

THE REPORT OF THE LAWRENCE SURVEY

STUDIES IN RELATION TO LAWRENCE, MASSA-
CHUSETTS, MADE IN 1911, UNDER THE ADVICE
OF FRANCIS H. MCLEAN BY ROBERT
E. TODD AND FRANK B. SANBORN
AT THE PROCUREMENT OF
THE TRUSTEES OF THE
WHITE FUND

LAWRENCE, MASSACHUSETTS

1912

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CONTENTS

	PAGE
INTRODUCTION by Wilbur E. Rowell	17
THE PLAN OF THE SURVEY by Francis H. McLean	20
TOPOGRAPHY OF LAWRENCE by Arthur D. Marble	22
LETTER OF THE CITY ENGINEER	24
PART I. HOUSING CONDITIONS	
BY ROBERT E. TODD	
HOUSING CONDITIONS	
The Early Houses	31
Future as City of Tenements	33
Fire Burden and Menace	35
Coming Conflagration	39
Houses Classified by Height	48
Huddle Fever	49
House Census	50
Land Occupied by Houses	58
Density of Population	60
Light	61
Sanitary Equipment	65
Tenement Maintenance	67
Building Regulations	81
Center's Future	87
✓ Social Results of Bad Housing	108
The Remedy	111
Housing Legislation, Dire Need of	115

THE REPORT OF THE LAWRENCE
SURVEY

INTRODUCTION

By WILBUR E. ROWELL

The City of Lawrence is essentially an industrial community. It was intentionally created to be such a community. First came the recognition by a land surveyor of the water power existing here in the Merrimack river. Next was enlisted the interest of Boston merchants and manufacturers. In 1845 was begun the erection of a dam across the river. There was no village on the site of the present city. The power was developed and factories were built, and people came here to do the work of construction and operation. It is not exactly true to say that the manufacturers brought people here, either in the forties and fifties or in recent years. Opportunities were offered and people came. First came people of New England birth, and English and Scotch workers skilled in textiles; then came Irish, later French Canadians and Germans, and recently people from the Mediterranean shores and Eastern Europe.

It is to be noted that the impulse for growth has never come from within the city's own life; but always from abroad. Men living elsewhere have built mills in Lawrence, and a population has gathered and swelled in numbers to perform the labor of carrying on the industries. Accordingly, the traditions and resources of a self-contained, or self-sufficient society have never been available in the development of the city. Whatever community good has been achieved has been such as a society of working people could gain for themselves, under the favorable laws and customs of this Commonwealth. Whatever may be lacking is to some extent explained and excused by the same considerations.

Lawrence is like a great workshop, so to speak. It is not the trading centre of a surrounding territory; nor the social centre of outlying villages; nor the home of families who have won wealth or culture in past generations. Many a city of half its size does have all these characteristics; and it is obvious that they are important elements in the common welfare of such cities. Lawrence has always had the difficult problem of the conduct of manufactures in a manner to secure prosperity on the one hand

and the welfare of the working people on the other. The writer likes to think that his city is working out a typical modern problem for other communities as well as for itself; that our troubles and our shortcomings are not due to peculiar faults of our own, but belong to nearly every American industrial city; and that if one has faith in the future of our country as a whole, he is entitled to cherish the same faith in the worthy future of this city.

The following studies are intended as a partial self-examination, undertaken in the hope that better understanding may lead to better achievement. The idea had been in the minds of the trustees of the White Fund for some time when they found themselves able to secure the assistance of Mr. Francis H. McLean, then Field Secretary of the Charity Organization Department of the Russell Sage Foundation, now General Secretary of the National Association of Societies for Organizing Charity. Mr. McLean came to Lawrence in December, 1910, and laid down the plan of the Survey. Mr. Robert E. Todd was secured to conduct the examination of housing conditions. Mr. Todd brought to this work the results of much experience in similar investigations elsewhere, and an extremely wide and accurate knowledge of this particular subject. The health investigation was conducted by Mr. Frank B. Sanborn, Professor of Civil Engineering in Tufts College. Prof. Sanborn had given special attention to hydraulic and sanitary engineering, and had experience in similar investigations. Mr. Todd and Prof. Sanborn upon beginning their respective tasks were given full and independent control of the investigations which they conducted. The entire expense of the Survey has been paid by appropriations from the White Fund.

It remains to give a brief account of the White Fund. One of the men born on the farms that occupied the site of Lawrence was Daniel A. White. His birth was in the year of the Declaration of Independence. He was a graduate of Harvard College of the Class of 1797. He was a member of Congress, and later for many years judge of the Essex Probate Court. In 1852 he gave to trustees a considerable tract of land, of which the site of the present Public Library building is a part, to be sold so that the proceeds should provide a fund for the maintenance of a course

of lyceum lectures. It is interesting to notice that Judge White was seventy-six years old when he established this fund and that he had lived nearly all his life away from the town of his birth, being then a resident of Salem. It was according to the best New England traditions that he should feel a responsibility for the new city which was growing up about his birthplace, and should make a generous provision for its welfare. The fund much exceeded the needs of the lecture course; happily the founder foresaw this possibility, and the trust contains the broad power to use the fund "to promote the moral, intellectual and Christian advancement and instruction of the inhabitants of the town of Lawrence."

The trustees of the White Fund with their terms of service have been as follows:

CHARLES S. STORROW,	1852 - 1865
NATHANIEL G. WHITE,	1852 - 1886
HENRY K. OLIVER,	1852 - 1873
GEORGE D. CABOT,	1865 - 1898
JAMES H. EATON,	1873 - 1901
CHARLES U. BELL,	1887 -
WILBUR E. ROWELL,	1899 -
WALTER E. PARKER,	1901 -

The lecture course was begun in 1864. The introductory lecture was by Dr. James Walker, President of Harvard University; the other lecturers of that year were Rev. George Putnam, Richard H. Dana, Jr., Rev. Joseph P. Thompson, Ralph Waldo Emerson, and Oliver Wendell Holmes. While it is to be feared that not every course has reached that standard, it is true that eminent men have been heard in every year; and that courses of a high degree of excellence have been of frequent occurrence. Many undertakings for the public welfare within the terms of the trust have received assistance from its funds.

THE PLAN OF THE SURVEY

In the winter of 1910-11 the writer was requested by the Trustees of the White Fund to recommend to them a certain line of social inquiry, the cost of which would come within certain limitations fixed by the free income of the fund. At the same time, though naturally this has not been embodied in any formal action, he was informed that dependent upon the values revealed in this investigation, might be further action of the Trustees in later years, as their funds permitted other investigations of a similar character. In other words, he was made to understand that this proposed first inquiry, while self-contained, need not be considered as the whole, but as part of a possible whole yet to be created. Outside of these considerations no limitations whatever were put upon the scope of the proposed investigation, nor was the slightest suggestion made by any of the Trustees as to the advisability of this or that field being omitted because of the economic and social make-up of Lawrence. The only limitation in fact was that the investigation should cover Lawrence and be for the education of its citizens, thus coming within the provisions of the trust imposed upon the trustees of the Fund.

Armed with such a *carte blanche*, so far at least as offering proposals were concerned, it was evident that what was required was to find some principles of elimination which would logically point out our field. Much ground could be covered superficially, or a more limited area with some greater degree of thoroughness. No other policy than the last was thinkable, considering the circumstances. An educational fund, such as the White Fund, could not publish anything which was not thorough as far as it went.

Therefore it was evident that a search should be made for the definite beginning point, and that proceeding along the road which there lay stretched out, we should travel just as far as we could and still see what in detail lay on both sides of the road.

Naturally the beginning point seemed to be some understanding of topography and physical characteristics. Following that, those conditions which affect all, or nearly all; and what could these be excepting questions of public health and of housing. Housing is mentioned apart from public health because it presents other problems than the purely physical. In the first drafts of the plan submitted there were schedules covering education and public recreation. But

it soon became evident that these could not be reached. This for the reason that the extremely serious housing conditions, revealed by the most superficial of observations, plainly indicated that a very highly specialized and extensive investigation would here be required. In the field of public health it was later revealed that as extensive an investigation would have to be made of milk, another one of the fundamentals affecting all. Another fundamental, water, required no such inquiry. So our fundamentals are housing, milk, water, other general public problems, prefaced by a topographical sketch. So to a later day must be postponed consideration of education, recreation, child welfare, and so on along the line to living and economic considerations.

But the foundations have been laid, and the fundamentals which affect all community life, have been presented.

Two experts have been engaged in making the investigations which are here presented. The soundness of their methods and the scientific character of their researches are evident. So far as their individual deductions or conclusions are concerned they stand essentially as they have been presented and for their individual verity the investigators themselves must be responsible.

In closing this introduction it is well to say that this is to be no fruitless investigation, but that the first steps have been taken to form the necessary organization to carry on the propaganda for the successful attacking of those evils which these investigations reveal.

FRANCIS H. McLEAN.

TOPOGRAPHY OF LAWRENCE

Lawrence is situated on both sides of the Merrimack River, about twenty-three miles from its mouth, in the heart of a fertile country, wooded to perhaps 10 per cent. of its area, within a radius of five miles. The city is bounded on the north by Methuen, on the east by the Merrimack and Shawsheen rivers, which separate the city from the town of North Andover, on the south by Andover, and on the west by Andover and Methuen. The territory of the city extends about a mile and one-third north and about a mile and one-half south of the Merrimack, and is about three miles in extreme width east and west. The area is about 4577 acres, 2097 being south and 2216 north of the Merrimack, with about 264 acres in the river itself. The Shawsheen river, about fifty feet wide, which forms a part of the eastern boundary of the city, winds gracefully through a wooded defile, about twenty feet below the broad and gently sloping sandy plain, which at an average elevation of fifty feet above sea level stretches southerly from the Merrimack to the range of wooded hills, extending at an elevation varying to 200 feet above sea level, along the entire southern boundary. In the westerly section of this range are located the quarries of gneiss which furnish the stone for the foundations (and in one important case, of the superstructure), of all the principal buildings of the city. This ledge which underlies the whole ridge appears to terminate in an abrupt wall of rock some fifty feet high, known as Den Rock, around which cluster many weird legends.

The Merrimack, which is about 600 feet wide, is crossed obliquely a little above the centre of the city by the great dam, 900 feet long, and from near it run the two canals down along each bank of the river, the lesser one on the south, the principal one on the north, furnishing the water power for the mammoth mills which form the life of the city. North of this canal in a valley something over a mile wide, and averaging, like the plain on the south of the Merrimack, fifty feet above the sea, is located the most populous part of the city. Bounding this valley on the west rise the twin summits of Tower Hill to a height of 245 and 248 feet above the sea.

This hill is in the line of the famous "Indian Ridge" which Dr. Hitchcock particularly mentions, and which has been studied and mapped for a distance of some thirty miles. The nucleus of this hill

as also of Prospect Hill on the east, belong to the "till" or ground moraine, with superficial deposits of sandy gravel covering the whole eastern slope to the summit. Extending to the north the valley terminates at the foot of the more gentle slopes of Clover Hill, the summit of which, 153 above the sea, has been called Sunset Ridge. On the east is Prospect Hill, which attains an elevation of 190 feet above sea level, with a moraine of sandy gravel covering its eastern slope.

The Spicket River, (about the size of the Shawsheen) falling forty feet in its course through the city, furnishing three mill privileges (one of which has been purchased by the city) runs in an easterly direction about midway through the northern portion of the city to Prospect Hill, where it turns abruptly almost at right angles and flows in a southeasterly direction along the foot of the hill, and discharges into the Merrimack River about half a mile above the mouth of the Shawsheen.

The surface of the valley is generally composed of drift deposited several feet deep upon trap rock, which crops out above the general surface in various places forming a line of low elevations extending in a northeasterly direction from south of the Merrimack to the abrupt bend in the Spicket at the foot of Prospect Hill.

The drift forming the surface varies from a coarse mortar sand to a fine "quicksand" which tenaciously holds water, and forms a treacherous material in excavation. This latter is particularly prevalent north of the Spicket, where the surface was formerly damp, but which drainage has mostly dried up. Above the general plain are here and there slight elevations, forming very desirable places of residence.

ARTHUR D. MARBLE.

LETTER OF THE CITY ENGINEER

To the Trustees of the White Fund:

In December, 1910, Mr. McLean asked me to answer certain questions, and I made a reply in March, 1911, which I have now revised at the request of Professor Sanborn. The original letter of December 16, 1910, asked me to answer the following questions:—

- (1) The engineering problems which will probably be solved the coming year.
- (2) The possible engineering problems of the future.
- (3) Map showing the sewered and unsewered sections of the city.
- (4) Outline description of the general sewer system.
- (5) Mileage of paved streets.
- (6) Permanent sidewalks.
- (7) Other important data.

The map you already have, answering No. 3.

I will not consider No. 1, as too uncertain.

(2) The future engineering problems undoubtedly will include the extension and improvement of the waterworks system. The growth of the city will require an additional supply. This may come from a source more remote than the Merrimack river, or it may come from the improvement of the present filtration plant at the Pumping Station. This improvement may be the covering of a part of the old filter built in 1892, or it may be a new covered filter built in another location. If the latter, then a concrete bottom could be laid in the part of the old filter bed from which comes the most trouble on account of the permeability of its present earth bottom.

These improvements or additions to the filtration plant will not probably increase the purity of the water supply, but it may remove some of the color in the city water, on account of cutting off some of the ground water which now finds its way into the old filter bed.

The covering of the filter would increase the amount of water capable of passing through the bed, and prevent the freezing of the surface in winter, thereby decreasing the cost of maintenance, and allow of more frequent cleaning of the surface during cold weather.

The improvement in the Spicket river which was made during the fall of 1910 eliminated the offensive condition of that river, so that during the summer of 1911 there were no complaints from property owners because of foul odors along the banks of the stream. So long as the river remains an open channel, constant and intelligent super-

vision will, however, be necessary to prevent its being made a dumping place for all sorts of refuse by those living near to and on the banks of the river.

It is quite possible that sometime in the future the river will be walled and covered, and the area thus formed be made into a park.

Other engineering problems include the disposal of the sewage of the city in some more sanitary and inoffensive way than discharging it from open sewer outlets into the Merrimack river, which outlets now are, at certain stages of the river, some distance from the thread of the stream:

The abolition of grade crossings:

The construction of one or more bridges over the Merrimack river:

The relocation of the railroad station in South Lawrence, connecting the same with North Lawrence by an electric car line, and discontinuing the "cab" train:

The sewerage of the section of the city lying on the westerly slope of Tower Hill, and the disposal of the sewage from the same so as not to make it an offense to the citizens of the district and an added pollution to our water supply.

The disposal of the surface water from this same section.

The sewerage of the southerly slope of Phillips Hill, and of the valley of Cold Spring brook. These sections are separated by ridges from the Merrimack river, and naturally drain into the Shawsheen river.

The State Board of Health will probably not allow the sewage to be discharged into the Shawsheen river, and the problem is how to dispose of it at reasonable cost.

(4) Generally speaking, the sewerage of Lawrence is on the combined plan. The outlets are chiefly into the Merrimack river, but one main sewer discharges into the Spicket river.

There are also fourteen overflow sewers in the Spicket river, which are only in commission during a heavy rainfall, and the matter then discharged is almost entirely street wash.

Portions of the city, notably parts of Tower Hill, Prospect Hill, and the valley of "Bloody" brook, are seweraged on the separate system, the surface water finding its way through street gutters to the nearest water course or river. The separate system sewers cannot take care of any roof, yard or other surface water.

The sewage from all the sewers is discharged in a crude state into the river.

(5) Street surface in Lawrence:

Granite block paving	9.18 miles
Asphalt	0.33 "
Wood	0.09 "
Brick	0.42 "
Macadam	25.10 "
Earth	79.51 "

Total streets open about 114.63 miles

(6) Permanent sidewalks, principally of tar concrete, are laid throughout the thickly inhabited part of the city. Of late, many walks of cement concrete, commonly called granolithic, have been laid. The city and the property owner share equally on the first cost of these sidewalks, and the city bears the expense of all subsequent repairs.

(7) Under this number might properly be mentioned the Park system. This was begun by the Essex Company by the gift of the Common, which has an area of about seventeen acres in the very heart of the thickly settled part of the city. Through all the years since the early days, the Essex Company has from time to time given areas for parks which are scattered all over the city. These include Storrow Park in Ward one, 10.75 acres, the Amphitheatre, 7.5 acres, in Ward five, Union Park, 11.25 acres, and Stockton Park, 0.4 acres, in Ward six, and lately the bank of the Shawsheen river, 15 acres, in Ward six, which we hope will eventually be transformed into a beautiful parkway leading out to Den Rock, where the city has acquired by purchase about eighty acres of wooded hills and river valley, including the picturesque rocky cliff. In addition to the parks above enumerated, there are the following:

Jail Park	area 0.80 acres
Durant Park	" 0.04 "
Pine Street Park	" 0.03 "
Milton Street Park	" 0.02 "
Crescent Park	" 0.08 "

The last four items are triangular plots of ground at the junction of various streets, which have been graded and curbed. There are also areas for playsteads in Wards one, three, four and six, all of which have been improved and graded, and some of them furnished with equipment for the enjoyment of the children. Some of the parks have also been equipped in the same way. Ward four has two play-

LAWRENCE SURVEY

steads, one a large one suitable for ball-playing ,and one smaller, more particularly for children's use.

To the problems of the future might be added the poles and wires belonging to the public service corporations, and their proper regulation and disposition.

A topographical description of the city is included herewith.

Yours truly,

ARTHUR D. MARBLE, *City Engineer*

April 21, 1912

HOUSING CONDITIONS

By

ROBERT E. TODD

HOUSING CONDITIONS

This examination includes in its census and some other statistics all houses in the city, but the rest of the inquiry does not include the houses of Lawrence as a whole. Lawrence has many good houses. The great majority of those outside the center are such. Though all defective houses are not at the center and all center houses are not defective, the city's pressing housing needs are at the center: hence that is the field covered in this inquiry. The exact scope of the examination is shown in the diagram on page 54. In connection with the description of the most important conditions an estimate is made of the probable extent of such conditions.

One of the former trustees of the White Fund, a banker and a man who had the interests of Lawrence near his heart, used to delight in speaking of the city as "a city of homes." This may have been true a decade ago. It is evidently the fact now that Lawrence is by more than one-half a city of tenements.

But the term tenement should be given the arbitrary and technical meaning described later. The essential idea in it is not necessarily bad housing but the nearness of families under the same roof; for, the word tenement, a "holding," and the word apartment have meaning only as opposed to the complementary idea that several families have quarters in the same house. It is the nearness with the common use of space and other circumstances, as well as the nearness of houses to each other, that needs to be controlled by legislation. No greater need exists in Lawrence.

THE EARLY HOUSES

It will be seen in the following paragraphs that the early houses were nearly all small and that the large houses have been built recently. While the work on the dam and canal were still going on, as early as 1847, the mill owners began building houses for the operatives and continued at intervals for about a decade. Most of these houses were in brick blocks located along Canal and Methuen Streets. Many of them have been supplanted by mill warehouses, offices and other buildings, but about seventy-two are still in use, though now largely owned by individuals. Most of the houses are three stories high, but some of them have dormer rooms on fourth floors. One square of forty two-story brick houses which were built by the Lawrence Machine Company about 1847 and are still in use, are similar to that satisfactory type of house which for years has been so popular in Philadelphia.

When the dam was being built, many of the laborers on it lived in South Lawrence in the fields not far from the work.

Their small shacks or huts were built hurriedly of slabs and rough lumber, with roofs of over-lapping boards, with sod piled high around the walls, and with stove pipe chimneys. These cabins stood for a good many years, but gradually their occupants left, or bought a right to the locations; and the last two of the shacks, occupied to the end, were torn down, one in 1894 and the other in 1898.

In the same period houses of a different class were being built in the districts to the east and north of the Common. They were almost as small as the shacks, but much more durable and with much better interiors. Usually each house had its own garden, and each occupant owned a few goats, pigs and hens, and kept the rural habit of laying in such stores both of meats and vegetables as would carry the family through the whole winter.

