25
A HOUSING SURVEY
OF
COLUMBIA, MISSOURI

by

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P R E F A C E

The treatment of social problems demands that they be subjected to scientific analysis. This means that the facts of any social situation must be the primary basis upon which to work out its solution. The following thesis is an effort to set forth the actual housing conditions as they exist in Columbia, Missouri.

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CHAPTER I

INTRODUCTORY

Columbia, Missouri, is a city of 12,500 inhabitants. Its topography may be described as hilly, or very rolling. The life of the city is organized mainly around the educational interests, for here is located the University of Missouri, Christian College (for women), Stephens College (for women), Missouri Bible College, and a preparatory school for boys. The dominance of this educational interest makes Columbia principally a residential community. The only industry of somewhat large proportions is the Hamilton Brown and Company's shoe factory, located in the north part of the city. Structurally, this factory is so compact that it permits us to call Columbia, not a factory city, but a city of schools and of homes.

The writer has learned from much travel over the state that Columbia has a reputation of being quite an ideal city. The citizens of Columbia, themselves, feel very much that way about it, and, as in many cities of its size and kind, there is a sense of pride in Columbia. It is quite common for cities to adopt some sort of a slogan which represents local pride. "What's the Matter with Our City", is what many cities like Columbia hold out to the outsiders, the inference usually being, "There's Nothing the Matter with

Our City." More than one city has held this uncritical regard for itself until an incisive examination of social conditions has revealed that the snug belief in its decency was somewhat unfounded. A social survey of Springfield, Illinois in 1914 and Topeka, Kansas in the same year are illustrations of how cities are sometimes awakened to hitherto unrealized conditions existing in their midst, and which call for humiliation rather than pride.

The following thesis is an investigation into one phase of the social life of Columbia, -- the conditions of housing. The problem of the investigation is whether the people of Columbia are properly housed. A house to house survey was made in typical sections of the city for the purpose of getting the facts. If we shall discover that conditions are not satisfactory, we shall ask the question, why? Also, we shall seek to know what can be done to make conditions better, and what limits must be recognized in the possibilities of improving the housing situation, for there is much difference in advocating an Utopia and advocating something reasonably possible.

The methods used in our investigation are those well known to social surveyors. The social survey is a scientific method of getting at a social situation. Its basis is strictly upon social facts. By tabulating and classifying these facts it is possible to reduce the general situation to such terms as will express themselves in some sort of def-

inite measurements. To say that so many families in a city have well ventilated indoor lavatories and so many others are compelled to endure unscreened out of door privies, is to reduce the material factors of a social situation to a quantitative analysis.

The complete social survey may be called a scientific diagnosis of the community, for it is an appeal to the facts. The whole process may be described as follows: first, the discovery of the facts; second, the classification of the facts; third, the interpretation of the facts. Such a scientific technique as thus described, so specifies the conditions, and presents them with such an approximation of accuracy, that a fairly exact knowledge of social conditions can be obtained. Whether or not society or any given community is to be rated high or low in terms of human welfare, or whether social institutions are approaching one hundred per cent. in their efficiency is by the social survey taken out of the realm of mere speculation or guess, as well as uncritical prejudice, and the whole question is subjected to a scientific analysis.

The social survey method was used in determining the housing conditions of Columbia. In such an investigation one of two things is necessary. Either the investigation must discover all the facts of a certain class, or else find typical facts. In St. Paul a survey of housing condi-

tions was made under the direction of Mr. Carol Aronovici, and an examination of his work as published shows that only typical sections of the city were chosen for investigation.¹ The published reports of a housing survey in Chicago indicate that typical Polish sections, negro sections, etc., were covered in the search for facts.

The sections which were selected in Columbia for this survey are described as follows:

Section I follows the west side of the Wabash tracks from Wilkes Boulevard to the Wabash station. The boundary line from this point follows the east side of Christian College Avenue, then turns eastward on Rogers Street, after which it runs northward to Wilkes Boulevard. There were two groups classified in this section, viz., white and negro families. In this thesis they will be identified always as Section Ia for the negroes, and Section Ib for the white people. The latter are mostly of the professional and business class living on Christian College Avenue and Rogers Street.

Section II forms a rectangle bounded by More's Boulevard, Tandy Avenue, Wilkes Boulevard and Fay Street. It lies immediately east of the shoe factory, and is composed mostly

1 - Aronovici, Carol, Housing Conditions in St. Paul
Housing Commission of the St. Paul Association, 1918.

of working people. The families in this section are of white people entirely.

Section III will always be referred to in this thesis as the west negro section. It lies between Walnut Street and Ash Street, extending east and west from First Street to Seventh Street. There is a northward projection from this rectangle lying between Third and Fourth Streets, and extending to Park Avenue. It is composed of negro families.

Section IV is a district composed of mixed residence and business features. It lies between Broadway and Cherry Street from Fifth Street to Hitt Street. The families in this section are of white people, who belong to the business and professional class mostly.

Section V, the University section, contains the area lying between Ninth Street and Hitt Street, and extending north and south between Elm Street and Lowry Street. Added to this is the group of houses lying on the south side of Rosemary Lane.

There were three schedules made out for each house.

Schedule I was for the purpose of describing the general conditions of the house as one would see it from the outside. Besides this, the immediate surroundings as they were related to the house in question were noted upon this schedule, -- condition of the street, sidewalk, fire protection, etc.

Upon Schedule II the investigators recorded the data for the interior conditions of housing, such as the number and

use of rooms, heating, lighting, ventilation, plumbing, occupants, etc.

Schedule III was filled out to show the conditions of yards, outhouses, water-supply, wells, sewage, garbage, livestock, etc., as well as the amount of rent paid by the tenant.

After the facts were gathered they were tabulated for each section. As is the case of any survey, there were inaccuracies in some of the returns. Where they did occur they were so obvious that it was easily possible to make allowance for them in the tabulations. Fortunately, the most outstanding inaccuracies were in connection with the less important data.

Having tabulated the data, it was then classified according to sections, race groups, etc., and the conclusions, or interpretations, were made from them. Use has been made of photographs as a means of illustrating typical conditions. A number of photographs were taken of houses, privies, alleys, surroundings, etc. They are to be found in their appropriate places in the thesis.

- SECTION Ia. Negroes
- SECTION Ib. Whites
- SECTION II. Whites near shoe factory

- SECTION III. Negroes
- SECTION IV. Mixed residence & business.
- SECTION V. University

PLATE I

Map of Columbia, Missouri, Showing
Surveyed Sections

HOUSING SURVEY

SCHEDULE I-- APPROACH TO HOUSE

- St. & No..... Name of resident.....
- A THE HOUSE: Wood, stone, brick, shack No. storeys..... Porch—G.F.B. Back porch—G.F.B. Chimney—G.F.B. Spouting—G.F.B. Roof—G.F.B. Paint—G.F.B. Fire escape..... Yard sidewalk—G.F.B.
- B STREET: Paved, surfaced, dirt. Electric service..... Telephone service..... Distance to fire plug..... Street sidewalk—G.F.B.
- C LOCATION: Face street..... Alley..... Above or below street level. Water drain toward or away from house.....

HOUSING SURVEY

SCHEDULE II--INSIDE THE HOUSE

- A ROOMS: No..... List rooms by use..... What rooms can't be reached without going thru bedroom..... Use other than sleeping to which bedrooms are put..... Beds per room..... Kitchen and Din. room separate..... Conditions of floors..... Walls papared, painted, neither. Does water enter thru roof..... From surface.....
- B HEATING, LIGHTING, VENTILATION: No. rooms heated..... Furnace, stove, grate. Condition of flue..... Cracks around doors..... windows..... panes missing..... No. rooms without windows..... Use..... Family sleep with windows open..... Any open now..... Light: gas, electricity, oil. Is house dark now..... Cross ventilation..... Have a telephone.....
- C PLUMBING: No. of sinks..... bath tubs..... indoor lavatories. Water flush-G.B. Lavatory ventilated-G.F.B. Connected with city sewer, cess pool. Plumbing leak..... where.....
- D BASEMENT: Earth, brick, stone, cement. Damp, wet, dry. Does overflow enter..... No. windows..... Used for storage, fuel, living room, sleeping room.....
- E OCCUPANTS: No. families..... dwellers..... lodgers..... Children under 12..... Over 12..... Family income..... Years lived here..... Expect to live here next year..... Why.....

PLATE II

Schedules I and II

HOUSING SURVEY

SCHEDULE III--OUTSIDE THE HOUSE

- A YARD: Size of lot..... Percent covered by buildings..... Low, grassy, bare,
littered up.....
- B OUTHOUSES: Stable..... Distance from house..... Privy..... Distance
from house..... connected with sewer..... full..... screened.....
water tight box..... windows..... how often cleaned.....
- C WATER SUPPLY: City water..... Indoor hydrant..... Outdoor hydrant.....
Used by how many families..... Well..... Distance from house..... from
barn..... from privy..... Does water drain into it..... walls tight.....
how covered..... condition of cover--G.F.B. Cistern..... filter.....
leaky.....
- D SEWAGE: Sewer line in street..... house attached..... trapped.....
- E SLUDGE: How kept..... how disposed of..... how often.....
- F GARBAGE: How kept..... how disposed of..... how often.....
- G RUBISH: Where are tin cans, etc. placed..... Where are ashes
kept..... how disposed of..... Manure pile.....
how disposed of..... how often.....
- H ANIMALS: Horses, cows, pigs, chickens Where kept.....
- I HOUSE: Owner of house..... Value \$..... Tax assessment \$.....
Rent paid \$.....

P L A T E II (Cont'd)

Schedule III

CHAPTER II

GENERAL CONDITIONS OF GOOD HOUSING

Before taking up the specific problem of the housing conditions in Columbia, it is well to devote a chapter to setting forth the general conditions of good housing. Setting out to do this is to assert that there is a standard of requirements by which to measure the facts gathered in making a housing survey of any city or community.

There can be no doubt that the environment is a tremendously powerful factor in human welfare. If it were not, the housing problem would not, nor should not, engage our attention; for the question of housing is an environmental problem. That is to say that the character of a group in terms of welfare, social efficiency, happiness, and other criteria of human values is largely determined by the type and quality of housing conditions. Hence the importance of a housing survey is manifest.

What has been said up to this point has been to emphasize that the question of housing is a human problem -- not merely one of mere academic interest; and that means that it involves real human values. In other words we desire satisfactory conditions of housing in our city, because human beings have a right to live in houses measuring up to approved and scientific standards. It is even more than the

question of the rights of a given group as compared with another; it is the question of the social welfare of the entire community group. This has been found particularly true from the standpoint of sanitation. An unsanitary section of a city is like a cancer on the human body -- the whole body is affected.

There are certain approved standards of living as regards housing conditions. There is no absolute standard accepted in every detail, but there is an approximate standard which holds good throughout the country. Quantitative measurements in terms of feet or per cent. vary in different places, but a fairly uniform set of requirements is discovered in examining the various housing codes of the cities of the United States.

In the following paragraphs of this chapter there is set forth the general requirements which, taken together, may be pronounced as constituting good housing conditions.

1 The Proper Amount of Space

One of the gross evils of city life has been the fact of crowding, especially among the working classes. In New York City in 1900 according to Jacob Riis over one half of the city's population was crowded into forty thousand tenements.² Lawrence Veiller says that, "in one small por-

² - Riis, Jacob A., A Ten Years' War, p.33; Houghton, Mifflin and Co., New York, 1900.

tion of Manhattan Island, the district south of Fourteenth Street and east of Broadway, dwell over 500,000 human beings, a population in itself greater than the entire population of any other American city except Chicago, Philadelphia, St. Louis, Boston, and Baltimore."³ In 1880 the average number of persons to each dwelling was 16.37; in 1890 the number had arisen to 18.52; in 1900 the average (in the old city) had mounted to 20.4.⁴ In 1900 the police of New York counted 4,254 persons living in a block lying between Sixty-first and Sixty-second streets, and Tenth and Eleventh avenues. This means that there were 1,158 persons to the acre.⁵

The housing of so many thousands in such small space is a condition in our cities which gives serious concern to those who are working to increase human welfare. People cannot live properly, socially or morally, under crowded conditions. Thus the question of living-space is important. In considering the matter we may look at it from two angles -- indoors and out-of-doors. This means that there may be too many persons per room in any given house or apart-

3 - Veiller, Lawrence, Housing Reform, p.11, Charities Publication Committee, 1910.

4 - Riis, Jacob A., The Battle with the Slum, p.81, The MacMillan Co., New York, 1902.

5 - Ibid, p. 83.

ment, or there may be too many persons per given area. The ratio of the size of a house to the lot upon which it stands is a very important item of consideration in larger cities. Where there are too many persons per room in dwellings it is called by social surveyors, overcrowding. Where houses crowd in upon each other, it is called congestion.

Specifically, the question of congestion and overcrowding involves in quantitative terms the cubic space of living quarters, the per cent. of lot occupied by the dwelling, and also neighborhood recreation facilities.

2 Privacy

The question of privacy must be considered in any housing survey. That every family is entitled to facilities for privacy is discernable to those who appreciate the moral and social significance of such a matter. An investigation into conditions as to privacy in houses will involve the discovery of facts as to the number and arrangement of rooms in a house, especially bedrooms, and also the manner of access to rooms, so that the house could be arranged for private use of individuals according to age, sex, etc.

