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INDUSTRIAL CAUSES
OF
CONGESTION OF POPULATION IN
NEW YORK CITY

BY
EDWARD EWING PRATT,
Assistant Professor of Economics and Statistics
New York School of Philanthropy

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE
FACULTY OF POLITICAL SCIENCE
COLUMBIA UNIVERSITY

NEW YORK
1911

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PREFACE

THE subject of congestion of population, especially in reference to New York City, has been widely discussed, but as yet the data presented have been lacking in definiteness. Wise and well known governmental commissions have held solemn conclave and have taken the testimony of eye-witnesses. They have announced their findings in well chosen but almost numberless recommendations. In spite of this mass of material the author of this monograph hopes that this contribution may still be of value.

The importance or conclusiveness of the facts and of the subsequent deductions must not be overestimated. The number of employers interviewed has not been large but is representative. The number of workers included forms a comparatively small proportion of the great total in New York City, but they are not unlike other workers. While he recognizes certain limitations in his methods of investigation and in his manner of presentation, the author still hopes that his work will be valuable as throwing light on the big problem of congestion. His study does not pretend to be exhaustive, but aims to segregate and examine intensively a small but important part of the whole,—a part which is closely related to other phases of the problem of which the author has not treated.

Undoubtedly the most valuable portion of this work is the statistical matter. Some of the tables have been placed in Appendix II merely for the sake of convenience as they are referred to frequently in the text. Percentages have been

used almost wholly. In many cases where the number of frequencies is very small a comparison of them means little, but it was thought best to pursue a uniform plan throughout.

This study was originally undertaken for the Exhibit of Congestion of Population which was held in the spring of 1908. A bit of the material was shown at that exhibit; later the study was considerably enlarged while the author was a Fellow in the Bureau of Social Research in the New York School of Philanthropy. At all times the ready advice and helpful counsel of Professor Henry R. Seager of Columbia University has been invaluable. The author's obligations to Professor Roswell C. McCrea of the School of Philanthropy can scarcely be discharged by this acknowledgment. The author is also indebted for help, criticisms and suggestions to Professors H. L. Moore, E. R. A. Seligman, J. B. Clark, S. M. Lindsay and E. T. Devine of Columbia University. Many of the statistical tables have been compiled by Miss Dora Sandowsky, whose work has been painstaking and careful. To the Russell Sage Foundation are due sincere thanks for making possible whatever breadth of scope this study has attained.

EDWARD EWING PRATT.

NEW YORK CITY, MARCH 11, 1911.

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CHAPTER I

INTRODUCTION

FROM time to time attention has been drawn by economists and sociologists to the world-wide movement of population from the country to the cities. This concentration of population and the growth of cities should be carefully distinguished from the increasing intensity or congestion of population in certain sections of large urban areas. The former phenomenon is universal in this country and abroad, the latter is confined to a few of the principal cities. As concentration of population in cities was one of the leading social phenomena of the nineteenth, so congestion bids fair to underlie the most critical social problems of the twentieth century.

The present essay will not attempt, beyond the briefest summary, to deal with the causes or status of the movement of population from the country into the cities. Nor will it attempt to make a complete study of the problem of congestion. It will seek merely to isolate, to analyze and to investigate some of the factors which have made for the very great density of population in New York City. That city is without doubt the most extreme example of congestion, and as a laboratory for research it is unequaled. The specific set of factors or causes of congestion which will be dealt with in the following pages are industrial. The writer recognizes other economic causes, and still other causes which may be called social. These are important, they are not to be underestimated, but they lie without the

field which is defined here. A study of the industrial causes of congestion will comprehend the factors which have determined the location and congestion of industries in New York City, and the part which they have played in the existing congestion of population. It may be found that such a study of a specific phase of a large problem will suggest some method of alleviation. It cannot, of course, lay claim to be the foundation of a complete remedy.

It may not be out of place to consider, in view of some existing confusion, the definition of certain terms which will occur with some frequency. Concentration of population describes the movement of population from the thinly populated districts to certain large centres. Concentration is the collection or agglomeration of people at certain well-defined points. Concentration of industries, likewise, is the grouping of industries in certain advantageous locations. Concentration is merely the antithesis of dissemination or diffusion.

Congestion of population or of industries, while one of the results of concentration is not concentration *per se* nor is it one of the *necessary* results. Congestion is the undue congregation of business or population on a limited area of land. What degree of congregation should be termed *undue* varies from place to place and from time to time, according to the use to which the land is put, according to the type of construction that is put upon it, and the manner and character of its inhabitation. To lay down a hard and fast rule as to the number of people who can be accommodated on an acre of land, or to find a numerical measure or co-efficient of congestion is as hopeless as it is unnecessary. A given acre of land may then be said to be congested when the mere congregation of industries or population upon it is, in itself, prejudicial to the physical, mental or moral well-being of its inhabitants. A high degree of concentration of population

may take place without congestion; it is possible, although not usual, that congestion may exist without a large amount of concentration.

Overcrowding more accurately, perhaps, than any other term, describes the actual living conditions of the inhabitants of any given congested area. Overcrowding is the excessively intensive utilization of buildings. Here again a mathematical point beyond which conditions may be described as overcrowded, or a standard of overcrowding, is not possible of attainment. Conditions of overcrowding vary with the size of rooms, the method and effectiveness of ventilation, the lighting, sanitary and hygienic conveniences, and a multitude of other elements. Again, the test must be the effect upon the individual who lives in the given environment. Overcrowding may occur where neither concentration nor congestion exists. It is more likely to occur, however, in concentrated urban centres, and most likely, in congested districts. The causes of overcrowding are heightened and aggravated by concentration of population, and, to a greater degree, by congestion.

The writer will, therefore, in the following discussions, confine the use of the term concentration of population to the phenomenon of the growth of cities, which is not subject to any measurement except in particular cases. The term congestion will be limited to congregation of population or industries on given land areas, and will usually be measured per acre. Overcrowding, then, will be confined to conditions existing within a building and will be measured per room, or per cubic foot.

Congestion of population is usually dependent upon concentration, and as cities increase in size, congestion becomes more intense. The fundamental causes of concentration must, then, be brought clearly into the foreground.

These are to be found ¹ in the great and general economic development which has taken place in the last two centuries in methods of production and distribution, which may be summarized as follows:

(a) The divorce of men from the soil, the result of improvements in agriculture and agricultural machinery, which make it no longer necessary for so large a portion of the population to engage in the process of supplying food for the community.

(b) The growth of commercial centres, that is, the gradual evolution of the self-centred economic unit from the town economy to the national economy and then to world economy, which has gone along, step by step, with the development and improvement of transportation.

(c) The growth of industrial centres caused by the great development of machinery and the processes of production, the rise of factories and the utilization of labor which could no longer be economically employed in agriculture. Hence the rise of factory towns and industrial centres.

New York City is the example *par excellence* of concentration of population. At the basis of her growth are the fundamental causes of concentration. Aside from these there are other and more immediate causes. These have brought together at this particular point the greatest urban population on the continent.

New York City is peculiarly fitted by nature for the important rôle she has played in the economic development of the country. Located on a sheltered, deepwater harbor, New York affords the finest port on the Atlantic coast. Glaciers which gouged out the river beds and deposited rich soil in the valleys converged at this point. The topography of the country has closely confined the best routes of

¹ Cf. Weber, "The Growth of Cities," *passim*.

communication from the West to the East, to the valleys of the Mohawk and the Hudson. New York City has, therefore, become the gateway to the Western Continent.

Similarly, because of the geological formation of the harbor, the largest proportion of the trade and commerce of the port has been confined to Manhattan Island. Staten Island and Long Island have been, until the last two decades, almost useless for commercial purposes; they are completely surrounded by water and permit no direct inland communication. On the other side, the shores of New Jersey are low and swampy and the water is shallow. Within a few hundred feet of the Hudson a high bluff rises abruptly, making transportation difficult and expensive. On the contrary, Manhattan Island is surrounded by deep channels and abrupt rocky banks. These facilities for commerce and communication have made the island the most precious parcel of land on the continent and have been important factors in attracting a large and heterogeneous population.

Two events early in the nineteenth century gave a great impetus to the growth of the city. Of these the first was the perfection of the steamboat, by Fulton and Livingston in 1807. This marked a new era of transportation in this country. It was an especially significant event in the history of New York City, because the city has largely developed her trade and manufactures with the aid of steam transportation. The second event was the opening of the Erie Canal in 1825. The Canal provided direct water communication between the seaboard and the regions around the Great Lakes, by way of New York. The Erie Canal entirely changed the direction of the internal commerce and made New York City the hub of trade and commerce. Later the railroads, following the best routes, centred their terminals at this port. The magnificent harbor and the gradual development of transportation routes from New York to the

West, attracted the principal steamship lines which operated between Europe and America. Thus New York City became the gateway to the New World, not only for trade and commerce, but for the great tide of immigration which began about the middle of the century. No doubt the ease with which the immigrant has been able to reach New York has aided greatly in the growth of the city. The continuously large proportion of foreign born in the population substantiates this view.

The causes of congestion of population may be divided into two main classes, first, those due to certain forces which are operating constantly and steadily, or have so operated, to bring about congestion of population; secondly, those causes of congestion which are due to the failure on the part of the community to provide necessary safeguards. These two groups of causes may be termed positive and negative. Each group may in turn be divided into causes which are everywhere operating and causes which obtain only in particular places. The latter are here confined to those factors to be found in the situation in New York City. Of the general causes of congestion two main groups may be distinguished, the economic and the social. It is sometimes difficult to draw a hard and fast line between the two, but I shall attempt by this means to emphasize the important phases of each.

The growth and concentration of industries, trade and commerce are usually due in the first instance to peculiar local advantages which make a particular place desirable for the location of business enterprises. These advantages being given, the increase of industry and business induces a larger and larger population which must live in the immediate vicinity. The advantages of any population centre are usually located within a small area. In this area trade, commerce and industries tend to concentrate. The ad-

vantages of a particular location may be the result of the intersection of two rivers, or the juncture of several railroads, or the presence of a harbor, or the mouth of a river. The desirable sites are necessarily limited and hence all kinds of industrial and commercial establishments tend to concentrate within a small and favored district.

It is a truism that population is dependent upon its means of support. It is by no means an even settled conviction, however, that the residence of workers is closely dependent upon their place of employment. It is certain, nevertheless, that population must live within an accessible distance of its place of work. Hence, it is scarcely necessary to point out how important a cause of congestion of population the concentration of industry, trade and commerce becomes.

Another almost axiomatic statement is that the poor inhabit the congested districts of a city. This is in part due to their poverty, the very smallness of their incomes. But we also find a fringe of the most poverty-stricken around the boundaries of any large city. There is a large class of poor, however, who find the central part of any city advantageous for residence. The casual laborers find in congested districts greater opportunity for work; the housewife finds a convenient method of eking out her husband's slender earnings in home work; the penniless immigrant finds the congested centre eminently satisfactory as a starting point for his new life; even the efficient workman counts the carfare to distant points a drain on his income and locates near the industrial districts. But the districts which provide all these things for the poor are limited in size and hence buildings must be erected which will house many families. The rooms in these houses are then crowded to the extent which the desires or necessities of the occupying families compel.