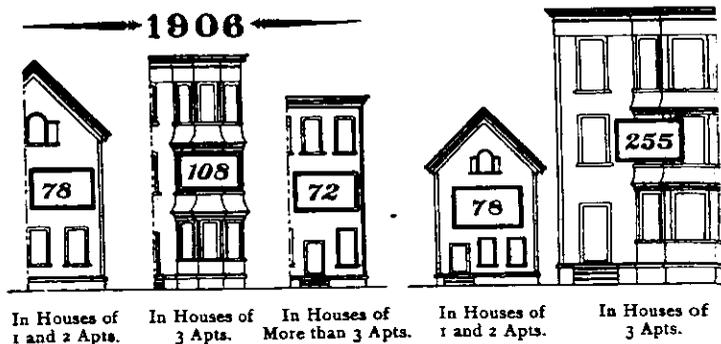
Several of these houses, improved and well painted, indicate present prosperity and comfort, and look like good homes; a few remain in use unaltered; many have been moved to the rear of the lot; some are vacant, or used as sheds; and many have been torn down. In a few instances, two, three or four have been moved up together, attached and extended, and make, as rented, a most interesting jumble of tenements. There are still standing at various locations, but not now in use, three or four peculiarly long and narrow houses that at once remind one of houses seen in Irish and English pictures.

Except those built by the mills, nearly all houses were made of wood. There were some wooden blocks, a considerable number of double cottages and houses, and several of that type of four-family double house of two stories with attic rooms which is so common in most of the mill towns of New England. As late as 1875, the three-story houses were probably less than ten in number, though the population had reached 35,000. Between 1875 and 1895 the three-story, flat-roof house began to be more common, though its incoming was quite gradual.

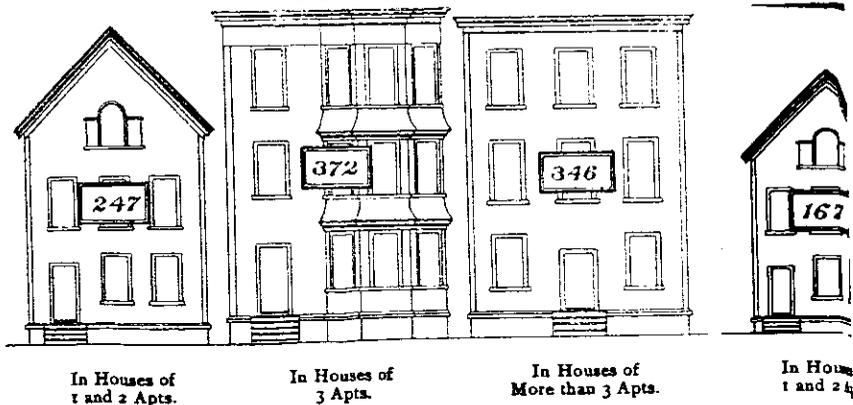
There is one instance of a four-story frame house which is said to have been built before 1850. But as late as 1895 there were not more than six or seven of these houses without stores, and about the same number with stores, making altogether less

THE NUMBER OF APARTMENTS
GROUPED FOR EACH YEAR IN RELATION
TO THE THREE FAMILY HOUSES
Illustrated by
June 1, 1906 to June 30, 1911

1906

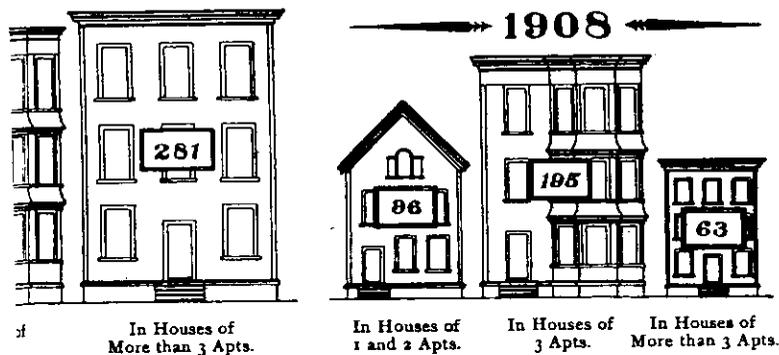


1909

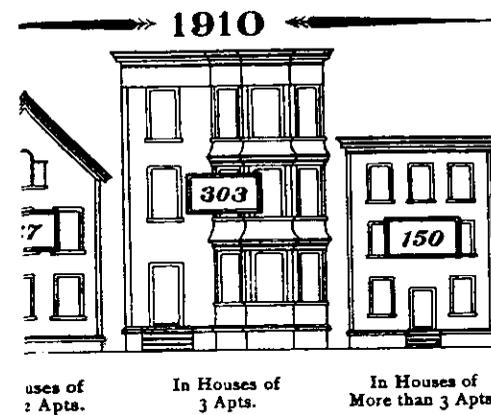


APARTMENTS IN NEW HOUSES
IN RELATION TO THE THREE FAMILY HOUSES
Illustrated by Area
June 1, 1906 to June 30, 1911

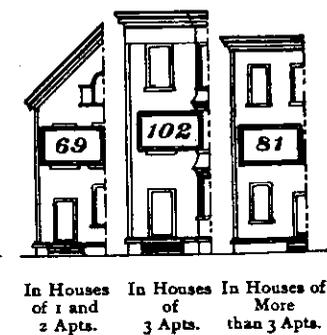
1907



1908



1911



than fifteen four-story frame houses sixteen years ago. Since then the number of these houses has increased rapidly.

THE FUTURE OF LAWRENCE AS A CITY OF TENEMENTS

The most common definition of a tenement house includes every house which has three apartments or more. At the present time Lawrence has:

17,988 apartments in 8,202 houses:
 8,599 apartments in houses for one and two families
 9,389 apartments in houses with three or more families. ✓

Forty-eight per cent of the families in Lawrence are living in one and two-family houses; the remaining fifty-two per cent are living in houses of three apartments or more.

The number and size of the houses which are now being erected can be found in the records of the office of building inspector which was established just prior to June 1st, 1906. In the five years and one month ending June 30, 1911, there were constructed:

3063 apartments in 1052 new houses:	
735 in houses for one and two families	24.0 per cent
1335 in houses for three families	43.6 per cent
993 in houses for more than three families	32.4 per cent

In the accompanying sketch the capacity of these new houses is shown as they have been built year by year. The number of tenements which were constructed in old houses by additions and alterations in the first four and one-half years is 283.

Thus we see two facts: more than one-half of all families are living in houses for three or more families; and among the new buildings the large houses greatly predominate. Only about one-fourth of the families that have been provided for in new houses are living in one and two-family houses. In every one hundred new apartments, seventy-six are being built in houses of three apartments or more.

In other words, the character of the homes of the majority of families is being rapidly and radically altered. This fact alone, as a general statement based on the building operations for the last five years, is abundant reason why the citizens of Lawrence should be seriously interested to determine whether the changes

in forms of houses are good and suitable for the preservation of that healthy family life, upon which the permanent welfare of any community depends.

In considering this question, we must not be too easily influenced by the fact that a large number of the three-family houses located in districts outside of the center are good-looking houses. This is only part of the story, and in Lawrence it is less than half of it. Bad housing is not a question of averages and majorities. The majority of the houses in a city may be excellent, and the minority so exceedingly deficient as to be a grave peril to the permanent welfare of the community.

THE NUMBER OF APARTMENTS AT THE CENTER

In Lawrence not only is there a rapid increase in the number of families which are being provided for in the larger houses, but there is steady growth in the process which is crowding houses together at the center of the city. In every 100 apartments of the city, 19 are located in South Lawrence, and 81 in North Lawrence. In a central district bounded on the south by Essex Street, on the east by Union and Garden Streets and the Spicket River, on the north by Maple, Auburn, Cross, Broadway, and Acton Streets, on the west by West Street, Bradford Place and the railroad, there are 300 acres. The congestion within this central district, relative to the city's area and population, is most remarkable.

For every 100 Acres in the districts named, there are

In the central district,	2,036 apartments
In the rest of North Lawrence,	443 "
In South Lawrence,	152 "

In other words, the density of apartments in the central district is about four and one-half times the density in the rest of North Lawrence, and more than twelve times the density in South Lawrence.

Yet the houses are made of wood. The need for ceasing to use wood for the houses at the center is very great. It is this piling up risk upon risk that has made a national burden which, though general, is nevertheless a very real burden. It is made general by our arrangements for paying fire losses.

FIRE BURDEN AND MENACE

WHAT WE BURN EACH YEAR

The true character of the fire loss and the extent of its burden upon us should be brought with such force to the conscience of the intelligent citizens that they will at once bring effective action for its reduction. We are extravagantly wasteful of our social wealth and we need to be told it many times and in many ways.

If a man were to sell all the property he had accumulated during his life-time for about \$20,000 in gold, put the gold in a basket, and, taking passage on a steamer, drop it overboard in mid-ocean, there is no one who would not say that the property was completely wasted. When property goes up in smoke, the loss is just as absolute; but by our arrangement for distributing the fire loss over the ninety millions of persons in the United States, it is not directly borne by any given individual, and its true nature is not seen.

The fire game which we Americans are playing is a wonderfully great game. Every man, woman and child in the country participates, but, strange to say, few of us realize that we are in it. We all need to be told how it is played. Whether we carry fire insurance or not, we pay landlords and merchants for carrying it. In effect, whether consciously or unconsciously, whether willingly or unwillingly, it is as if each householder in the country who is at the head of a family of four, takes a good chair, or a serviceable bookcase, or six valuable books, or any other articles that have a value of eleven dollars,* and goes every year to the landlords and the merchants, with a statement, "Here is what we desire to have burned up this year." They reply, "All right! We are a young and rich country. The nation at large will see that your wish is carried out. But these goods are awkward to ship to the nation's great tax-gatherers, the insurance men. Give us, instead, eleven of your hard-earned dollars." These dollars the landlords and merchants stamp "Money to burn," and pass on to the insurance men. The insurance men are in a ring. They throw the money in various piles within their circle and stand guard over it. Up rush the Citizens called Unfortunate, Ignorant, Indifferent, Careless, Fraud and Thief, each crying, "Hold, did you not see that smoke? That was my building with all the contents. To be sure, I built cheap. What of it? Everybody's doing that. Where is my share of what was set aside this year to be burned?" The circle of insurance men send out representatives, investigate, judge the claims, and parcel out the money. It's a great game.

*The source for figures and quotations relative to housing conditions are listed on page 143.

During each year for the last decade, this country has turned into smoke \$216,000,000, not including fire losses in forests, in mines or at sea. These annual losses have increased in the last thirty years 134 per cent, although the population of the country has increased but 73 per cent. "If all the buildings burned last year (1910) in the United States were placed together on both sides of a street, they would make an avenue of desolation reaching from Chicago to New York, and, although one seriously injured person were rescued every thousand feet, at every three-quarters of a mile, a man, woman or child would nevertheless be found burned to death." And it would take eighteen hours on the fastest train, or five days of daylight by trolley, to view without stopping this avenue of desolation and death.

Huge as that price is, it is not all we are paying for the use of fire, for it costs money to fight fires. Thousands of men and thousands of pieces of expensive apparatus are employed constantly. In fire defence, this country spends yearly, by an authoritative estimate, \$241,000,000, an expense that is entirely additional to the \$216,000,000 that is burned up each year.

THE FIRE BURDEN IN LAWRENCE

Compared with other cities, Lawrence's record in the matter of fires in the past is a remarkably good one in nearly all points, such as confining the fires to the building or place of origin, number of fires to 1,000 population, losses which are not insured, and the average total loss by fire each year: though the record is slightly less favorable in the cost of maintaining the fire department. In each year of the decade ending December 31, 1909, the total loss in Lawrence has been \$53,367, of which \$49,975 was insurance loss, and \$3,392 was uninsured. Fifty-three thousand dollars is a large amount of property to burn up each year. It is quite three times the amount of money which Lawrence spends yearly for the maintenance of the public library,

Yet this is only about one-quarter of the amount that fires are costing Lawrence. The total amount of fire insurance premiums paid each year, by an authoritative and conservative estimate, exceeds \$200,000. Because so many of the other cities

of the country, as well as Lawrence, have not been willing to restrict themselves in the use of wood, Lawrence business men are paying out every year more than \$150,000 which is consumed elsewhere in the country; and this waste is increasing at a very rapid rate. It demands everywhere and particularly in the cities of eastern Massachusetts a radical change from the present lack of building regulations. Cambridge, Worcester and Lowell have made a beginning.

THE FOUR STORY WOODEN HOUSES

The most striking fact about houses in all cities in Massachusetts is that they are almost exclusively built of wood. Outside of the center in a few cities, such as Boston, Worcester, Springfield and Holyoke, practically all houses are frame. Building in Lawrence goes to the extreme in this respect. Fully ninety-seven per cent of the houses in Lawrence are made of wood. Three-story wooden houses with large floor areas unbroken by fire walls are a constant menace to their occupants, no matter where in the city the houses are located. When these houses are located at the crowded center, they also magnify seriously the conflagration hazard. This is equally true of all four-story frame houses and in addition there is a greatly increased life risk for all who live upon the fourth floor. They are farther from the ground, and the speed and the volume of a fire can be very much greater than it could be in a three-family house. Also the four-story frame house is usually much weaker structurally than the smaller houses. In fire insurance rating, houses of one to three apartments are in one class, those with four to eight families in another. In building practice in most cities four-story frame houses are relatively very infrequent. Many cities prohibit them. There is a concensus of opinion that they are dangerous, too dangerous to be tolerated. They are especially dangerous in the congested wooden center in Lawrence.

In the number of such houses which have been built, Worcester and Lawrence exceed all other cities in Massachusetts, and the condition in Lawrence is much worse than it is in Worcester. Lawrence has 268 four-story frame houses, 216 of them located

in the central district of 300 acres, which is described elsewhere. A majority occur in blocks where the three-story houses have already crowded out most of the small buildings and where rear buildings are the rule, some of them being four stories high. Worcester has 120 four-story frame houses. Located on its side hills, there are also 200 three-story and basement houses which have four families, one above the other, or three families above a store. They are not quite comparable with the four-story frame house in that one end or one side is only three stories from the ground. On the other hand they are much more dangerous than the ordinary three-story frame building. With them included, the number of these houses in Worcester is 320. They are, however, scattered about the city, and are not in one relatively small area as in Lawrence, and where they occur there is greater distance between houses. Furthermore, four-story frame structures are now prohibited everywhere in the city, and the three-story and basement houses are not allowed to accommodate more than one family on a floor, unless the building is provided with a brick wall from front to rear, and from cellar to roof, with one apartment on each side of it. Worcester has a central fire district which is more than twice the area in North Lawrence which lies south of the Spicket River and east of the railroad. Within it no new frame houses can be built. Additional to this there are two other fire districts containing about 126 acres, where the three-story and brick basement houses are allowed, provided they are placed no nearer than seven feet to the side or rear line of the lot. Such buildings must also have tar and gravel or slate roof.

Lowell has 140 four-story frame houses, which is a few more than half the number in Lawrence. In August, 1906, Lowell prohibited the construction of these houses anywhere and established a good-sized fire district within which wooden buildings may no longer be erected. Since Lowell ceased to construct this form of building, Lawrence has built nearly one hundred.

There are three cities in the state which have smaller areas than the 6.53 square miles in Lawrence, and all three cities have greater densities of population. Lawrence has 13,210 per square mile. Somerville's density of population is at the rate of 17,160

per square mile, and the city has not over 50 four-story frame houses. Cambridge, with a density of 16,050 per square mile, has 110 houses of this kind. Chelsea, with a present density of 14,420 per square mile, is not comparable, because the houses in half its area have so recently been reduced to ashes. The distribution of the population in Lawrence is so uneven that at the center the density is more than five times greater than it is in all the city. Such center density is a result of four-story houses, rather than a reason for them. With the 268 four-story frame houses in Lawrence we should compare the number of such houses in Fall River, 95; in Salem, 90; in New Bedford, 55; in Lynn, less than 50.

THE COMING CONFLAGRATION

The yearly fire loss in Lawrence, \$53,367, serves well to illustrate the tremendous loss in a conflagration. This is less than a sixtieth of what was recently burned in Bangor in a few hours. Chelsea burned two hundred and twenty-two times as much in seven hours. It is in the daily fear of such disaster that many of the citizens of Lawrence are living. As one prominent business man remarked recently, "It hasn't come yet. But we will surely come down to the center some day with the face of the earth changed."

The sticks are all laid for a most superb bonfire. With the prevailing winds as they are, from the west, and north of west, a fire that originated in the vicinity of Broadway at any point from Common Street to Cross, and broke from the control of the firemen at a time when a measurably high wind is blowing, could not fail to destroy the section north of Essex to the Common, and, if the wind were from the west, could hardly fail to sweep to the east around the Common to the Union Street district, and possibly cross the Spicket River to the shingle roofs of the section in the vicinity of Avon and Belmont Streets. Excluding, however, the latter district, the area threatened is 300 acres, and contains 6108 apartments.

It should be noted that this central district, as described, does not include the mercantile and mill buildings south of Essex Street, and that additional values are there endangered.

Besides the large number of four-story frame houses at the center, there were counted in the house census of this investigation 1,000 shingle roofs in this area of 300 acres. As a form of construction, shingle roofs are quite comparable to paper hats as a form of clothing.

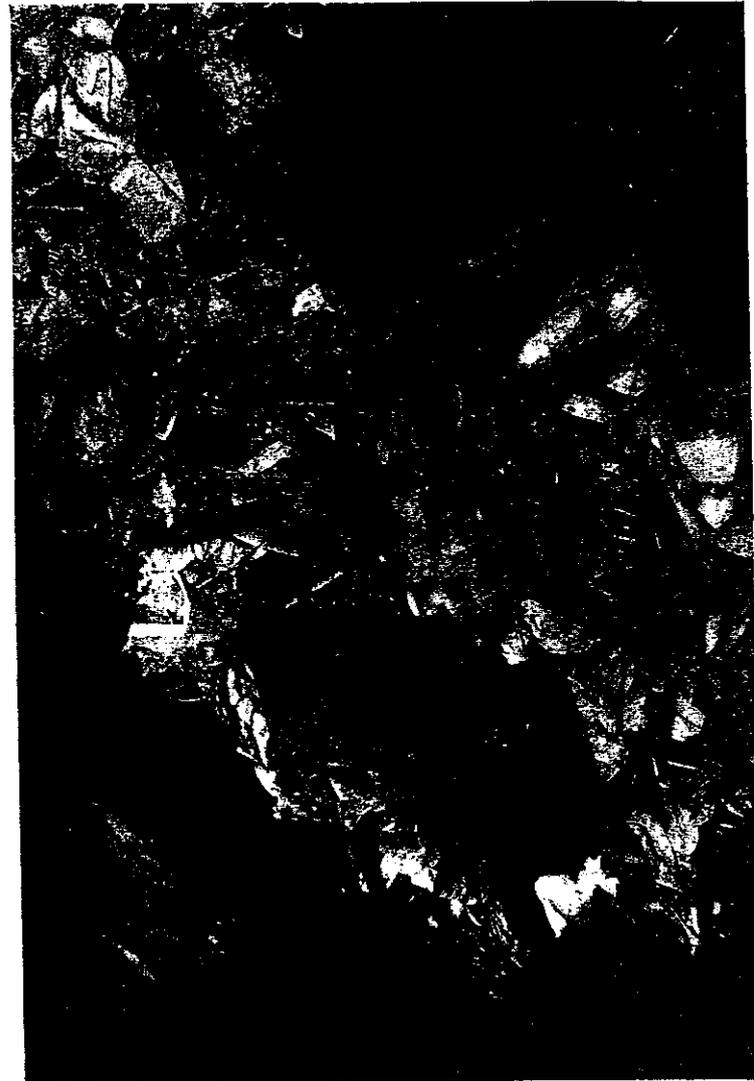
"In the old days, roofs were covered with thatch. The process was to thatch a roof, watch it dry and eventually try to stop it from burning up. It was useless. We know that a thatch roof is not desirable. But we progressed slowly. Our next idea was to use wood in the form of shingles. We simply changed the rate of deterioration. Shingles dry up and eventually burn. Some day we will learn that shingles should be given up and placed in the museum with thatch.