3 Lighting, Ventilation, Heating.

Sanitary conditions cannot be maintained without a proper amount of sunlight and pure air. Hence, it becomes important in an investigation of housing conditions to determine whether or not the houses of the inhabitants are provided with the means to admit these two necessary ele-

ments of healthful living. The fight against tuberculosis in the city slum has been successful largely through such structural improvement in tenements as to permit the enjoyment of sunshine and pure air by the tenants. Neither can a house be fit for occupancy which is not properly heated. In our investigation we shall seek to discover to what extent houses are so heated.

4 Water Supply

Every family should have easy access to a plentiful supply of wholesome pure water. It has been demonstrated that most surface-water wells are contaminated in some way, or are potentially a source of great danger to the community. The presence of privy-vaults and manure piles is a constant menace to the public health because of the fact that surface wells receive contamination so easily from these sources. Not only should the water be pure and wholesome, but it should be conveniently obtained to insure a plentiful use of it. The specific requirement, to be most ideal, is an indoor hydrant furnishing wholesome water from an uncontaminated source. One of the grievous short-comings of many cities is the fact that, although there is an efficient system of water works, a large per cent. of the population -- mostly the poor -- are deprived of its benefits, and thereby must resort to surface wells.

5 Sanitary Conveniences

Under this heading may be placed such items as bath-

ing facilities, indoor toilets, and sinks. A bath tub makes it easy to bathe -- a wash tub or a candy pail is hardly a good standing invitation to enjoy a bath. It is asserted by many that if the poor were provided with bath tubs, they would use them for the storing of coal. Lawrence Veiller, an expert of long experience in housing investigations, makes a refutation of this hackneyed assertion. He says, "No story, I imagine, has been repeated more often, and none has less basis of fact -- a hasty generalization from a single instance."⁶

The indoor flushing closet stands out in glaring contrast to the average dingy, vile, and dangerous privy. The latter has been found to contaminate wells and to be a source of dangerous diseases through the presence of flies that carry germs from the privies.

There should also be at least one sink to provide for the deposit of waste water from the kitchen, instead of disposing of it in pails or throwing it upon the ground in the backyard.

6 Sewage Connections

The matter of sanitary conveniences involves the question of sewage. To provide for the proper operation of sinks, baths and toilets it is necessary that these should

6 - Veiller, Lawrence, Housing Reform, p. 17

be connected with the sewer system. As a matter of fact, we can say nothing less than that every family in a city should have the sanitary conveniences previously mentioned, and should have them connected with a city sewer pipe. As in the case of city water, we find in many cities that certain sections are not provided with sewer facilities. Even leaving out the matter of sanitary conveniences, such a state of things leaves many parts of a city poorly drained, and thereby dirty and unhealthful. Open sewers are often tolerated but they are very dangerous.

7 Garbage, Sludge, Rubbish.

There should be in every city the provision for properly disposing of garbage, sludge and rubbish. They should be deposited in such a way as to comply with the requirements of sanitation and orderliness. Then there should be means provided for the gathering of these at frequent and regular intervals for final disposal. The city may do this latter through its own administration, or it may license persons to do it as a private business under strict, official surveillance.

8 Fire Protection

Buildings should be so constructed that they will not be a continual menace for fire. So it is required that houses be constructed with reasonable safe-guards against fire. Where there are many tenants in a building adequate fire escapes should be provided, and they should be

easily and quickly accessible. Not only that, but the city should see that every house within its limits is within reach of a fire plug.

9 Freedom from Nuisances

People cannot live comfortably or ideally in the proximity of dirt. Junk heaps and rubbish furnish poor surroundings. Streets and alleys should be cared for, and be kept orderly. People should not be obliged to dwell in the midst of excessive noise. Stenches, such as odors from manure piles, hog pens, and open sewers should not be tolerated. Neither should persons be compelled to live where factory fumes contaminate the air.

10 General Repairs

The owner of a dwelling occupied by another should keep the premises in good repair. Paper, paint, plumbing, roof, chimney, windows, doors, porches, etc., should be properly kept up.

11 Housing Code

The last thing in this chapter to be mentioned is the matter of such official regulation on the part of a city as affects the general conditions of housing mentioned above. A city corporation should control the construction and equipping of dwellings, and should provide sanitary regulations of various sorts by statute or otherwise. To be effective, such regulation requires that there shall be inspection by competent officials and machinery to enforce the municipal regulations.

CHAPTER III

THE PROPER AMOUNT OF SPACE

In this chapter we shall seek to find if the problem of crowding exists in Columbia. The problem is approached from two angles. First, are people crowded upon the ground space? An answer to this involves a consideration of the matter of yard space, or the percentage of the area of a lot occupied by the dwelling. Second, are the conditions such that families do not have sufficient room in their dwellings to efficiently carry on the varied functions of the household? In the previous chapter attention was called to the crowding together of persons in the large cities. It has been found to be impossible to live a socially wholesome and efficient life unless there is a certain amount of open space in proximity to dwellings. Where so many persons are crowded into dwellings so as to prevent the normal carrying-on of the functions of the household, social conditions are always found to be bad.

Lot Space Occupied by Buildings

Before taking up the first problem of this chapter, that of the crowding of buildings upon the lots, it is necessary to decide upon some standard by which to measure the data of our investigation. This is possible by turning to some one who is of expert authority in the field of the so-

cial survey, and whose standards are more or less recognized because of his wide experience in investigations of this type. Mr. Lawrence Veiller, who has directed many surveys under the direction of the Russell Sage Foundation, sets the following standard as the maximum percentage of any lot to be covered by a building: "No tenement house hereafter erected shall occupy more than eighty percentum of a corner lot, nor more than sixty percentum of any other lot."⁷ Keeping in mind that this extract from a model housing law has specific reference to the tenement house problem of a large city, we shall see how conditions in Columbia compare with it.

In order to determine the question for each house investigated, the percent. of the lot space occupied by the building was found. In table I the average amount of the lot space occupied by buildings is shown for each section of the city investigated, and for all the sections as a whole.

Table I

Lot space covered by buildings

Section	I a	negroes	24.2	%
"	I b	whites.	32.5	"
"	II	whites near shoe factory. . .	9.4	"
"	III	negroes	42.9	"
"	IV	residence and business. . . .	32.0	"
"	V	University.	39.0	"
All sections.			30.6	"

7 - Veiller, Lawrence, A Model Tenement House Law, p.23, Charities Publication Committee, New York, 1910.

In getting the averages shown in Table I, we have considered the family as the unit by which to measure. Among the negroes of the section west of the Wabash tracks (Section I) , according to Table I it appears that each family enjoys an average of 78.8% of the lot given over to a yard. Among the whites of this section the yard space is 67.5% of the entire lot space; while for the whites near the shoe factory (Section II) the average yard space is 90.6%. For the west negro section (Section III) the average yard space is 57.1%; and for the mixed residence and business section (Section IV) it is 65%. According to the table the people in the University section (Section V) avail themselves of 69.1% of yard space.

The great variation in the amount of yard space in the section opposite the shoe factory is due to the fact that the lots facing upon Fay and Tandy streets are very deep. The cottages in this section are mostly of medium size, to accomodate working people of moderate wages. On the contrary the houses of the whites in Section I are much larger than those of the whites in Section II. The most of them among the whites in Section I are the residences on Christian College Avenue and Rogers Street, where the houses may be said to be of considerably more than medium size -- some of them are large.

The people living in the west negro section (Section III) have the least average yard space of all the sections

tabulated. The average is 57.1%, and it is determined partly by returns on three tenements each occupying 75% of the lot, thus leaving but 25% of yard space in these instances. Most of the houses are small, as they are among the negroes of Section I, and are set close together, in many cases, upon small lots.

In the mixed residence and business section (Section IV) some of the homes are in business blocks; and this factor makes the average yard space less than were this factor absent. The remainder of the homes in this section are dwellings of both small and large type.

Although the University section (Section V) contains many large dwellings used for fraternity and sorority houses besides the Dumas Apartment house which occupies 66 2/3 % of the lot, and the two flats known as the Maryland and the Rosalind, each taking up 46% of the lots, the average yard space of 61.1% shows that the yards -- mostly lawns -- are quite spacious.

Table II

Average percent. yard space

Section	I a	negroes		78.8%
"	I b	whites		67.5"
"	II	whites near shoe factory.		90.6"
"	III	negroes		57.1"
"	IV	residence & business.		65.0"
"	V	University.		69.1"
All sections				69.4"

The average per cent. of yard space per home for each section and for the whole area is shown in Table II.

The foregoing data presents a comparison of the various sections investigated in terms of average per cent, the degree to which the buildings occupy the lots upon which they stand. We observe in Table I that no section has an average per cent. exceeding the maximum standard of 60%, which we have accepted.

From this we conclude that the crowding of buildings upon lots is not a serious problem in Columbia as far as present conditions are concerned. However, there are a few places that exceed the standard set by Mr. Viller's model housing code. In the west negro section (Section III) there were reported seventeen places where buildings occupy more than 60% of the lot space. No corner building was reported as exceeding the 80% limit. There are four families in this section who live in houses which cover 100% of the lot space; eleven families in houses covering 75% of the lot space; and two families where 60% of the lot space is occupied by houses.

Plate III--Group of houses on Park Street near Wabash Railroad showing crowding upon the lot.

In the section west of the Wabash tracks (Section I) one house was found to occupy 60% of the lot; two occupy each 80% of the lot space; and two occupy, in each case, 70% of the lot space. This entire group is located on Park Avenue near the point where the Wabash Railroad crosses the street. Among the whites of this section two houses were found which cover 80% of their respective lots, and one covers 90% of the lot. These houses are one and two story houses of a good type located on Rogers Street opposite the Christian College campus.

Plate IV-Group of houses on Ash Street showing crowding upon the lot.

As for the remaining sections, there was only one place recorded as exceeding the maximum standard. One building in the mixed residence and business section (Section IV) was reported as taking up 75% of the lot.

Although we have asserted that the data justify us in

concluding that at present the crowding of buildings upon lots is not a serious problem in Columbia, there is a potential evil in the tendency to allow buildings to occupy more than the standard maximum of lot space. This is in the possible growth of Columbia into a larger city when land values will be high, thus causing tenements to be crowded upon one another. The fact that 20% of the houses investigated in the west negro section exceed the maximum of 60% of lot space are mainly one story houses or tenements, and more or less isolated, does not indicate a serious condition of crowding, but it points out a tendency to evil in view of the possible growth of the city to a point where tenements would be a very decided feature of housing.

Crowding in Houses

Our second problem is to find whether there is in Columbia any serious abnormal conditions with respect to crowding within the houses. We shall again be obliged to accept some standard by which to measure. The director of the Bureau of Standards of New York City says, "A family of five people needs at least four rooms to meet the demands of decency. Three rooms for more than four persons causes overcrowding. Four rooms, on the other hand, for five persons is slightly above the accepted standard of one and one half persons to a room."⁸ R. C. Chapin, who is well

⁸ - Report, Bureau of Standards of N. Y., for 1915.
M. P. Brown Printing and Binding Co., N. Y., 1915.

known as a social investigator says, "To make allowance for variations in the number of persons using the family apartment, a standard of 1 1/2 persons to a room has been applied."⁹ The reference is from a survey to determine the standard of living in New York City.

These standards used to judge conditions in large cities can with all fairness be adopted in our survey of housing conditions in Columbia. In order to determine the question of indoor crowding for each section and for the whole area under consideration, the total number of rooms in each section was found, and this number was divided by the number of inhabitants living in these rooms. In the section lying west of the Wabash Railroad (Section I) the aggregate number of rooms for the 57 negro houses reported for this item is 190, making the average 3.3 rooms per house. The total number of occupants in these houses is 239 reported for 61 negro homes, including the 57 mentioned above, making an average of 3.9 persons per house. The total number of rooms among the white people of this section is 163 for 26 houses reported, making an average of 6.2 rooms per house. Among this group there was found an aggregate of 93 occupants. The average number of persons per house is 3.5.

The group of whites opposite the shoe factory (Sec-

⁹ - Chapin, R. C., The Standard of Living in New York City, p 80, Charities Publication Committee, N.Y. 1909.

tion II) show a total of 82 rooms for 17 houses reported, making an average of 4.8 rooms per house. The total number of occupants in these 17 houses was 73, giving an average of 4.2 persons per house. The west negro section (Section III) gives us an aggregate of 244 rooms for 82 homes reported, making an average of 2.9 rooms per house or apartment. There is an aggregate in this group of 188 occupants, so that the average number of persons per house or apartment is 3.1.¹⁰ In the mixed residence and business section (Section IV) there is a total of 82 rooms for 14 places reported. The average number of rooms per place is, therefore, 5.8. The total number of occupants is 61, making an average of 4.3 persons per home. For the University section (Section V) there was reported 76 places having a total of 196 rooms -- an average of 8.5 rooms to each house or apartment. This section has 327 occupants reported for 59 homes. This would show an average of four persons per home in this section.

Taking the whole area of investigation we find a total of 957 rooms in 272 homes, which makes an average number of 3.5 rooms for each home reported in our schedules for this item. In all there are 237 homes reported as to the number of occupants, giving a total of 981. The average number of persons per house or apartment accordingly is 4.1.

¹⁰ - Only 60 places show reliable figures for the number of occupants in each house in this section.