Some part of most congested populations is due to

faulty systems of taxation and more especially faulty methods of assessments. Certain land is taxed as unimproved property, at very low rates, which permits the owner to hold it out of the market without building upon it. This may be the case even in the heart of a congested district. Further, the best improvements are usually taxed the highest, regardless of their earning power or their advantages or disadvantages from the point of view of society. Hence, a model tenement, because it is a more costly building, is taxed more than a tawdry, unsafe rookery, in spite of the fact that the latter may be returning the larger net profits. Seldom are the social consequences taken into consideration.

Closely linked with faulty taxation is speculation in land. As a cause of congestion it cannot be passed over without consideration. Speculation in land values usually takes one of two forms, either the holding of land for a rise in value, or the anticipation of a future rise in value in the present improvements. The speculator of the first type usually allows land to lie dormant until its value shall have risen and rewarded him with a goodly profit. The speculator of the second type believes that land in a certain locality will in the future be in demand for homes, accordingly he builds houses, in anticipation of those needs. If he builds in the outlying districts he may erect two or three story flats; if he thinks the district in which he is operating will be subject to a peculiarly acute demand, he will run up tenements in anticipation of this need. The building speculator, then, by providing accommodations for a large and congested population, in advance of present demands, is a constant constructive cause of congestion.

The economic causes of congestion, those causes in which the economic motive is uppermost, may be summarized as follows: (a) the concentration of industries, trade and commerce; (b) the close dependence of population upon the

means of support; (c) poverty and small incomes; (d) faulty systems of taxation and assessment; (e) speculation in land values.

Foremost among the causes of congestion which are predominantly social, is the so-called gregariousness of certain classes of people. Usually this trait is ascribed to certain classes—the poor, the unskilled workmen, the petty tradesmen, or to certain nationalities, as the Italians, the Slavs, or to a race, the Jews. There is no doubt truth in the assumption that certain classes or nationalities do group together, sometimes in the most congested districts, but that this trait of the mere gregariousness of peoples is an important cause of congestion, is scarcely proved. Consciousness of kind holds great groups of people together, and these natural instincts do tend to bring similar people together, and they often find convenient and sometimes not uncongenial homes in the congested districts.

Some students of the problem of congestion have discovered the fact that in the most congested districts there are to be found the largest proportions of aliens. The conclusion is then drawn that congestion is due to immigration. The best that can be said of this generalization is that it is indeed a hasty one. There is, however, some basis for this conclusion. It is a matter of common knowledge that certain nationalities and certain races tend to group themselves in certain localities. This tendency is so strong that there are often to be found little colonies in a large city whose members are from the same village in Sicily or Russia. Little Italy, Bohemia, the Ghetto, are common terms indicating those districts which are inhabited largely by persons from one nation. These names usually signify more than this, they are usually “slums”, the congested and crowded quarters of the city. This tendency for people to group themselves together in a strange land is most na-

tural. The newly arrived immigrant seeks his friends or relatives,—if he has none, he seeks companionship where he can be understood and where he can understand. From this little nationality group he makes his start in the struggle of the New World. These steady accessions of newly arrived immigrants no doubt augment the crowded districts, but they are scarcely an important cause. Chicago has and has had for decades a proportion of aliens almost as large as New York City, and yet the intensity of congestion there does not approach that of New York City. Similar tendencies of congregation among immigrants are found in sparsely settled Minnesota and the Dakotas, in the mining towns of Pennsylvania, and in the mill towns of New England, but we do not find congestion. These differences may be simply of degree, but a more logical explanation, no doubt, is that there are other and perhaps more fundamental causes at work.

One of the most powerful lodestones of the city is the city itself, and within the city, the centre is the magnet. These advantages of the city and the centre of the city are not purely pleasurable, but are social in the best sense of the word. It is at the centre of a great city like New York that educational and cultural facilities are found most highly developed. As a shrewd employer of men once said, "A man can get more for nothing in New York City than he can buy with his whole wage in a small town." True, he can get more pleasure, more excitement, more education, than he can anywhere else. The city contributes to every side of a man no matter how varied his nature. This is true in general of the city; it is preëminently true of the centre of the city's population, where congestion has occurred or is likely to occur.

A consideration of the social causes of congestion would scarcely be complete without reference to that perverse in-

dividualism which we are wont to call democracy. It is that pseudo-democratic sentiment that permits men to use their property in the way that yields them the greatest benefit and permits men to live as they see fit, to the detriment of themselves and of society. As long as the majority of us hold these ideals, so long will we permit the overcrowding of our cities.

Important as are the causes of congestion which have been discussed, in every city local factors are even more influential. As relating to New York City, two such factors are of great consequence, first, the natural and physical peculiarities of the vicinity, and, second, the converging of transportation routes.

The most potent factor in shaping the history and development of New York City, has been the peculiar shape of Manhattan Island, and the comparative disadvantages of other available districts. Practically the entire trade of the city has been confined, until recent years, to lower Manhattan. There the great steamship lines have landed, there the great exchanges have grown up, and there also have grown up great industries. Only the veritable lack of standing room has hitherto forced the occupation of less intensely desirable districts.

Probably as a result of the peculiar shape and formation of Manhattan and New York Harbor, at least growing out of them, has been the convergence of transportation routes upon lower Manhattan. For many years the only communication between Manhattan and the other boroughs was by means of ferries, slow and not always certain. Later, Brooklyn Bridge opened up a new feeder for Manhattan. Lines of rapid transit focused on downtown Manhattan, each bringing in great crowds to swell the number of workers. Almost all the lines of rapid transit have been north and south, that is, they have distributed population within

Manhattan, and only recently have the facilities for connection with other boroughs been effected.

The negative causes of congestion, those due to the perpetuation of conditions which with thought and foresight might have been prevented, are negative because of themselves. They could not cause congestion, but if applied they would have prevented it.

The first of these negative causes is the lack of proper planning of the city,—the lack of city planning. Had our cities been laid out on broad, comprehensive plans, had our streets been laid out on wide, intelligent lines, and adequate parks been provided, had our industrial and commercial districts been segregated, and our residence districts reserved, some of the very tap-roots of congestion would have been removed.

The lack of adequate building laws is closely linked to that of city planning. The limitation of the area of the lot which can be built upon, the height of the house, the size of the rooms, are all factors which would definitely and certainly have confined and limited congestion.

Lack of inspection and supervision posits good laws, but even those we have have not been adequately enforced. Had our laws been enforced in the best possible manner, we would have gained a little in preventing congestion.

Lack of education and of the appreciation of good air and good light have no doubt permitted many families to remain in the heart of the city, in congested and overcrowded quarters, who would otherwise have removed to more healthy localities. Ignorance, especially, of the harm done to children by congested and overcrowded environments, renders parents contented with their conditions. Proper appreciation of the dangers, brought home by some form of education, would, perhaps, have lightened congestion to a degree.

Of the local negative causes of congestion, the first and foremost is, perhaps, the lack of adequate rapid transit. Whenever it has been advantageous to do business in lower Manhattan, it has been convenient, because of lack of transit facilities, both to have a permanent place of business there and to live there. Transit, as has been pointed out, not only converged on lower Manhattan, but what there was of it simply conveyed people into the crowded districts and "dumped" them. Had transit facilities to neighboring localities been convenient and adequate, the population might have availed itself of the advantages of the central city, and business might have flourished in other than downtown Manhattan districts.

Scarcely separated from rapid transit facilities are the other means of communication with suburban districts. None of these means of getting out of Manhattan came into existence with any degree of effectiveness until congestion was well under way. A great population has thus remained in Manhattan, surrounded by a seldom traversed gulf.

If immigration is a contributing cause of congestion, as it doubtless is, the lack of any effective system of distributing the newly arrived immigrants has caused some difficulty. They have settled with their nearest group of kinsmen, and although their services have not been greatly demanded, have remained, swelling the total of population. A constructive and vigorous campaign for distributing these immigrants quickly to inland centres where they are more needed, would have relieved in no small measure any congesting force they may have exerted.

The results of congestion of population have frequently been pointed out. It is unnecessary, therefore, to recall those consequences here, except in a very general way. The short outline of the results and consequences of congestion which follows, is introduced to clarify and furnish a proper

setting for the detailed study of the single phase of the subject which will be the theme of the following chapters.

The consequences of congestion may be roughly divided into two main classes, direct and indirect. The direct results of congestion are those due immediately and directly to congestion. The indirect results are more remote and are those effects which result from conditions brought about by congestion. The latter are one step removed from the conditions of congestion. Remedies looking toward the elimination of the direct results will *ipso facto* cure the indirect, but not so remedies applied to cure the indirect results.

The first direct consequence of congestion is the intensive use of land. This is expressed and indicated by high land values and high rentals, by the erection of lofty buildings, by the occupation by the building of a very large proportion of the lot, and by the inadequate provision of park facilities. These results of a condition of congested population do, of course, react upon the intensity of congestion in any given section, but they are not the primary causes. They are essentially results. Hence, land becomes extremely valuable at the centre of a large population, because the quantity of it is limited and the demand for it is very great. Much of the land in lower Manhattan would be almost as valuable, if the buildings built upon it were limited to five stories in height. This would be true because this land is tremendously desirable for certain reasons, and it is even conceivable that its nominal value might increase, if the multiplication of it, by means of additional floors, were limited.

A second direct consequence of congestion is the intensive utilization of buildings. This fact needs very little proof. It is indicated by the overcrowding in the home, by the overcrowding of the workshop, by long hours and overwork, and by the large amount of manufacturing which is carried

on in tenement homes. The intensive utilization of buildings increases in direct ratio with the desirability of the site for whatever purpose. For the two main uses to which they are put, as homes and as workshops, buildings thus become overused and overcrowded. Long hours often result because of the inability of the employer to expand his business by adding to or enlarging his plant. One method of expansion used by employers is that of sending out work to be done in the home. Thus he supplements his factory space.

The indirect consequences of congestion are less tangible and less susceptible of definite proof than those which have just been considered. These results are also almost inextricably entwined with the results of many other shortcomings and difficulties in our social life. The mere mention of the principal consequences indirectly resulting from congestion of population and the intensive use of land and buildings, will suffice to indicate their extent and serious character. Foremost, is the lack of privacy which leads to moral deterioration. This is revealed in the gradual breaking down of family ties, in the increase and prevalence of crime and delinquency in congested districts, and, not least, in the extensive moral looseness and the virulence of prostitution in the densely populated districts. Further, there is the lack of proper light, ventilation and sanitation, which leads to disease and physical deterioration. The indications of these results are not far to seek, although they are difficult to segregate and study. Prevalence of disease, high rates of mortality, high death rates among infants and children, and the stunting of physique are admitted consequences. Lastly there is the lack of leisure and seclusion for study and improvement, which leads to mental deterioration. The large number of backward children is due in no small part to congestion.

Such, in brief, are the principal causes of congestion of

population and such are some of the results of a dense population. It is not the purpose of this essay to deal with the entire problem as outlined above. On the contrary, the essay proposes to deal intensively with but a limited portion of the field. Its path will cut many of the factors named above, but will not attempt to deal with them except as related to the special object of this study.

The location and growth of industries has been responsible in no small measure for the growth and continuance of congestion of population. The consideration of the industrial causes of congestion falls into two distinct parts. First, an investigation of the elements which have influenced the location of factories and manufacturing establishments, and secondly, a study of the distribution of population about the establishments, with the aim of discovering the important factors determining the residence of the working population.