"Have you ever thought of the first cost of a shingle roof? Then have you added the cost of the upkeep? Have you added the cost of the damages to materials under that roof? Have you watched a shingled roof catch fire? Or seen the sparks fly to the next shingled roof? Or realized that you were viewing a conflagration?

"Many people have. Many cities have gone through this experience. The mayors telegraph for help. The papers are full of the pitiful details of homeless people, of wasted property, of appeals for subscriptions. A conflagration is a terrible menace hanging over many cities and the shingled roof is the main cause. The great fire in Chelsea, Massachusetts, spread horizontally, from roof to roof (burning down) instead of from wall to wall."

The report on the City of Lawrence made in July, 1908, by the Committee on Fire Prevention of the National Board of Fire Underwriters, says concerning the Valley Street and Lowell Street district; "The potential hazard of this considerable area of large, compactly grouped frames is high. A fire once beyond the control of the fire department would become a most serious conflagration. The prevailing direction of high winds being from the west or northwest under ordinary conditions, the principal mercantile district would become involved and the mill district threatened. Even with the efficient fire department, the abundant water supply at moderate pressures and the good accessibility, the probability of a large fire is great, due to the character of the population and the extremely hazardous construction."

The habits of the population in the congested district, as well as the lack of convenience in the houses, certainly add very materially to the fire risk. The conditions which attend the use of



Papers and rubbish under cellar stairs in a six family wooden house with four floors. Tenants on the second, third and fourth floors front have egress only down the stairs over this pile. An equally great pile was seen in the next house. These houses are so situated that an uncontrolled fire in them would sweep the whole center of the city.



The cellar had six sub-divisions or bins. Straw in large quantities was found in five, one of which is shown above. The straw was more than two feet deep. A sixth large pile lay in the open cellar near the foot of badly broken stairs, which are under the main entrance and stairs in a six-family, three-story rear frame house.

the cellar, especially in the winter time, illustrate this. The stairs are frequently very narrow, winding, dark and, in a considerable number of instances, broken. In some of the cellars artificial light is absolutely necessary, and hence the striking of matches and the carrying of lamps is very common. It is most frequently the children who are sent to the cellar, and the load of fuel together with the lamp, and the conditions surrounding its use, make a daily risk that is excessive.

The presence of piles of inflammable rubbish in the cellar add to the risk. Among the houses examined in six half blocks, an average of one in six had a serious amount of inflammable rubbish in the cellar. Where the condition occurs to the extent shown in the photographs, there can be no question about the risk involved. There surely need not be more than one such cellar in each of the 160 half-blocks at the center to make a conflagration hazard well worth periodic and efficient fire inspection. This the city has not had, but should have.

Another illustration is the practice in lighting kitchen fires. Many tenements are deserted during school hours. All the adults work, and the children below school age are left in other tenements. Hence the kitchen fires are allowed to go out at least once, and in many cases twice, a day. At the end of each morning and afternoon, it is the school children who reach the house first, and upon them falls the duty of starting the kitchen fire. Many of them are not taught how to do it, and others are altogether too young to be trusted to do it safely. Kerosene is used, and used by very young children. In one apartment a small Italian boy not over eight years of age was seen at the stove starting the fire. He scratched so many matches and went so many times to a small closet that the attention of the writer was finally attracted, just as he was raising a can to pour oil into the open hole of the stove. A shout stopped him and a glance into the stove showed red embers. This youngster of eight years and his brother, not over six years old, were alone in the tenement.

In Ohio and two other states, by legal enactment, the children are being taught in the schools the causes of fires, the dangers in handling materials, and what to do in time of fire. Lawrence

would do well to secure at once the introduction of similar instruction in the public schools.

THE SUFFERING INFLICTED BY A CONFLAGRATION

What conflagrations mean to the individuals who suffer in them, we do not sufficiently consider. A former Lawrence citizen, who passed through the Chelsea fire, afterwards described his experience. Having taken some bundles to a distance, he returned to his house for more. Soon a neighbor called to him, "Mr. B., are you in there? Come out as quick as you can. The next house is all ablaze and your roof has caught." Mr. B. escaped hurriedly, and, in referring to his loss, said: "No one, who has not gone through the experience, can possibly realize what are the sensations of those who were driven from their homes, and lost all their worldly goods by the flames." He had no insurance, and saved only a suit and a little other clothing.

The life risk in Lawrence is greater than it was in Chelsea. In that city at the time of the fire, there was a density of population at the rate of 16,880 per square mile. The density in North Lawrence is at the rate of 20,732 per square mile, and in the 300 acres of the conflagration district, it is at the rate of 72,000 per square mile.

At the time of the conflagration in Chelsea, the 275 acres which were burned did not equal the present conditions in Lawrence in the congestion of wooden buildings. The buildings were not as high and they were not as near together. In Lawrence, in the 216 four-story frame houses of the 300 central acres, between 1800 and 2000 persons are living on fourth floors. As shown elsewhere in the report, there are altogether too many third and fourth floor apartments from which there is no adequate second egress. This condition is most serious, and, though the greatest risk involved is from fires that originate inside the houses, the lack of egress greatly complicates and increases the life risk at the time of a conflagration. But the possibility of safe exit is not the only factor in the probability of life disaster in a conflagration. In the historic newspaper fire of the *Spring-*

field Union, in which about eight persons lost their lives, most of them perished because they were in such a condition of panic, that no one thought to break the glass in an elevator door which had blown shut and locked, and through which they might have escaped to safety, as others before them had escaped. The safe egress of everybody in a midnight sweeping conflagration might possibly take place and yet hundreds be injured by returning to their quarters at great risk with or without very much reason. The natural instinct to try to save money, papers and various articles, is, many times, responsible for more deaths than the original condition of peril in which the individuals were.

The Chelsea fire began a little before eleven o'clock Sunday morning, and yet nineteen people lost their lives. It is hard to see how a conflagration in Lawrence, especially if it were to occur at night, could have a loss of life less than that which took place in Chelsea; and it might easily be many times greater.

OUR RESPONSIBILITY

Lawrence has never had any very large fire. The collapse of the Pemberton Mill when eighty-seven persons were killed, took place fifty-one years ago, and is not now remembered vividly enough to stir anyone to action. In 1906 the roof of a new rink fell in, just after a large crowd of spectators had left; and out of its dust came the present inadequate building code. In this record, the absence of any great fire has practically nothing to do with the danger from a sweeping conflagration, and the recklessness involved in continuing the present policy in the use of wood at the center. Lawrence is in the position of the small boy who repeatedly goes in swimming just above the dam. The argument that the city has been getting along well enough under present lack of restrictions is no better than the small boy's argument that he has never been drowned yet. Is it probable disaster or possible disaster which causes individuals to carry accident, life or fire insurance? The sum total of our lack of real interest, as individuals, in the welfare of the community in which we live is colossal.

We desperately need to be jeered at in the manner of a recent newspaper editorial.

“ ‘We are greatly shocked,’ volunteers the head of the pulp and paper company whose dam, collapsing, brought death upon Austin, Penn.

“ A proper sentiment and typical. The American people are most convincing in moods of amazement and consternation. They are most themselves when they are ‘greatly shocked,’ which they are pretty frequently.

“ Temperaments of less ardor and more calculation than theirs do not shock so effectively, because they get less exercise. Instead of celebrating calamity, less gifted people merely prevent it. Such a people, for example, would have heeded the first warning given by the Austin dam last year. They would not have permitted a moving picture of the deluge to be staged in a remote Pennsylvania valley.

“ It is left for Americans to know that in many theatres exit doors open inward or are locked during performances, and then to be greatly shocked when 587 persons are burned to death in an Iroquois fire; to know that excursion steamers are often over-loaded, inadequately manned, insufficiently provided with fire-fighting appliances, and then to be greatly shocked when a thousand persons lose their lives in a General Slocum disaster; to know that many factory lofts are unprovided with fire-escapes and factory hands unacquainted with the fire-drill, and then to be greatly shocked when 145 girls are burned or crushed to death in an Asch Building horror.

“ By forestalling disaster the phlegmatic German and the dull-witted Englishman may make life safer in their jurisdictions; but that is dry, routine business that does not appeal to American emotions.”

THE LOSS OF POPULATION AND OF UNINSURED PROPERTY

The loss of population in Chelsea is interesting, as shown in the five-year periods subsequent to 1895. After a gain in 1900 of 8.9 per cent, and in 1905 of 9.4 per cent, the loss in 1910 is 12.9 per cent. There is possible of course only speculation as to how many persons would be forced to leave Lawrence after a sweeping conflagration, but the extent of the risk should be considered. In the central fire district mentioned, there are at least thirty thousand persons who could be rendered homeless by a sweeping conflagration. This would mean a very great loss of population for a long period.

The fire report of the Underwriters says in a summary, “ Structural conditions are poor except in the manufacturing district. The congested parts of the tenement district constitute a high conflagration hazard.” The report concludes with the recommendations:

“ That a complete building code be adopted.

That the fire limits be extended.

That the construction of frame tenements over three stories in height be prohibited.

That incombustible roof coverings be required on all new or repaired buildings.”

About \$3,000,000 of the \$12,000,000 loss in Chelsea was not paid back in insurance. Is the amount daily in jeopardy in Lawrence much less than \$10,000,000, and would the uninsured loss be much less than one-quarter of that sum? Can Lawrence afford to continue to add daily to this great risk?

Concerning the city of Chelsea, the authentic insurance report of the conflagration said, “ Chelsea openly acknowledged a deplorable condition of affairs, and yet nothing was done to improve it.”

What will the record of the business men of Lawrence be?

NUMBER OF HOUSES CLASSIFIED BY HEIGHT IN STORIES

SBC.	NORTH LAWRENCE	LOCATION		HEIGHT BY STORIES						
		Front or Rear	One	One and one-half	Two	Two and one-half	Three	Four	Five	
A	West of R. R. Tracks . . .	F	4	312	232	486	225	18		
		R	1	75	21	30	24	2		
B	R. R. Tracks to Lawrence St. . .	F	5	375	156	679	735	110		
		R	4	108	41	66	64	25		
C	Lawrence to Prospect . . .	F	1	266	169	695	392	104	1	
		R	1	68	30	46	38	24		
D	East of Prospect St.	F	0	277	149	198	82	0		
		R	0	16	10	6	3	0		
	Total Front Houses . . .		5671	10	1230	706	2058	1434	232	1
	Total Rear Houses . . .		703	6	267	102	148	129	51	0
	Total for North Lawrence .		6374	16	1497	808	2206	1563	283	1

SBC.	SOUTH LAWRENCE	LOCATION		HEIGHT BY STORIES						
		Front or Rear	One	One and one-half	Two	Two and one-half	Three	Four	Five	
E	West of Southern Div. R. R. Tracks	F	1	166	18	159	60	6		
		R	1	31	4	16	1			
F	Southern Div. to Western Div.	F	2	167	30	112	50			
		R		7	4	1	1			
G	East of Western Div.	F	1	232	146	400	155	4		
		R	2	21	6	10	14			
	Total Front Houses . . .		1709	4	565	194	671	265	10	0
	Total Rear Houses . . .		119	3	59	14	27	16	0	0
	Total for South Lawrence		1828	7	624	208	698	281	10	0
	TOTALS FOR THE CITY . . .	F	14	1795	900	2729	1699	242	1	
		R	9	326	116	175	145	51	0	
			23	2121	1016	2904	1844	293	1	

SUMMARY OF TOTALS

Front Houses	7380
Rear Houses	822
	8202

HUDDLE FEVER

The increase in urban population, everywhere a matter of common knowledge, is especially noteworthy in the cities of Massachusetts. In 1875, only thirty-five years ago, 620 out of every 1000 persons were living in towns and cities of less than 30,000; whereas the census for 1910 shows that now 620 out of every 1000 are living in cities of more than 30,000.

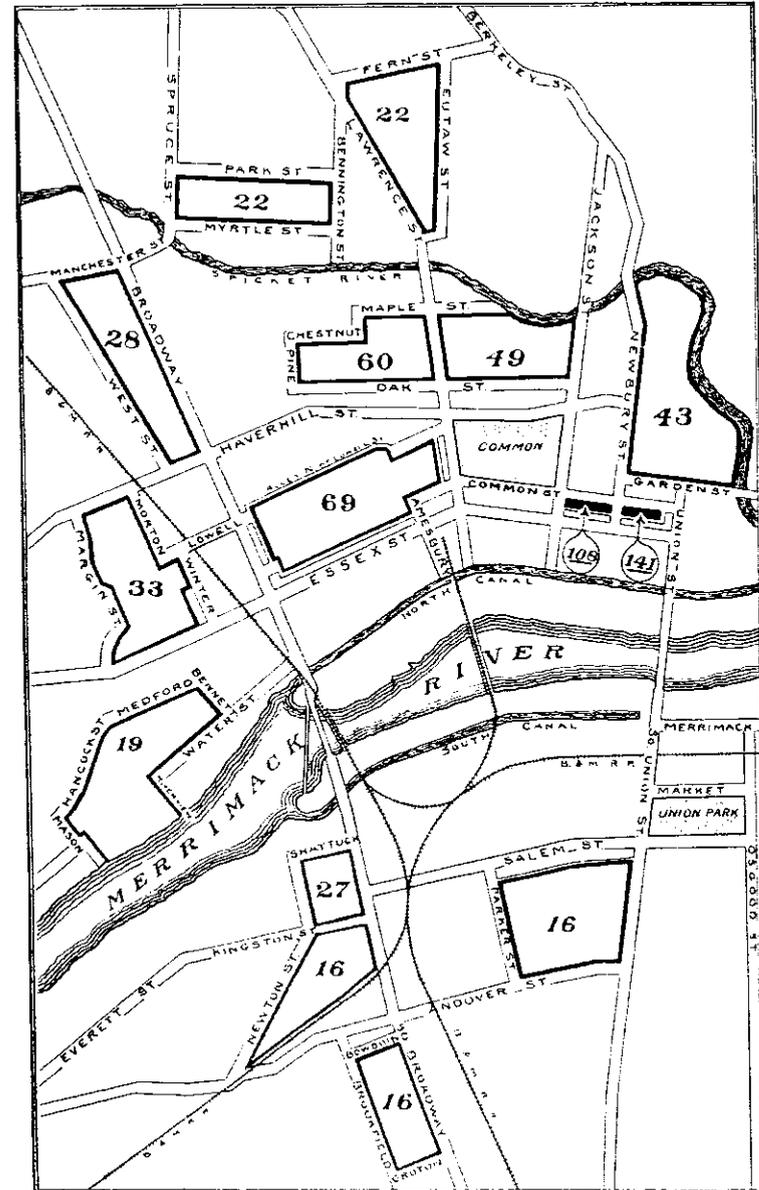
Simultaneously the tendency to crowd people onto land at the center of a city is universally increasing. The never ending seesaw on each lot between new, high sale-price and increased amount of rent goes on steadily, though by jerks, like a cutter across bare ground. The increased amount of rent of course usually comes from a larger number of persons using the land.

The forces impelling the congestion are exceedingly strong and with their results, seen everywhere in the hundreds of families crowded together in the beehives at the centers of the cities, make a condition that must increasingly come to be viewed as abnormal, unnatural, a social disease rightly to be called by some such term as huddle fever.

In many cities in Massachusetts these forces have been placed under almost no legal restriction. In other cities the few restrictions that have been established are pitifully inadequate. Disorder and chaos prevail. The progress toward wretched conditions is rapid and demands immediate restraint. Such measurements and equipment as will produce good living conditions for healthy and contented family life must be set up as legal standards, and it ought to be impossible for any builder to go below them. The need for public intervention is seen to be all the greater when we contrast the interest of builders with the interest of the public. Those who build houses in quantity receive their reward within a few months or years. Their interest is relatively momentary. Yet the living conditions which they create continue in use for 50 to 80 years, and sometimes for more than a century.

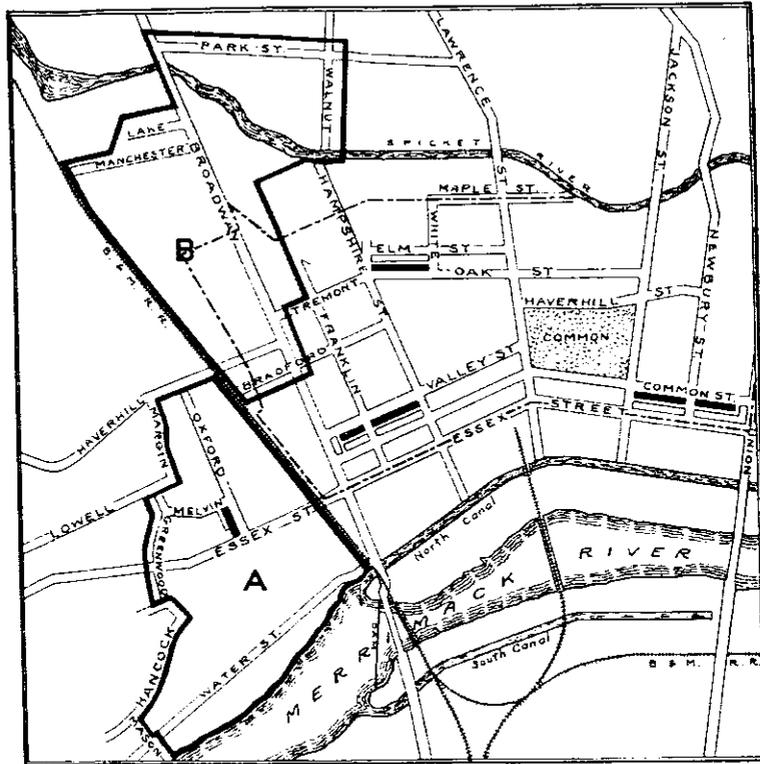
THE STUDY OF LAWRENCE BY A HOUSE CENSUS

For an adequate study of the congestion in Lawrence, a special house census was made, and the figures secured are the basis for the following sketches. In the first one, the average number of apartments per acre is given for thirteen special sections of the city. In general these sections comprise the blocks which have the largest number of apartments in a particular locality. The second and third sketches make a study of density by half-blocks for the three sections nearest the center of the city, namely, those which appear in the first sketch with the averages 69, 60 and 49.

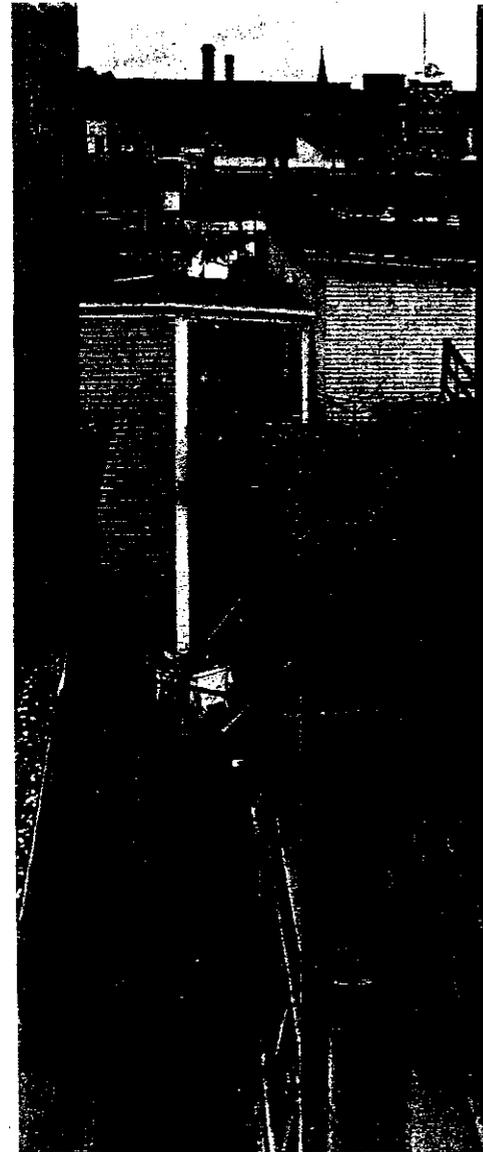


THE AVERAGE NUMBER OF APARTMENTS PER ACRE

LAWRENCE SURVEY
THE INVESTIGATION OF HOUSES



The two districts, A and B, are in a middle zone lying between the center and the outskirts, where several blocks are badly congested but most of the blocks are not. The central district, bounded by the broken line, contains the 300 acres that have been described. The six half-blocks, in solid black, represent the center and its future. In the point of crowding houses together, they are among the worst twelve in the city. They were chosen on that account. It should be noted how they are distributed around the center.