From the figures given above it is now possible for us to determine in each section and for the whole area under consideration the number of persons per room. The finding of the number of persons per room in a house or apartment is one way of arriving at the problem of overcrowding. In each case, dividing the number of persons by the number of rooms gives us the desired ratio. By this process we see that the average number of persons per room for the negroes of the section lying west of the Wabash (Section I) is 1.1. The whites of this section show an average of .5 person per room. For the whites near the shoe factory (Section II) the average is .8 person per room. In the west negro district (Section III) the average is one person per room. In the mixed residence and business section (Section IV) the average is .7 person per room. The average in the University section (Section V) is .4 person per room. For the whole area investigated we find there is an average of one person per room, allowing for a slight fraction above this figure too small for consideration.

In Table III are given the average for each section and for the whole area as to the number of rooms per home, the number of persons per home, and the number of persons per room. The chief significance of the table is in the variation indicated for the two negro groups, where the average person per room for both groups combined is a slight fraction over one. The nearest approach to this figure is

among the working people opposite the shoe factory (Section II) where the average is .8 person per room. The contrast between the averages shown for the University section and for the west negro section can be further visualized from the fact that in the former there is 2 1/2 rooms to every person, while in the latter there is only one room per person.

Table III

Section	Av.No.Rooms per home	Av.No.Persons per home	Av.No.Persons per room
I a negroes	3.3	3.9	1.1
I b white	6.2	3.5	.5
II	4.8	4.2	.8
III negroes	2.9	3.1	1.0
IV	5.8	4.3	.7
V	8.5	4.0	.4
Whole Area	4.1	3.5	1.0

By comparing the data with the maximum standard of 1 1/2 persons per room, the schedules show that among the negroes of the section west of the Wabash (Section I) that there are 16 homes which violate the standard. There are eight houses where the rate reached two persons per room, and four places where the rate goes up to 2 1/4 to 2 1/3 persons per room. Among the white people of Section I only one home violates Chapin's standard. The rate for this house is 2 1/4 persons per room.

No home among the whites opposite the shoe factory (Section II) violates the standard. Twelve homes are abnormal according to the standard in the west negro section (Section

III). Of these four homes have two persons per room; four have $2 \frac{1}{3}$ to $2 \frac{1}{2}$ persons per room; and four have three persons per room. Neither in the mixed residence and business section (Section IV), nor in the University section (Section V) are there any homes which violate the standard we have accepted.

If we judge the whole situation by this standard of $1 \frac{1}{2}$ persons per room as a maximum, we find that among the negroes of Section I there is crowding in 28% of the homes. The per cent. is reduced to 3.7%^x for the whites of this section. In the west negro section (Section III) where 82 homes were reported for this item there is crowding in 14.6% of the homes. Among the remaining groups, which are composed entirely of white people there is no crowding according to the above mentioned standard.

The chief significance of the figures is that, according to the above standard, the white population is practically free from crowding while among the negroes 13.6% of the families are living in homes which are crowded.

By means of the test accepted as the standard of the New York Bureau of Standards, viz., at least four rooms for a family of five, the following results are found. Among the negroes of the section west of the Wabash (Section I) there are 8 families of five or more persons who have only three rooms. Six families among this group have each five members, one has six members and another has sev-

en members. Among the whites of this section no family of five or more was reported to have less than four rooms. In Section II (the whites near the shoe factory) no such case appears on the schedules. Turning to the west negro section (Section III) the returns show that there are nine families of five or more persons who live in houses or apartments having less than four rooms. Of those living in three rooms there are two families having six members, two families having seven members, and one family having nine persons. Of families of over five persons having only two rooms at their disposal there are four in this section. Two of the families have five members; one has six and another has seven. In the mixed residence and business section (Section IV) and in the University section (Section V) no schedule shows any family of five or more having less than four rooms.

According to the latter standard with which we have compared our data, the case is not so favorable. We have seen that 17 families in the two negro groups live in homes which violate the minimum of four rooms to a family of five persons. That means that there is crowding in 12% of the negro houses investigated. The ratio for the entire area of our survey is 6.2% of homes which are abnormal according to this standard.

In addition to the data given above, an examination of the schedules reveal that among the negroes of Section I there are twelve families living in houses of two rooms,

and in Section III 27 families live in houses or apartments of two rooms each, making a total of 39 families living under such restrictions. In other words 27.8% of the negro families investigated live in two room houses or apartments.

Crowding in Bedrooms

We can see by the foregoing data the extent to which crowding exists in Columbia. It is desirable to know in what ways this shows itself in other forms. One of the questions upon the schedules was to find the number of beds per bed room as an indication of one form of crowding. The results were as follows.

In the district lying west of the Wabash Railroad (Section I) among the negroes there were 61 places reported for this question. In 11 families or 18.1% of the total there are two beds per bed room, and in four houses, or 6.5% there are one and one half beds per bed room. As for the whites in this section, out of 23 homes reported six families or 26% of the total have two beds per bed room. These are found among the poorer classes of whites in this group. One place was reported as having the ratio of one and one half beds per bed room, or 4.3% of the total number.

Turning to the whites near the shoe factory (Section II) out of 16 places there were reported three families or 18.7% who have one and one half beds per room, one family who has two and one half beds per bed room, or 6.2% of the total number of families. Among the west negroes

(Section III) of 93 homes reported 13 of them or 13.9% have two beds per bed room, and thirteen families or 13.9% of all have the rate of one and one half beds per bed room.

In the mixed residence and business section (Section IV) no family has the rate of two beds per room, while of the 14 homes reported two of them, or 14.2%, have one and one half beds per room. These are among the poorer class in the west end of this section. For the University section (Section V) of 44 homes reported for this item, only one shows a rate of two beds per room. This is 4.7% of the total number. One family, or 4.7% of all shows the rate of one and one half beds per bed room.

Normally, there should be only one bed per bed room, and a rate as much as one and one half or two beds per bed room is abnormal and deserves consideration. According to this standard 24.6% of the negro houses in Section I are crowded in bed rooms and 17.3% of the whites in this section are thus crowded. Of the white families near the shoe factory (Section II) 24.9% are crowded in bed rooms. Of the negro families in the west negro section (Section III) 27.8% of the families have crowded bed rooms. In the mixed residence and business section (Section IV) 14.2% of the families are crowded, and in the University section (Section V) 9.4% of the houses show crowded bed rooms. This item is not so serious for Section V, as the reports are in many cases from sorority and fraternity houses having large

spacious bed rooms.

Mixed Use of Rooms

The problem of crowding also involves the question of the extent to which rooms are forced into uses for which they are not normally intended. All families should have sufficient room in which to properly carry on the various functions of the household. In connection with this survey, and specifically in connection with the problem of indoor crowding, we shall seek to find out to what degree families are compelled to use sleeping rooms for dining rooms and for cooking. Further we shall find how many families are obliged to combine cooking and dining in one room.

Among the negroes of the section lying west of the Wabash tracks (Section I) the schedules show that out of 56 houses it is necessary for 54 families to use sleeping rooms for what are usually called living rooms. This is 78% of those recorded. Eight families or 14.2% are obliged to use rooms for both cooking and sleeping. For the white people of this section it was found that only four families out of 25, or 16%, need to use sleeping rooms for living rooms. None of the families cook and sleep in the same room.

The returns show that among the white people near the shoe factory (Section II) nine families out of 17, or 53%, make use of sleeping rooms for living rooms. In this section, also, no families cook and eat in the same room. For the west negro section (Section III) the schedules show

that out of 91 families, 52 of them, or 57%, make use of sleeping rooms as living rooms.¹¹

The mixed residence and business section (Section IV) has in it only one family that made a living room out of a room in which they sleep. No family in this section cooks in a sleeping room. It is impossible to give statistically the conditions under this category for the University section (Section V). The situation here is complicated by the fact that a great many of the houses reported are sorority and fraternity houses, of which one of the chief purposes is their use as dormitories.

Mixed Kitchen and Dining Room

The remaining item in the chapter on crowding is the question as to what extent families are compelled to use one room for both cooking and dining. Although this has been mentioned as of lesser importance, it is deemed of sufficient importance to include it in the problem of crowding. Normally, every family should not be obliged to use the kitchen permanently as a dining room. Table IV shows the data, which were reported upon the schedules and is an indication as to the way crowding registers itself in this form.

The chief significance of Table IV is the fact that

¹¹-Only one family was reported in Section III as cooking and sleeping in the same room. The writer doubts the accuracy of the returns of this item.

the proportion of families among the negroes who have combined kitchens and dining rooms is 79.5% and 58% for the working class whites near the shoe factory, while for the remaining whites only 12.5% of the families eat in the kitchen. These latter are confined to the poorer class in Sections II and IV.

Table IV

		Kitchen and dining room separate		% having combined kitchen & dining room
Section		Yes	No	
I	a negroes	10	51	83
I	b whites	23	3	11
II	whites near factory	7	10	58
III	west negroes	17	55	76
IV	residence and business	12	2	14
V	University	64	64	0
	All sections	133	185	58

CHAPTER IV

PRIVACY

In chapter II reference was made to the fact that the question of privacy enters into the problem of housing. If houses are so small that it is impossible to isolate bed rooms in such a way as to give privacy, it is quite certain that standards of refinement, decency, and of morals cannot be maintained. Where the rooms are few in a house occupied by a large family there is apt to be a disregard of the demands of moral refinement and decency by persons disrobing in the presence of others of the opposite sex; and by persons entering or remaining freely in rooms where persons of the opposite sex are in bed. Familiarity with such conditions cultivates an attitude lacking in the sense of embarrassment which marks true moral refinement whether privacies of a certain kind have been invaded intentionally or not. This may seem to be of minor importance, yet it is certainly true that what we are dealing with is important enough when one considers what goes to make up a wholesome, refined life of today. In Table V there is tabulated for each section of our surveyed area the number of places which have rooms that cannot be entered without going through a bed room.¹²

¹² - Among white families it is a common habit to keep a "spare bed" in the living room. This should be kept in mind in examining Table V for these rooms are included.

There are 55 negro families reported for this item in the section lying west of the Wabash Railroad (Section I). Hence, according to Table V, 72.7% of these families are living in houses encroaching upon the rights of privacy. The number of white families living in this section who have rooms which must be entered through a bedroom amounts to 15.3% of those reported.

Table V

Places where rooms must be entered through living rooms

Section		
I a	negroes	40
I b	whites	4
II	whites near shoe factory	7
III	negroes in west district	28 ¹³
IV	business section	1
V	University	0

Among the white people living near the shoe factory (Section II) only 14 houses are reported for this item, and seven of them, or 50%, have rooms which cannot be entered except through a bed room. In the west negro section (Section III) there were 28 such places reported out of 72, or 38.8%. In the two remaining sections, only one house is found which has such a room as above described. It is in the mixed residence and business section, for which 14 houses

¹³ - The schedules for this item seem quite unreliable for Section III. The figure given is approximately correct as far as it goes.

were reported under this item. This makes it 7% of the total for the section.

If we compare the data given for the total number of negro families in the whole surveyed area with the white families we find that 53.5% of the negro families have rooms which must be entered through sleeping rooms, as over against a slight fraction more than 1% of white families who have such rooms. Had the returns for this item in Section III been fully reliable it is quite certain that the contrast would be greater, for it is hardly probable that conditions are so much different between Section I a (negroes) and Section III as the table indicates. However it is necessary to bear this discrepancy in mind.

It is seen that the question of privacy is contingent upon crowding. It is in the negro sections that rooms are shown to be crowded, and it is in these same sections that the table reveals conditions which prevent the proper minimum of privacy demanded by decency.

CHAPTER V

LIGHTING, VENTILATION, HEATING.

In this chapter we shall take up three factors which go to make up the health, comfort and general wholesomeness of a home, viz., lighting, ventilation, and heating.

Lighting

The problem of lighting is somewhat different in a city like Columbia from what it is in a large city because of the fact that in a small city the dominant type of dwelling is the single family cottage. The acuteness of the problem in a large city is due, in great part, to the fact that tall tenements have been built closely together, thereby shutting out a great portion of the light from the rooms.

To determine the question of lighting as far as the inlet of daylight is concerned, the investigators recorded at each home whether or not the house was dark. In Table VI the results are shown for the various sections.

Table VI

Light conditions in houses in day time

Section	No. houses light	No. houses dark
I a negroes	45	12
I b whites	25	0
II whites near shoe factory..	17	0
III negroes	64	27
IV mixed residence & business	14	0
V University.	66	0
All sections	231	39

The table reveals that the houses reported dark are found only among the negroes. Of the 109 houses recorded for the two groups of negro families 39 are dark, which is 35% of the total number. This is explained in part by the fact that many of the negro houses have windows only in the front and rear sides of the houses. In the west negro section, there are two brick tenements of several apartments each which have one small window in only the rear and front sides of the buildings, the side walls being devoid of any openings whatever.

Plate V

Tenements in west negro section (III) showing poor lighting, as well as poor ventilation. The light and air is admitted by only one window in rear. Note blank walls at side. There is also only one window in front.

The Schedules indicate that there are no families in Columbia compelled to use any room not having a window.

Artificial Lighting.

How people light their homes at night was thought to be of sufficient importance to be included in this investigation. To be able to have the use of electricity as a means of lighting a home instead of the kerosene lamp with its inevitable odor and faint light is to be able to enjoy just that much more of human welfare. Table VII presents the data upon this item for each section investigated.

