the following defects be remedied at 726 West Street:

(1) The floors of the cellars should be concreted and made impervious to dampness. The side walls should be lined with a dampproof course of brick or waterproofed. The cellar should be properly graded, so as to drain any water that may accumulate, the drain to be trapped and connected to sewer.

(2) The yards should be thoroughly cleaned, concreted, cemented and properly

drained. The drain to be trapped and cemented to sewer in a proper manner.

(3) The plastering should be repaired where it has fallen off, and the remaining walls and ceilings should be thoroughly scraped and cleaned. The whole should be whitewashed, kalsomined or painted.

(4) The upper panels of the doors of the rooms facing on halls should be taken out and replaced by translucent glass, thus forming a sash window. A skylight should be constructed over stairway with ridge and movable louvres ventilators.

Respectfully submitted,

JOHN DOE.

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