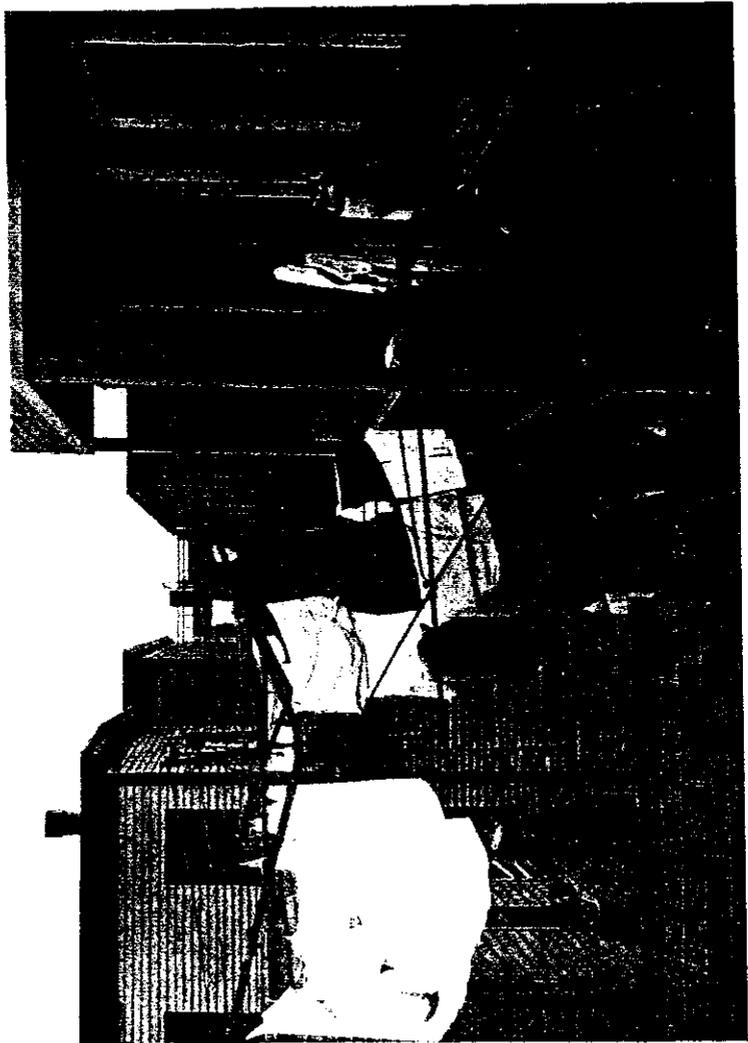
THE COMMON
STREET

Two Half-Blocks

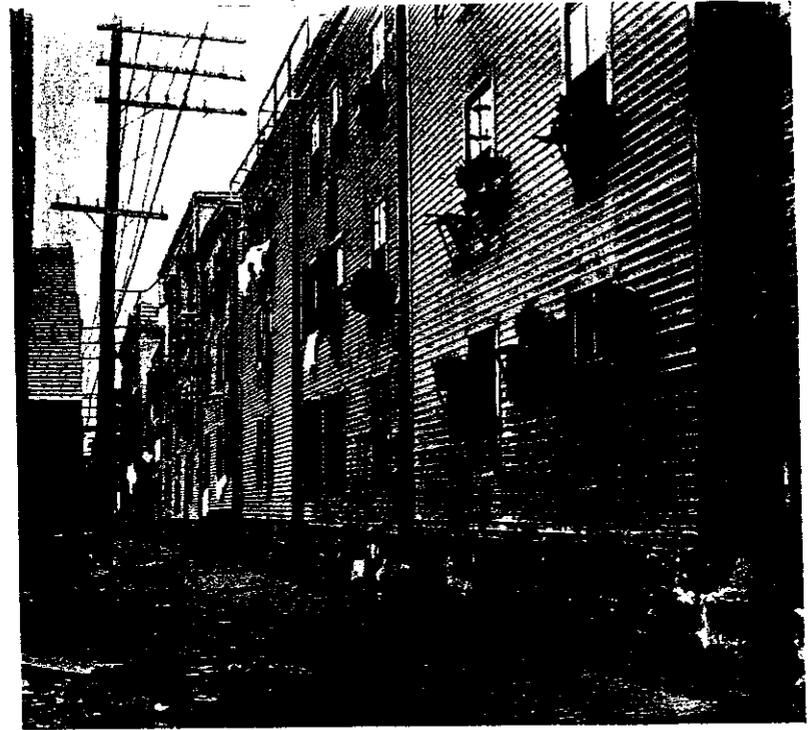
They contain the greatest congestion of population in wooden houses on any three acres in the state of Massachusetts. No three acres exceed these except at the infamous center of Boston where the houses are nearly all brick.

In the rear houses, those at the right in this picture, the best light comes from an alley fourteen feet wide.

LOOKING EAST INTO THE CENTER OF ONE HALF-BLOCK



LOOKING WEST INTO THE CENTER OF THE OTHER HALF-BLOCK



THE ALLEY SIDE OF THE HALF-BLOCK WEST OF NEWBURY STREET

These two half-blocks located on the south side of Common Street east from Jackson Street contain 3.2 acres with one-half the surrounding street space included. An adequate idea of the narrow spaces, dark rooms and other conditions can be secured only by seeing them. But from the foregoing pictures it is possible to judge partially, especially if one imagines himself standing in among the houses. The open spaces shown in the first two pictures are those between front and rear houses at the center of the lots. The slits in the picture above is all the space there is at the sides of the houses.

The houses are so close in these half-blocks that it is said to have been the practice of one agent to collect rents at the third and fourth stories by reaching out into the apartments on the same

floors of the next house. Thus he saved himself trips above the second floor. One instance occurs where, by reaching out the kitchen window, four or five kitchen utensils are regularly hung on nails which have been driven in the side wall of the neighbor's house. As a matter of fact two or three houses occupy so fully the lots on which they stand that there is not room to place a garbage can on the same lot with the house.

These buildings are exclusively used for dwelling with the exception that the majority of the front houses have stores on the first floor, and as indicated in the sketch which follows there is a small group of one-story stores and a small shop. Except two brick houses and one concrete house all the houses are of wood.

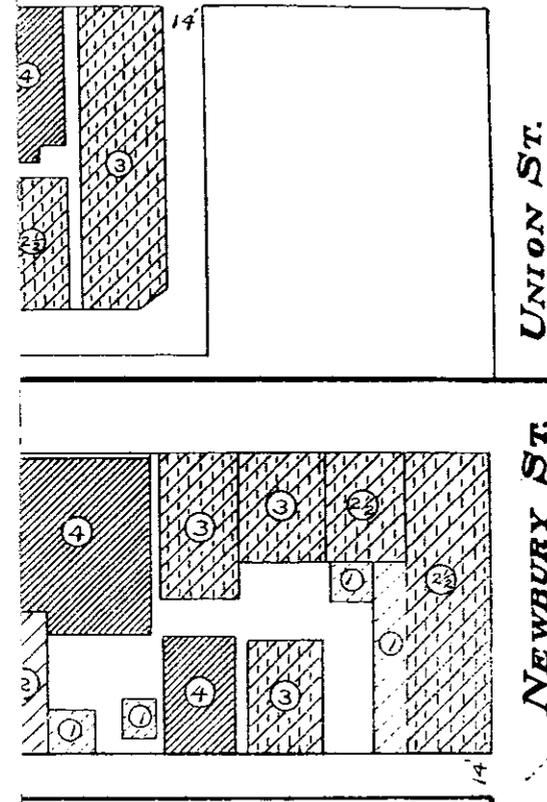
THE AMOUNT OF LAND OCCUPIED BY HOUSES

At the east end of Common street the overcrowding is duplex,—houses on land and persons in apartments. The latter form is described elsewhere. In the other four half-blocks the densities of population in 1911 were due chiefly to the number of houses on the land, and these half-blocks represent more of the center blocks than do the two on Common street.

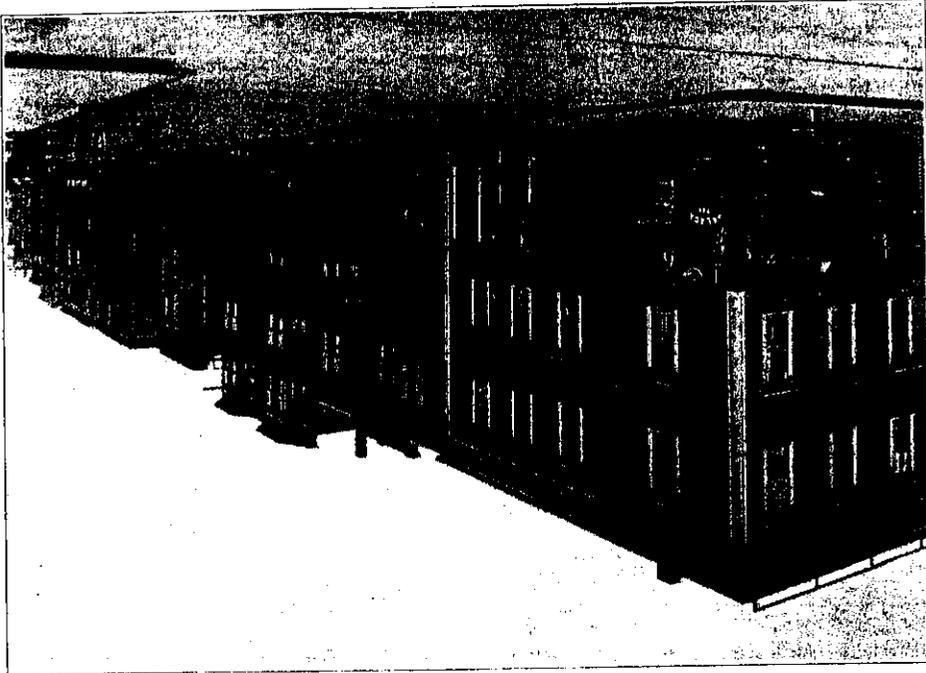
In ascertaining in the six half-blocks examined what proportion of a lot is occupied by a house or houses, the computations that were made used the dimensions of the house at the second floor. Thus the areas of the houses do not include one-story buildings or extensions. A house that is not on a corner lot ought not to occupy as much as 70 per cent of its lot. The following are the facts as they exist in the interior lots of the six half-blocks examined. The amount of land occupied is:

less than 70 per cent	in 22 lots
70 to 75 per cent	" 7 "
75 to 80 " "	" 15 "
80 to 90 " "	" 10 "
more than 90 per cent	" 2 "

Thirteen of the twenty-two where less than 70 per cent is occupied are on Oak and Oxford streets. In the four half-blocks on Valley and Common streets, among the thirty-seven interior lots only nine have less than 70 per cent. This is extreme congestion.



THE SOUTH SIDE OF VALLEY STREET WEST OF HAMPSHIRE STREET



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THE DENSITY OF POPULATION IN THE SIX HALF-BLOCKS

With the following figures concerning the number of persons living in the six half-blocks, there is a second column which gives an estimate of the probable density at times when there is regular employment, for in the spring of 1911 the number of vacant tenements was unusually large.

The number of persons per acre:

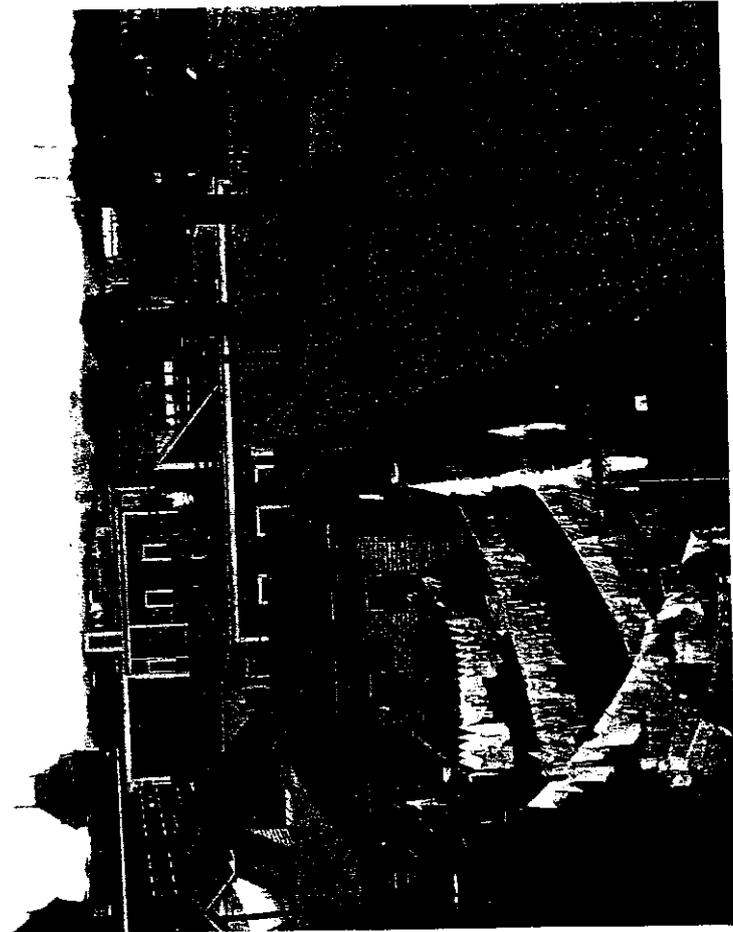
	Actual Density	Estimated Density
1. Common Street S. side E. fr. Newbury	556	603
2. Common Street S. side W. fr. Newbury	439	462
3. Valley Street S. side E. fr. Franklin	327	348
4. Valley Street S. side W. fr. Franklin	322	342
5. Oak Street N. side W. fr. White	287	303
6. Oxford Street W. side N. fr. Essex	243	266

All Lawrence citizens who go to New York by rail pass in front of thirty blocks situated along Park Avenue from 125th Street Station to the entrance of the tunnel at 110th Street. Among the houses seen the five and six story predominate. They appear oppressively high and close together, and the streets are crowded. It would seem scarcely possible that any congestion in Lawrence would be comparable with the congestion in those blocks. Yet according to the 1910 Census there are only three of those thirty blocks which have a density of population greater than 600, and only seven others greater than 462.

SEMI-DARKNESS

The rooms which are lighted from other spaces than the side courts are described elsewhere. The following is the statement for the spaces at the side of the houses, and it has to do solely with rooms for which the chief source of light is a window with the location described.

Window	No. of rooms
On the lot line	58
Less than 1 foot from lot line	70
1 to 2 feet from lot line	163
2 to 2.7 feet from lot line	145
2.7 to 4 feet from lot line	131



Spaces between front and rear houses in the Oak Street Half-Block; the densest north of the Common.

SUMMARY OF RATES OF RENT PER ROOM PER WEEK

Rates in Cents	Common St.		Valley St.		Oak St.		Oxford St.	
	No. of Apts.	Per Cent						
Less than 40	2	.01	5	.036	14	.152	6	.10
40-50	5	.025	22	.159	19	.203	7	.117
50-60	30	.149	85	.616	28	.304	19	.316
60-70	40	.189	23	.167	26	.283	24	.4
70-80	46	.228	3	.021	0		1	.016
80-90	35	.174	0		4	.043	0	
90-95	43	.214	0		1	.011	3	.05
	201		138		92		60	

On Common Street 61 per cent have rates greater than 70 cents.
On the other streets 92 to 95 per cent have rates less than 70 cents.

PERCENTAGE OF LOTS OCCUPIED BY THE HOUSE OR HOUSES ON INTERIOR LOTS IN SIX HALF BLOCKS

	Number of Lots	Less than 70 per cent	Per cent 70 to 75	Per cent 75 to 80	Per cent 80 to 90	Per cent 90 to 100
Common St. (south side)						
East from Newbury (C11K)	12	1	1	4	4	2
West " " (C12K)	13	3	0	6	4	0
Valley St. (south side)						
East from Franklin (B16K)	8	2	3	3	0	0
West " " (B17K)	4	3	0	0	1	0
Oak St. (North Side)						
West from White (B43L)	13	10	1	2	0	0
Oxford St. (West Side)						
North from Essex (A52M)	6	3	2	0	1	0
	56	22	7	15	10	2

Among the fifty-eight rooms lighted from a window on the lot line, thirty-five are in rear houses, and in such houses the best light in any room is from an alley.

All of the facts about the open spaces show the variant, irrational and low standards which have prevailed. They spell a gloomy future for the working people in Lawrence; for a proper amount of light is a prime requisite in any apartment that is worthy of the name home. But it is no mere prospect that is confronting them. The hardship of living in gloomy and dingy homes is already theirs; for one of the most noticeable results of house crowding in the center of Lawrence is the excessively large number of dimly lighted rooms.

The typical light condition in these apartments may be described as follows. Eighty-three per cent of the apartments have either four or five rooms, and in most of them the kitchen, which is unusually large, is located in the center of the floor space. In the apartments of the front house, one or two rooms are well lighted from the street; the kitchen receives but little light; and the two rooms at the rear are almost as poorly lighted because of the lack of space between front and rear houses. This is just as true of the front rooms in the rear houses, because they have the same source of light. The kitchens in the rear houses are also entirely inadequately lighted. Many of the rooms which open upon the alley are not well lighted, although in others the amount of light is fair at present, because there is not yet a high building on the rear of the lots across the alley.

The rooms which were examined in the matter of light are grouped below according to the location of the window which is the chief source of light for each room.

Source of light	Number of rooms
Street	497
Alley	386
Yard	574
Side court	720
Outer court	85

In giving to each room that was visited a grade according to the amount of light in it, a definite meaning was assigned to

each grade and that method is the basis for the following summary. There are 342 rooms in which it is not possible to read except within a foot or two of the window. There are 561 other rooms where it is difficult to read on the side of the room opposite the window and where also protracted eye work in any part of the room is dangerous for the majority of persons. There is a satisfactory amount of light in only about fifty-nine per cent of the rooms. There are 31 apartments in which no room has a satisfactory amount of light.

What these dim tenements mean to their occupants is partly shown by two casual comments made by women at work in kitchens. One woman looking up from the peculiar, double-ended wash tub which the Italians use remarked, "Don't know what I am doing. Can't see much." Another mother whose little child was walking around against her wish commented, "Windows no good. Baby won't stay here in the kitchen near the fire."

It is doubtful whether architects and builders have sufficiently considered the financial disadvantage there is in dimly lighted tenements. There is a constant loss of income in the worst houses in Lawrence. In the two half-blocks at the east end of Common street, in a total number of thirty vacant apartments, twenty-two were located on the first and second floors where the light is the least. It is evident that, when tenements are not in great demand, the dimly lighted quarters on the lower floors are abandoned. Smaller tenements with better light would yield an equal or a larger income than do these dimly lighted houses.

Nearly all factories now being constructed are given a great abundance of light, in the belief that any lack of light results in a reduction of the quality or quantity of the work in them. The same standard for the homes of the workers ought to be considered commercially advantageous,—not to the builders, as such, but as a matter of general public policy. The efficiency of workers is constantly being reduced by the impaired vision and permanent injury to their eyesight that is one of the results of their living in darkened houses.

The newspapers have at various times in the past urged that the industries of the city should be diversified, and that one of the

natural developments would be to secure the incoming of clothing factories. The products of the woolen and worsted mills are now transported to New York and Rochester, and there made into clothing. The question raised is, why the products of the woolen and worsted mills should not be used in Lawrence? If Lawrence were to have clothing factories, with the usual accompaniment of sweat shops in tenements, the present houses are so wretchedly lighted, that the resulting conditions would need another Dante to describe them properly.