Table VII

Section		Kind of artificial light used		Electri- city
		Oil	Gas	
I a	negroes	59	1	2
I b	whites.	5	0	21
II	whites near shoe factory. . .	15	0	2
III	negroes	87	0	4
IV	mixed residence & business	1	2	11
V	University.	0	0	58

By examining the table it will be observed that the kerosene lamp is the means used most exclusively among the negro families and among the working people near the shoe factory. Of the total negro families reported for this item 95% are obliged to use the oil lamp. Among the white people of the section near the shoe factory 88% of the families use oil for lighting. For the whole number of white families investigated the table shows that only 21 of them use oil. This is 17% of all families reported for the item under con-

sideration. The table shows that one negro family lights by gas and two families among the whites do so. The data given in Table VII show us the variation between the negro houses and those of the whites in the matter of efficient and wholesome means of lighting by night, and also the variation between the families of the working people near the shoe factory and those of the remaining white sections. The oil lamps^x reported in Section I a and IV are found in the homes of poor people. It is significant that in the University section all the families enjoy the use of electric lights.

Ventilation

One of the necessary items in a housing investigation is the question of ventilation in a house or apartment. Without proper ventilation the air within a house becomes contaminated and unfit for persons to breathe. Houses are often constructed in such a way as to prevent the admittance of a sufficient amount of pure air, and in houses where construction does not have this defect, families are found who violate the principles of sanitation by refusing to ventilate their homes properly.

Cross-ventilation

At each house or apartment of the sections which were investigated in Columbia, the surveyor recorded whether or not the rooms are so constructed as to permit cross-ventilation. To secure ventilation in any room it is necessary to have at least two windows so placed that a current of air may flow from one to the other across the room. The data

for this item is presented in Table VIII below.

Table VIII
Cross ventilation

Section	No.families having cross ventilation	No.families not having cross ventilation
I a negroes	54	6
I b whites	26	0
II whites near shoe factory	14	3
III negroes	71	15
IV mixed residence and business	14	0
V University	63	0

The table shows that here also the variation toward abnormal conditions is most pronounced among the negro families. Of these 14 per cent. live in rooms without cross ventilation, due to the fact that a number of small houses have a window in only one side of a room. Two tenements are found in Section III where the rooms are constructed with this deficiency. Only three families of the whites investigated or 2.5% of the total are prevented from having cross ventilation in the rooms. The three families so reported are found among the poorer people in the north part of Section II, the people near the shoe factory.

Ventilation of sleeping rooms

In Table IX is shown how many families in each section reported that they sleep with windows open.¹⁴

¹⁴ - It is necessary to state that the data for this item is not as accurate as is desirable. The answers to the question upon the schedule cards must be qualified to a great ex-

Table IX

Ventilation of sleeping rooms		No.families	No.families
Section		windows open	windows shut
I a	negroes	21	22
I b	whites	21	1
II	whites near shoe factory	7	0
III	negroes	38	41
IV	mixed residence & business	10	0
V	University	35	1

Making allowance for some inaccuracy in the data, the table furnishes us a means of observing the conditions as they vary between the whites and the negroes. Among the latter, where there is found the least education and culture, the per cent. of those who sleep with closed windows are, at least, 56.2% of the families. The percentage for the white families on this item is 2.7.

In addition to the above data there are 10 families among the negroes who reported that they sleep with open windows some of the time, and 20 who sleep with windows open in summer. Among the whites eight families said they sleep with windows open only some of the time, and eight families sleep with windows open in summer only. The only significance of this seemingly unimportant addition to the data is in the fact that the families who practice sleeping with windows closed are confined almost entirely to the negroes and to the families of the poorer whites, inasmuch as it is among these two groups that the most of the above mentioned families are

14(cont'd). tent by considering the effect of varying kinds of weather. The schedules are to this extent incomplete. However the tendency in each group is seen.

found.

The investigators recorded upon the schedule cards for each house whether or not there were any windows open at the time of the visit. This was to assist in determining the question as to whether the family practices ventilation.

Table X shows the results for each section surveyed.¹⁵

		Table X	
Section		No. Places Windows Open	No. Places Not Open
I	a	.23	32
I	b	.10	21
II		.11	6
III		.22	68
IV		.6	8
V		.22	5

Upon the basis of the table it is found that of the negro families 31% of them had windows open, as compared to 54.5% of the white families who had windows open. If we eliminate the white families near the shoe factory, of whom 32.2% had windows open, the result indicates that 66.6% of the remaining white families had windows open. Although, it is not to be thoroughly depended upon, the data of Table X points out the tendency, at least, in this item for the conditions to conform to the abnormality already found among the negro families as compared to the white people.

¹⁵ - The limitations of this data as a basis of calculation must be recognized. The data was gathered during the opening of spring, and therefore under very changeable conditions of weather. Hence, its value is discounted to that extent.

Heating

Another question for investigation in our housing survey is whether the family can properly heat the house. At each house the investigator learned the number of rooms that are heated. This number in ratio to the total number of rooms gives us an idea as to what extent conditions under this item are normal or abnormal. Table XI indicates the proportion of rooms heated in the houses investigated in the various sections.

Table XI

Average number rooms that are heated		Av. No. ¹ Rooms	Av. No. Rooms Heated
Section			
I a	negroes	3.4 . . .	2.4
I b	whites	6.2 . . .	4.5
II	whites near shoe factory .	4.7 . . .	2.7
III	negroes	3.2 . . .	2.4
IV	mixed residence & business	6.1 . . .	5.4
V	University	10.5 . . .	10.4

If we express the ratio between the average number of rooms heated to the average number of rooms reported in each section we find among the negroes that the average family heats 70.5% of the house. The whites of Section I heat 70.9% of the house. The white working people near the shoe factory heat upon an average 44.6% of the house. In the mixed residence and business section (IV) the people heat an average of

16 - The average number of rooms per house is based only upon the cards which show a report as to the number of rooms heated.

44.6% of the house, while in the University section the ratio is 99%. Contrasting the negro group with the entire white group we find that among the former, as stated above, the ratio of the house heated is 70.5% as compared to 83% among the latter. If we should eliminate a number of small houses among the working people of Sections I a and II, the ratio for the white people would be considerably higher.

The significance of this data lies in the fact that although most of the houses of the white people were very much larger than those of the negroes, the former heat such a greater per cent. of the room than the latter. And in view of the fact that the number of persons per room does not vary so greatly in the different sections, it indicates that the negro families are compelled to huddle into a very limited space in order to keep warm.

Difficulties of Heating

Under this head we place the data with reference to cracks around doors and windows. It is impossible to properly diffuse the heat in a house if there are large cracks which allow strong currents of cold air to enter. The inlet of air necessary for ventilation should be by some means more capable of regulation. In Table XII are found the data under these items for each section.

Among the negro families 56% of the houses or apartments reported for this item have cracks around the doors, and 40.6% have cracks around the windows. Among the white

people 10.4% of the houses and apartments have cracks around the doors,¹⁷ and 6.8% have cracks around the windows.¹⁸

Table XII

Cracks around doors and windows

Section	Doors	Windows
I a negroes	32	24
I b whites	5	3
II whites near shoe factory.	1	0
III negroes	47	35
IV mixed residence & business.	2	2
V University.	2	1

Again, we see the variation between the negro and the white sections of the area surveyed. It is plain that the former are compelled to suffer during the cold weather to a greater extent because of the abnormal conditions as shown by these figures.

Manner of Heating

One of the items which enters into the classification of a house as "modern" is that it shall have modern methods of heating. Among these methods are the furnace, hot water and steam heating apparatus. The fact that persons who buy, build or rent houses so eagerly desire one of these methods of heating as a part of the domestic equipment is in itself a recognition of them as a means toward greater human welfare.

Table XIII presents the data for the question of the

¹⁷ and ¹⁸ - In each case, one half of these were among the white working people near the shoe factory.

methods of heating for the various sections.

Among the negroes, the table reveals that 92.3% of the families use stoves, 3.5% have furnaces, and 4.2% have a grate without other means of heating.

Table XIII
Methods of heating¹⁹

	Section	Stove	Furnace	Grate
I	a negroes	54	0	0
I	b whites	19	7	0
II	whites near shoe factory.	22	0	0
III	negroes	79	5	8 ²⁰
IV	mixed residence & business	10	4	0
V	University.	0	66	3 ²⁰

Among the whole group of white people, 39.8% of the families use stoves, and 60.2% have furnaces. Of those among the white people who use stoves, the great majority are found among the poorer people of the various white sections. It will be observed that 100% of the families in the University section use modern means of heating.

The above data show the distribution of this factor of welfare among the various groups, and indicates again the disadvantages placed upon the negro group and the poorer white people. It is not customary to consider the difference in the possession of a stove instead of modern methods of heating as of any serious concern. However, it would be interesting to know to what extent this item enters as a factor

¹⁹ - In this thesis the term "furnace" is arbitrarily made to include steam and hot water heat. The essential point is the fact of modern means of heating a house. ²⁰ - Of the 11 grates reported five of them are in conjunction with other methods of heating.

in the comparative death rates of children in such surveys as was made in Johnstown, Pa., and East Orange, N. J. The general comfort of a home certainly has a close relation to the health of the family. Therefore our data for Columbia is important enough for consideration.

CHAPTER VI

WATER SUPPLY

The people of Columbia are supplied with water from three sources. These are city water, surface wells, and cisterns.

The city of Columbia possesses a water system capable of furnishing an ample supply of wholesome water. The pumping station is located near More's Lake just north of the city limits. The water is pumped from six deep wells, and is distributed by the direct pressure method.

Elmer J. McCaustland, Professor of Sanitary Engineering, and Dean of the School of Engineering, University of Missouri, states that an analysis of the water supplied by the city pumping station shows it to be of a most excellent quality for domestic purposes.²¹ In regard to bacterial conditions, Prof. F. A. Baldwin, M. D., of the Laboratory of Preventive Medicine, University of Missouri, says that the city water in Columbia is entirely free from dangerous organisms.²²

The real problem in connection with the water supply in Columbia is that of an adequate distribution of city water. It is, therefore, important to discover how far the distribution of water in Columbia reaches toward a normal standard, or fails to reach it, as the case may be. This

²¹ and ²² - The writer secured verbal statements from Prof. McCaustland and Prof. F. A. Baldwin, M. D.

normal standard is "that each family should have its own supply of city water in at least one place in the apartment."²³

It should be emphasized that the standard requires city water. The extent to which city water is found to be distributed is shown by Table XIV. Among the negroes 54.6% of the families are supplied with city water. Among the white people 92% of the families use city water. Among the people of Section IV and V 100% of the families use city water, while among the white people living near the shoe factory only 70% of the families reported do so.

Table XIV

Extent of distribution of city water

Section	Families having city water	Families reported
I a negroes	23	57
I b whites	22	26
II whites near shoe factory. . .	14	20
III negroes	59	93
IV mixed residence & white . . .	16	16
V University	76	76

Of the 82 negro families who use city water only 10 have indoor hydrants. All but one family among the white people were reported as having indoor hydrants. For the remaining 72 families there are out-of-door hydrants located so as to supply groups consisting of from one to eight families. Only 26 families using city water from outside of the

23 - Veiller, Lawrence, Housing Reform, p 110. Charities Publication Committee, New York, 1910.

house have their own hydrant. The schedules show that there are two hydrants supplying eight families each. One of these is located in the district lying west of the Wabash Railroad (Section Ia), and the other is in the west negro section (Section III). In the latter section there is also a hydrant supplying seven families.

In view of the standard that each family should have in the house a hydrant supplying city water, we can see to what extent the above data show abnormal conditions.

Water Mains

A word should be said about the distribution of water mains over the city of Columbia. A study of the map showing the location of mains indicates that they extend into every part of the city in such a manner that water is quite accessible to any group of property owners who desire to install city water service for domestic uses.

Wells

The problem of water supply presents itself in another way when we turn to the question of the use of wells in Columbia. The report of the survey made in Topeka, Kansas, states that a well is a rural device, but a municipal menace."²⁴ The surface well has long been condemned by sanitary experts as a means of supplying water to people in a city. The

24 - The Survey, page 454, Vol. 32, 1914.

chief reason for this is because of the fact that it is so easily contaminated with germs, and thus becomes a means of spreading diseases, especially those which are due to intestinal bacteria of human origin.

William G. Savage says, "A surface well receives its water from the superficial pervious strata, so that its supply is greatly influenced by rainfall, while it is also liable to contamination from the soakage from organic matters on the ground in the neighborhood. Any harmful bacteria contained in such organic matter may be washed through the soil into the water of the well."²⁵ The author of this statement points out the ways in which wells are so contaminated. The closeness of a well to a source of contamination is the first he mentions. A heavy rainfall and a stiff soil are the two other factors in the ease with which bacteria find access to a well.

The number of wells in Columbia indicated by the returns from the typical sections surveyed constitutes a grave menace. The rainfall for this section of the country is fairly heavy, and the soil is very stiff, hence there is here supplied two of the factors mentioned by Mr. Savage which make wells a public menace. Adding to this the fact that so many privies were found by the surveyors, the danger from

25 - Savage, William G., Rural Housing, p. 211, T. Fisher Unwin, Publisher, London, 1915.

surface wells is multiplied.

Table XV

Number of wells in surveyed area

Section	No. in each section
I a negroes	29
I b whites	4 ²⁶
II whites near shoe factory.	9 ²⁶
III negroes	36
IV mixed residence and business.	2
V University.	4 ²⁷

Table XV shows a striking difference between the white and negro families for this item. Among the negroes there are found 65 wells, and among the white people there are 19. It should be observed also that the group of white families having the most wells are the working people near the shoe factory. There are, altogether, 84 wells.

Table XVI

Distance of well from house		No. feet					
Section		1-10	11-25	26-50	51-75	76-100	100
I a negroes		19	5	2			
I b		2	1	1			1
II		1		1			1
III negroes		20	15		1	5	
IV		1			1		

Table XVI indicates that there are 43 places where the well is 10 feet from the house or less. Of these, 39 are among the negro families. There are 64 places 25 feet or less from the house, of which 59 are among the negroes.