It is a phenomenon of no mean importance that industries are able to thrive in the centre of New York City, where land values are so excessive, and where rentals and insurance charges are proportionately high. The value of land, exclusive of improvements, below Fourteenth Street in Manhattan is, \$895,645,360.¹ The average value of land per acre in Manhattan is \$222,562, and the value of that below Fourteenth Street is \$326,403 per acre. Many parcels are, of course, rated much above these figures. Improvements on this land are worth usually about as much as the land itself. Yet manufacturers occupy these exceedingly costly sites and continue to produce. In many cases production is carried on under conditions which are extremely deleterious to the health and efficiency of the workers. It becomes, then, a very pertinent question whether manufacturing under such conditions is not a social and economic

¹ Report of the Commission on Taxes and Assessments, 1910.

waste. Why is not this manufacturing carried on under more economical conditions, upon cheaper land, in more healthful surroundings, with more efficient workmen? A manufacturer in lower Manhattan will tell you quite frankly that if an employee cannot turn out a certain minimum product he is not worth the room, the actual standing or sitting room, which he is occupying, and another more productive laborer must take his place. Why is it necessary to count the cost so closely? Why does it pay to manufacture where the margin is so narrow? How does it pay to manufacture in lower Manhattan, where land values are higher than anywhere else in the world and where population is denser than in most crowded China? This essay will attempt to answer these questions. Further, it will attempt to find out where men and women who work in the crowded factories of lower Manhattan live, and to determine, if possible, the connecting links between the workroom and the home. Finally, the essay will consider the causes and effects of industries upon an intensely concentrated population, and what remedies can be applied to relieve the situation.

*

CHAPTER II

CONGESTION OF POPULATION IN NEW YORK CITY

SINCE the second decade of the nineteenth century the growth of the population of New York City has been exceedingly rapid. Proportionately it has been much greater than either that of the state of New York or of the United States. The rate of increase has been very much greater during the last century than that of any other great city in the world which existed prior to 1800.¹ This rapid growth of the city of New York and the various boroughs that compose it is shown in Table I.

TABLE I
Population of New York City at each Census Period

Year.	New York City.	Boroughs.				
		Manhattan.	Bronx.	Brooklyn.	Richmond.	Queens.
1790	49,401	33,131	1,781	4,495	3,855	6,159
1800	79,216	60,515	1,755	5,740	4,564	6,642
1810	119,734	96,373	2,267	8,303	5,347	7,444
1820	152,056	123,706	2,782	11,187	6,135	8,246
1830	242,278	202,589	3,023	20,535	7,082	9,049
1840	391,114	312,589	5,346	47,613	10,965	14,480
1850	696,115	515,547	8,032	138,882	15,061	18,593
1855	907,775	629,904	17,079	216,355	21,389	23,048
1860	1,174,779	813,669	23,593	279,122	25,492	32,903
1870	1,478,103	942,292	37,393	419,921	33,029	45,468
1880	1,911,698	1,164,673	51,980	599,495	38,991	56,559
1890	2,507,414	1,441,216	88,908	838,547	51,693	87,050
1900	3,437,202	1,850,093	200,507	1,166,582	67,021	152,999
1905	4,014,304	2,112,697	271,629	1,358,891	72,846	198,241
1910	4,766,883	2,331,542	430,980	1,634,351	85,969	284,041

¹ Weber, *op. cit.*, p. 450.

Table 2 indicates the very great importance of Manhattan during the early part of the last century, and how, with the increase of population there, the other boroughs have become more and more populous and absorbed larger and larger proportions of its total population. Table 3 demonstrates the great increase in density, which has been greatest, of course, in Manhattan but which is rapidly increasing in other boroughs.

TABLE 2

Proportion of the Population of New York City in each Borough at each Census Period

Years.	New York City.	Boroughs.				
		Manhattan.	Bronx.	Brooklyn.	Richmond.	Queens.
1790	100 %	67.0 %	3.6 %	9.1 %	7.8 %	12.5 %
1800	100	76.4	2.2	7.2	5.8	8.4
1810	100	80.5	1.9	6.9	4.5	6.2
1820	100	81.3	1.8	7.4	4.0	5.5
1830	100	83.6	1.2	8.5	2.9	3.8
1840	100	79.9	1.4	12.2	2.8	3.7
1850	100	74.1	1.2	19.9	2.2	2.6
1855	100	69.4	1.9	23.8	2.4	2.5
1860	100	69.3	2.0	23.8	2.1	2.8
1870	100	63.8	2.5	28.4	2.2	3.1
1880	100	60.9	2.7	31.4	2.0	3.0
1890	100	57.5	3.5	34.0	2.0	4.4
1900	100	52.6	6.8	33.8	1.8	5.0
1910	100	48.91	9.04	34.29	1.8	5.96

The notable features brought out by these tables are: first, the great increase of the total population; secondly, the decrease in the proportion of people living in Manhattan; and third, the remarkable increase in the density of population. The real problem presents itself in Table 3 which shows the tremendous increase in the density of population especially in Manhattan. Manhattan, even in 1850, was more crowded than any of the other boroughs are today.

But the full force of congestion in Manhattan is not evident until the very high densities of population in certain small divisions of Manhattan, (here represented by Wards and Assembly Districts), are examined and compared with the densities in certain other sections. Such a comparison shows the problem of congestion of population to be a problem not of Manhattan, but of a *part* of Manhattan. The investigation of these small areas also emphasizes the fact that although the problem of congestion is that of a part of the island of Manhattan, it is a constantly increasing part.

TABLE 3

Density of Population per Acre in New York City by Boroughs

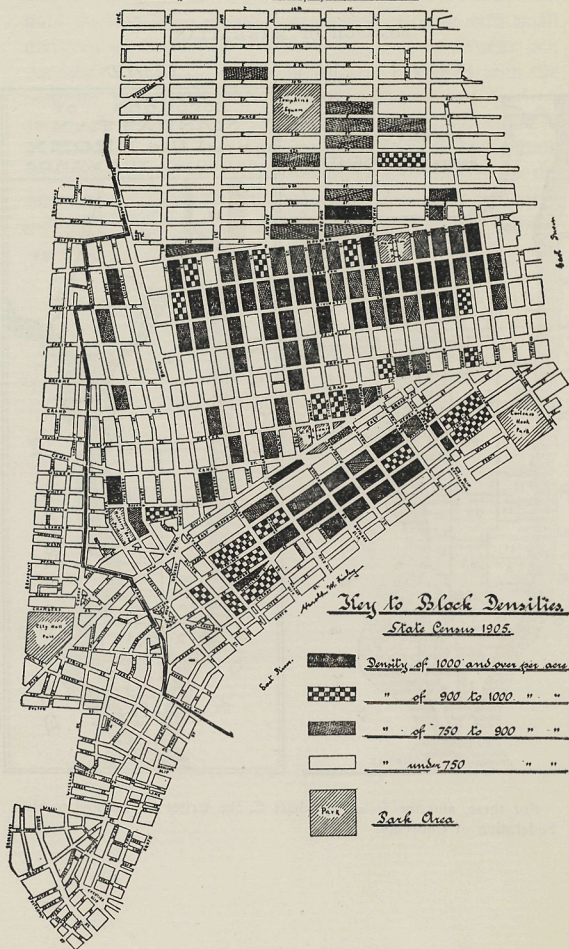
Years.	New York City.	Boroughs: Persons per Acre.				
		Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.
1790	0.2	2.3	0.06	0.09	0.07	0.1
1800	0.3	4.3	0.06	0.1	0.08	0.1
1830	1.06	14.44	0.1	0.4	0.1	0.2
1850	3.3	36.7	0.3	2.8	0.2	0.4
1855	4.3	44.9	0.6	4.3	0.2	0.6
1880	9.1	82.9	1.9	12.6	0.7	1.0
1890	12.4	102.7	3.4	18.9	1.1	1.4
1900	17.1	131.8	7.7	23.5	2.0	1.8
1905	19.2	150.5	10.4	27.3	2.4	1.9
1910	23.66	166.08	16.56	32.89	3.78*	2.34

* Calculated on an acreage of 75,111 acres. Area named by Nelson P. Lewis Chief Engineer of Board of Estimate and Apportionment, New York City.

GREATER NEW YORK
SHOWING SUB-DIVISIONS

Chart C

Population 592,541
Total Area 1092 acres
Density 558 people to the acre



For this chart the writer is indebted to the Federation of Churches. The data are accessible to any one through the State Census of 1905.

The accompanying tables, 4, 5, 6, and 7, and charts A, B, and C, which show the densities of population in the various assembly districts, indicate that the problem of congestion is largely localized in certain areas, and that other sections cannot be said to approach congestion. Some of the most congested districts are inhabited by large proportions of aliens—Italians, Russians, Germans and Irish. A very large but unascertainable part of the Russian and German population is Jewish. Although the most densely populated districts of the city show the highest percentage of aliens, it does not follow that immigration is the cause of congestion. It seems dangerous to draw the conclusion, as has often been done, that there is a causal relation between nativity or race and congestion.

In spite of the vivid impression which may be made by the startling intensity of congestion in certain small areas of the city, the story is still incomplete, until the bestial congestion and overcrowding in certain blocks is considered.

TABLE 4

Density of Population in Manhattan and the Bronx by Assembly Districts

Section.	Assembly Districts.	Area in Acres.	Population, 1905.	Density Per Acre, 1905.	Per Cent. of Alien Population, 1905.	Families per Dwelling.	Leading Nationality, 1900.
Lower East Side.	2	343	58,448	170.4	39.7	5.6	Ital.
	4	166	90,941	547.8	51.1	8.6	Rus.
	6	185	73,964	397.6	47.6	7.1	Ital.
	8	98	71,241	727.9	58.1	9.8	Rus.
	10	114	74,330	652.	46.5	8.8	Ger.
	12	160	74,449	465.3	49.3	9.1	Rus.
	14	161	65,392	406.1	39.4	7.3	Ger.
	16	165	94,210	570.9	45.9	8.3	Aus. Hun.
Total.....		1,393	602,975	432.8	47.4	7.9	

TABLE 4—*Concluded*

Section.	Assembly Districts.	Area in Acres.	Population, 1905.	Density Per Acre, 1905.	Per Cent. of Alien Population, 1905.	Families per Dwelling.	Leading Nationality, 1900.
Upper East Side.	18	236	48,739	206.5	19.9	5.4	Irish.
	20	186	44,392	238.6	18.5	4.6	Irish.
	22	218	51,762	237.4	19.7	4.8	Irish.
	24	348	60,161	172.8	21.6	4.5	Ger.
	26	224	60,108	268.3	23.8	6.7	Boh.
	28	166	51,842	312.3	16.7	5.9	Ger.
	30	220	61,696	280.4	12.1	7.	Ger.
	32	573	105,156	183.5	27.3	7.	Ger.
	33	385	70,696	183.6	28.1	4.8	Ital.
	34	278	43,743	157.3	12.0	3.9	Irish.
Total.....		2,834	598,295	211.1	21.	5.4	
Total East Side..		4,227	1,201,270	284.2	34.2	6.4	
Fifth Avenue Districts.	5	277	38,613	139.4	16.4	3.	Am.
	25	460	39,721	86.3	20.9	2.3	Am.
	27	434	34,952	80.5	17.6	1.8	Am.
	29	1,153	52,431	45.4	17.5	2.3	Ger.
	31	470	103,691	220.6	13.1	3.8	Ger.
Total.....		2,794	269,408	96.4	16.2	2.7	
West Side.	1	520	24,030	46.2	24.8	3.8	Irish.
	3	230	59,041	256.7	33.8	4.5	Ital.
	7	297	42,246	142.2	11.6	4.1	Irish.
	9	264	47,057	178.2	13.5	3.9	Irish.
	11	194	33,990	175.2	13.9	5.2	Irish.
	13	188	40,879	217.4	15.8	5.7	Irish.
	15	124	40,994	330.5	12.1	6.4	Irish.
	17	226	44,898	198.6	11.9	6.1	Irish.
	19	600	77,903	129.8	16.9	3.6	Am.
	21	1,068	113,809	106.5	12.5	4.7	Am.
	23	3,306	107,168	32.4	9.4	3.3	Am.
Total.....		7,017	632,015	90.0	14.2	4.3	
Total Manhattan.		14,038	2,112,380	150.5	21.7	4.9	
Bronx Annex.	34	1,029	65,888	64.	9.2	3.7	Am.
	35	11,288	171,701	15.2	12.3	2.	Am.
	..	13,700	34,003	2.4	9.6	1.2	Am.