FROM DARKNESS TO DEATH

There are numerous kitchens and other rooms which have a most generous supply of glazed area in the windows, and yet artificial light is absolutely necessary, whenever any work is being done. In some of these rooms lamps are kept burning constantly. The majority of the rooms located at the centers of the buildings require artificial light when the sky is fully clouded. This means inconvenience, loss of time, and expense. It also means suffering and danger from disease. We need again and again to consider seriously the chain of the D's, in order to feel that they do lie bound together in a *CHAIN: Darkness and dampness and dirt; dirt and discomfort and disease; death.* The following is one of the memorandums made on an inspection card. "Mother coughs and looks tubercular; just back from hospital; there three months after child-birth. Kitchen dirty and black dark; lamp burning on stove at midday, March 4th. Same March 15th." This is a new house, less than three years old, and the kitchen has abundant window area.

In the most recent report of the state inspectors of health of Massachusetts the comment is made concerning cases of tuberculosis in two mill cities: "Many tenements were found from which cases of tuberculosis were frequently reported." Concerning a certain tenement quarter in another city the report says: "In looking over a list of deaths from tuberculosis, and the residence of the patients, it was discovered that a large number of persons were found to have died at the same street number, some of the same family name, showing by the dates that one had

taken the disease from another. Many were found at the same number with different names, thus giving rise to the question whether the persons may have contracted the disease from the bacilli left in the house by former patients." Tuberculosis is already costing Lawrence dearly, and a toll of about 150 lives yearly. Thousands of dollars are being spent in Massachusetts for the cure of this dread disease. Wise business policy for a successful city, and the public's need for conditions that produce health, not that destroy it, demand that we place an awakened and intelligent valuation on these dimly lighted tenements. It ought no longer to be possible to build them.

WINDOWLESS ROOMS

There were fifty-nine rooms examined which have no windows to the outside air.

In the six half-blocks, there are four rooms which have no windows whatever, eight rooms with transoms only and 21 other rooms which have no windows to the outside air, but intercommunicating windows to rooms or halls. Among these 33 rooms, 25 were used as bed-rooms, four as kitchens, and four as store rooms. In the two districts, there were examined seven rooms without any windows whatever; and nineteen rooms with no window to the outside air, but small windows communicating to halls or rooms. Many of the interior windows are immovable.

When windowless rooms are used as bed-rooms the kind of use they commonly receive may be illustrated by the description of one of them. In it there slept regularly a father, mother and a three year old girl in a three-quarter bed, and two boys in a crib. Two weeks previous to the visit an eight months old baby had died. The mother was still grieving over the loss, and with apparent unconsciousness of the inconsistency in her ideas, stated that the baby had always slept in the same room with the rest, that from birth he had been the strongest of her babies, and she wondered why he had died.

If fifty-nine windowless rooms were seen in this examination, Lawrence must have a good many more than that. When the intelligent citizens have seriously considered how these rooms are

usually used and what culture bins they can become, pushing on through the years and piling up ill-health and death, suffering and expense to thousands, and great expense to the city, they will not submit to the continuance of building regulations that permit the construction of such houses.

SANITARY EQUIPMENT

The following are the facts concerning the sanitary equipment and arrangements as found in the six half-blocks. There is in every apartment a sink and a supply of city water. In five or six apartments on upper floors tenants complained that they could not secure water when it was being drawn on the floor below,—due probably to pressure reduced within the house by old or small pipes. The general condition in this respect is one in which the city may well take much pride. The fact that all the houses are connected with sewers is good reason for further satisfaction. There are very many cities in the country that are not to be compared at all with the New England cities in these two particulars, water supply and sewers, and among the New England cities Lawrence is at the front.

Judging by the six half-blocks, the bath-tubs and wash-tubs at the center of the city are few. In the Common, Valley and Oak Street half-blocks one apartment in nineteen has a bath-tub. In the Common Street half-blocks there are fourteen, nearly all at the west end; in Valley Street, nine, and in Oak Street, four. In the Oxford Street half-block one apartment in two has a tub; twenty-six of them being old pattern tin tubs encased. A considerable number of all the tubs have only one faucet, and a number of those that have two faucets and that are new are not connected with hot water, because the tenants say they cannot afford it. One apartment in fourteen has a wash-tub. They are distributed as the bath-tubs, except that the Oxford Street half-block has fourteen.

All the houses have water closets inside the house; and twelve out of thirteen of these closets are located within the apartment. All closets not located within the apartment are in public halls adjoining the apartment, there being no basement or cellar closets

In these six half-blocks. Among 132 houses, there are only four where two families are using one closet. This is a remarkably good showing. There are probably few cities where the houses are better equipped in the number of water closets.

It is much to be regretted that the amount of light in the water closets is not greater. Nine per cent of the closets are supplied with artificial light at night. Four per cent more have sash doors, which admit some secondary light at night. In eight per cent, there is practically no daylight whatever. In eighteen per cent more, it is not possible to see such obstacles as pails. In twenty per cent more, it is impossible to see whether the floor is clean or dirty. Altogether forty-six per cent have insufficient daylight.

Many of the old closets are encased in wood, and the conditions behind the casings are not right. In a considerable number which were malodorous, the very apparent source was not accessible.

The houses which have ash chutes number on the average one in four.

Among 23 yards which are regularly used as passage-ways, eight are not paved. Among 34 side courts similarly used, there is no pavement in 11.

CONDITIONS WITHIN THE APARTMENTS

In grading occupied rooms according to the condition of cleanliness, it was noted that there are a smaller number of very clean apartments in Common Street than in the other half-blocks. So far as very dirty rooms are concerned, the six half-blocks do not differ from each other materially. The figures show that they all have relatively about the same number. About seven per cent of all apartments seriously needed much cleaning, and five other apartments were in wretchedly filthy condition.

There is wide contrast in the facts that cause these dirty tenements. In some where there are several boarders and children, the women work hard and still are always in dirt. In others the women seem to let dirt accumulate in order to be able to clean it up at their



This water-closet is so constantly wet that cement is used to keep the water from passing under the matched board partition across the kitchen floor. The floors and bases of most water-closets ought at least to be kept well painted. Many ought to have a floor of some other material than wood.

special cleaning seasons. A few of the families are poor creatures, dependent and on the verge of degeneracy.

The largest number of water closets with wet floors and the greatest amount of dirt on the floors occurs in the half-blocks at the east end of Common Street. Among 128 water closets where there was a considerable amount of water on the floor, 91 are located in those half-blocks. This is thirty-eight per cent of all the closets there. Many of them had old wet, rags and paper; some were so foul smelling as to be nauseating; and dogs were kept in two. In the other four half-blocks thirteen per cent were wet and dirty.

OVERCROWDED COMMUNAL APARTMENTS

The great density of population in the two half-blocks at the east end of Common street is due to the over-crowding of apartments as well as to the crowding of houses upon the land. The

prevailing arrangement of four bedrooms around the kitchen not only furnishes economy in fuel expense, because all bedrooms can be heated from the kitchen, but also makes easy the use of the apartment by several families. In these two half-blocks, in three of every five tenements, there were more than one family; in one tenement of every five, there were more than two families. Six apartments of five rooms each had fourteen persons each; and in one apartment of five rooms there were eighteen. Fifteen apartments had three or more families and also an average of three or more persons per room, excluding the kitchen. Seventy-three per cent of the population of these two half-blocks were living in 117 apartments where the average number of persons per room excluding the kitchen is more than two. This proportion in the other half-blocks is, in Valley street 40 per cent, in Oak street 37 per cent, in Oxford street 0 per cent. In 120 apartments where there were more than one family, there were 1,152 persons, 202 of them unmarried boarders. The foregoing figures were taken at a season when the mills were running on part time. Nearly all of those who live in these two half-blocks are mill workers.

The manner of living at the east end of Common street differs materially from that in the houses of the other half-blocks. Many of the bed-rooms are kept locked, the key being carried away by the occupants. The money paid to the family who rents the tenement is rent only and does not include board. Sunday and holiday meals are cooked and eaten separately. Usually the woman who rents the apartment cooks one meal a day for the others, but the food for this meal is furnished separately by the couples or families and is usually eaten separately. The other meals are purchased, prepared, and eaten separately. Such small stock of food as is carried from one meal to another is frequently kept in the bed-room. That the dirtiest water closets seen in Lawrence were in these apartments, is probably due to the fact that it is felt by all occupants, that the water closet is a community convenience and that no one person, not even the one who rents the tenement, is wholly responsible for its condition.

It is said to be the practice with some landlords in these two half-blocks, when the work is plentiful and the tenements are

crowded, to make the amount of rent collected depend upon the number of persons accommodated in the apartment.

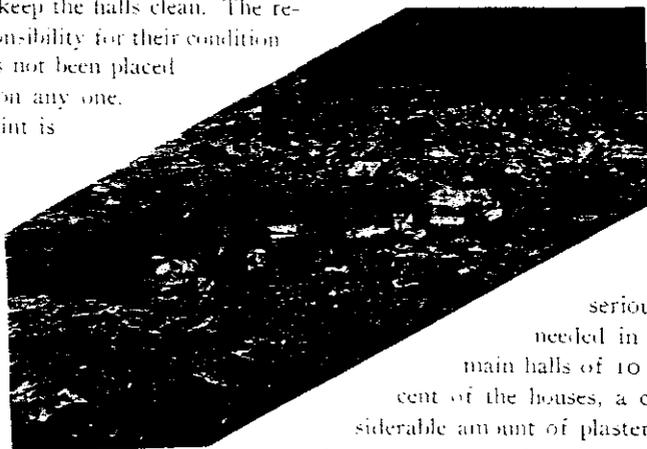
Among other serious disadvantages in these communal apartments, two may be mentioned: the absence of reasonable privacy, since all the bedrooms are heated from the kitchen, and the universal absence of bath-tubs. Such lack is bad enough in any apartment; but, where the tenement is used by three or four families and there is no heat in the bed-rooms, the confusion and inconveniences make bathing most difficult.

One of the worst conditions that is found in large cities is the makeshift tenement which is made by cutting off space at the rear end of the store with dwarf partitions, curtains, etc. The combination of dark rooms, no ventilation, food for sale, and frequently dirt and children, together with flies in season, makes a most deplorable condition. Two such quarters were found in February at the east end of Common street. Each store, and, in one of them, two children, were in the care of a man who stated that he could not get work but his wife could. Lawrence would be in a wretched state, if the city officials could complacently allow such overcrowding. Evidently this is realized; for, less than two months later, these stores had been vacated and most of the partitions removed. It is to be hoped that, with a rejuvenated city government, other investigations will not be necessary to keep such conditions permanently out of Lawrence.

DEFECTIVE MAINTENANCE

The conditions of cleanliness and repair in public halls were marked with gradations that had definite meaning. This scoring makes possible the following statement. Twenty-seven per cent of the houses had main halls and stairs which were excessively dirty. Rubbish, ashes, garbage and litter were found in them, and in most of them black dirt gummed down indicated that the floor had not been washed for many months. The dirtiest of the halls and the largest number of them are in the houses at the east end of Common street. In several of these houses the landlords themselves are living, but into certain others the present landlord has perhaps never entered. Apparently there is almost no attempt

to keep the halls clean. The responsibility for their condition has not been placed upon any one. Paint is



seriously needed in the main halls of 10 per cent of the houses, a considerable amount of plastering in 25 per cent, and whitewashing

in 66 per cent.

Scoring for the walls of rooms, made conservatively, shows that the walls in 13 per cent of the rooms are in need of repair. The largest proportion of such rooms are in a Valley street half-block and the smallest proportion in the Oxford street.

The cellar floors were wet in thirteen houses. The roofs were in bad repair in five. More than half the pitch roofs and a few of the flat roofs have seriously broken eaves and leaders, or none. This is the more serious, because of the lack of pavement in the yards and side courts and because so many of these spaces are used as passageways. Some of the courts and yards have pavement in bad repair. At the time of steady rain many pavements hold puddles to be crossed, or are so graded that they throw small brooks across the street walks for pedestrians to wade through; for almost none are sewer connected.

Two defects in water closet plumbing were the most common. There is frequently a leak at the bottom of the flush-box where the flush-pipe joins it. This usually results in a steady dribble of water down the outside of the flush-pipe onto the floor. The galvanized two-inch pipe that ventilates the water closet bowl is rusted out in many closets at the point where it joins the bowl.



This is the passageway to the street from eight apartments in one rear house and three in another. Pavement is dished and not connected with the sewer. It is impossible to use without wetting the feet,—as the mother and child are doing.



The steps are front entrance of the eight-family rear house. At its corner in the upper picture a boy is standing.



In some bowls this gives at times a quantity of water as overflow out of the bowl. In several closets this pipe is completely dislocated and the value of the vent destroyed.

In a total number of 70 lots, the surfaces of 56 had a considerable amount of ashes, rubbish and garbage, and 16 had an excessively large amount. There was an entire lack of receptacles in some yards. In others where the supply is adequate, the receptacles are either not used or are used very carelessly. The photographs tell the story better than figures or words; though even they do not tell the whole story, as any one knows who has tried to get a photograph of rubbish that appears as bad as the condition. Only a few ash chutes were noted as clogged or in very bad repair; though a considerable number were seen which were not emptying squarely into the receptacle under them, or had no receptacle.

To give a better knowledge of the conditions than figures can give, by a cursory review of the inspection cards, the following hit-or-miss transcript was made from the notes on the back of some of the cards. Nothing can give the impression that would be made by a visit to the premises.

— Bottom of air shaft loaded with rags, papers, cans and swill. Cellar entrance loaded with rubbish.

— Odors from cellars and garbage cans are very strong at the rear of these rooms; two bedrooms.

— Cellar compartments loaded with rubbish, old rags, mattress, excelsior, cans, two spots of human filth, dead cat. Under stairs about a barrel of excelsior.

— Sink: side gone, door off, trap leaks; has been repaired with putty and rag. In bad condition for a year. "Owner tried to fix it about three weeks ago but he has not been to it since. I've told him about the casing many times."

— Water warped floor boards at sink make trip for feet; broken drain board; waste pipe at trap wrapped with grease-soaked rag.

— Two holes in bottom of sink stopped by rags.

— Waste pipe tied with large rag. "Leaked before, not now." In water closet leak from above through ceiling. Tenant says condition is chronic, and that the water drops on the seat. Discolored spot, wet, confirms the statement.

— All paint at sink and cupboard scrubbed off. Tenant here six years. No painting in that time.

— Tenant here ten years. Two rooms white-washed in that time.

— Here eight years. Front room done over two years ago, paper not paint.

— Both front and rear halls in very dirty condition. Two tenants say they have not been done over in ten years. Good-sized holes in plaster in rear hall and places lacking paper in front.

— Water closet floor badly wet with dirty water as from soil-pipe. Tenant says the leak has been here five months. Source not discernible. Hole in kitchen ceiling over stove, about four feet by two feet. This tenant lived five years at the west end of the building. No painting there in that time.

— Two holes in second floor hall patched by nailing pieces of boxes onto them.

— Here thirteen years. "He clean one time."

— Sink doors in all these apartments (3) off hinges.

— Entrance sash door (front) permanently boarded: stairs with winders made very dark.

—Here more than twenty years. "Painted kitchen once. So long back I can't remember. More than fifteen years." In apartment on same floor: here eleven years. "Front room and kitchen done two years after we came. No painting." Three owners in twenty years. Present landlord has owned the house seven years.

—Hole in entrance hall at threshold of front door.

—Door from hall into tenement (only entrance), upper hinge severed. "Told the agent three weeks ago."

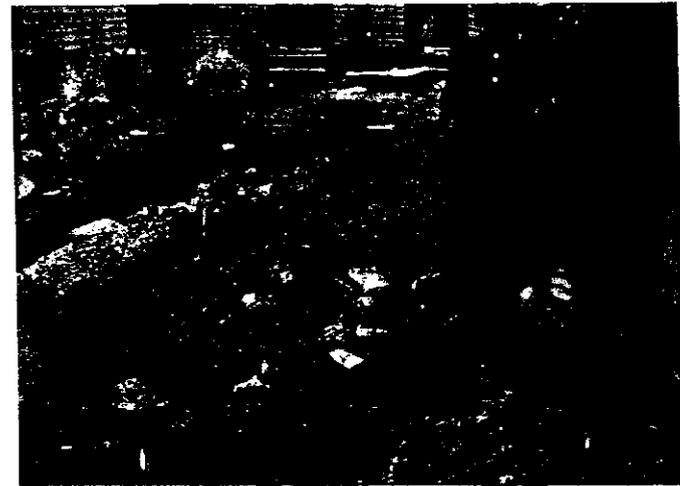
—Floors in hall very thin and full of humps. Stairs same. Nosing on four treads all gone.

—Nosing gone on winder (triangular tread). Girl fell on the stair last week.

—Leak at sink strainer follows waste pipe to water closet floor around the bowl which is encased. Floor inside case soaked and with fifth: not accessible. Water follows soil-pipe into cellar and keeps a section of soft ground wet. Sink waste pipe is not trapped, goes into cellar, thence into soil-pipe direct. Vent pipe from water closet trap is open into the compartment, due to the fact that a sink formerly on the opposite side of the partition was served by the same vent pipe, and when removed the tee was not closed.

A house owned by an elderly woman who is a life-tenant only, was in particularly bad repair. The following are the facts about the first floor tenement at the rear. The ash chute from the two floors above emptied directly, without box, onto the porch floor which is the only approach to the apartment. No barrels have been provided for several months, and the occupant of the tenement was forced to keep the ashes and garbage swept into a pile under the ash chute to avoid the necessity of climbing over them. In the room which was used as a sitting-room, the paper on the ceiling hung down in long strips. It had been in this condition for three weeks. The tenant stated that he had been there five years, and that no repairs had taken place during that time, although he had asked for them. He had hesitated to move because with eight children he had found it difficult to find a tenement. In a bedroom off the kitchen such dim light as could have entered the room was entirely shut out by a blind. When the tenant was asked why the blind was kept closed, he pointed to the fact that a pane of glass was gone, with the statement, "The landlord said if we wanted it fixed, we would have to do it ourselves. But I'm not going to. It is not right. It fell out for lack of putty. None of us did anything to it."

The supply of water in nine water closets was cut off by frozen pipes. Most of these were in houses owned by one man, and all the tenants in those apartments claimed that the condition



The boys are in the front and only entrance to a six-family rear house. The brace in the upper left corner is at the steps of the front entrance of a three-family rear house.

was usual in cold weather. In three hall closets in two houses, lanterns were kept constantly burning to keep the closets from freezing. In another house where there are six hall closets, the water was turned off in the cellar, and a tenant who had been there several years stated that in very cold weather the landlord habitually kept the water turned off except during the hours six to nine in the evening, with the idea that so many were out of the house during the day. Mothers and children were found in three apartments, and at the noon hour several others were seen. The house was visited three times in two weeks and at these times the odor from unflushed closets was sickening.

About ten apartments on Common street were found vacant and unlocked. The public had free access at all times. The closets had been used many times and could not be flushed. Many of the floors had been used in place of the water closet. Six other similar apartments were noted in one of the half-blocks on the opposite side of the street. There three halls were also in the same filthy condi-

tion. During the summer the windows of these apartments were open, and the odor from them was obnoxious. Flies abounded, and the open doors and windows of grocery and meat stores are close at hand. Apparently these conditions are constantly to be found in these particular houses, for they existed through the spring and summer.

Almost no halls are lighted at night in the Common and Valley street half-blocks. Most of the houses in these blocks are not provided with gas in the public halls. In some where the house is piped for gas, there are no fixtures in the halls, and in others where the fixtures exist, either there is no supply of gas or no regular arrangement for lighting it. An examination of the halls in the two blocks at the east end of Common street made between eight and nine o'clock on three different nights, two of them Saturday, found less than ten halls with lights in them. Similar examination in two blocks on Valley street disclosed only four halls which were lighted. One yard in the Common street half-blocks and four yards in the Valley street are the only instances where the space between front and rear buildings was found lighted at night.