26 - Three of these wells were out of use.

27 - Two were out of use, and two were being filled.

Table XVII

		Distance of well from barn					
		No. feet					
Section		1-10	11-25	26-50	51-75	76-100	100
I a	negroes			2			
I b				1	6		
II				1			
III	negroes		6	7	1	6	
IV							
V							

There are comparatively few barns in the area surveyed. The automobile has displaced the family horse to such an extent that garages are found where barns would otherwise be. Table XVII shows that there are six wells which are 25 feet or less from the barn. There are 17 wells which are 50 feet or less from the barn. Altogether there are 25 wells which are 100 feet or less from a barn.

Table XVIII

		Distance of well from privy					
		No. feet					
Section		1-10	11-25	26-50	51-75	76-100	100
I a	negroes	2	10	9	1	4	
I b						2	
II			1	1			2
III	negroes	1	8	13	1	4	2
IV							
V							

Table XVIII shows that there are three houses where the well is 10 feet or less from a privy; 22 places are 25 feet or less; and 45 places are 50 feet or less from a privy. Of the 45 wells, only two are among the white people.

Of the 84 wells in the surveyed area, 23 are reported as being situated so that water can drain into them. This

would greatly increase the possibility of contamination from organic matters upon the ground. The returns are not complete upon the question of the manner of covering upon the wells, and also the state of repair in which the cover was found. However, those reported for these two items show that at least 42 wells, or 50% of the total, are covered with boards. The significance of this item is the fact that wooden tops on wells so easily deteriorate and make it, therefore, easier for pollution to enter the water. The schedules show that 12 well tops are in only a fair degree of repair, while 26 of them, or 30%, are in bad repair. A surface well in a city is a menace at the very best; it becomes much more so when it is left in bad repair.

The foregoing data emphasize the menace of the 84 wells found in the sections surveyed. The ease with which harmful organisms penetrate the type of soil upon which Columbia is located causes the wells in the city to remain continually a source of danger. The danger from intestinal bacteria of human origin becomes very serious in view of the fact that in the investigated area 59 privies stand upon the same lots in which there are wells. The state of bad repair shown for the coverings of many of the wells adds to the testimony against this source of water supply.

Cisterns

There remains the question of cisterns. There are only 29 such in the entire area surveyed. The schedules do

not show to what extent they are used for drinking water. A clue to this question is furnished when it is seen that among the negro families six of the cisterns are found where there is neither city water nor a well. There is one cistern located at such a place among the white people of Section I, and two cisterns at such places among the white people near the shoe factory. Of the 29 cisterns reported six are abandoned for any use whatever. In the mixed residence and business section (Section IV) and the University section (Section V) there are 10 cisterns, all located where there is city water. Three of them are abandoned.

No cistern was reported as having a filter while the returns for the question of whether they are leaky indicate that the investigators could not get the proper information for this item. As it is scarcely possible that more than six families use water from cisterns for drinking purposes it is not a very serious problem. However, it should be said that not a single family should use any other than city water for domestic purposes.

CHAPTER VII

SANITARY CONVENIENCES

Toilets

The first item we shall consider under the question of sanitary conveniences is that of indoor lavatories. The extent to which families have these in their homes is indicated by Table XIX.

Table XIX

		Number of lavatories	
Section		Places reported	No. of lavatories
I	a negroes	57	1
I	b whites	27	22
II	whites near shoe factory.	17	0
III	negroes	82	4
IV	mixed residence and business	14	12
V	University.	65	65

The table shows that out of 139 negro families only five of them have indoor lavatories. Of the 123 white families reported 99 of them have indoor lavatories. This means that 80.4% of the white families have such convenience, while only 3.6% of the negro families have them. A striking contrast is shown in comparing Sections II and V. The returns show that 100% of the families among the white working people near the shoe factory do not have indoor lavatories, and that 100% of the families in the University section do have them.

All of the lavatories with the exception of one located in Section III were reported upon the schedules as flushing satisfactorily.

As to the matter of ventilation in lavatories, all but four were reported to have good ventilation. The investigators classified two lavatories in the west negro section, one among the negroes of Section I, and one in the mixed residence and business section, as in a fair condition of ventilation.

The significance of the data concerning indoor lavatories in their relation to the question of sanitary standards are more vividly brought out in connection with the statistics concerning out-of-door toilets, or privies. The data for this item are presented in Table XX, which is literally the inverse of Table XIX.

Table XX

Showing number of privies		
Section	No. places reported	No. of Privies
I a negroes	59	54
I b whites	26	4
II whites near shoe factory.	20	20
III negroes	90	79
IV mixed residence and business.	17	0
V University.	67	0

Again, by drawing a contrast between the negro and the white families we find that 89% of the negro families have privies, while only 18.4% of the white families have them. The contrast between the whites near the shoe factory and the people of the University section is significant. Among the former 100% of the families have out-of-door toilets or privies; among the latter 100 % of the families have none.

Attention has already been called to the menace of privies in connection with water supplied from surface wells.

The danger²⁸ consists of the possibility of harmful intestinal bacteria finding their way through soakage to the water of the well, where the contamination may cause the spread of the disease. Means by which to prevent soakage

P L A T E VI

Showing type of privies found in the surveyed area. Note the dilapidated condition.

P L A T E VII

Showing privies standing on bank of Flat Branch and emptying into it.

28 - See Table XVIII in Chapter VI.

is provided for in only 13 privies in the entire area covered by the survey. The water tight boxes which are provided are of galvanized iron.

In the data under this item we saw in Table XVIII that there are 45 houses where wells are 50 feet, or less, from the privies; 22 places where they are 25, or less; and three places where they are 10 feet or less, from privies. Aside from the danger arising from the proximity of privies to wells, there is a further source of danger to be considered. Flies infest most of the out-of-door toilets by getting in through cracks and open doors. There they become laden with germs, and fly into the houses, lighting upon food, upon the mouths of persons, or in other ways coming into contact with people in such a way as to be always a positive danger. Sanitary science has come to look with real alarm upon both privies and flies.

In the surveyed area of Columbia only 24 of the 157 privies reported are screened. This indicates that flies and other germ carrying agents have free access at all times to 133 privies, or 84.7% of the total number. The schedules show that 30 privies, or 19.1% of the total number are full.²⁹

Among all the places investigated there are no privies which are connected with a sewer.

²⁹ - There is reason to believe that there are more. The data are incomplete, but at least, the above is a conservative estimate.

The cleaning of privies is very irregular and uncertain. Of those that are reported as being cleaned at all, there are only four which are cleaned as often as once a week. There are only 32 that are cleaned as often as once a month or less. Of those that are cleaned no oftener than once a year there are 63. There are six which the schedules show to be seldom cleaned, and two in Section III which empty directly into Flat Branch. This indicated that only 45% of the privies are cleaned at least once a year. In a few cases the persons answering the investigator on this point were rather non-committal, but the remaining 55% of the privies may be said to be neglected as far as cleaning is concerned.

The fly and the privy is a dangerous combination. "Swat the Fly!" is the slogan of a modern sanitary movement; but "Swat the Privy!" should be another slogan adopted. Such vile places as the out-of-door toilets which are found in this investigation can be nothing less than a positive menace to public health and welfare.

Bathing Facilities

We have mentioned in another chapter that every family should have a generous amount of city water available in its own house or apartment. Along with this, every family should have a bath tub -- a real bath tub. We said in Chapter II that a wash tub is not a standing invitation to take a bath. If a bath tub is considered as a necessary part of the domestic equipment in a house on Rosemary Lane, why not also in a

negro home on Ash Street?

In Table XXI is shown the number of places in the sections of the surveyed territory having bath tubs.

Table XXI

Showing homes having a bath tub

Section		Homes reported	Homes having bath tub
I	a negroes	60	.1
I	b whites	26	.22
II	whites near shoe factory.	18	0
III	negroes	93	0
IV	mixed residence and business.	14	.11
V	University.	65	.65

Among a group of 153 negro families reported under this item, only one family, that of a colored minister living in Section I a, has a bath tub. Of the working people east of the shoe factory (Section II) not one family has a bath tub. In glaring contrast to this is the fact that of 79 families reported for the mixed residence and business section (Section IV) and the University section (Section V) 76 of them have bath tubs. In the University section every family reported has one. Thus we see how part of the population is deprived of one of the means by which to improve sanitary conditions in the home.

In addition to the above data it is shown by the schedules that in the University section there are 13 homes having two bath tubs each, and two places having three each. These houses are used as dormitories for students of the University,

Sinks

Among the 153 negro families there are only five who

have a sink. Of the 97 white families reported under this item 71 have sinks. In the University section every family has at least one sink. The schedules show that in the group of whites in Section I b there are four families who have two sinks, and one family who has three sinks. In the University section 10 families have two sinks each; two families have three each; and two families have four each.³⁰

Sewer Connections, Leaky Plumbing.

All of the houses reported as having plumbing are connected with the city sewer. No house in the surveyed area is connected with a cess pool. However, there are cess pools in other parts of the city. Mr. N. H. Hickman, Sanitary Officer of Columbia says there are several about the city. He cites in particular two such in the northeast part of the city near Paris Road and Gordon Street. In the southeast part of Columbia there is a cess pool which takes care of the drainage of that part of the city known as the Highlands.

Only one house was reported as having leaky plumbing. The explanation of this is the fact that the families who have plumbing fixtures are those, with a very few exceptions, who live in good houses, and who are accustomed to rather high standards of housing conditions and who insist on keeping the plumbing in good repair. The evil of leaky plumbing is

³⁰ - There is reason to believe there are more, as the data for Section V are incomplete.

one which is usually found in connection with tenements for poor people, where cheap grades of plumbing fixtures are installed, and where it is considered cheaper to allow a leak to remain than to repair it.

CHAPTER VIII

SEWAGE CONNECTIONS

In the section west of the Wabash tracks (Section I) according to the schedules, there are out of 80 houses reported, 45 houses on streets in which there is not a sewer line. Of these 44 are located among the negroes, and one among the white people. Among the negroes there are three houses attached to the sewer, and among the white people there are 20 houses attached. In other words, only 5% of the negro families have sewer connections, while among the white people of this district 80% of the houses have sewer connections.

Among the white people near the shoe factory, (Section II), there are no sewer lines in the streets. Therefore, no houses are connected with a sewer. Coming over into the west negro section (Section III) we find that of 75 houses reported 34 of them are located on streets having no sewer lines. In this section 19 houses, or 25.3%, are attached. In the mixed residence and business section (Section IV) all the 17 houses reported are on streets having sewers. Of these houses 16 of them, or 94%, are attached. In the University section all of the houses are on streets which had sewer lines. Every house reported is attached.

The schedules show that 38 houses having sewage connections have the plumbing trapped. This is 30% of the houses reported attached to the sewer.

A study of the map in the office of the city engineer shows that drainage districts are pretty well distributed over the city with two or three exceptions. The territory occupied by the negroes of Section I is without any sewer lines except a line which runs as far east as the shoe factory on Wilkes Boulevard. The white working people near the shoe factory (Section II) have no sewer lines at all in their streets. Sewer lines are lacking in the west part of the west negro section. The area in which the deficiency exists lies between Walnut Street and Switzler Street, extending east and west from Garth Avenue to Third Street. Another section unprovided for lies outside of the area surveyed in this investigation. This section lies on both sides of Paris Road near More's Switch, extending southeast nearly to Amelia Street. The reason for the deficiency here is said by the city engineer to be a difficulty in topography, but he states that the sewer will be put in at some future time.

The data which have been given in this chapter reveal further the manner in which abnormal conditions tend to exist in far greater proportion among the negroes than among the white people, and also more among the working class than among the other whites.

CHAPTER IX

GARBAGE, SLUDGE, RUBBISH

The accumulation of garbage and rubbish, and the improper disposal of sludge is a violation of normal standards which enter into the making of good housing conditions. The improper care of refuse from various activities of the house makes possible the breeding of germs, and thus creates bad sanitary conditions; or it causes the surroundings of a home to have an unsightly appearance.

Garbage

Garbage may be defined as the refuse from the house of either vegetable or animal food. It is very evident that the accumulation of such refuse around or near the home of a family is a menace to health, because of the fact that harmful germs can easily develop in such matter when it decays. The manner of the disposal of garbage is presented in statistical form in Table XXII. It serves to show the great irregularity which exists in this matter. In other words, people are allowed to dispose of their garbage very freely, so far as any public regulation is concerned.

Among the negroes of Section I a only two families were reported as having the garbage hauled away, and from these places it is hauled daily. The frequency of the removal of garbage among the white people of Section I b ranges from once a month to once a day. There are four places where it is removed daily, and eight places where it is removed once

Table XXII

Showing the manner of disposing of garbage in the various sections. The number of families who practice each method is shown.

Section	Back yard	Burn	Feed to animals	Can, bucket or barrel	Other means
I a	13	20	16	6	2
I b	2	11	2	10	2
II	7	2	6	2	
III	20	7	28	12	
IV		1	6	5	
V		8	5	39	

a week or less. Among the white working people near the shoe factory (Section II) the garbage is hauled away from only one place, and this occurs two or three times a week. There was no removal of garbage by hauling reported for the west negro section (Section III). Among the families of the mixed residence and business section (Section IV) only one family was reported as having garbage hauled away. This is done twice each week. The matter is quite different in the University section (Section V). Here there are 50 families who have the garbage hauled away at regular intervals. Of these there are 20 families who have it removed daily. The frequency for the remainder of the families is two or three times each week. Special note should be made of the apartment houses in this section. At the two Smith Flats, known as the Rosalind and the Maryland, the garbage from each apartment is deposited for removal once a day, and the janitor sees that it is hauled away each day. The same practice prevails at the Dumas apartment house.