TABLE 5

Density of Population in Brooklyn by Wards

Section.	Ward.	Area in Acres.	Population, 1905.	Density Per Acre, 1905.	Per Cent. of Alien Population, 1905.	Families per Dwelling.	Leading Nationality, 1900.
Heights and Red Hook.	1	233.	22,838	91.8	13.4	2.	Am.
	2	97.7	9,026	92.4	20.2	3.2	Irish.
	3	161.4	19,484	120.7	12.3	2.1	Irish.
	4	111.3	12,951	116.3	7.5	2.3	Irish.
	5	119.4	19,807	165.9	18.8	2.9	Irish.
	6	302.9	48,547	110.3	26.3	2.8	Irish.
	10	318.7	42,854	134.4	13.9	2.7	Irish.
	11	252.6	25,090	99.3	12.2	2.2	Am.
	12	663.1	31,429	47.4	15.2	2.7	Irish.
Hill or Central.	7	458.2	45,358	98.9	11.3	1.9	Am.
	9	623.6	47,555	76.3	9.6	2.2	Irish.
	20	461.5	27,303	59.2	7.1	1.7	Am.
Bedford and Bushwick.	21	483.2	65,176	134.9	11.6	2.6	Ger.
	23	736.	67,966	92.3	6.7	1.6	Am.
	24	1,198.5	43,583	36.3	9.9	1.7	Am.
	25	567.8	55,211	97.2	5.3	2.	Am.
	27	400.7	47,521	118.5	12.2	3.6	Ger.
	28	884.4	87,301	98.7	3.9	2.9	Ger.
Flatbush, etc., East N. Y.	29	3,800.	43,061	11.3	8.8	1.3	Am.
	31	6,312.4	22,358	3.5	10.8	1.2	Am.
	32	14,082.	13,232	.32	9.5	1.2	Am.
	26	5,690.	94,149	16.5	20.6	1.7	Ger.
Bay Ridge, etc.	30	5,404.1	37,163	6.87	10.9	1.2	Am.
Park Slope.	8	1,843.3	63,912	34.6	11.7	2.2	Irish.
	22	1,361.6	74,974	55.1	10.	2.1	Irish.
Eastern Dist.	13	413.8	41,704	102.3	8.2	2.2	Am.
	14	873.	27,931	117.8	27.1	3.4	Ger.
	15	244.8	61,136	134.7	14.5	2.7	Ger.
	16	244.8	32,982	249.3	32.	4.3	Ger.
	18	282.6	33,298	31.9	13.2	3.3	Ger.
	19	230.3	23,567	100.7	16.1	2.5	Ger.
Greenpoint.	17	823.3	66,268	80.5	11.1	3.	Irish.
Total Brooklyn*	.....	49,680.	1,358,686	27.27	13.2	2.2	

* Co-extensive with Kings County.

TABLE 6.

Density of Population in Queens by Wards

Wards.	Area in Acres.	Population 1905.	Density Per acre, 1905	Per Cent. of Alien Population 1905.	Families per Dwelling.	Leading Nationality, 1905.
1	4,650	55,020	11.8	10.5	1.6	Ger.
2	14,700	60,559	4.12	8.3	1.3	Ger.
3	22,000	29,505	1.34	9.4	1.2	Am.
4	36,600	42,817	1.17	7.9	1.2	Am.
5	4,933	9,926	2.1	9.6	1.1	Am.
Total Queens ...	82,883	198,240	2.3	10.2	1.3	

TABLE 7

Density of Population in Richmond by Wards

Wards.	Area in Acres.	Population, 1905.	Density Per acre, 1905.	Per Cent. of Alien Population 1905.	Families per Dwelling.	Leading Nationality, 1905.
1	3,340	23,659	7.1	10.9	1.3	Am.
2	4,130	14,035	3.4	6.5	1.4	Ger.
3	10,050	15,347	1.5	7.7	1.2	Am.
4	8,180	9,480	1.2	8.0	1.2	Am.
5	10,900	10,198	.9	9.4	1.0	Am.
Total Richmond .	36,600	72,845	1.9	8.8	1.2	
Total Greater New York.	209,218	4,013,781	19.1	19.6	2.9	

Diagram C. shows the lower East Side, included between Fourteenth St. on the north, Third Ave. and Broadway on the west and the East river on the south and east. In this small section of Manhattan, as will readily be noted by a

comparison of this diagram with Diagram A, are some of the most congested assembly districts. Here also are to be found a few blocks, which in the intensity of their congested population are unequaled. The black blocks on the diagram represent blocks having a density of 1000 and over per acre, and many of them considerably exceed this amount. They vary from 1,000 per acre to almost 1,700 per acre.

TABLE 8

Population Per Acre in Manhattan by Wards—1860-1910

Wards.	Population per Acre by Wards.				
	1860	1880	1890	1900	1910
1	117.8	116.5	72.2	50.7	57.2
2	30.9	19.6	11.4	11.6	12.
3	39.5	37.7	39.6	16.9	18.4
4	264.9	252.9	214.5	202.2	258.
5	132.9	94.3	73.7	51.5	35.3
6	310.4	233.6	268.8	187.2	193.8
7	201.9	252.9	289.7	433.	495.6
8	215.3	196.0	170.6	162.5	187.3
9	137.8	169.5	169.	193.3	212.7
10	272.7	432.3	523.6	651.7	609.5
11	303.9	350.9	384.3	464.2	641.
12	5.5	14.8	44.5	78.1	136.2
13	307.6	352.2	428.8	588.6	593.1
14	292.14	314.3	292.6	311.1	354.3
15	139.3	161.0	128.3	101.5	135.9
16	129.4	149.5	140.8	165.1	175.8
17	220.4	316.7	311.6	489.1	647.8
18	127.7	148.0	140.6	119.1	125.2
19	22.1	106.8	158.5	132.4	158.2
20	152.0	193.7	189.9	212.7	175.3
21	119.5	161.8	153.3	154.9	164.8
22	40.3	72.9	100.6	111.8	124.4

These are some of the facts which go to show the importance and the seriousness of the problem.

Some writers and investigators have maintained that the congestion of population has reached the point of saturation,

TABLE 9

Population Per Acre in Manhattan by Assembly Districts
1900-1905

Assembly Districts.	Population Per Acre by Assembly Districts.	
	1900	1905
1	49.9	46.2
2	153.8	170.4
3	202.8	256.7
4	462.8	547.8
5	137.0	139.4
6	345.6	397.6
7	141.3	142.2
8	735.9	727.9
9	160.4	178.2
10	577.0	652.
11	212.6	175.2
12	455.6	465.3
13	199.8	217.4
14	340.6	406.1
15	313.8	330.5
16	447.4	570.9
17	181.3	198.6
18	191.5	206.5
19	108.3	129.8
20	229.0	238.6
21	83.3	106.5
22	223.8	237.4
23	23.7	32.4
24	147.1	172.8
25	80.0	86.3
26	253.9	268.3
27	85.2	80.5
28	277.8	312.3
29	44.8	45.4
30	266.9	280.4
31	165.9	220.6
32	140.2	183.5
33	150.9	183.6
34	137.7	157.3

and even that a decrease could be noted in some of the most congested downtown districts. With the exception of the assembly districts at the very southernmost end of Manhattan, which have been given over largely to trade and

commerce, there is no such tendency. On the contrary, the most congested districts are becoming more congested. Of much greater significance is the increase in the density of other districts farther uptown. Tables 8¹ and 9 demonstrate clearly that the downtown assembly districts are becoming more densely populated and that the uptown districts are fast rivaling conditions prevailing farther downtown.

Of the various important elements in the growth of the city of New York and factors in the growing intensity of population, three are possible of statistical measurement. These three causes of congestion are: (a) the growth of commerce; (b) the growth of immigration; and (c) the growth of manufactures. The direct effect of these three

TABLE 10

*Growth of Commerce of the United States and at the Port of New York
Total Exports and Imports for Specified Years*

Year.	Total Exports and Imports for United States.	Total Exports and Imports at the Port of New York.	Per cent. of Total for United States entered at Port of New York.
1790.....	\$43,205,156	\$2,505,465	5.7%
1800.....	163,224,548	14,045,079	8.6
1810.....	152,157,970	17,242,330	11.3
1820.....	144,141,669	13,163,244	9.1
1830.....	144,726,428	55,322,053	36.8
1840.....	239,227,465	94,704,830	39.5
1850.....	230,037,038	163,836,313	71.2
1860.....	687,192,176	311,358,064	45.3
1870.....	828,730,176	477,663,559	57.6
1880.....	1,503,593,404	852,497,243	56.6
1890.....	1,647,139,093	865,478,484	52.7
1900.....	2,244,424,266	1,056,071,753	47.0
1910.....	3,427,415,895	1,624,493,354	47.4

¹ Table 8 presents comparisons in terms of wards, as all statistics of population up to 1900 were so tabulated. Statistics for 1900 and 1905 are also tabulated by assembly districts.

factors upon congestion cannot be shown but their consideration will throw light on important phases of the subject.

The growth of commerce at the port of New York has been phenomenal, and has not been dependent upon the commerce or development of any other section of the country. It is clearly a phenomenon of our national development and of the growth of world-wide commerce. Table 10 shows quite conclusively the tremendous commerce of the port of New York. When it is remembered that until about thirty years ago, this commerce was almost entirely centered in Manhattan, the force of it making for congestion may be gauged.

It is in the great stream of immigrants which have been pouring into the city, that New York has found an almost

TABLE 11

Growth of Immigration to the United States and at the Port of New York

Decade.	New York.	United States.	Per cent. of Total Immigrants to United States entering at the Port of New York.
1820-9....	82,970	128,502	64.6%
1830-9....	360,885	538,381	67.0
1840-9....	985,137	1,427,337	76.7
1850-9....	2,182,005	2,798,323	78.3
1860-9....	2,002,164	2,061,630	97.1*
1870-9....	1,837,786	2,742,137	67.0
1880-9....	3,614,188	5,248,568	68.8
1890-9....	2,877,458	3,636,378	79.1
1900-9....	6,301,407	8,202,388	76.8

inexhaustible supply of labor. The proportion of foreigners entering the port of New York has been very large. Table 11 describes the extent of this movement. Many of these

*This large proportion in this decade is due to the fact that the statistics for New York City are those for passengers arriving, and those for the United States are immigrants only. The statistics for New York City could not be refined.

immigrants do not tarry in New York City, but some do, and they are to be found in the congested districts of the East Side and in the crowded workshops of the neighboring downtown factories.