THE COMMON NEED FOR BETTER HOMES

A chief of a fire department recently described the manner of gathering certain figures as a "triangular dispensation." The phrase well summarizes our city life in the tenement districts. We are under a triangular dispensation, the neglect, ignorance and low ideals of the owners, tenants and the city officials. It is waste of time to debate with anyone which of the three groups has been chiefly at fault in the past. But it is quite worth while to consider methods for meeting in the future the need for better homes.

The idea which many have that the owner of a house is the one who should be considered responsible is natural, justifiable, and necessary. The clearing of the walks promptly in winter is a typical responsibility. It can be borne by no one so well as by the owner. No one else has control of the spaces which are used in common in and around the houses. The halls and stairways should be always clean, in good repair and well lighted; the open spaces clean, well-drained and, if used as a passageway, lighted at night.

This means for the owner constant expense in money and time, and much anxiety. It can seem an unreasonable burden only to those who have been regarding their ownership as purely a matter of investment, who regard rent as identical with interest. Monthly, weekly and almost daily expenditures for maintenance,—cleaning, lighting, repairing and watch-care,—will come to be common practice; for the care of the public places such as hallways, yards and walks is inherently part of the business of owning a tenement house. There are in Lawrence a considerable number of landlords who seem to regard the ownership of these houses as they would regard the conduct of a store. They give their time and attention to the details involved in the business. In these rapidly growing cities the idea will prevail with increasing speed, that it is not good public policy to allow tenement house owners to ignore their manifest duty in this particular, or to pass the responsibility to the tenants, or to say that the habits of the tenants are beyond the owner's ability to control. A janitor is needed in the largest houses and a caretaker in the smaller ones. In every house there ought to be a definite financial arrangement with a tenant or another person for the lighting of the halls and the care of all the public places. Whatever arrangement a landlord may make, his responsibility for the successful working of the arrangement seems unavoidably part of the business and, in the event of its failure, there ought to be a recognized right with any family to ask the city for the safety of light, and for protection against the dirt of other families. This protection will seldom be sought from the health department directly, because the families fear that the landlord will know who made the complaint.

That fact adds greatly to the need which is everywhere recognized, that tenement houses should have systematic inspection regularly within stated periods. For this purpose, though there were five sanitary inspectors in the employ of the city for most of the year 1911, Lawrence has not had the right kind of inspection. The right inspection would assist owners very materially, and they need such assistance. Additional to a caretaker the presence of a good inspector in a tenement house, recurring periodically whether

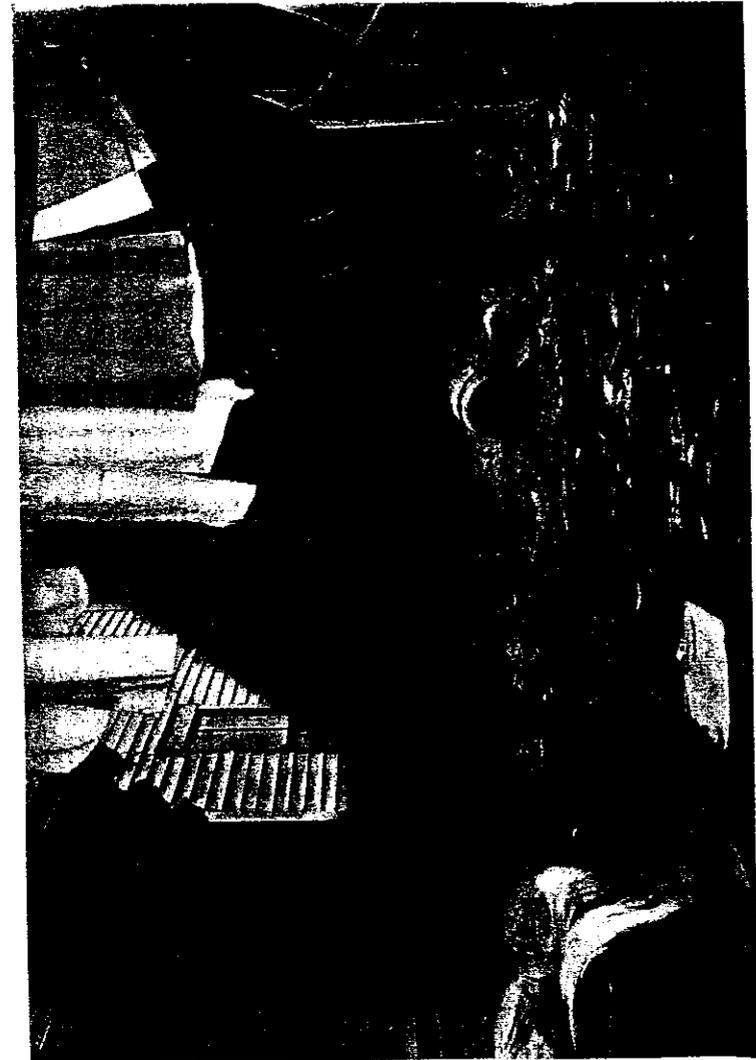
needed or not, is all that is necessary to better the conditions in hundreds of houses. Many owners do not need written orders and many tenants do not need reprimands to be stirred to remedy the conditions of neglect and carelessness. The right inspection should of course include conditions inside apartments. For this purpose and for other reasons, the right kind of a woman can secure the best results. Women have done some of the best work in sanitary inspection. They accomplish most in the education of the tenants, and that is important, for one of the chief objects ought to be persistent instruction in sanitary matters. This is needed by many tenants. The health department should deal officially and legally with owners, but its inspectors meet the tenants incessantly and the opportunity for effective service is constant.

Our public school curriculum cannot be loaded with cures for every social ailment, but certainly the instruction of the young concerning how to live in the over-crowded houses of the tenement districts ought to be serious and efficient. Two or three text books now in use in some schools are helping but they are not comprehensive in their topics and in most of their suggestions are altogether too meager. The right books and the right instruction would achieve direct and broad results. The education of the tenants is so much a social need that the community as a whole should be co-operating with the tenement house owners through the schools and the right kind of sanitary inspection.

THE IMPROVEMENT OF EXISTING BUILDINGS

If old buildings are kept in good repair, that is not all that the city might well be requiring; for there are improvements which can be made in existing buildings at a cost that is immaterial in relation to the benefit secured.

For many years it has been common practice in the large cities to paint or whitewash the side walls of buildings. In New York the law has required for ten years that the walls of courts shall be either of light colored brick or made white with paint or whitewash. Lawrence should be securing white side walls on many of the houses in the crowded blocks; for in this manner the dimly



"Little Indian, Sioux or Crow,
Little frosty Eskimo,
Little Turk or Japanese,
O don't you wish that you were me?"

Robert Louis Stevenson

lighted tenements would be very materially improved. This is the more desirable because there are so many dimly lighted rooms, and the improvement that could be secured is out of all proportion to the cost involved.

There are possible other low cost changes of various kinds in a good many houses. Better light can be secured in halls that are now dark,—by glass substituted for wooden panel in entrance doors, by windows in outside walls, or by the construction of a skylight. The light in water closets in some houses could be greatly improved. In some of the older houses there are windows only a few inches in either dimension. Also in some houses windows have been constructed through a partition into a room, in spite of the fact that the water closet is against an outside wall in which the window could have been placed. There are water closets with doors coming from public halls which could have had doors from each apartment and each then would have been within the apartment. Whatever question there may be about the city's ordering some improvements, there is no question about the desirability of removing the wooden cases around the water closets in many of the existing houses. This would be apparent to anyone from a most cursory examination of the conditions which are now to be found around many of these encased fixtures. The requirement that the floors of many closets be kept heavily painted would not be unreasonable and would be decidedly beneficial. Where the lower end of the galvanized local vent pipe has rusted out, a section ought to be replaced by another kind of metal;—that which several cities are now requiring.

There are buildings that ought to have fire escapes ordered onto them immediately. The need for this is shown later in the paragraphs concerning no second egress.

If the board of health were to adopt the policy of bringing into court regularly each quarter, or even each half-year, one good case of overcrowding, and give it much publicity, the living conditions in some of the tenements would be constantly maintained on a much better level than they are now.

THE BEST WATER CLOSET STANDARDS IN MASSACHUSETTS

If there were anywhere to be found a study of the history of water closet requirements as they have been adopted at various times in all the cities of this country, such study would probably show that Lawrence stands among the first in this particular. In fact it would not be surprising, if it were found that only two or three cities antedate this one in establishing equally high standards. Since 1894, Lawrence has been requiring by the regulations of the board of health, enforced by a plumbing inspector, that there shall be in every house one water closet for each family, and that it shall have a window of three square feet area. These two standards have not only been secured in new houses, but repairs in old houses have been accompanied by the installation of water closets within the house, and usually in the number required in new houses. That it might be possible to compare Lawrence with the other cities of Massachusetts, the plumbing codes and regulations of all cities with a population of more than 20,000 were studied. Only one other city could be found that has yet established these two standards which Lawrence has been requiring for seventeen years.

Whatever may be the results which are being secured without legislation in the other cities, these two requirements are far too important to be left to chance. Lawrence has added to them the specifications that each closet shall be "in a separate compartment separated from all other rooms by partitions from floor to ceiling," that windows onto air shafts shall be five square feet in area; and the "area of the shaft shall be equal to the combined area of the windows opening onto it." Eleven cities in Massachusetts have no requirement concerning the number of water closets that shall be placed in a house, and a twelfth specifies one for every twelve persons. Concerning windows: three cities permit them to open on a shaft of 3 sq. ft.; three others permit flues of six or eight inches; seven accept in place of a window that two inch pipe from the water closet bowl which is known as the local vent; two stipulate that the ventilation shall be "adequate": and six have no requirement. Thus among 27 cities, 21 have entirely inadequate specifications for windows. The citizens of Lawrence may well take

just pride in the record of the city in these particulars. But that record does not mean that there are no water closet conditions that need remedying.

HISTORY OF BUILDING ORDINANCES

In the 1908 report of the fire underwriters, it is said that a comprehensive fire limits district which had previously been established was abolished in 1880. On June 4, 1900, a small fire district, lying along both sides of Essex street, was established and has remained unchanged. This district is less than 280 feet wide, with Essex street's 80 feet in the middle of it. It does not even include the east end of this main business street, and by 1908 the city officials had forgotten that it existed.

In 1901 an attempt was made to secure a building code. The interest began in February and lasted, so far as any record could be found, till the first week in May.

In the draft first proposed, fire limits were to be established from the river to Haverhill street, from Union street to the Railroad. Within the district no wooden building exceeding one story was to be erected. Section 13 aimed a body-blow, though a very clumsy one, at the use of wood outside of the fire limits: "No tenement house shall be erected within three feet of the side or rear line of the lot, but, whenever two or more houses to be used for tenement purposes are hereafter built nearer together than twenty feet, the walls shall be brick at least twelve inches thick above the foundation walls to the roof." Another section required any tenement or lodging house "with a frontage of more than thirty feet" to have a middle fire wall from cellar to three feet above the roof.

Early in April, the matter was referred to a committee consisting of two aldermen, the city engineer, superintendent of public property, four contractors and two insurance men. Their draft reduced the fire limits to include only Common street, additional to the limits then existing. Sec. 13 was made to read "No wall or part of a wall shall be erected within three feet of the line of an adjoining lot or within six feet of the wall of another building, unless said wall or part of a wall is brick filled as specified in Sec. 7." Sec. 7 provided that tenement houses having two families on a floor should have a separating brick-filled wall four inches thick. The same kind of wall was required for all partitions inclosing stairways and light shafts.

The ordinance appears to have been smothered some time in May.

March 19th, 1906, the main portion of the roof of the Majestic Rink collapsed, because of a heavy fall of snow. A section of about 100 feet by 50 fell to the skating surface. The following day the Telegram said: "A significant warning, — something certainly ought to be done to enforce safe and sane building laws in this city. The collapse of the roof of the Majestic Rink is a case to the point. No new building like this one, properly constructed, would collapse under last night's snow fall. Just think of what might have happened had the accident occurred a few hours earlier, while a polo game was in progress. If this narrow escape from a terrible tragedy means anything, it means the city government will be remiss in its duty, if it does not at once pass wise building ordinances and appoint proper officials to see that they are carried out."

The agitation thus renewed secured the reconsideration of the formerly proposed regulations and of one or two other similar bills. The code finally adopted April 23, 1906, was based upon the proposed code of 1901 emasculated.

It strengthened Sec. 13 by substituting a twelve-inch brick wall in place of a brick-filled wall. It made the distance between front and rear buildings eight feet instead of six feet and irrespective of the character of the walls. It added the requirement of a bond from the inspector and the keeping of records and a paragraph giving right to enter. It incorporated the establishment of the office of inspector, the issuance of permits, and some paragraphs giving him much discretionary power over unsafe buildings. It also included verbatim three or four small paragraphs, relatively unimportant, and two important paragraphs weakened.

The amount of penalty possible was greatly reduced; the fire limits were omitted; Sec. 7, as summarized above, was dropped; and about thirteen paragraphs of conservative specifications for structural safety were ignored.

The building inspector qualified for his duties May 28, 1906. The building ordinance as adopted is now in force, except that minor amendments have since been made in two sections. The inspector's annual reports have repeatedly asked for a better ordinance.

THE CHARACTER OF THE BUILDING ORDINANCE

Concerning this, the report of the fire underwriters said: "The municipal building laws are practically valueless." The basis for this opinion may be seen by considering the ordinance in detail. That can be done briefly. Several of the sections have been sufficiently described above. There are three about metal leaders, chimneys and projections into streets.

For the purpose of fire protection, there are three requirements:

FIRST. "No tenement house shall be erected within three feet of the side line of a lot, unless the walls be brick" etc.

The ordinance does not define tenement house, and any building inspector could legally allow three-family wooden houses to be built on the lot line. This would be in keeping with the legal definition of tenement house in Boston, Springfield and a few other places. Fortunately Lawrence had for five years a building inspector who had sufficient interest in the city's welfare to define tenement house to include any house with more than one family. A second grave fault in the section is the fact that tenement houses are mentioned at all. Wooden boarding houses and other buildings are not mentioned and have been, and are being, erected on side lot lines.

SECOND. "Whenever two buildings shall be erected on the same lot of land, one in the rear of the other, the outside walls shall be at least eight feet apart."

Separate rear houses on lots of ordinary depths ought not to be allowed. If allowed, the distance of eight feet is altogether too small. Small as it is, the phrasing "outside walls" permits all sorts of encroachments on it. In very many instances porches, stairs, balconies and other encroachments have been constructed in this space, frequently filling it entirely.

THIRD. "All buildings hereafter erected two stories above the level of the street shall be provided with two separate stairways, placed in such manner that the inmates shall have easy means of egress at all times, said stairways to lead from each story."

It would seem to be the purpose of this section that all inmates shall have two means of egress, but the phrasing does not explicitly say this, nor does it say that the two ways out shall be independent of each other. Without doubt each apartment should have direct access to two independent and safe stairways or fire escapes. The section is from the 1901 proposed code verbatim with two exceptions. That code read "occupants" instead of "inmates," and its final clause read "each tenement to have access to both stairways" instead of "said stairways to lead from each story." The section as enacted appears to say what it does not say. There are new buildings in Lawrence where one or more third or fourth-floor apartments have no second egress. This is radically wrong, yet is possible, because the explicit language of the 1901 draft was dropped.

For ordering additional egress in old buildings, certain sections seem to give the inspector abundant power, but leave the question entirely to his judgment. Such a condition as no second egress from third and fourth floor apartments is too important to be left to the discretion of any individual.

The foregoing three sections have some value. A fourth has none. Wooden tenement or lodging houses are limited to the height of 48 feet. In this height five stories can be erected; what more would be desired? So far the builders have not desired to build wooden five-story houses, and only four or five four-story and basement houses. The 1901 draft limited wooden tenement and lodging houses to four stories.

For the purpose of structural safety there are three paragraphs; one against weakening timbers by cutting them for pipes; a second which limits the distance between studs to sixteen inches; and a third which gives two dimensions for certain timbers. Both these specifications are limited to buildings of "over two and less than four stories." The phrasing is ridiculous, for it includes only three-story buildings. Since the passage of the ordinance almost one hundred four-story, frame houses have been built; and there is not a word in the code concerning the strength of such buildings. Relate these ridiculous, structural provisions to the

new rink that fell and the public's demand for protection, and we have a tale of comedy fit for the best of court jesters.

The foregoing summary states all there is to the building ordinance of Lawrence and it has been in existence five years,—three years since the National Board of Fire Underwriters in formal report termed it valueless. It is not surprising that the building inspector said in his last annual report:

“Each year, I have recommended that the City Council take up the matter of revising the Building Ordinances. That suggestion is not out of place at this time. Last year and the year previous, I recommended that the Building Ordinances be revised along the lines laid down by the National Board of Fire Underwriters. This year I make the same suggestion. Under the present ordinance, there is no provision for foundations, thickness of brick walls, size of floor timbers or columns, floor loads, lighting or ventilation of buildings, protection against fire, or any of the important matters which a building ordinance should restrict. Of course, in a general way, some provision has been made in the ordinance to cover some of the matters above mentioned. The law should be specific and accurate, in order to be effective.”

It should be noted that the building code has nothing in it that meets the conditions of defective maintenance and the need for renovation that has been shown in the preceding pages. The care and improvement of old houses is a need that is found in every city and should of course be provided for in legal requirements. Serious as this need is, it is small in comparison with the need for controlling the construction of new houses. Prevention not cure should have first consideration. Any city of any size has this need. In view of the entire lack of control of new houses that exists in Lawrence, it is necessary to study in detail the extent to which this control is needed. Because of the congestion the character of the new houses is of supreme importance.

THE CENTER'S FUTURE

33,700 PERSONS ON 300 ACRES

This is the population in the central district elsewhere described. There are probably very few cities in the country where the population is less than 100,000 and there is so large an area as 300 acres with an average density of 112 to the acre. The density, if the 17 acres in the Common is excluded, is 119 per acre. There is one section of 14.9 acres where the density is 216 and another of 17.3 acres where the density is 214. The densities in six half-blocks, as previously stated on page 60, range between 243 and 556.

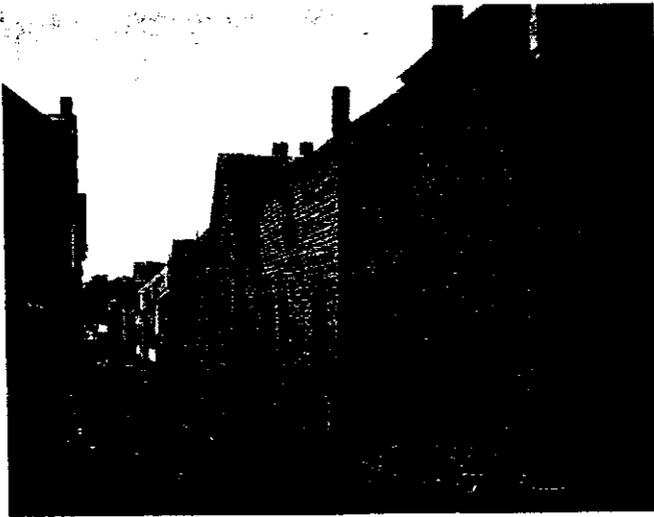
The area of the city is small in relation to most of the cities in Massachusetts. But the smallness of the total area is not the reason for the congestion in Lawrence, if it can be stated, as it can be, that *more than one-third of the population is living on one-thirteenth of the city's area.*

In the central district there are about thirty half-blocks where the majority of the lots are so built upon at present that further additions of houses will be in the nature of filling in the light and air chinks; with the result that such additions will make city blocks which are solidly built upon, except the narrow slits of space between houses. There are numerous other half-blocks which contain many vacant lots and also houses which are crowded together. Into two-thirds of the central half-blocks, large houses are steadily being inserted. The congestion is increasing rapidly.