The data which have been presented on the disposal of garbage gives an idea of the degree to which this very important matter is neglected in view of its tremendous importance in connection with public sanitary policy. There is shown an utter lack of public official regulation in connection with garbage disposal, whereas, the city should have strict control in the matter.

Fargo, North Dakota is a city which furnishes us with a good example of what any such small city ought to do with regard to the disposal of garbage. Fargo is selected for comparison with Columbia because they are not so different in size,³¹ which makes the comparison more acceptable than were Columbia compared with a very large city and because a definite survey has been made of that city which furnishes comparable data.³² The city of Fargo in 1915 passed an ordinance which deals with the disposal of garbage. The law prohibits the occupant of any house or apartment to throw any garbage or filth upon or near the premises upon which the occupant lives. This does away with the careless throwing of kitchen refuse, etc., into the back yard, street or alley, a practice very common in many homes of Columbia.

31 - In 1915 the population of Fargo, N. D. was 19,350

32 - Elmer, Manuel C., Social Survey of Fargo, North Dakota. The Associated Charities, Fargo, N. D., 1916

The ordinance provides for covered cans of durable material, which are to be placed upon all premises under the direction of the proper official. The ordinance further provides for the regular removal of the contents of the cans as often as twice a week from private residences, and in the case of hotels having more than twenty rooms as often as once a day. This is for the time of the year between May 1st and October 1st. During the remainder of the year the removal must be at least once each week.

It is also provided that no one shall be allowed to engage in the removal of garbage except by authority of the health commissioner. Those who are authorized to remove garbage must use wagons which are water tight. These wagons are to be thoroughly cleaned and disinfected every week. One section of the ordinance gives permission to the auditor of the city to advertise for bids for the contract to remove garbage. There are a few other features of the law contained in other sections, but the general features outlined above give us an idea of a good system of regulation of garbage disposal which is in most striking contrast with the lack of public regulation in this matter in Columbia.

Sludge

Under this head we shall observe in what manner the people in the various sections dispose of such liquid refuse as dishwater, etc.

In Table XXIII the manner in which sludge is disposed

of is shown for each section.

In order to conform to the best sanitary standards the proper method of the disposing of sludge is pouring it into a sink connected with a sewer. In Chapter VII we saw to what extent sinks and sewer connections are wanting in the negro sections and among the families of the white people living near the shoe factory. Naturally, it is in these very sections that the method of disposing of sludge varies so much from the standard.

Table XXIII

Showing manner of disposal of sludge, and number of places using each method.

Methods	Sections					
	I a	I b	II	III	IV	V
Sink	2	21	1	2	13	62
Thrown in yard	42	3	11	57	1	
Open bucket	1	1	1	2		
Thrown in street	1			1		
Fed to hogs, etc.	6		2	3		
Barrel			1	4		
Thrown in stream				5		
Thrown in alley				2		
Thrown in privy	—	—	—	2	—	—
Total reported	52	25	16	78	14	62

In Table XXIII we find that only 3.7% of the negro families of Section Ia pour sludge into a sink connected with a sewer. In this group 80.7 throw the sludge upon the ground in the backyard. Among the white people of Section Ib 87.5% of the families pour sludge into sinks connected with sewers, and only 2.5% of the families throw it out into the yard. Turning to the white people of Section II, we find that only one

family reported as using a sink for the disposal of sludge. Upon examining the schedule card it is revealed that the house in which this family is located is not connected with a sewer. Therefore, we can say that among the white people near the shoe factory no family uses the proper means of disposal for sludge. Among the negroes of Section III only 2.5% of the families use the proper method of disposal. In this section 73.2% of the families throw sludge into the yard. Among the people of Section IV the ratio of those who dispose of sludge by the normal method is 92.8%. Only 7.2% of the families throw sludge into the yard. In Section V 100% of the people handle the sludge in the proper manner.

The data which have been presented above show the extreme variation among the negro families from the standard accepted, as well as among the white people near the shoe factory. One fact worthy of mention is that there are five families in Section III who throw sludge into Flat Branch. In connection with the fact that privies empty into Flat Branch there is here an indication of the way in which this stream, which flows by a large school building and a great number of houses, as well as under a grocery store, is polluted. The remaining figures of the table are separately not of sufficient importance for detailed discussion. However, they serve to emphasize the unsanitary way in which sludge is disposed of in the city of Columbia.

Rubbish

Rubbish is composed of such debris as tin cans, scraps of iron, bottles, broken glass, rags, etc. The data given under the head of rubbish reveals a great variety of ways in which it is kept. To procure a standard means of accumulating and disposing of rubbish is important. Rubbish scattered about is unsightly. Besides, it may be accumulated in such a way upon poorly drained lots that it can become a menace to health.

Table XXIV gives the data concerning the way in which rubbish is treated in the different sections of the area covered by this investigation. The figures represent the number of places where each means is practiced.

Table XXIV

Showing where families deposit rubbish.

Place	Sections					
	I a	I b	II	III	IV	V
Back yard	44	7	10	48	2	37
Street	1			5		
Barrel or box	6	12	4	9	6	15
Basement		2		1		13
Shed			1	1	1	1
Other places	1	3	1	9	1	

It is observed that the prevailing method of keeping rubbish is by depositing it in the back yard. The next prevailing method is that of placing rubbish in boxes and barrels. At six places the families admitted that they throw tin cans, etc., into the street.

The schedule did not provide for information upon the

question of how frequently the rubbish is removed. The existence of many unsightly piles of cans, bottles, etc., which are seen, especially in the negro sections, is evidence that the rubbish is, as a rule, not removed very often. As a matter of fact, most of the rubbish about the city is removed once a year. The city maintains an annual "clean-up-week" in the early part of May. Posters are placed in different parts of the city to inform the public of the matter. The people are urged to place the rubbish in a convenient place, and the city has it hauled away at public expense. A very efficient handling of rubbish is carried out at the Rosalind, Maryland and Dumas apartment houses in Section V. At the Rosalind and Maryland the rubbish coming from each family is placed in the basement in care of the janitor, who has it taken away twice a week. This plan is carried out strictly. At the Dumas the collection of cans as they come each day from the various apartments are scalded by the janitor. The rubbish is removed from the latter place once a month.

The subject of ashes may be treated as a part of the discussion of rubbish. The schedules show that there is great variety of ways in which ashes are handled. Table XXV shows the different methods used, and the number of families practicing each method. The normal method of disposing of ashes is to place them conveniently so that they can be removed at certain intervals. In view of this standard 55.8% of the negro families of Sections I a and III place the ashes

in a pile in the back lot, or in boxes or barrels. The remainder of the families scatter the ashes about the yard, in the street, or in other ways leave them as rubbish.³³

The proportion for the white people of Section I b is 80%. Among the white working people of Section II 37.5% of the

Table XXV

Showing how ashes are kept.

Place	Section					34
	I a	I b	II	III	IV	V
Back yard	31	16	6	45	7	38
Street	5		4	10		2
Cinder walk	6		1	4		
Driveway		1	4	3		
Levelling in yard	11		1	19		1
Basement						12
Barrel or box	1			2	1	1
Alley	1				1	2
Other means	3	3				1

families place the ashes for convenient removal while the remainder disposed of them in an abnormal way. Among the people in Section IV 100% of those reported place ashes convenient for removal. In the University section 91.2% of the families so deposit their ashes.

In the total area, as the table shows, there are 25 families who throw ashes into the street or alley, which should not be allowed. At 32 places the ashes are scattered promiscuously around the yards, leaving such places badly littered

33 - The percentages eliminate those who made driveways of ashes.

34 - This table leaves out the Rosalind, Maryland and Dumas apartments. Special mention is made of them.

up and unsightly.

As for the final disposal of ashes the returns show that among the negro families only 17 of them are reported as having them hauled away. Among the white people of Section I b 80% of the people were reported as having the ashes hauled. For the white working people near the shoe factory the schedules indicate that 30.1% of the families have the ashes hauled away. For Section IV 77.7% of the families and in Section V 85.9% of the families were reported as having the ashes hauled.³⁵

The data indicate that there is far less regularity in the final disposal of ashes among the negroes and among the white working people near the shoe factory. The result is that in these sections large heaps of ashes remain from year to year to give an unsightly appearance to many yards.

The remaining item under the subject of rubbish is that of manure piles. These can be unsanitary as well as unsightly if not properly disposed of. There were not many manure piles reported. It has already been stated that the automobile has so thoroughly displaced the horses that garages have largely displaced these.

Among the negroes of Sections I a and III there were six places reported which have manure piles. Of these one is

³⁵ - It may be fairly taken to mean that the remaining families in each section seldom have the ashes hauled.

disposed of once a week, another once a month, and another once a year. The three others were indefinitely reported upon the question of frequency of disposal. At four places the manure is scattered upon the garden belonging to the premises, and at one place it is hauled away from the premises entirely. The disposal of the remaining one is not reported. Among the white people of Section I b there were four places reported as having manure piles. Three of these are hauled away at least four times each year. The remaining one is scattered upon the garden. Among the white working people near the shoe factory only one manure pile was reported. There were no manure piles reported for Sections IV and V. The data indicate that this is not a wide spread menace in the sections surveyed.

C H A P T E R X

FIRE PROTECTION

Fire Plugs

The people of Columbia as far as the distribution of fire plugs is concerned, are well protected against disastrous fires. The fire chief states that the maximum length of hose carried upon the fire truck is about 1000 feet.³⁶ This is equivalent to a little over three blocks in length. The figures in Table XXVI which show the distance of the houses from hydrants in the various sections, indicate that all are well within reach of fire plugs.

Table XXVI

Showing distance of houses from fire plugs.

Section	Distance				
	$\frac{1}{2}$ blk.	1blk.	$1\frac{1}{2}$ blk.	2blk.	$2\frac{1}{2}$ blk.
I a	13	12	18	19	2
I b	10	9	1	4	
II	7	3	2		
III	51	20	16	5	
IV	13	3	1		
V	62	8			

While the table presents the conditions within the surveyed area only, a study of the map at the city building shows that fire plugs are placed over the city in such a manner that nearly all houses are within reach of water for fighting fire. There are a few houses scattered here and there far apart near the corporation line that are unprotected. They are near the open country in parts that have not long been within

36 - Statement from T. M. Walden, fire chief of Columbia.

the city limits.

Supply of Water

Six deep wells at the pumping station give the city access to a supply of water adequate to meet any emergency that may arise from fire. The concrete reservoir located at the pumping station has a capacity of one million gallons, which provides a reserve supply of water sufficient to meet any unusual demand, such as for a great fire.

Fire Department

There are four paid men in the fire department of Columbia, including the chief. These men are alternately on duty at the city building nineteen and one half hours per day, but they are subject to call during their leisure time. Telephones are provided that they may be easily accessible. The apparatus consists of a truck driven by gasoline motor power and carries a combination apparatus consisting of hose, chemical apparatus, and ladders. There is needed an additional truck to be used in case of more than one fire occurring at the same time. The matter of additional equipment is receiving very definite official consideration at the present time. The increase of fire fighting apparatus would, no doubt, considerably decrease insurance rates in the city.

It has been recommended in official circles that the proposed new apparatus include a pumper. At present it is necessary in order to furnish a stream of water sufficient for fighting a fire to increase the pressure of the pumps at the

pumping station. At times the pressure is raised to as much as ninety pounds. This becomes disastrous to plumbing, which in many houses is unable to resist such a force. Water mains have been known to burst under the strain. A pumper drawing water from a fire plug could furnish a large stream of water while leaving the pressure in the mains normal.

Fire Escapes

The dominant type of residence in Columbia is the house built for one family. Of these almost all are of two storeys or less. The negro tenements found in Section III are of one story each. There is scarcely any menace to life, therefore, in case of fire in dwellings. The occupants of the Rosalind, Maryland, and Dumas apartment houses, located in Section V, are well protected by fire escapes of iron construction, and they are conveniently located.

CHAPTER XI

FREEDOM FROM NUISANCES

In a sense, many of the abnormal conditions previously presented in this thesis may be called nuisances. A nuisance is the maintenance of anything which is, or should be, considered offensive to a neighborhood or community. Under the subject of nuisances there will be considered such things as junk heaps, rubbish piles, dirty streets and alleys, privies, live stock and open sewers.

Rubbish and Junk Piles

The careless disposal of rubbish has already been discussed in Chapter IX. This referred principally to the accumulation of rubbish upon individual premises. Often alleys are littered with debris and rubbish. An example of this is an alley in Section I a short distance from the shoe factory. It is just south of Wilkes Boulevard and lies between Webster and Clay Streets. This alley which has several negro families living in it, is extremely littered up with tin cans and various kinds of rubbish. Rubbish is thrown in streams, upon embankments, in fence corners, etc. Just west of the University a little off Stewart Road a place is used for the disposal of all sorts of debris, and it is very unsightly. The worst piles of rubbish found in this investigation are two such on the banks of Flat Branch. One of them is about half way between the M. K. and T. station and Stewart Road bridge. There is here a great accumulation of tin

cans, wire, brick-bats, broken-up concrete, manure, etc. Near this is a number of houses in which negroes live.