An accurate statistical presentation of the growth of manufacturing presents a most perplexing problem. Although the official censuses of manufactures have constantly increased in value both because of greater detail and better classifications, it is still exceedingly difficult to arrive at fully competent comparisons. For the present purpose it is not necessary to discuss the inconsistencies in the statistics of manufactures nor to attempt to account for inaccuracies.

Adequate statistics are lacking for the period from 1810 to 1860, but at the end of that period New York City had become comparatively important as a manufacturing centre. The total value of its manufactured products amounted to \$159,107,369 and the character of the product had largely changed from the earlier leather, textile and food industries to the metals, machines and conveyances. During the last half-century the industrial development has been even greater. The value of manufactured products has increased from \$159,107,369 in 1860 to \$1,526,523,006 in 1905. These facts signify a very great development and indicate that New York is changing from a purely commercial city to a manufacturing centre as well.

Even more significant as bearing on the problem of congestion of population is the increase in the number of people employed in manufactures. Table 12 gives the increase in the various groups of industries from 1860 to 1910. There is indicated there the change which has taken place in the character of the industries of New York City during that period.

TABLE 12

*Workers Employed in Manufactures in New York City**1860 *-1910 †*

	Class of Industry.	Number of Establishments.		Number of Employees.	
		1860.	1906.	1860.	1910.
1	Stone, Clay and Glass Products.....	143	549	3,515	12,015
2	Metals, Machines and Conveyances....	918	3,557	15,897	99,867
3	Wood Manufactures.....	563	1,693	8,895	37,587
4	Leather and Rubber Goods.....	730	1,872	7,231	36,601
5	Chemicals, Oils, Paints, etc.....	94	614	1,550	16,976
6	Paper and Pulp.....	1	68	160	1,039
7	Printing and Paper Goods.....	425	2,193	10,050	71,290
8	Textiles.....	71	716	3,404	29,905
9	Clothing, Millinery, and Laundry.....	594	10,189	30,158	235,565
10	Food, Liquors and Tobacco.....	610	3,987	6,784	65,081
11	Water, Light and Power.....	2	277	2,020	5,405
12	Building Industry.....	166	196	2,007	404
Total.....		4,317	25,911	91,671	611,738†

Notwithstanding the great increase of manufactures in Greater New York the largest portion of them, during this entire period, have been carried on in Manhattan. We have already found that Manhattan is the centre of congestion of population, the converging point of commerce and the destination of a large portion of the immigrants. It is also necessary to determine its importance as the centre of manufactures. Table 13, which follows, illustrates the development of manufactures in each of the boroughs of Greater New York.

* U. S. Census of 1860.

† Report of Department of Factory Inspection, New York State, 1910. The author is indebted to Mr. L. W. Hatch, Chief Statistician, Department of Labor, New York State, for these figures, which have not, at the time of the publication of this work, appeared in the reports of that department.

‡ Includes 3 miscellaneous.

TABLE 13

*Growth of Manufactures in New York City by Boroughs**

1860-1900

Number of Establishments.	1860.	1870.	1880.	1890.	1900.
New York County.....	4,375	7,624	11,339	25,403	27,168
Kings County.....	1,032	1,043	5,281	10,585	10,713
Queens County.....	195	336	355	575	1,292
Richmond County.....	28	134	100	562	603
Total, Greater New York	5,630	9,137	17,075	37,125	39,776
Number of Employees.					
New York County	90,204	129,577	227,302	354,291	383,482
Kings County.....	12,758	18,545	48,798	109,292	108,213
Queens County.....	2,264	2,534	3,884	8,119	12,610
Richmond County.....	990	1,033	1,557	4,962	6,469
Total, Greater New York... ..	106,216	151,689	281,541	476,664	510,774

Table 13 shows the very great relative importance of Manhattan in comparison with the other boroughs. But this is not the extent of congestion of industries. Population was found to be greatly congested in Manhattan, but even more congested in Lower Manhattan. Similarly, the concentration of manufactures in Lower Manhattan is very marked. There are no census statistics available which show the precise locality in which the bulk of the manufacturing is carried on. Table 14, however, affords a fairly accurate indication of the concentration of industry in the city. These data were compiled from original material collected by the New York State Department of Labor, Bureau of Factory Inspection.¹

* See Federal Censuses for years as given.

¹ The writer is indebted to Commissioner John Williams.

The statistics cited here show quite conclusively that the great bulk of the manufacturing in Greater New York is carried on in Manhattan below Fourteenth Street, on that small but immensely valuable one-hundredth of the city's total land area. Of the whole number of workers engaged in manufactures in Manhattan, 321,488, or 66.8 per cent, work in factories below Fourteenth Street, while only 160,-

TABLE 14

*Distribution of Workers and Factories in Greater New York
1906**

	Area Acres.	Number of Workers in Factories.	Number of Factories.
Manhattan.			
Below 14 St.	2,717	321,488	13,066
Above 14 St.	11,321	160,368	6,483
Brooklyn	49,680	54,281	4,941
2nd Ward Brooklyn	97	8,658	108
Bronx	26,017	18,143	....
Queens	82,883	22,324	597
Richmond	36,600	7,960	....

368, or 33.2 per cent, work in the much larger area above Fourteenth Street. The problem of congestion of population, then, seems to be closely linked with that of congestion of industries.

In further illustration of the congestion of manufactures in Manhattan, the distribution of workers by assembly districts and their number per acre is given in Table 15.

The statistics introduced here indicate the great growth of New York City as a centre of population, as a port of entry for immigrants, as a terminal for trade and commerce and as a manufacturing city. It would have been possible

* This table is based on the figures of 1906 because no later material in this form was obtainable.

TABLE 15

Workers in Factories of Manhattan Distributed by Assembly Districts
1906

	Assembly Districts.	Total No. of Workers.	No. of Workers Per Acre.	Percentage of Total No.
Manhattan below 14th Street.	1	56,933	110	11.9
	2	50,026	149	10.4
	3	50,133	218	10.4
	4	12,218	73.6	2.5
	5	49,301	178	10.2
	6	56,598	304	11.9
	7	16,168	55	3.3
	8	5,857	60	1.3
	10	1,809	16	.4
	12	9,475	59	1.9
Manhattan above 14th Street.	14	4,017	25	.8
	16	8,953	54	1.8
Proportion below 14th St.				66.8
Manhattan above 14th Street.	9	12,191	46	2.5
	11	3,605	18	.8
	13	5,271	28	1.1
	15	2,216	18	.4
	17	5,939	26	1.3
	18	7,599	32	1.5
	19	1,588	3	.3
	20	6,939	37	1.3
	21	921	.86	.2
	22	9,367	43	1.9
	23	2,799	.84	.5
	24	5,077	15	1.4
	25	5,693	123	11.9
	26	8,789	39	1.8
	27	10,487	25	2.2
	28	2,445	15	.5
	29	1,719	1.5	.3
	30	3,032	14	.6
	31	1,652	3.5	.3
	32	6,025	10.5	1.2
	33	1,924	5.	.4
	34	3,844	14.	.8
Total .....	.....	418,856	.....
Proportion above 14th St.				33.2
Total, Manhattan				100.

to show the concentration of the aliens and immigrants in lower Manhattan in more detail, but the few significant figures given suffice to describe the tendency. Congestion of population has been increasing rapidly and the density of population is increasing even in the most congested districts. In addition to these forms of congestion, is that of industries and manufactures. This, too, is occurring in the most congested districts of lower Manhattan.

The problem immediately before us, then, is to find the relation between this congestion of industries and the congestion of population. We shall investigate the causes of the location of these manufacturing establishments, and study the influence they have, if any, on the distribution of population.

CHAPTER III

REASONS GIVEN BY MANUFACTURERS FOR THE LOCATION OF THEIR FACTORIES

NEW YORK is not only the chief manufacturing city in the country but as such it is continually growing, while the bulk of its manufacturing enterprises continues to be concentrated on Manhattan Island. Obviously this concentration in the most congested spot in the country means the payment of exorbitant rents, as well as high insurance and tax charges, and makes for unwholesome conditions of labor. These questions, therefore, present themselves: What causes industries to locate in Manhattan? What forces keep those already established from moving out? Why is there so strong an industrial trend toward the city? Why do industrial concerns continue to erect large buildings on expensive sites in the heart of the city? The situation is complicated by the fact that along with this growth and expansion of industries in Manhattan and the influx of new enterprises from a distance, industrial companies are making every effort to get away from New York. Indeed, there is a continuous movement away from the city.

Before attempting definite answers to the questions raised, it is necessary to analyze more closely some of the industries which are concentrated in Manhattan and in the other boroughs. With regard to their effect upon congestion of population, manufacturing industries may be divided into two main classes, namely, Primary and Secondary Industries.

Primary industries are those which originally induce population and are not dependent on the immediate locality for a market for their goods.

Secondary industries are those which are established to meet the needs of a particular local market and which are attracted to large centres of population.

It will be readily conceded that this distinction is one of importance in a study of the industrial causes of congestion of population. Particularly so, because the Primary industries constitute the lodestone of population, while the Secondary industries follow in the trail of population already concentrated. The latter may contribute some additional population, but not at the beginning.

The classification of the different lines of manufactures used in this study is the one adopted by the New York State Bureau of Factory Inspection. It answers the purposes of the investigation and permits, moreover, the utilization of statistics which have already been collected. The classification¹ is as follows:

- I. Stone, Clay and Glass Products.
- II. Metals, Machines and Conveyances.
- III. Wood Manufactures.
- IV. Leather and Rubber Goods.
- V. Chemicals, Oils, Paints, etc.
- VI. Paper and Pulp.
- VII. Printing and Paper Goods.
- VIII. Textiles.
- IX. Clothing, Millinery and Laundry.
- X. Food, Liquors and Tobacco.
- XI. Water, Light and Power.

¹ For the complete and detailed classification, see Report of the Bureau of Factory Inspection, New York State, 1906, 1907 or 1908. Particular industries are to be found there classified under the main heads as named above.

XII. Building Industry.

These main classes of industries may be roughly grouped under the classification of Primary and Secondary industries, as follows:

(A) *Primary:*

- I. Stone, Clay and Glass Products, other than used in building.
- II. Metals, Machines and Conveyances.
- III. Wood Manufactures.
- IV. Leather and Rubber Goods.
- V. Chemicals, Oils and Paints.
- VI. Paper and Pulp.
- VII. Printing and Paper Goods, other than newspaper printing.
- VIII. Textiles.
- IX. Clothing, Millinery, Laundry, etc., other than Laundry, Custom Clothing and Custom Dress-making.
- X. Food, Liquors and Tobacco, other than perishable Food Products, bulky Beverages and Bakery Products.

(B) *Secondary:*

- I. Stone, Clay and Glass Products, used in the building industry.
- VII. Newspaper Printing.
- IX. Custom Clothing, Dressmaking and Laundry.
- X. Food and Liquors, other than Flour, Cereals, non-perishable and easily transported goods.
- XI. Water, Light and Power.
- XII. Building Industry.