THE LARGE NUMBER OF REAR HOUSES

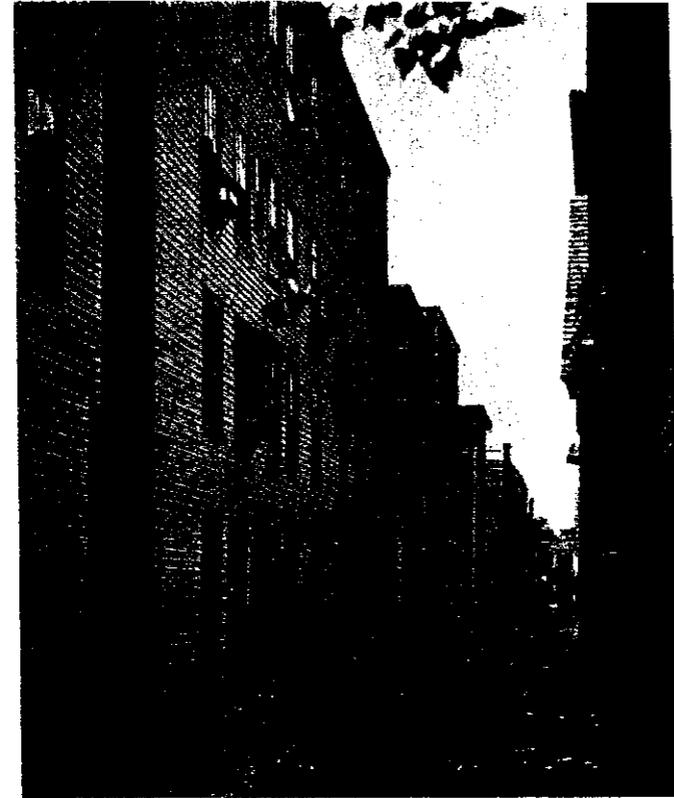
The houses that are moved back on lots are usually small houses; but the new houses that are being built at the rear are large houses. Seventy such, built in the last four and one-half years, contain 255 apartments. There are in the central 300 acres, 360; in a district bounded by the rivers, Park, May and Margin streets, 500; in North Lawrence 703; in all Lawrence 822.

There is a striking contrast between the insurance map of Lawrence and the maps of other New England cities in the number and size of rear houses. The maps of all the important



An alley corps of "old settlers," most of them still in use but marking time waiting to be displaced by houses like those in the following picture.

cities were examined. In those for Manchester, Lowell, Salem, Fall River and New Bedford, certain streets have front houses as close together and in some blocks as large as the front houses in Lawrence, but the rear houses are not as numerous and not as large. Cambridge and Manchester have some badly crowded blocks, but the houses are smaller. Lowell and Salem have sections of blocks, groups of four to eight houses, which equal the worst congestion in Lawrence, but the pages in their maps do not display the conditions on the Lawrence map. The center in Lawrence has the largest number of large frame houses and the largest number of rear houses. With Boston's brick center excepted, the map of the Lawrence center is the worst in New England.



Rear houses in the next alley to that shown in the preceding picture; one block nearer to the center of the city.

SOME OF THE RECENT HOUSES

Lawrence ought to be examining with great care every house which is proposed to be introduced into the already overcrowded center. Some of the houses now being built would have to be considered badly lighted houses, if they were on a prairie. There are kitchen and water closet windows that open onto deep porches and the windows give entirely insufficient light. Builders are constructing dimly lighted and even windowless sink rooms, which also frequently serve as pantries. These are the work-rooms for the women. It is not difficult to guess accurately how many carpenters would build for themselves bench-rooms that have neither light nor ventilation; but they build them for the women.

In the two districts, there were found fifty-seven living-rooms where the source of light and air is from ten light-wells. Their areas and the number of living-rooms opening from them are as follows:

In	Area of Each Shaft	Living Room
Two shafts	20 sq. ft.	11
Three "	25 to 27 sq. ft.	18
Five "	32 to 36 " "	28

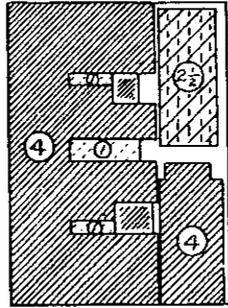
Six of these shafts serve, besides 34 living-rooms, 30 sink-rooms and 32 water closets or bath-rooms including water closets. Most of these shafts occur in buildings that are relatively not old buildings. The practice with architects in trying to secure light in this manner is current. The spaces on the plans are usually marked, "Light well—skylight over." All the shafts seen are covered with skylights and there are ventilators in most of them. In some of them at the bottom there is an opening to the cellar but in no case a fresh-air duct. The ventilation is quite inadequate. To the upper floors the bad air and noise of the lower floors are furnished. The shafts are enlarged speaking tubes; a quarrel or a child being whipped, a sick baby or a person who snores,—any of these in one family disturbs all other families. Onions for dinner in a lower apartment means onions for dinner in all apartments. The situation is ludicrous,—except for those who live in it. In the hot weather the bedrooms that open on

these shafts are a burden to the strong as well as to the babies and the sick. The light for the rooms on the top floor is fair at all times. On the next to the top floor a fair amount of light is secured only on bright days. For the rooms that are three and four floors below the roof there is inadequate light at all times. Such construction as this is not necessary.



The photograph was taken looking from a dark kitchen through a half-open window into an inner court between two buildings. It serves six kitchens and at the third and fourth floors contains porches four feet wide. Such space in Brooklyn and Connecticut would have to be about twice as large and could not have any encroachments. This inner court is materially better than the spaces that exist in some buildings, yet it is entirely inadequate for the lighting of the center floor spaces of the house.

LAWRENCE SURVEY

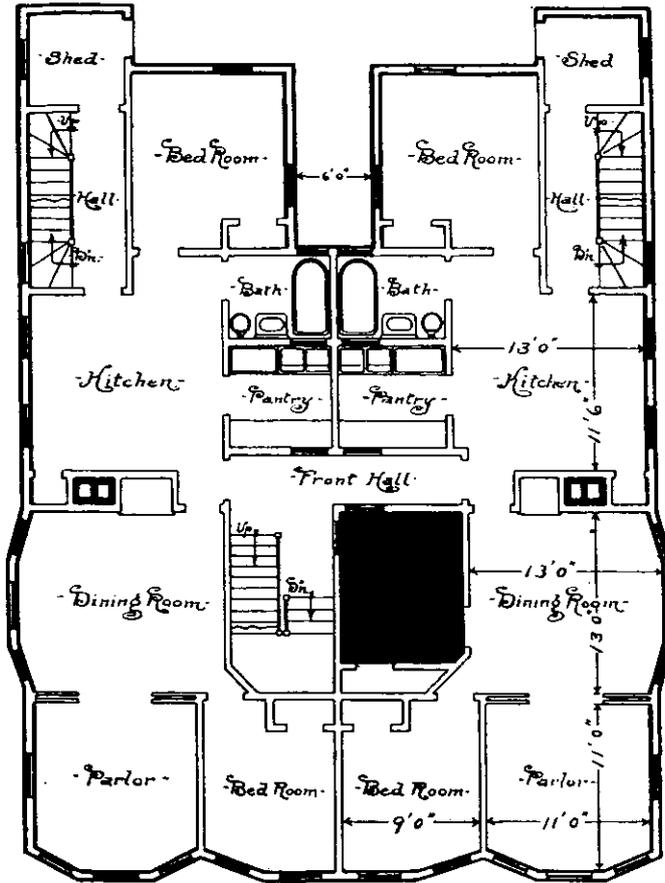


The left part of the sketch above is the outline of one of two recently built houses which are almost identical. The picture on the opposite page shows the interrupted wall as above. Both this house and its mate appear on their street sides to be among the best of the large tenement houses, and are good in many respects. But in the point of lack of light in the centers of the buildings, they are among the worst houses in Lawrence. The two narrow slits shown in the sketch are only three feet wide and their inner ends are twenty-seven feet from the rear wall of the building. For the purpose which these slits serve, other cities have for several years been securing by law courts nine and ten feet wide and in addition a yard of five feet depth at the rear of the building. Behind one of these buildings is a very small yard space; the other has no yard.

The front halls have windows into these narrow courts, but are so dark that one has to feel his way at the second and third floors. The open spaces are not even wide enough to give room for a window of adequate size to light the bedrooms that are located at the ends. At the rear end of the two courts, the sketch represents, by broken cross lines, space that is occupied by porches at each floor. Kitchen and rear hall windows open onto the porches and at the second and third floors receive almost no light. On cloudy days artificial light is necessary in the halls, kitchens, sink-rooms and bath-rooms. Such obstructions as these ought not to be allowed. The buildings will have even less light in them, when the owners of the adjoining lots have built as near the lot line and as high as these buildings stand.



A new building with rear wall on lot line, occupying 95.5 per cent of its lot. The open spaces are most seriously small. Several houses of this kind adjoining each other would contain many rooms which would require artificial light constantly.



ROOM WITHOUT LIGHT OR VENTILATION

A four-story frame house. "Not more than two such houses built each year."—*Building Inspector*. Such rooms are unnecessary, and permission to construct them is not good public policy. Built summer of 1911.

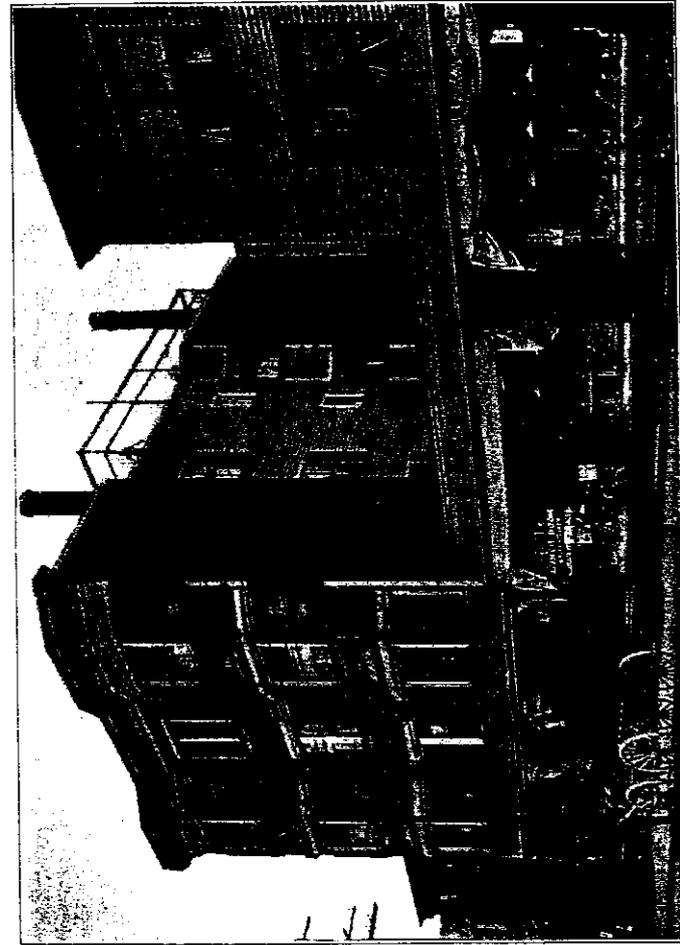
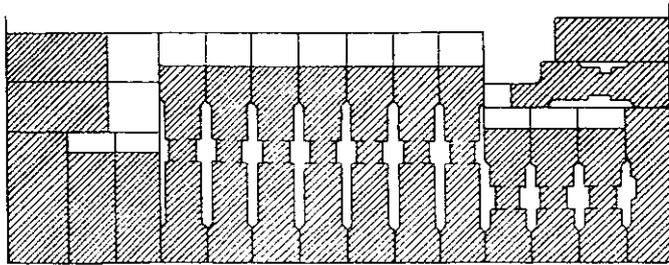


BADLY LIGHTED DOUBLE HOUSE

Looking between two rear houses to the rear of the front house. The court between wings, obstructed by stairs, serves six bed-rooms and six alcove rooms and is only four feet wide. From eight to ten feet are being required for such spaces in some cities, and the obstructions would be illegal. Built summer of 1911.

The foregoing picture shows a form of house which is already very common and will probably increase in number rapidly. It is the double house with two wings at the rear, separated by an outer court, making a floor plan with an outline that suggests a magnet. In many houses in Lawrence these courts are not wide enough to properly light the centers of the buildings and in numerous instances are obstructed by porches and balconies. In some houses the courts are almost entirely filled by such obstructions. The obstruction ought not to be allowed and a court of adequate width should be required. Cities with populations of more than a million are requiring that such spaces shall be eight feet wide and the standards in some cities are nine and ten feet. Surely Lawrence ought to be able to leave more open space around a building than is being left in cities with a population of a million.

Some of the new houses would not be bad houses in open fields but are thoroughly bad for the center of Lawrence, because of their relation to other houses. On the adjoining page is a picture of a building which is practically the same as that form of house known in New York notoriously as the "dumb-bell" house, so called because the outline of the buildings has somewhat the shape of a dumb-bell, as may be seen in the sketch below which shows the ground plan of a series of these bad buildings as they exist in New York. Each of the narrow slits seen between the houses is the only source of light and air for about forty-eight rooms. It has been impossible to construct them since the law of 1901.



Because of the recess in the side wall, this house is like the notorious "dumb-bell" house in New York City. When two such houses exist side by side the chimney-like space between them admits little light and ventilation. New York ceased to build such houses ten years ago.

The owner of the "ten footer" in the foregoing picture built the walls of the store wide enough to permit the construction of a four-story building and he is being urged even now to do this. He says he does not see what he can do, when he builds, except to duplicate the recess of his neighbor's building. When this has been done, the narrow space between these two buildings will admit practically no light and will furnish the upper floors only with the bad air of the lower floors. In New York City the construction of such houses was begun as early as 1879, and, although at that time the true character of the house was realized, this form became the prevailing type of tenement house for nearly twenty years. Since the passage of the new law in 1901, the legal requirements have been such that these buildings can no longer be erected. Except for the thousands of unfortunate families who still live in the old ones, the dumb-bell tenements have been for ten years a matter of history. Certain types of buildings such as this one are inherently bad, and never can be otherwise. It matters not in what city they are located. Knowledge of them ought to be universal. The experience which New York has had with this form of building ought to satisfy all the cities of the country. It would seem that the complete demonstration that has been made in that great city should be adequate to prevent the building of such houses anywhere. There are no peculiar conditions in any city which are so fundamental that they need to force in the repetition of the worst features in the worst houses in the old building practice of New York City.

Scattered all through the center there are many other buildings which are paupers in the matter of light. They are being supported by their neighbors. In these buildings rooms are lighted solely by windows that are located on a side lot-line; such rooms being the majority of all rooms in some buildings. When the owner of the adjoining lot comes to build, he is almost forced to do as the man on the other side of the line has done, and by so doing he shuts out the light from the lot-line windows. There are numerous buildings where rooms have already been made practically windowless in this way. There are several

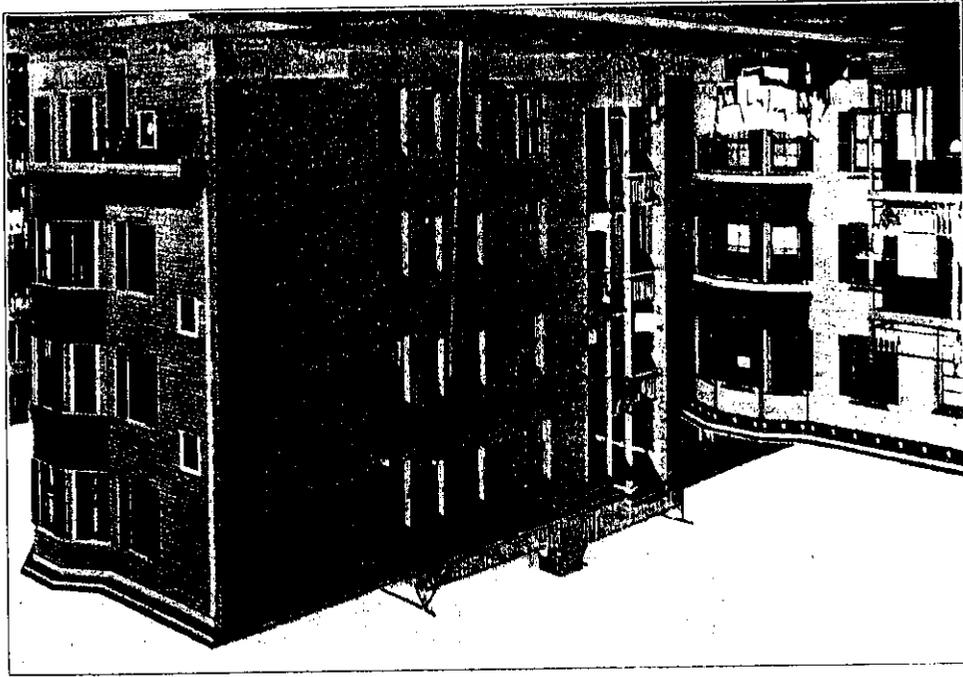


Old Settler "Marooned." Two three-story houses shut it in at the rear also. Both four-story houses have lot-line windows. What will become of them when the old settler passes away?

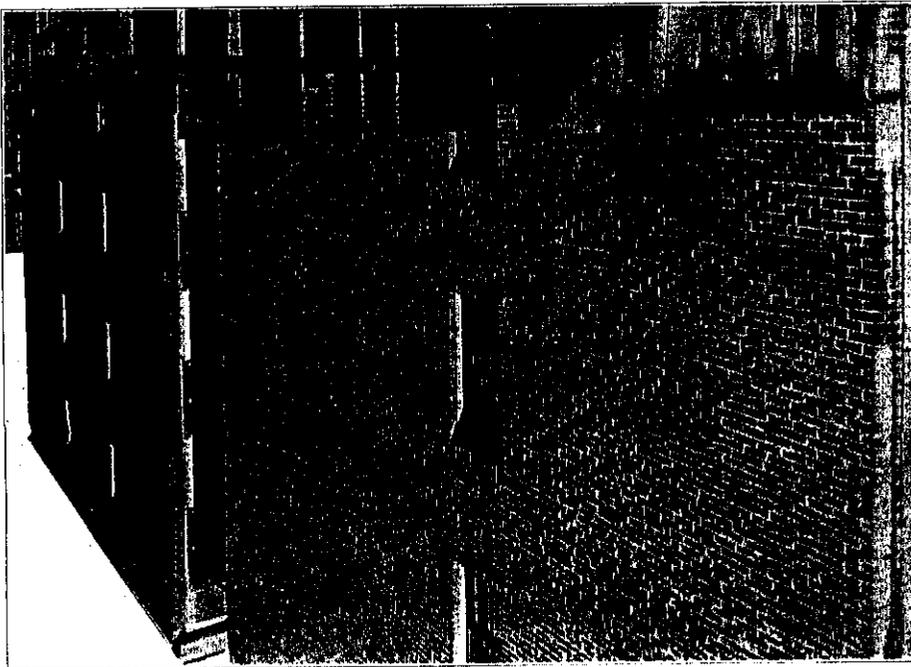
instances where the man who first built kept away from a side line, then the man on the opposite side of the line built close to the line and after a while the first man put out a new wall near the line. Thus the failure of two men to agree is allowed, by our lax public policy, to create dangerous housing conditions which will cost the public dearly. Considering the speed with which large new buildings are being introduced, it is certain that this blockading of windows at the center in Lawrence will increase rapidly during the next few years.

A house with lot-line windows and similar defects has some immediate financial advantage to the builder. There can be more rooms in a tenement or the rooms can be larger; so that for a few years the rents are higher. The builder has benefited himself at the expense of his neighbors and the public.

The front porch of a rear house touching the rear porch of a front house, four tenements in each. Both the side walls shown are on the side lot line and together they contain windows which are the only source of light for eight bed-rooms, eight water-closets, and eight sink-rooms. The owner of the adjoining lot taking the same privilege will make these open windows, and will make eight other rooms nearly windowless because they would then open only upon the two sets of porches between the buildings. The best light in the rear building is from the alley fourteen feet wide.