A very hideous pile of rubbish is found upon the west bank of Flat Branch about one hundred and fifty yards up the M. K. and T. from Stewart Road bridge. There are in this great mass of debris tin cans, scraps of tin and iron, wire, bottles, broken glass, rags, feathers, and worst of all, there are a great number of dead chickens in all stages of decay upon the top of this pile. The remains of a small animal of some kind is distinguishable. A family lives within fifty feet of this nuisance. Evidently, it has not come to the attention of the board of health.

There is great deal of junk as well as rubbish, scattered about in the blocks just west and south of the court house. The block west of the court house is notoriously hideous. Amid the ugly tenements and dilapidated buildings there is an unkempt appearance that is literally disgraceful to the city. In the alley running east and west through this block there are several families of negroes living in a tenement and who must endure the presence of these unsightly surroundings.

Two places where junk is piled deserve attention. There is a great accumulation of junk upon a vacant lot on Walnut Street opposite the court house. It is surrounded by bill boards, which do not succeed very well in hiding the

junk, which is exceedingly unsightly so close to the court house and business district. The other pile of junk is in

P L A T E VIII

Rubbish heap on bank of Flat Branch near
Stewart Road bridge.

a vacant lot on Fifth Street not far from the University. It also is very unsightly, considering its proximity to the University campus.

Dirty Streets and Alleys

The streets which run through the negro sections of the city have an extremely neglected and dirty appearance. Already mention has been made of the way in which rubbish is thrown into the streets. Added to this are the ashes and the weeds seen in the streets of these sections. There is considerable contrast between Clay Street in Section I and University Avenue with its pavement and carefully trimmed parkings.

In connection with this discussion of the conditions of streets Table XXVII is presented to show the number of fami-

lies in each surveyed section living on paved, surfaced, and dirt streets.

P L A T E IX

A section of Rogers Street in front of Christian College campus. A neat appearance is presented.

P L A T E X

A section of Walnut Street between Second and Third Streets. Negro families live in the houses shown.

Nearly every alley in Columbia is an "eye sore." They are usually dirty, for it is so tempting to throw ashes, manure and rubbish into them, and it is not considered a very serious matter. The alleys in Section III, the west negro section, are

extremely bad. They are very much littered up and generally dirty. Added to this are the weather-beaten and dilapidated sheds which add to the ugliness of the surroundings.

Table XXVII

Showing the number of families living on paved, surfaced, and dirt streets.

Section	Paved	Surfaced	Dirt
I a	6	2	57
I b	23	0	3
II	0	0	22
III	0	0	99
IV	15	3	0
V	68	0	3

In several of these alleys are the homes of negro families. There are five negro families living in an alley in Section I. They speak of themselves as living in "Webster Rear." This is probably an attempt to assume some little dignity in spite of their surroundings. The schedules show that there are nine negro families in Section III living in alleys. This is 10.4% of the families reported for this item. North and west of the surveyed section in this part of the city are found a number of alleys in which negro families have their homes. Usually in such cases there are houses facing the street upon the same lots.

Privies

Privies have already been mentioned in a previous chapter. They are, beyond a doubt, intolerable nuisances. Aside from the menace to health, their odor in the heat of the summer is very offensive. Most of the 84 privies in the

surveyed area are in a more or less dilapidated condition, and many of them are open beneath. Their offensiveness can be imagined.

P L A T E X I

A typical nuisance. A foul privy one block west of the city building.

Live Stock

Among the negroes of the surveyed area 1.6% of the families keep horses, 1.6% keep cows, 5.2% keep hogs, and 2.6% keep chickens. Among the white working people near the shoe factory 11.7% of the families keep horses, 11.7% keep cows, 5.8% keep pigs, and 47% keep chickens. Among the remaining white people of Sections I b, IV and V 1.7% of the families keep horses. Of those who keep cows the ratio is .9% none keep pigs, while 10.9% keep chickens.

These are a nuisance to the extent that manure is allowed to accumulate about premises without being removed at frequent intervals. Hogs are positively a nuisance, for the odor from pig pens is always extremely offensive. They should

not be tolerated within the city under any circumstances.

Open Sewer

An outstanding nuisance in Columbia is the open sewer known as Flat Branch and its tributary which flows by the gas works. There are several places in the negro district of which Section III is a part, where this open sewer runs down the street in front of the houses. Such is the case on Switzler Street, and for about two blocks on Third Street between Broadway and Park Avenue. In the other blocks it winds about back of the houses, cutting through the campus of the Fred Douglas School, passes under a grocery store on Broadway, and finally finds its way to the M. K. and T. railroad where its banks become the dumping ground for rubbish.

P L A T E X I I

Open sewer running down Ash Street between Third and Fourth Streets.

This stream receives pollutions from all sorts of debris thrown into it, from privies which empty into it, and

From the stream which brings the refuse from the gas house. At the south point of Section I this little tributary stream is a perpetual nuisance to the negro families living near the Wabash station. The stream flows within a few feet of their

P L A T E X I I I

Open sewer flowing past negro homes near corner of Ash and Third Streets

P L A T E X I V

Open sewer flowing back of negro houses near Wabash Station.

back doors with its slime and stench. Besides, it is a bit of scenery which catches the eyes of incoming visitors who get

an impression of it quite opposite to that of classic beauty. The nuisance of Flat Branch is possibly looked upon as of little concern because it flows by negro homes. If this is the case, so much the worse for Columbia's civic pride and her sense of social obligation.

P L A T E X V I

Front view of a grocery store on Broadway near the M. K. and T. Station.

P L A T E X V I

Rear view of same store showing Flat Branch, an open sewer, running under it.

C H A P T E R X I I

GENERAL REPAIR OF PREMISES

The state of general repair is judged by a number of items recorded upon Schedule I. These are the conditions of porches, chimneys, roofs, paint, etc. What has been already said in Chapter V about cracks around doors and windows is included in this chapter as a part of the discussion of general repair. The condition of walks is also included. The conditions are presented in a series of tables. For purposes of comparison the tables are arranged to show the conditions separately for the two negro groups combined (Sections I a and III), the white working people near the shoe factory (Section II), and the remaining group of whites (Section I b, IV and V).

Table XXVIII

Showing in terms of per cent. the conditions of general repair in Sections I a and III (negroes).

	Per cent.	Per cent.	Per cent. ³⁷
	good	fair	bad
Porch. . .	33.9 . . .	36.3 . . .	29.8
Back porch	22.9 . . .	36.4 . . .	40.9
Chimney. .	58.1 . . .	30.4 . . .	11.5
Spouting .	41.9 . . .	25.9 . . .	32.2
Roof . . .	33.3 . . .	40.0 . . .	26.6
Paint. . .	21.8 . . .	26.0 . . .	52.2
Yard walk.	18.3 . . .	22.0 . . .	59.7
Street walk	33.6 . . .	6.3 . . .	60.1
Flue . . .	71.5 . . .	14.5 . . .	14.0

³⁷ - The classification of the conditions of repair into good, fair and bad does not give exact measurement but the items tabulated could not be reduced to numerical equivalents.

Table XXIX

Showing in terms of per cent. the conditions of general repair in Section II (white working people near shoe factory).

	Per cent. good	Per cent. fair	Per cent. bad
Porch . . .	.80 . . .	10 . . .	.0.0
Back porch.	.40 . . .	56 . . .	.4.0
Chimney . .	.90 . . .	10 . . .	.0.0
Spouting. .	.66.6 . .	6.6 . . .	26.8
Roof . . .	.61.9 . .	23.8 . .	14.3
Paint . . .	.71.3 . .	19.0 . .	9.7
Yard walk .	.42.8 . .	9.5 . . .	47.7
Street walk	100 . .	0.0 . .	0.0
Flue . . .	100 . .	0.0 . .	0.0

Table XXX

Showing in terms of per cent. the conditions of general repair in Sections IV and V (mixed residence and business and University).

	Per cent. good	Per cent. fair	Per cent. bad
Porch . . .	93.0 . . .	5.0 . . .	2.0
Back porch.	80.6 . . .	9.3 . . .	0.0
Chimney . .	95.3 . . .	2.3 . . .	2.4
Spouting. .	90.4 . . .	0.0 . . .	9.6
Roof. . . .	90.0 . . .	7.5 . . .	2.5
Paint . . .	80.3 . . .	17.3 . . .	2.4
Yard walk .	.100.0 . .	0.0 . . .	0.0
Street walk	100.0 . .	0.0 . .	0.0
Flue . . .	97.5 . . .	0.0 . . .	2.5

The tables presented show the great variation in the condition of general repairs for the three groups selected for comparison. It will be observed that in the negro section the conditions of bad repair run from 11.5% to 60.1% for the different items enumerated. For the group of white working people near the shoe factory bad conditions run from 4%

to 47.7%. The conditons of bad repair in the remaining white sections range from 2.4% to 9.6%.

Another item in which the question of general repair is involved is the matter of cracks around doors and windows. Among the families of the negro groups 34.5% of the houses have cracks around the windows, and 52.6% have cracks around the doors. Among the white working people near the shoe factory no house has cracks around the windows, 4.7% of the houses have cracks around the doors. For the remaining white sections the ratios for these two items are 8.3% and 9.4%, respectively. The variation toward bad conditions in the negro sections is shown by these figures.

As for the number of places where window panes are missing among the negroes 32.3% of the homes have windows with panes missing; while among the white working people near the shoe factory no house was reported as having window panes missing. Among the remaining white people only 3.1% of the houses have panes missing.

Another item is that of leaky roofs. Among the negroes 40.1% of the houses have roofs which allow water to leak through. Among the white working people only one house, or 5.8% of the total number of houses reported, has a roof that allows water to enter. Among the remaining group of whites 18.7% of the houses reported have roofs which leak.

These latter items confirm the evidence shown in the tables at the beginning of this chapter that bad conditions

of repair tend to characterize a far greater proportion of the homes among the negroes than among the whites, with the white working people near the shoe factory showing conditions not nearly so bad as among the negroes, nor nearly so good as among the remaining white people, who live in Sections I b, II, IV, and V.

P L A T E X V I I

Where some people live.

P L A T E X V I I I

Where other people live.

CHAPTER XIII

HOUSING CODE

In the previous chapters, the conditions of housing in Columbia have been presented as they are found in the typical sections selected for investigation. There is a housing reform movement which is carrying on a very definite propaganda in the United States and the countries of Western Europe. It has evolved a specialized form of social investigation for the purpose of scientifically dealing with the problem. There are two ways, principally, in which those carrying on this movement seek to bring about a solution of the housing problem. These are the education of the public through various methods of social propaganda, and also through the enactment of housing codes as city ordinances or other forms of public investigation.

Housing Laws in Columbia³⁸

The following list presents the requirements in the city ordinances of Columbia which deal with the conditions of housing that have been discussed in this thesis:

A law requiring persons owning property on a street having water mains to install city water for flushing closet, providing property is within 150 feet of a sewer.

38 - Revised Ordinances of Columbia, Missouri, 1916.

A law requiring installation of water closets in houses which are within 150 feet of a sewer. In other places the owner to provide a closet as approved by board of health.

A temporary privy to be properly screened and maintained in a sanitary manner.

Privies to be cleaned at expense of owners at times fixed by sanitary inspector.

Sewers to be constructed in each district of the city when the majority of property owners resident in said district shall petition, or whenever city council shall determine.

Private sewers to be controlled by the city.

Gutters and privies not to empty into city sewer.

Each building to be separately connected with sewer.

Plumbers to be licensed by city and under control of city engineer.

Every closet, sink, bath tub, etc., to be separately trapped.

Vent pipes to be of durable material and approved construction.

Householders not to allow accumulation of garbage on premises except in manner approved by city.

All householders, tenants, hotels, boarding houses, etc., to provide covered cans of approved stan-

dard for disposal of garbage, tin cans, broken glass, etc.

Filth and garbage or rubbish not to be deposited on streets or in any alleys.

Sanitary inspector to supervise the disposal of contents of privies, garbage, rubbish, manure, etc.

None but licensed scavengers to be allowed to handle such refuse.

Vehicles for such work to be approved by city according to sanitary requirements.

Refuse not to be thrown into ponds, gullies, drains, nor into any well, spring, fountain, drinking place, or any body of water from which drinking water is taken.

Animals not to be kept in unclean pens.

Carcasses not to be kept undisposed for more than six hours in any private or public place.

All buildings over two storeys in height to have fire extinguishers.

Fire hydrants not to be obstructed in any manner.

Hours for burning trash restricted.

Depositing, keeping or storing of combustible material restricted.

Law establishing fire limits. Certain structures prohibited in fire limits.

Law prohibiting erection or maintenance of flues

considered unsafe by fire chief.

Fire escapes of approved standard required for dwellings three or more storeys in height³⁹.

A Model Housing Law⁴⁰.

The following items of a model housing law serve as a contrast to the laws contained in the Columbia ordinances. The items given furnish only the broader outlines of a housing code.

Light and Ventilation

1. Laws regulating the height of buildings and the percentage of the lot space which they shall occupy, to protect occupants of such houses from poor lighting and ventilation. Inner courts to be regulated in size and manner of construction.

2. Laws regulating lighting and ventilation of rooms by requiring minimum standards with reference to number and size of windows in rooms of all dwellings. Size of rooms also to be regulated by minimum standards.

3. Laws requiring that access to all rooms, bedrooms, water closets, etc., be arranged in such manner

39 - This law compares favorably with the regulations concerning fire escapes in large cities where the requirements are rigid.