In order to obtain information about the reasons for the location of the various classes of industries in Manhattan, the most prominent manufacturing establishments in each

line of business were visited. The heads of these establishments were questioned as to their reasons for locating in New York City, and what advantages or disadvantages they found in being located there. The establishments visited were located not only in Manhattan, but in other boroughs and in New Jersey. The latter were included because economically the industries located in New Jersey, on the west bank of the Hudson River, are a part of New York City.

In the following discussion each industry group will be considered separately. Tables will be introduced showing the principal reasons for the location of each establishment visited, as given by its own officers. The size of the concern will be indicated by the number of employees, and the proportion of product marketed in New York City will also be shown.

A. PRIMARY INDUSTRIES

I

Stone, Clay and Glass Products, Other than Used in Building

The stone, clay and glass industry, which is largely composed of stone and marble cutting and dressing establishments, was once located almost entirely in Manhattan. Considerable ground is required by these concerns, and hence, with the rapidly-increasing value of property, many of them have moved to the suburbs. Table 16¹ gives the reasons for the location of these concerns.

¹ In all the tabulations which follow, the reasons for locations—both advantages and disadvantages(*)—are put down in order of their importance. Thus, 1. means that the reason is the primary one; 2. that it is second in importance; and so on. The tables thus indicate what the manufacturers themselves feel to be the principal objects to be sought for in locating their manufacturing establishments.

TABLE 16
Reasons for the Location of Plants given by Proprietors or Officers

I. STONE, CLAY AND GLASS INDUSTRY

	Manhattan.	Bronx.	New Jersey.	Brooklyn.			Queens.										Long Island.
Per cent. of Product Marketed in New York City.....	100	100	90	....	....	....	75	90	100	95	80	100	80	100	100	100	10
Number of Employees.....	50	300	40	....	....	....	300	700	30	40	150	20	200	75	10	10	1800 to 2600
Designation of Concern.....	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
Accessibility of New York Market ..	1	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Accessibility of Supplies .....	....	....	....	....	....	....	....	2	....	4	....	2	....	....	....	....	....
Labor Supply	2	*1	....	....	....	....	....	3	3	2	....	....	....	....	3	2	3
Transportation Facilities .....	....	*2	2	1	2	2	....	....	2	3	2	3	1	2	2	1	....
Water .....	....	....	....	(1)	....	....	....	....	(2)	....	(2)	....	(1)	(2)	(2)	(1)	....
Railroad .....	....	....	....	....	(2)	....	....	....	....	....	....	....	....	....	....	....	....
Trucking .....	....	....	....	....	(2)	....	....	....	(2)	(3)	....	(3)	....	(2)	....	(1)	....
Saving in Rent and Cost of Site ....	....	....	1	....	1	1	2	1	1	1	1	1	2	1	1	....	2
Long Establishment.....	3	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....

* Negative reasons, or disadvantages.

These establishments, because of the changing conditions, present particularly well the various phases of the problem of the location of industries. The concern located in Manhattan (a) is the sole survivor of a considerable group of marble and stone-cutting establishments. The Bronx concern (b) evidently finds little to commend in the new location which it has chosen. Likewise, New Jersey, although offering some advantages (c), is handicapped by the low and marshy land, which is ill adapted to heavy work. Two of the establishments in Brooklyn (d and e) were glass cutting factories and did not have quite the same needs as the majority of the concerns in the group. The other firm (f) manufactured a patent cement building material and finds the water front a necessary factor in the business. The one concern in Long Island is a large manufactory of enamel ware. It finds that proximity to New York City, where its sales offices are, is a great advantage; aside from this, the economy of a cheap site, and a large labor supply, are important factors.

The establishments in Queens present an interesting grouping of several similar concerns. Four of these cut and dress building stone, three are marble dressers, the remaining three are respectively manufacturers of slate, terra cotta and granite.

The motives which stand out most prominently among the reasons for location in the stone, clay and glass group are saving in rent or cost of site and transportation facilities, especially water transportation and trucking. The cost of site plays an important part in this industry on account of the bulky character of the goods handled and the necessity of having water-front in order to dispose of the finished product. The uncut and undressed stone comes to New York on barges which must be brought directly to the stone cutters' yards and handled but once; rehandling

means a very serious loss. Water-front property in Manhattan has become prohibitive for manufacturing concerns. Hence, the stone-cutting business has been forced out of Manhattan and has grown up, indigenously, on the other side of the East River, in Long Island City.

Behind these reasons for location at a particular place, is the ever-present reason to be near the New York market. Although not always expressed, the great value of such a location is constantly evident in the large proportion of the product which is marketed in New York City. Another important factor is transportation facilities. The emphasis is placed on water transportation because it is most largely used. Trucking is another expression of the proximity to the market. Indeed many of these firms find that they are just as conveniently located in Long Island City, as far as ability to get goods brought into the city on trucks is concerned, as if their plants were located in Manhattan. The expense of trucking is largely the maintenance of the trucks and teams and the loading of the material. An additional haul of a mile or two miles, or the payment of a small ferry toll is of almost no comparative value.

The part of this group of establishments which is included under glass manufactures is not necessarily influenced by the same considerations as the stone and clay workers. The remaining establishments, however, find their weightiest reasons for location in the nearness and accessibility of the New York market, and less important reasons are the cost of site or rentals and transportation facilities.

II

Metals, Machines and Conveyances

During the early period of the development of manufactures in New York, metal working played a very important part. At one time there were many foundries in Manhattan. The manufacture of machines developed very naturally. New York was a great port where the shipping of the world was centered. With the introduction of steam and its application to water transportation, building of marine engines became a leading industry of the city. To-day there are no iron foundries in Manhattan, but there are manufacturers of machinery in many lines. In Manhattan, however, the metal and machine industry is decadent. Many establishments are dependent on repair work and the various odds and ends of work in a great city. A few of the old, time-honored concerns, their officers and reputations hoary with age, remain. The young, strong, virile concerns have left Manhattan, or perceiving the difficulties have located elsewhere. Brooklyn has become a centre for this industry, and New Jersey is rapidly becoming important.

In the accompanying table (No. 17), the reasons given by the owners and managers of many concerns for their location in Manhattan¹ indicate its advantages and disadvantages. Emphasis is placed in many cases upon "long establishment". This means that these firms have grown old in their present locations, some of them are too inert and unprogressive to contemplate removing, others, after counting the costs, have found the gain too small.

¹ Many of the data for the table concerning Manhattan were collected by Miss Carola Woerishoffer, to whom the writer is indebted for permission to use them.

TABLE 17
Reasons for the Location of Plants given by Proprietors or Officers

II. METALS, MACHINES AND CONVEYANCES

	Manhattan.																		
Per cent. of Product Marketed in New York City.	Less than 20 per cent.				21-40 Per cent.		41-60 Per cent.			61-80 Per cent.				81-100 Per cent.					
	1000 (a)	400 (b)	7 (c)	350 (d)	70 (e)	2500 (f)	1000 (g)	225 (h)	300 (i)	500 (j)	45 (k)	50 (l)	300 (m)	11 (n)	35 (o)	40 (p)	40 (q)	40 (r)	30 (s)
Number of Employees.....																			
Designation of Concern.....																			
Accessibility of New York Market						2	1	3	.....	1	.....	1	1	2	.....	2	1	1	1
Store and Factory Combined.....						.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Labor Supply .....						.....	.....	1	2	2	.....	.....	3	1	.....	1	.....	.....	.....
Transportation Facilities .....						.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Water .....						.....	.....	.....	.....	.....	.....	.....	(2)	.....	.....	.....	.....	.....	.....
Long Establishment.....	1	1	.....	1	.....	1	.....	.....	1	.....	1	.....	.....	.....	1	.....	.....	.....	.....
Ownership of Property					1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Personal .....		..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....

TABLE 17—Continued

Per cent. of Product Marketed in New York City.	Brooklyn.															
	Less than 20 per cent.										21-40 per cent.					
	*125 (t)	115 (u)	75 (v)	*491 (w)	300 (x)	500 (y)	10 (z)	40 (aa)	150 (bb)	25 (cc)	15 (dd)	120 (ee)	*400 (ff)	60 (gg)	400 (hh)	170 (ii)
Number of Employees.....
Designation of Concern.....
Accessibility of New York Market.....	3	1
Store and Factory Combined.....
Nearness to New York Office.....	2	.....	.....	.....	.....	.....	.....	.....
Accessibility of Supplies.....
Labor Supply.....	*2	3	2	*3	1	2	.....	3	3	.....	2	3	.....	4	.....	2
Transportation Facilities.....	2	.....	*1	*3	1	1	1	.....	1	1	1	*1	1	2	3
Water.....	(2)	.....	*(1)	.....	(1)	(1)	(1)	.....	.....	.....	(1)	.....	.....	.....	.....
Railroad.....	(2)	.....	*(1)	.....	.....	(1)	(1)	.....	.....	.....	(1)	*(1)	.....	(2)	.....
Trucking.....	*(1)	.....	(1)	.....	.....	.....	(1)	.....	(1)	.....	.....	.....	(3)
Saving in Rent, Cost of Site, Taxes and Insurance.....	*1	1	1	.....	.....	3	3	.....	1	.....	.....	.....	.....	3	.....	.....
Room, Light and Air.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Better Surroundings for Employees, Health and Sanitation.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Long Establishment.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ownership of Property.....	*2	.....	.....	.....
Difficulties of Moving.....
City Officials.....	2

* Negative reasons or disadvantages.

TABLE 17—Continued

[illegible]

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LOCATION OF FACTORIES

TABLE 17—*Concluded*

	Mt. Vernon, N. Y.					Queens.				New Jersey.				Long Island.
Per cent. of Product Marketed in New York City.	0	0	10	25	33	50	90	90	100	.....	.....	.....	.....	25
Number of Employees.....	.....	125	2	150	180	80	300	75	300	.....	.....	.....	.....	1000
Designation of Concern.....	(bbb)	(ccc)	(ddd)	(eee)	(fff)	(ggg)	(hhh)	(iii)	(jjj)	(kkk)	(lll)	(mmm)	(nnn)	(ooo)
Accessibility of New York Market	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Accessibility of Supplies .....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....
Labor Supply	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Transportation Facilities	1	.....	3	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	3
Trucking .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(3)
Saving in Rent, Cost of Site, Taxes and Insurance.....	.....	1	.....	1	.....	1	1	1	1	2	1	1	1	1
Room, Light and Air .....	.....	.....	2	.....	1	.....	.....	.....	.....	.....	3	.....	.....	.....
Large Area Required .....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Better Surroundings for Em- ployees, Health and Sanita- tion .....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Long Establishment.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
New Jersey Corporation .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....

An interesting change in the character of the answers takes place as the amount of product marketed in Manhattan increases. This change of emphasis from "long establishment" to "accessibility of the New York market" indicates a change in the character of the concerns. The former are those doing a widely-scattered business, although they may have been unprogressive; the latter are largely job and repair concerns, doing a local business.

The majority of the data concerning the establishments located in Brooklyn were collected in the manufacturing districts which stretch along the East River from the Wall-about Basin north to Newtown Creek. The particular types of products vary greatly: they include tinware (2), ship-building (1), machinery (9), gas fixtures (2), electrical fixtures (1), iron mouldings (2), metal tubing (2), architectural iron (1), pumping machinery (1), hardware (1), brass goods (1), sheet metal goods (1), hoisting machinery (1), heating apparatus (1), car supplies (1), filter presses (1), silverware (1), scientific apparatus (1), metallic beds (1), and distributing metalware (1).