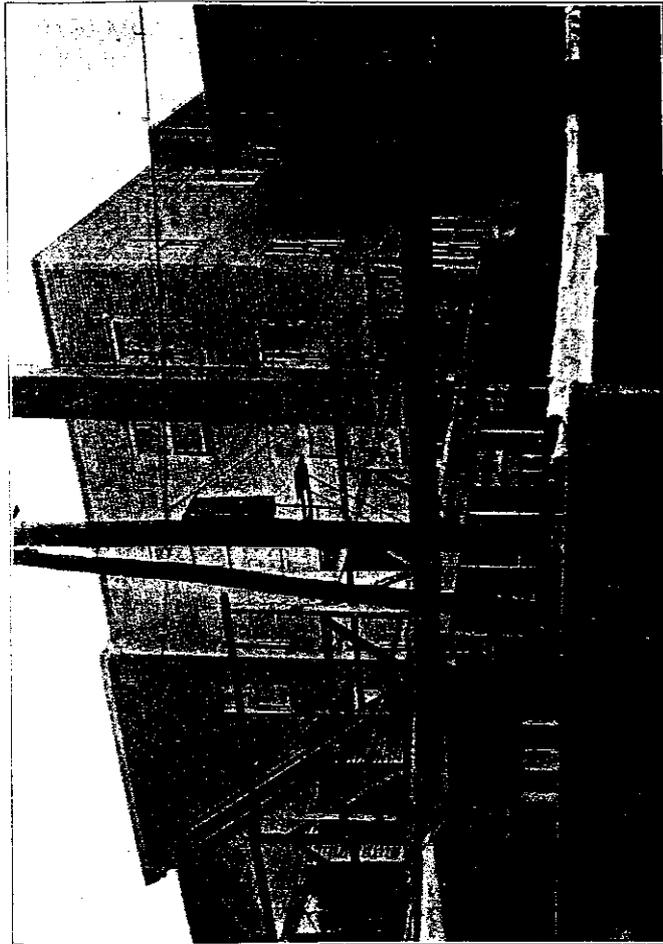
A side wall which extends from street line to alley line and is less than eight inches from the side lot line. It contains eleven windows which are the only light for eleven rooms. When the owner of the adjoining lot takes the same privilege, this building will have eleven windowless rooms. Eight other rooms open on the court shown. It is 5.7 ft. wide, 10.8 ft. deep; whereas in Brooklyn for ten years such spaces have been required to be 8 ft. wide by 14 ft. deep. Built summer of 1911.



100

100

100



A new "chambers"—rooming-house. Located on a corner, with fine front walls, it is one of the best appearing houses in Lawrence. The light in it will probably be wretched before its usefulness is half over.

Rooming houses were purposely not included in this examination. But they should not escape attention entirely; for there are a considerable number of new ones and some of them are not well lighted, while others will be poorly lighted eventually. Most of the new ones have very good exteriors, but in the interiors the city is allowing the gradual accumulation of very badly lighted living quarters. The newest hotel in the city may easily become one of the worst buildings. The building shown on the opposite page is by no means a single instance, but a fair sample of all this class of dwelling-places.

That windowless rooms are being constructed in new houses, as in shown in the sketch on page 94, needs little comment. For more than ten years, thousands and thousands of houses have been constructed in New York with a window in every room, as the law requires. There is no opportunity for any feeling of complacency that Lawrence is not building a large number of these houses. We know too much about the use of such rooms through long periods of years to make it possible to think with complacency of one such house.

Two facts partly explain the bad new buildings. Some builders plan a house which is suitable enough for a good-sized lot. Then they use this plan over and over again, regardless of the size of the lot they are building on. This frequently turns a good house into a bad house. There seems to be no thought that the reduced size of the lot should radically change the form of the building. The other fact is the unwarranted toleration of the smallest lots. Nearly everyone is ready to excuse wretched construction on the plea of the smallness of the lot. It seems to be considered possible to take from a very small lot half the income which could be secured from a lot twice as large. This is unreasonable. In using building material there are certain minimum dimensions below which the material has little or no value. The same ought to be true concerning the smallest building lots. The amount of light admitted into buildings is subjected to definite measurements. The necessary measurements for open space in relation to width of floor and height of wall cannot be secured on

the smallest lots. It ought to be impossible to construct a house on them which has half the value of a house on a lot twice as wide.

As a help to a right view of the seriousness of the conditions, we should mark out as best we can in a coarse, rough way the number of people who will try to use such a house as that described elsewhere, in which there are eight apartments which have eleven rooms lighted solely by windows on a lot-line. Supposing that these windows are blocked by an adjoining building before the end of ten years, and after that the house remains in use for sixty years; using the average number of persons in private families in Lawrence, and figuring that there will be one removal in each apartment every two years, we reach the number 1,100 persons. At least one thousand persons will try to use this house after the windows are blockaded and the rooms are practically windowless. This is an underestimate for one house.

New houses so constructed that there are dark halls, dark and crooked stairs, rooms opening only on vent shafts, windowless rooms, lot-line windows, large floors unbroken by fire walls, and other similar defects are most serious. There is possible practically no alteration that betters these conditions. Once in existence, they will continue the same till the house is burned or torn down. Are not these the conditions that have cost the cities of England millions of dollars in the effort to better here and there a few patches? Is it wise that a few men should be allowed to take for a few years, a little more money than they would under reasonable restrictions, and the whole city suffer for it? Surely the intelligent citizens in Lawrence have not stopped to think about these houses. For such houses at the center of any city, and especially in Lawrence where the congestion is already so great, are not bad in any onefold, twofold or threefold manner. They are seventy times seven bad. The periods of their existence will average seventy years. Each one, because it seems possible to take a larger income from it than from a better house, will cause other new houses to take the same form. In fact, if unrestrained, they will become the prevailing form of house at the center. This is exactly the history of the infamous dumb-bell house in New York City.

HOUSES THAT TRAP MEN LIKE ANIMALS

The life hazard at the time of a conflagration, when fire attacks the exterior of houses, has been mentioned in the first pages of the report. The life risk from fires that originate inside of houses is excessively high in Lawrence; judging from the conditions which exist in the six half-blocks examined; for they are typical of about thirty half-blocks at the center. There is second egress from thirteen third-floor and two fourth-floor apartments only over the roof. When egress is to be had only by entering the upper part of a flight of stairs which may already be choked with smoke and flames, safe exit is very questionable. It is not to be expected that women, children, the old and the sick will act rationally or choose such exit when it involves rushing through dense smoke or flames. Two other third-floor apartments are depending for second egress upon wooden balconies in exposed positions. Three have egress only across a bridge through another apartment. Egress that involves the possible need for breaking into, and then out from, a vacant third-floor apartment is not what it should be for the young and the feeble. Four other third-story apartments have dangerous exit over roofs where the spaces between houses are from three to five feet wide, and it is necessary to step over these open spaces. Three houses that are not included in the figures of this paragraph had second egress completely shut off by obstruction. A description of one of them is sufficient. In a rear house there are four apartments, two each on the third and fourth floors. The rear stairs lead to the alley and were completely blocked by rubbish and wood at the second floor and on the first flight. They remained impassable below the second floor for more than nine months, and were in that condition when last seen. There are, in addition to the foregoing, thirty-five third-floor and seven fourth-floor apartments which have no second egress whatever. This makes in six half-blocks a total of sixty-six third and fourth-floor apartments which have insufficient egress. Under nine of them there are seven bakeshops.

WHAT NO SECOND EGRESS FROM A THIRD FLOOR MEANS

2 KILLED BY LEAP AT FIRE.

Fire started mysteriously on the ground floor of a tenement house at No. 250 Powell street, East New York, at 4 o'clock yesterday morning. The rooms of Julius Shapiro and his family were on the top floor.

The Shapiros groped their way to the front of the building. Shapiro stood on a narrow ledge at the third floor and dropped his infant Sidney safely into Policeman Thomas Goodman's arms. The father next dropped nine-year-old Aaron with like success. Aaron's hair was aflame. George and Sadie Shapiro, fourteen and twelve, were then dropped by their father. George's right leg was fractured, Sadie's skull and left leg were fractured and both were hurt internally.

Shapiro and his wife jumped and both were instantly killed.

"I would be pleased to receive contributions addressed to me, for the children, care of Box 14, Station P, Brooklyn," said Alderman Alexander Drescher.

N. Y. World, Nov. 4, 1911. (Pg. 16, Col. 4).

East New York is a district in Brooklyn. The house contained two tenements above a store; and, because it is a two-family house, it is not under the state tenement house law. Each item of the accident as described above has been corroborated in a letter from Mr. Drescher. Was there any accident about the fact that the house had no second egress?

In view of all the knowledge we have of the daily occurrences in the cities of this country, was the event described below an accident, or something else? The *Hartford Courant* of December 4, 1911, under the heading "Woman Suffocated in Old Fire Trap," says:

"Through what the officials term a violation of the tenement house law Mrs. Jane Banks, 71 years old, lost her life late yesterday afternoon in a tenement house fire at No. 37 Wolcott street. The fire was of unknown origin, starting on the third floor, which was occupied by Mrs. Banks and her husband.

"Engine company No. 8 is located only a few blocks from the scene of the fire. Two ladders were put up the side of the house, but the fire was so hot and the smoke so dense the firemen could not penetrate the part of the building where the body was later found.

"The intense heat of the room had baked the body. The skin had peeled off the face and hands, and the hair was scorched off her head. The fact that her clothing was not burned indicated that she had not been actually touched by the fire, but dropped overcome by the smoke, and the heat of the room did the rest.

"Medical Examiner W. W. Knight was called, and he questioned Ladderman Collins about the finding of the body. The body was lying on the floor near a window, and it is believed that the old woman, who had been left sleeping some time before the fire started, awoke to find the place on fire and that when she found that she could not get to the stairs, her only means of escape, she tried to get back to the window of her sitting-room, but was overcome by the smoke before she got there.

"The house is an old one, and was originally a four-family tenement, with two tenements on a floor on each side of the brick block. It had been made over into a six-family block, however, and while the tenement house laws call for two means of egress to the ground from each tenement, there was only one from the third floor, and that is why the old woman could not be saved in the early stages of the fire."

LAWRENCE NEEDS NO MORE DISASTERS

Three years ago the fire underwriters said concerning explosives and inflammables in Lawrence: "The City laws are very meager and are not being enforced." The citizens cannot claim that they must wait for an explosion in Lawrence to make them feel that gunpowder will do there what it does elsewhere. They cannot claim that they must wait for a disaster in Lawrence like that in Brooklyn before making all buildings safe, or wait for another sweeping conflagration in New England before establishing an extensive fire district. They cannot claim that any exigencies in the building business, no matter what they are, make it necessary to wait for twelve or fifteen blocks of windowless houses before light and ventilation shall be required by law. The long period of indifference or ineffective interest ought to end.

THE SOCIAL RESULTS OF BAD HOUSING

Such centers as the one in Lawrence are not only seriously wrong, but especially dangerous to the common welfare, because of the new-comers who are filling the centers. In each of the three states, Massachusetts, Connecticut and New York, among every three persons only one has parents who were born in this country. In Lawrence, among every five persons four are the children of foreign-born parents. The English-speaking element in Lawrence is large, but in the last decade the non-English speaking element has been growing rapidly.

This is adding to our problems rapidly. Already the great majority of those who live in the crowded districts of the cities are persons from countries where the theory and practice of democracy either do not exist or have not progressed as in this country. Good citizenship is based on the moral integrity of individuals. We cannot have good citizens who use honestly and intelligently the opportunity to control our city affairs unless as children they are protected and helped in houses that are worthy the name homes. Many tenement houses at the center in Lawrence are permanently injuring the child-life that is in them. Because of the dim light, eyes are being strained and the rooms

are not being properly cleaned. Children are being brought up in rooms where it is constantly possible to see into and across the bed-rooms of other tenements, because they are so near. Dark halls at night are universal; yet they offer grave moral risk for the young, as many realize who know the life in the tenements. Some of the most important testimony taken by the New York 1900 tenement house commission shows what potent adjuncts dark halls are in demoralizing and ruining the lives of young people. The overcrowding of tenements with numerous boarders is demoralizing. The presence of dissolute tenants, especially the women, is debasing.

There are other social results of poor houses. We are inclined to consider the dimly lighted tenement too superficially. It is not a home but a tool-box. The gloomy rooms are not only not attractive but actually drive the children and many an adult into the street and away from the home. To the many other forces which are constantly interfering with family life, drawing and keeping the members of the family away from each other, we are allowing the repellent home to be added. The members of a family ought to know each other better. We need better and stronger home influence, to preserve and foster the integrity of the individuals; and we are not wise, if we do not see that bad housing has a distinct, deteriorating influence on character; while on the character of the individuals the stability of our institutions is based.

"Since things alter for the worse spontaneously, if they be never altered for the better designedly, how is the evil to stop?"

—BACON

THE REMEDY

It is mid-day. The time for inaction is long passed. But action should be in the direction that will lead to the speediest, the most fundamental and the most secure relief. It is extremely doubtful whether adequate, effective action for the control of the conditions in Lawrence is attainable through any city legislation. Those among its citizens who know the city best and have the best interests of the city near their heart know better than the public knows what an extremely weak, and exceptionally broken assembly of peoples the city is. Though the pride of the individuals in their city may be as great as it is in most cities, the best of the citizens if they are honest with themselves must quietly acknowledge the fact. But the fact because of its relation to the housing condition is not one that can be merely quietly asserted. It must be openly faced, publicly asserted, if the help is to be secured that will bring in adequate remedies. It is not just to the better citizens in Lawrence to speak of it in direct comparison with other cities. The citizens with influence and civic ideals are too few. The prospect of successfully controlling the building of houses in the indefensibly congested center cannot be considered without mentioning the absence of the mill owners as residents. Stated baldly, Lawrence is an appendage to the textile industries — a tool-room attached to a workshop. Many cities have such economic balance within themselves that they are far more integers than Lawrence and far better able to take care of themselves. The city is woefully weak because there is lacking in the control of its civic affairs, the direct sense of shame and personal responsibility and the efficient, public-spirited, controlling interest which the mill owning families would have, if they were residents. Because the mill owners live outside of the city, the housing problem is a state problem, and can be solved only by state legislation.

This is true of other factory cities in New England. The economic power of the corporation over-shadows and dominates

for corporate purposes the weak city government in which the owners of the corporations as individuals and citizens have no responsibility and little interest, because they are not residents. To these political units, which are not economic units, or are so out of balance with the economic facts, the theory of home rule is ill-suited.

Our economic relations have greatly changed. This is remarkably well exemplified by the early relations of the textile employers to their employees as tenants. The mill owners founded the town for their manufacturing purpose. It was a component part of their project. They planned painstakingly for it and its welfare. They built sewers at their own expense and planted ornamental trees and shrubbery. For their employees they built houses that were large, but considering their date, exceedingly good houses. Some are still in use and are superior to many of the houses that are being built in the center now. For certain streets they stipulated that no lot should have on it more than one house and no house contain more than one family. They limited the height of and specified material for buildings on the main business street. But their intentions extended beyond the founding of the town as a business project.

What we call the industrial revolution had at that time brought in machines and factories in large numbers, but had not yet spoiled the feelings of the employers. Their point of view was that of the employing artisan toward his apprentice. Large numbers of the employees were unmarried and away from home. Boarding-houses were maintained or controlled by the companies at a low profit, and sometimes at an annual expense, for the purpose of preserving a proper supervision over the operatives. The mill agents were chosen as men who had wisdom for supervision of the houses as well as the mills. By rules and regulations posted in all the houses, the attempt was made to safeguard not only the physical welfare of the tenants, but their moral and religious life. Men and women were not allowed in the same boarding-house. Tenants were cautioned to pay particular attention to the cleanliness and daily ventilation of their rooms, were required to keep a quiet bed-room for the sick, and were vaccinated

at the office of the company at the company's expense. They were required to be in the house by ten o'clock at night, were expected to keep their twelve to fourteen year old children constantly in school, and were expected to attend divine service on the Sabbath. The corporation furnished a library and maintained a relief fund. We may smile when we first read their rules, but our sober second thought ought to bring us a deep feeling of gratitude that the philanthropic purpose in the employers was once so strong. What we smile at is the method of expressing the purpose, because the method is so ill-suited to our present social conditions. The companies were not many years in finding this out. The surveillance of course proved too troublesome. They learned the lesson that some other industrial corporations have yet to learn. They ceased to be landlords long ago, and have thus escaped the tangled relationship which made the town of Pullman a failure for many years, and has given serious trouble at Ludlow and elsewhere.

Recently one of the largest mill corporations has resumed this relationship in Lawrence, to the extent of building in 1907-8-9 houses for 142 families. Fifty-two are in cottages of exceedingly good design. They are on large lots, and serve as a benefit to a few families, an attractive feature of the town and an advertisement to the company. The rest of the houses are good houses, almost too good to be interesting to commercial builders. In view of the fact that this Company employs from three to four thousand operatives who rent apartments, the 142 apartments in these good houses are as a drop in a bucket. If anyone asserts that the purpose of the corporation in maintaining the houses as a financial burden is to benefit the employees, he should be asked whether the method is not still missing fire like an old flint-lock gun.

There are other great civic needs in Lawrence besides the housing conditions. It is symptomatic of a general condition. We can, any of us, dream in a utopian manner of an interest among the mill owners that would make them willing to say definitely to their representatives in Lawrence: "We feel that the city has reached a position which demands some of your attention and time, and we are willing that you should consider yourself free to participate in any civic movement which seems to you to be worth

while for the immediate betterment of the city's affairs. In fact the need there is sufficient to make us desire to have your influence count even though in some particulars your activities should temporarily work against our interest as a corporation. We will trust your judgment. You will be acting as an individual. You are not representing the corporation; but in the end you are working for the corporation's best interests, and we shall so regard the time you spend in enterprises that are genuinely for the best interest of the city as a whole."

Dreams sometimes come true, but even if this one should, it is doubtful whether the actual results achieved could be more than a partial remedy for the housing conditions. The forces at work are too deep and too strong. Huddling people together is a disease. It generates profits that are a poison, intoxicating the whole community. With unusually strong religious prejudices and race hatreds, and with the absence of those who conduct its chief enterprises, such a community would seem to have the chances all against its being able to cure itself.

The citizens who are genuinely interested in the city's welfare will welcome the day that wipes out the fictitious lines of the present political unit and establishes the unit more nearly according to the economic facts by including in it the towns, Methuen and the Andovers. Lawrence needs state legislation.

THE STATE'S DIRE NEED IS HOUSING LEGISLATION

Contemporaneously with a cholera epidemic in 1849, Lemuel Shattuck, one of Boston's citizens, became actively interested in securing healthful living conditions. With two others he was appointed by the state legislature to bring in a report on the conditions. "The report of the Sanitary Commission of Massachusetts: 1850" is a historical document of 500 pages, simple in its purpose and comprehensive in its argument for the establishment of a State Board of Health. It was chiefly a housing investigation and so is one of the earliest in the country. Besides describing the conditions in the center of Boston, it presents in about thirty pages a sanitary survey of Lawrence, to illustrate one of its chief objects, namely: "We recommend that special sanitary surveys of particular cities, towns and localities be made from time to time, under the direction of the general Board of Health."

The examination of Lawrence, then a town of 8,000, was quite comprehensive and has preserved a picture of its life in the early days as no other book has. It has much praise for the living conditions found there. One of its conclusions concerning the town is especially interesting in view of the present congestion. "We recommend that every practical effort be made to prevent crowding too many houses upon one lot and too many families or persons into one house."

It is a melancholy fact that this young town that happened to be chosen as a field to illustrate a method for improving living conditions should have developed since that time the most congested center in New England, apart from Boston. But Lawrence is fortunate in having some citizens who are interested in finding out the facts and willing to face them publicly. Outside of Boston it is the first city in the state to have a formal housing investigation and print an extensive report. It is fitting that Lawrence should call the attention of the other cities to the state-wide need for housing legislation.