40 - Aronovici, Carol, Housing Conditions in the City of St. Paul, The Housing Commission of the St. Paul Association, pp. 103-120, St. Paul, Minn. 1917.

that they can be entered without passing through a bedroom.

4. Law requiring proper ventilation and lighting of all water closet compartments and bath rooms. Also the proper lighting of public halls in multiple buildings. Size of windows for stair halls to be regulated.

5. Screens to be provided by owners to placed on windows between May 15 and October 15 of each year.

Sanitation.

1. Law forbidding persons to live in cellar or basement rooms.

2. Law requiring water proofing and proper lighting of cellars and basements.

3. Law requiring running water and sink in each house or compartment. Also water closet placed and constructed according to approval of proper sanitary authorities. Required that there be one for each family.

4. Law forbidding erection of multiple building on street where there is no water main or sewer.

5. Plumbers and plumbing to be under control of sanitary authorities.

Fire Protection.

1. Law requiring houses over three storeys in height to be thoroughly fire proof.

2. Law providing for standard equipment of fire

escapes and two or more ways agress, the former to be applied to multiple dwellings three storeys or more in height, the latter to multiple dwellings of any size.

3. Law requiring stairs to be constructed so that they shall furnish easy means of egress, and that stair halls be properly lighted. Entrance halls, elevators, shafts, to conform to certain regulations for fire protection.

4. Law prohibiting the erection of wooden multiple dwellings more than two storeys in height.

5. Law regulating fire walls in multiple dwellings Outside stand pipes required for buildings exceeding three storeys in height.

Alterations.

Laws prohibiting the alteration of existing buildings in such manner as to violate laws governing the erection of new buildings.

Maintenance.

1. Law requiring owners of multiple dwellings to maintain proper light at night in all public hallways.

2. Law prohibiting water closets in cellars. Water closets to be provided for existing buildings according to sanitary requirements. Rooms in basements already existing before passage of law not to be occupied by persons for living or sleeping purposes.

3. Law requiring floors around sinks and water

closets to be kept in good condition.

4. Law requiring buildings to be kept in good repair.

5. Law regulating cisterns and wells where city water is not accessible.

6. Law requiring sanitary catch basins at houses located where there is no sewer accessible.

7. Law requiring the maintenance of cleanliness about dwellings. Old wall paper required to be removed when so ordered by health officer.

Improvements.

Laws under this head provide that dwellings existing before passage of housing law may be required to be standardized according to certain approved standards of sanitation, etc.

Building Permits.

A body of laws requiring persons desiring to build one or more dwellings to secure a permit from a city officer who shall have regular jurisdiction in such matters. Alterations of certain kinds of buildings to be also regulated by official permits.

Violations and Penalties.

Laws setting forth the penalties for the violation of the laws mentioned above, and the procedure to be taken in prosecuting cases against violators.

CHAPTER XIV

SUMMARY, CONCLUSIONS, SUGGESTIONS

Summary

1. Crowding of buildings on lots

Number of families in houses on inside lots covering over 60% of lot:

Negroes	22	15.1%
White people near shoe factory	0	0
Remaining whites	1	.8%

2. Crowding in house

a. Average number of persons per room:

Negroes	1.0
Whites near shoe factory	.8
Remaining whites	.5

b. Proportion of number of families exceeding standard of $1\frac{1}{2}$ persons per room:

Negroes	21.3%
Whites near shoe factory	0.0
Remaining whites	3.2%

c. Proportion of number of families having more than one bed per bed room:

Negroes	26.6%
Whites near shoe factory	24.9%
Remaining whites	13.5%

d. Proportion of number of families who use sleeping rooms for living rooms:

Negroes	71.4%
Whites near shoe factory	53.0%
Remaining whites (not given)	7.2% ⁴¹

e. Proportion of number of families who have kitchen and dining room combined.

Negroes (section I a only)	79.5%
Whites near shoe factory	58.0%
Remaining whites	0.0%

⁴¹ - Not including student dormitories.

3. Privacy

Proportion of number of families that have rooms which must be entered through other rooms.

Negroes	53.4%
Whites near shoe factory	50.0%
Remaining whites	11.1%

4. Lighting

a. Proportion of number of houses dark:

Negroes	35.0%
Whites near shoe factory	0.0%
Remaining whites	0.0%

b. Proportion of number of families using kerosene lamps:

Negroes	95.0%
Whites near shoe factory	88.0%
Remaining whites	17.0%

5. Ventilation

a. Proportion of number of houses not having cross ventilation:

Negroes	14.0%
Whites near shoe factory	2.5%
Remaining whites	0.0%

b. Proportion of number of families who sleep with windows closed:

Negroes	56.2%
Whites near shoe factory	2.7%
Remaining whites	0.0%

c. Proportion of number of families having windows closed when investigator called:

Negroes	69.0%
Whites near shoe factory	45.5%
Remaining whites	33.4%

6. Heating

a. Average amount of house heated:

Negroes	70.5%
Whites near shoe factory	44.6%
Remaining whites	71.5%

b. Proportion of number of houses having cracks around doors and windows:

	Doors	Windows
Negroes	55.0%	40.6%
All whites	10.4%	6.8%

c. Proportion of number of families having stoves:

Negroes	92.3%
All whites	39.8%

7. Water supply

Proportion of number of families having city water:

Negroes	54.6%
Whites near shoe factory	70.0%
Remaining whites	100.0%

Number of families having wells:

Negroes	65
Whites near shoe factory	9
Remaining whites	10

8. Sanitary Conveniences

a. Proportion of number of families having indoor lavatories:

Negroes	3.6%
Whites near shoe factory	0.0%
Remaining whites	80.4%

b. Proportion of number of families having privies:

Negroes	89.0%
Whites near shoe factory	100.0%
Remaining Whites	3.6%

c. Proportion of number of families having bath tubs:

Negroes	0.6%
Whites near shoe factory	0.0%
Remaining whites	93.3%

d. Proportion of number of families having sinks:

Negroes	3.2%
All whites	73.1%

9. Sewage Connections

Proportion of number of houses on streets having sewer connections:

Negroes	68.4%
Whites near shoe factory	0.0%
Remaining whites	95.8%

10. Garbage, Sludge and Rubbish

a. Manner of disposing of garbage:

aa. Negroes

Back yard	26.6%	families
Burn	21.6%	"
Feed to animals	35.4%	"
Can, bucket or barrel	14.5%	"
Other means	.1%	"

bb. Whites near shoe factory

Back yard	41.1%	"
Burn	11.6%	"
Feed to animals	35.2%	"
Can, barrel or bucket	0.0%	"
Other means	11.6%	"

cc. Remaining whites

Back yard	24.4%	"
Burn	24.4%	"
Feed to animals	15.0%	"
Can, barrel or bucket	79.1%	"

b. Manner of disposing of sludge:

The negroes are represented by I a and III, the whites near shoe factory by II and the remaining whites by I b, IV and V. The percentages represent proportion of number of families.

Methods	Sections		
	I a & III	II	I b, IV, V
Sink	3.7%	6.2%	95.4%
Yard	75.2%	68.2%	3.9%
Bucket	2.2%	6.2%	1.0%
Street	1.5%		
Feed	6.8%	12.4%	
Barrel	3.0%		
Alley	3.8%		
Stream	1.5%		
Privy	1.5%		

c. Manner of disposing of rubbish:

Place			
Yard	73.6%	62.0%	46.0%
Street	4.8%		
Barrel or box	12.0%	24.8%	33.0%
Basement	.8%		15.0%
Shed	.8%	6.2%	3.0%
Other places	7.2%	6.2%	4.0%

d. Manner of disposing of ashes:

Back yard	53.2%	37.2%	79.3%
Street	1.0%	24.8%	22.6%
Cinder walk	7.0%	6.2%	
Driveway	2.1%	24.8%	1.3%
Basement	21.0%	6.2%	1.3%
Barrel or box	2.1%		15.6%
Alley	0.7%		2.6%
Other means	2.1%		2.6%

11. Fire protection

The statistics show that all families in the surveyed area are well within reach of a fire plug.

12. Families living in alleys

The data show that 9.3% of the negro families that live in the surveyed area live in houses located in alleys.

Conclusions

1. Fortunately there is very little crowding together of dwellings in the city as judged by the schedules filled out in the surveyed area. Even among the negro families nearly all the houses have sufficient lot space to prevent encroachment upon the standard set up by model housing laws concerning this matter. All of the houses among the negroes are of the one and two stor^y type of cottage dwelling. Even the tenements found in Section III are each only one stor^y in height. The vacant portions of the lots upon which the houses of the white people near the shoe factory stand are unusually spacious. Among the remaining white people the houses are thoroughly free from crowding upon the lots. These conditions indicate that the crowding of dwellings upon one another is not a serious menace in Columbia at the present time.

2. While conditions of indoor crowding are far less abnormal than they are in large cities where there are tenement districts, the data presented in previous chapters show that a great many negro families are compelled to occupy houses which are too small for normal and decent living conditions. Bed rooms are so arranged that the right of privacy, a matter of serious interest to social morality, is denied the occupants.

3. There is very much disregard in the proper ventilation of houses, especially in the negro sections.

4. A number of houses in the negro sections do not allow sufficient sunlight to enter, a condition unfavorable to health.

5. The public health is menaced continually by the existence of a great number of surface wells, privies, and rubbish heaps; by the careless disposal of garbage, sludge and rubbish upon or near premises; and by the presence of open sewers flowing through thickly populated parts of the city.

6. The sanitary regulations of the city, such as they are, concerning these matters are grossly violated. The ordinances regarding privies and the installation of water and sewer laterals and water closets are practically ignored.

7. The city is well protected against ordinary cases of fire. The water supply is adequate, and nearly all houses can be reached with the fire hose. However, should two fires break out at the same time the fire departments would be handicapped by lack of apparatus to meet such a situation. The investigation shows that few dwellings are of such a character as to require fire escapes. The flats in Section V, which are all three storeys in height, are provided with fire escapes in a manner approved according to the best standards. The city ordinance dealing with fire escapes compares favorably with the standard requirements in the larger

cities.⁴² There is lacking a body of laws regulating the construction of halls, stairways, firewalls, etc., for multiple dwellings where egress should be made as easy as possible in case of fire.

8. The houses of the negroes are, as a rule, in a bad state of repair. Many of them are shacks unfit for human habitation. The homes of the white working people in the surveyed area appear very much better upon the schedule cards in regard to conditions of general repair, although they fall far below the conditions presented by the returns from the remaining white sections. In the University section conditions of repair are, on the whole, very good.

9. Those alleys in which the negro families live are in such condition that they are extremely undesirable locations for dwellings. A most hideous alley is found directly opposite the court house, and runs east and west between Sixth and Seventh Streets. In this alley are two tenement houses, one of which is inhabited by negro families. In fact the general aspect of the entire block is such that should a stranger be visiting the city one would hesitate to take him through the court house for fear he might look out of the west windows.

10. The city ordinances that deal with the various fac-

⁴² - The law for fire escapes measures very well with one presented in the model housing law of Carol Aronovici for St. Paul, Minn., See "Housing Conditions in the City of St. Paul", pp. 111, 112. Housing Commission of the St. Paul Association, St. Paul, Minn., 1917.

tors which determine housing conditions are very inadequate. For example, there is in the ordinances of Columbia no law to regulate the construction of dwellings so that they shall conform to such sanitary requirements as good lighting and ventilation. No city law restricts the size of buildings upon lots, or regulates the size of space between dwellings. The ordinances do not prevent halls and stairways from being poorly lighted. A toilet may be placed in any part of a dwelling from basement to attic, whether for use by owners or tenants in either single or multiple dwellings. And there is no law requiring owners of houses equipped with indoor toilets to have these toilets ventilated properly.

11. The streets among the white people in the area surveyed are kept in good condition in most cases. The paved streets are confined to the sections occupied by the white people of Section I a, the mixed residence and business section (III), and to the University section (IV). The appearance of the pavements and parking on these streets is generally good. In the section occupied by the working people near the shoe factory the streets present a reasonably good appearance. In the negro sections the streets are mostly neither paved nor surfaced in any way. They are generally neglected and dirty.

12. The arrangement of the data shows the wide variation of housing conditions among three groups, viz., the negroes, the white working people near the shoe factory, and the white people of Sections I b, IV and V, who belong mostly to the business, professional or student class. Among the negroes the con-

ditions are, on the whole, very bad. There is probably too much of the idea that "anything is good enough for a nigger." Among the white people near the shoe factory the conditions are generally far better than among the negroes, but they are very far below the conditions prevailing among the remainder of the white people of the surveyed area. In the University section there are districts, such as Hitt Street and Rosemary Lane, where the housing conditions are subject to very little criticism according to the best standards of proper housing conditions.

Suggestions

1. That an ordinance be enacted regulating the construction of dwellings to conform to principles of good lighting, ventilation, privacy, fire protection, etc.

2. That a more thorough control be exercised over the handling of garbage, rubbish, junk, the cleaning of privies, scavenger wagons, etc. Also there should be a law forbidding dump heaps inside the city.

3. That the general extension of water mains and sewer service to dwellings now without it be carried out.

4. That the problem of the Flat Branch nuisance be taken up for solution.

5. That owners of dwellings be made to keep them in good repair.

6. That a housing code be accepted which shall be adequate to control the general housing conditions more thoroughly.

7. That a propaganda be carried on to educate the pub-

lic with reference to actual housing conditions in Columbia, upon what is being done in other cities to remedy abnormal conditions and to urge that the abnormal conditions in Columbia should be eliminated.

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