Establishments selected from such a large area as that of Brooklyn are of course subject to many diverse conditions. Hence, one concern may feel that it is advantageously located as regards transportation facilities, while another only a few blocks distant, finds this same thing a disadvantage. However, certain prominent facts are evident. The almost total lack of reference to transportation facilities among the firms located in Manhattan, and the great emphasis placed on transportation facilities by the Brooklyn concerns is important. The two prominent features among the reasons for locating in Manhattan, "long establishment" and "accessibility of the New York market", receive scant attention from the Brooklyn factories. On the other hand, they emphasize "transportation facilities",

the "labor supply", and "saving in rent, cost of site, taxes and insurance". It will also be noted that the emphasis changes as the proportion of product marketed in New York City increases, from water and railroad transportation facilities to trucking facilities.

In at least three cases the manufacturer felt that the disadvantages outweighed the advantages. These factories, then, should move to more advantageous sites. Two of them are doing so: one to Ohio, the other to New Jersey.

In the reasons given by manufacturers located in Mt. Vernon, N. Y., Queens, New Jersey, and Long Island, surprising unanimity of opinion prevails that the main factor in determining the location of the factory is the saving in rent, cost of site, taxes and insurance. The reasons which were emphasized in the cases of Manhattan and Brooklyn are almost neglected. Evidently it was primarily to avoid the large fixed charges prevailing at the centre of the city that these concerns decided to locate in these less expensive localities.

III

Wood Manufactures

The establishments included under Wood Manufactures form a rather diversified group. They include piano factories, wooden-box factories, veneer mills, manufactures of cork and billiard tables and even a cooperage. Most of the piano manufactures were found in Manhattan. Aside from these factories almost all the remaining ones had this feature in common: they were using a bulky and comparatively raw material and were turning out bulky and comparatively cheap products.

The factories located in the suburbs seem to have found the chief advantage of such a location in the saving of rent and the saving in the cost of the site—property charges.

At least two of these firms were once located in Manhattan; one removed many years ago and the other only recently. Both, however, did so in order to make room for increasing business. The question of transportation is of unequal importance according to the particular character of the business. Hence among the firms manufacturing a heavy product, a water-front location is of great importance because rehandling must be avoided.

One of the establishments cited gives petty grafting on the part of city officials as the primary cause for its removal. This same reason appeared in one of the other cases, but it was difficult to secure direct or convincing evidence. The proprietors may have interpreted the enforcement of the rather stringent factory laws in the State of New York as attempted extortion on the part of the enforcing officials. There may, however, exist practises of petty graft that are annoying to many manufacturers.

The firms located in Manhattan show the same difference of emphasis as was exhibited in the case of the metals group. The bulk of the advantages cited are not saving in property charges or transportation facilities, but rather, accessibility of the New York market, long establishment and a good labor supply. This instance shows rather clearly the variation between a location in the heart of the city, and its advantages, and a location in the suburbs and the attractions there. The old established concerns are held in the central part of the city by their heavy fixed investments or by honorable traditions. Other firms seek a good labor supply. Still others do a largely local business or feel that great advantages accrue to them through their site at the centre where business is largely transacted.

TABLE 18
Reasons for the Location of Plants given by Proprietors and Officers
III. WOOD MANUFACTURES

	Manhattan.																Brooklyn.	Queens.				New Jersey.
Per cent. of Product Marketed in New York City	10	25	30	40	50	50	75	80	90	90	90	100	100	100	100	3 *100	10	30	100	50		
Number of Employees.....	120	25	250	700	100	100	15	100	60	1200	125	100	35	17	35	125	175	100	500	175	450	200
Designation of Concern	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)
Accessibility of New York Market.....				2	2	1		1	1		1		1	1		1						
Accessibility of Supplies.....		3				2		2										*2				
Labor Supply		2		1	1	3	2						2		1	2	3				3	
Unskilled Labor.																	(3)					
Transportation Facilities.					3	4											1	*1	*3	3	2	3
Railroad																	(1)	*(1)		(3)	(2)	
Water.																			(3)	*(3)		
Trucking																		*(1)		(3)		
Saving in Rent or Cost of Site.							1										2	*3	1	1	1	2
Room, Light and Air																			2			
City Officials and Petty Graft.																						1
Long Establishment		1										1										
Ownership of Property.			1																			
Personal	1									1		2										

* Negative reasons or disadvantages.

IV

Leather and Rubber Goods

The group of establishments designated as leather and rubber goods included the following: leather, fur, gloves, rubber, gutta-percha, shoe and brush factories.

The group as a whole is not specially significant, but some of the individual establishments are very interesting. Establishment (e), in which many female workers are employed, finds it hard to retain its labor force—"They drift away." This concern expects to move to a smaller town in order to obtain a cheaper site, more room, air and light, and better surroundings generally. Another establishment (f), also employing a large number of women, somewhat skilled, reported that the labor supply was the one great overwhelming advantage, in comparison with which other advantages dwindled away. This concern manufactures gloves, a product light and valuable in proportion to bulk. Hence transportation facilities do not play an important part. This fact is brought out strongly by the location of the factory which has been placed at some distance from any lines of transportation. The site of the plant is in the heart of a middle-class residential district of Brooklyn, near convenient transit lines, which tap good residential neighborhoods. This enables the factory to draw its help from the more intelligent homes, which furnish it with a never-failing supply of labor. The work is not distasteful but fairly attractive, and the young women employed are able to earn fair wages.

The shoe factories form an interesting group. At one time this part of the industry was centered in Manhattan,¹

¹ See Bishop, J. L., *History of American Manufactures, 1608-1860*, chapter on Manufactures of Shoes in 1850. Also, Reports on Selected Industries in the various Federal Censuses.

TABLE 19
Reasons for the Location of Plants given by Proprietors or Officers
 IV. LEATHER AND RUBBER GOODS

	Manhattan.																		
Per cent. of Product Marketed in New York City	10	10	10	10	10	20	25	25	33	33	40	40	40	50	50	50	75	90	....
Number of Employees.....	150	350	30	30	120	45	55	50	150	100	35	90	50	100	24	225	40	90	350
Designation of Concern.....	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
Accessibility of New York Market	1	2	....	1	1	2	....	....	2	....	2	1	....	1	....
Accessibility of Supplies	1	....	....	3	....	....	....	....	....	....	3	....	1	....	....	....	....	....	....
Labor Supply	1	1	1	....	1	1	....	....	1	1	....	....	....	1	....	....	....	....
Transportation Facilities	2	....	2	2	2	....	....	....	....	....	2	....	....	....	....	2	....	....	....
Railroad	(2)	(2)	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Water
Trucking
Saving in Rent, Cost of Site, Taxes and Insurance.....
Better Surroundings for Em- ployees, Including Lower Rent
Long Establishment.....	1
Personal or Family Reasons....	2	....	....	....	....	....	2	....	....	....	1	3	1	....	....	1	....	2

TABLE 19—*Concluded*

	Brooklyn.										Queens.	
Per cent. of Product Marketed in New York City .....	.....	0	5	5	10	20	25	35	66	80	100	100
Number of Employees.....	50	140	1200	700	50	1500	225	40	70	200	569	400
Designation of Concern.....	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(bb)	(cc)	(dd)	(ee)
Accessibility of New York Market ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Accessibility of Supplies .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....
Labor Supply	3	1	.....	3	2	1	3	1	3	1	.....	.....
Transportation Facilities .....	.....	2	3	4	.....	.....	1	2	1	.....	2	2
Railroad .....	.....	.....	(3)	.....	.....	.....	(1)	(2)	(1)	.....	.....	(2)
Water.....	.....	(2)	.....	.....	.....	.....	(1)	.....	.....	.....	(2)	(2)
Trucking .....	.....	(2)	.....	(4)	.....	.....	(1)	(2)	.....	.....	(2)	(2)
Saving in Rent, Cost of Site, Taxes and Insurance.....	1	.....	1	1	.....	.....	2	3	.....	3	1	1
Better Surroundings for Employees, Including Lower Rent	2	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Long Establishment.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....

where it thrived, until high buildings, cramped quarters, high rentals and poor light forced it out. To-day only one firm of any note remains in Manhattan. The bulk of this industry has settled in Brooklyn, where at present the manufacturer is able to secure, for a reasonable outlay, the most essential conditions of shoe manufacturing, namely, room, light and air. This small group of factories furnishes an excellent example of the forcing out of Manhattan of an entire line of industry because of the conditions of congestion. The abundant supply of labor in Brooklyn probably led to the choice of that city as a site for the industry. Had New Jersey presented the same facilities, it is quite possible that this important line of manufacturing would have been moved entirely out of the state.

The two concerns located in Queens, in a rather out-of-the-way place, send their products to a salesroom in Manhattan from which they are distributed. In both plants the cost of site was very important, but both complained of insufficient housing for their workers. One reports scarcity of labor, the other petty grafting and hampering municipal regulations.

V

Chemicals, Oils and Paints

Among the establishments investigated in this group, the following products were manufactured: chemicals, paints, varnish, fertilizer and lead pencils. The plants were widely scattered, usually located in thinly-populated sections of the city. One of the firms had several plants: two in Brooklyn, and one each in Edgewater, N. J., and Elizabethport, N. J.

The one concern located in Manhattan did a very large distributing business, its manufacturing being of much less importance. Transportation facilities are emphasized as the most important factor, especially water transportation

for foreign shipments. The concern is not located on the water-front, probably because its business is largely in very expensive chemicals, which are put up in small packages.

The group of establishments located in Brooklyn shows quite clearly the effect upon the reasons for location of marketing a large product in New York City. Hence the firms marketing a large proportion of their product in New York City find the accessibility of the New York market to be their chief advantage, while the others find their chief advantages in other features, such as saving in cost of site, labor supply and transportation facilities.

Firm (d), which has been located at its present site for many years, finds many disadvantages there as well as advantages. Thus Brooklyn furnishes a large supply of unskilled labor. The saving in cost is only a saving in comparison with Manhattan sites. Among the disadvantages that they find are lack of transportation facilities, particularly the high cost of direct access to water-front property, and the consequent necessity of trucking. These disadvantages are so weighty that the firm is seriously considering removing its plant to New Jersey.

Another factory, manufacturing paints, has found the location in Brooklyn so hampering that the proprietor has purchased a new site, and is erecting a factory at Elizabethport, N. J. This man wished to expand his business, and in order to do this he found it necessary to purchase additional land. This could be obtained in the vicinity of the present plant in Brooklyn only at very great cost. In discussing the difficulties, he pointed out very clearly that the cost of such a removal would be very great indeed, but that the main item of cost was the initial removal of the machinery. It made very little difference, therefore, whether he moved his factory a few blocks or several miles. In Brooklyn, the plant occupied a scant acre at some distance

TABLE 20
Reasons for the Location of Plants given by Proprietors and Officers
 V. CHEMICALS, OILS AND PAINTS

	Manhattan.	Brooklyn.					Queens.			
Per cent. of Product Marketed in New York City....	.....	.....	5	20	75	90	5	5	10	10
Number of Employees.....	.....	40	1000	300	75	50	.....	1250	70	325
Designation of Concern	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Accessibility of New York Market	1	.....	.....	.....	1	2	.....	.....	.....	.....
Accessibility of Large Supplies .....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Labor Supply .....	.....	3	3	1	.....	.....	.....	3	3	2
Transportation Facilities	2	2	2	*3	.....	1	1	1	*(2)	1
Railroad .....	.....	(2)	.....	.....	.....	(1)	.....	(1)	*(2)	(1)
Water	(2)	.....	(2)	*(3)	.....	.....	(1)	(1)	.....	(1)
Trucking. ....	.....	.....	.....	*(3)	.....	.....	.....	.....	.....	.....
Saving in Rent, Cost of Site, Taxes and Insurance. ..	.....	1	1	2	.....	3	.....	.....	1	*3
Location Required by City Ordinance .....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....

* Negative reasons or disadvantages.

from the water-front; in the new location there will be fifty-eight acres, with direct water and rail facilities, thus eliminating trucking and rehandling. There will also be a large saving in taxes and insurance, and no difficulty in obtaining labor is anticipated. The latter is of the cheapest grade, composed mainly of Poles.

With one exception, (i), the establishments composing the Queens group are located on the water-front and do the largest and most essential part of their shipping by water. In the case of establishment (h), this is especially necessary, because about 45 per cent of its product is exported.

The representatives of one establishment (h), in giving rent and cost of site as the least important factor, stated that this was not an important consideration with a large company. A more expensive site simply meant a slightly larger amount of capital, which was usually easily obtainable and not a serious charge. Further, as in this particular case, many plants are considered nuisances, and must take the most available of the sites which are allowed them without regard to their primary cost.

Most of these concerns emphasized the abundance of the labor supply, of the unskilled and cheap foreign type, largely Poles and Slavs. This is an ingredient in the product which is particularly accessible in New York City.

VI

Paper and Pulp

The amount of paper made in New York City is an almost negligible quantity, because paper from wood pulp is made in the woodland districts of the country. As the representative of one of the largest paper interests in the country remarked, "Because there isn't any wood in New York City, the mills must be located near the wood and pulp supplies and must be provided with cheap power."

The one mill found in Greater New York produces a very fine grade of paper and receives a large part of its raw materials from Europe.

TABLE 21

Reasons for the Location of Plant given by Proprietor and Officers

VI. PAPER AND PULP

	Brooklyn.
Per cent. of Product Marketed in N. Y. City	25-30
Number of Employees.....	40
Labor Supply	3
Transportation Facilities	2
Railroad.....	(2)
Water.	(2)
Trucking	(2)
Saving in Rent and Cost of Site.....	1

VII

Printing and Paper Goods

The printing industry is the one in which, perhaps, the greatest success has been attained in determining the causes for its location in New York City. Not only are the establishments investigated very representative, but the facts ascertained are numerous and suggestive. The proprietors and officers of these concerns were thoughtful and well-informed, and were able to give full and intelligent answers to questions concerning the reasons for their location in New York City. Not only was the character of the information obtained in the printing industry careful and fairly complete, but it is in this industry that some interesting experiments have been made in removing plants from the city.

The establishments returning data for Table 22 included in Manhattan, engravers, lithographers, magazine publishers, book-binders and job printers; in Brooklyn, paper and stationery, printing and lithographing, blank books, paper

boxes, printed games and toys and paper goods; in Queens, magazine printing; in Jersey City, paper boxes; and in Westchester County, the manufacture of maps.

It is quite evident from this table that the principal advantages which printing concerns find in Manhattan are the accessibility of the New York market and the abundant supply of labor. In the other parts of the city, in the suburbs, greater emphasis is placed on transportation facilities and saving in rentals and cost of site. The labor supply remains of considerable importance.

According to the Federal Census of Manufactures, 1905, almost one-fourth (23.1 per cent) of all the printing of the entire country is carried on in New York City. The far greater part of this output is manufactured within the narrow limits of lower Manhattan. These facts become even more striking when one considers that there are more establishments in this line of industry than in any other and that it is more scattered than any other line of manufacturing. Before considering in detail the causes of this phenomenal concentration, it may be profitable to consider some of the instances of firms which have moved away from the city.

One of the largest printing firms in the city has recently moved its plant from Manhattan to a near-by New Jersey town. The advantages sought were the following:

Cheaper rent and insurance.

Accessibility of large supplies.

Transportation facilities.

The initial cost of moving the establishment and transferring the heavy presses was, of course, great. But there was also a large compensatory saving. While it is yet too early to test the result of the experiment, it is expected that at least one-third the cost of production will be saved. It is further estimated that fixed charges amounting to \$60,000 a year will be eliminated.

70 CAUSES OF CONGESTION OF POPULATION [70

[70]

TABLE 22—*Concluded*

	Manhattan— <i>Concluded</i> .								Brooklyn.								Queens.
	75	80	90	90	90	95	95	99	1	10	20	25	33	50	67	75	
	70	300	300	115	60	385	400	80	75	700	700	1200	600	150	450	75	
	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(bb)	(cc)	(dd)	(ee)	(ff)	(gg)
Per Cent of Product Marketed in New York City	4	1	1	1	1	...	1	3	...	...	1	...	...	...	...	...	...
Number of Employees .....	...	3	2	...	2	...	...	1	...	...	...	...	...	...	...	...	...
Designation of Concern .....	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Accessibility of New York Market	1	2	...	2	3	1	...	...	...	1	...	3	3	2	2	3	...
Accessibility of Supplies .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Advertising Facilities .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Labor Supply .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Less Danger of Labor Difficulties .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cheaper Labor .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Transportation Facilities	3	...	...	...	...	2	...	2	1	2	2	1	1	1	3	2	2
Railroad	(3)	...	...	...	...	...	...	(2)	...	(2)	(2)	(1)	(1)	(1)	(3)	...	(2)
Water .....	...	...	...	...	...	...	...	...	...	...	...	(1)	...	(1)	...	...	...
Trucking .....	...	...	...	...	...	...	...	(2)	...	...	...	...	(1)	(1)	...	(2)	...
Saving in Rent, Cost of Site, Taxes, and Insurance .....	...	...	...	...	...	...	...	...	2	3	...	2	...	3	1	1	1
Better Air, Light, Sanitation, etc. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Better Surroundings for Employees ....	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
Long Establishment .....	...	...	...	...	...	...	3	...	...	...	3	...	2	...	...	...	...
Custom or Inertia .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

The same influences which are driving manufacturers out of Manhattan are found in Brooklyn. One concern, making paper boxes, has purchased land and removed its plant to New Jersey. The reasons were that the firm wished to expand their business and could do so only at great cost in Brooklyn. The one establishment investigated in Queens, which was one of the largest magazines in the country, removed in 1907 from Manhattan. A new building was erected near Long Island City. The advantages expected from this removal were the following:

Transportation facilities, direct track connection.

Better light, air and sanitation.

More room.

Saving in value of site, or rental charge.

Saving in insurance.

The editorial offices were retained in Manhattan, and were about three-quarters of an hour's ride from the factory.

The savings on the cost of the property and insurance resulted as was expected; better light, air, sanitation and more room were obtained. The transportation facilities proved to be less of an advantage than had been hoped, while a new and quite unexpected difficulty arose. The firm found it almost impossible to secure the skilled labor which it requires at all times, nor could it secure the special and comparatively unskilled help necessary at the end of each month to get out the magazine, bind, wrap and address the many thousands of copies. As a result the firm has moved its printing department back to Manhattan.

A large manufacturer of maps located in Westchester County, having recently removed from New York City, presented a very interesting case. The reasons for leaving Manhattan were:

1. The congested conditions of the quarters in New York City, inability to secure the necessary room, air and

light. Good light was one of the absolute necessities in this industry.

2. High insurance rates. A saving of 90 per cent was effected in the present location.

3. Expensive rentals in New York City. The concern has a beautiful site in the country, not even near a railroad, which is not an essential on account of the light and very valuable character of the product.

4. Impossibility of expansion. This requirement is amply provided for in the present location.

The casual observer riding past this excellent plant on a street car would probably mistake it for a new and palatial school building. Its large windows, great entrance, well-kept lawn, extending some little distance in front of the building, are features not common in factories. It was to secure these conditions that the factory was removed from New York City in 1907. Very little of the product is marketed in New York City. The firm has found it necessary to build up an entirely new labor force in their little community, and the manager states emphatically that a better grade of help has been secured, which is doing better and more work than was done in Manhattan. In all, the savings have been very great, and the proprietors consider the move the best that could have been made. In fact, the results have more than justified their expectations.

A striking experiment in removing a printing plant from Manhattan was that made by the Frank A. Munsey Company. Mr. Munsey moved his plant from New York City to New London, Conn., for two reasons:

1. To secure a cheaper site and to eliminate the high rentals, taxes and insurance chargeable against production in New York City.

2. To secure for his employees decent living conditions, to enable them "to become efficient American citizens". This he believed to be impossible in New York City.

The first expected benefit was secured. But the workers seemed reluctant to become "efficient American citizens". In fact, the publishers experienced considerable difficulty in inducing the workmen to stay in New London or in obtaining new workers. Mr. Munsey was finally forced to return with his plant to New York City.

The *Woman's Home Companion*, which has been located at Springfield, Ohio, has recently moved its editorial offices to New York City. The reasons for this change were:

1. That the editorial offices might be near the centre of contributions and have the advantage of the prestige which a location at the centre of the publishing world offers.
2. That men who are really big enough to carry out large enterprises successfully, object to living in a small town like Springfield, Ohio, and prefer to be in New York City.

The divorce of the editorial department and the publishing rooms has not been found to be a serious handicap. The location of the editorial offices in New York City has proved to be an economic advantage, while the separation of offices and work-shop has turned out to be an "inconvenience rather than a disadvantage."

There is one very successful printing firm, having editorial offices in Manhattan and printing plant in the suburbs. This concern is G. P. Putnam's Sons. New Rochelle, where their manufacturing department is located, is within easy distance of the city. In the early days of the experiment the firm experienced considerable difficulty in securing labor, and it was only through the personal efforts of the elder Mr. Putnam that they were able to keep hands enough in New Rochelle to man the presses. The factory is now thoroughly established and no further inconvenience in the matter of the labor supply is expected.

Other instances of success and failure might be cited, but the last two cases are typical of the prevalent kinds of

movements. The *Woman's Home Companion* represents the indigenous growth of manufacturing establishments in small provincial towns where the editorial and manufacturing ends of the business grow up together. As the concern becomes more important, and finds it necessary to expand, the editorial department is moved to the metropolis, the manufacturing plant remaining at the original site. G. P. Putnam's Sons represent another type: establishments which have grown up in New York City, where editing and manufacturing were combined. They have been compelled by the strain of competition to remove their manufacturing plants to outlying and provincial sites in order to take advantage of lower rentals and lower fixed charges. The editorial departments have remained in the city to secure the advantage of the facilities offered by New York City as the centre of the publishing and printing of the country.

For the purpose of analyzing further the causes of the location of the printing industry in New York City it is necessary to consider separately the various classes of establishments. These are: (1) newspaper printing; (2) job printing, including lithographing, engraving, etc.; (3) book publishing and making; (4) magazine and periodical publishing and printing.

It is quite obvious that a newspaper must be printed in the city where it is circulated.

Under job printing are included all those printing processes and particular lines of the printing business, which are not periodical in their nature and are subject to casual orders. One very large manufacturer in this line of the industry drew a rather significant distinction from his large and extremely successful experience. An establishment manufacturing a staple article, like shovels, or bottles, or muslin cloth—articles which do not vary in form or com-

position, beyond perhaps very narrow limits—can locate in any place where it will be possible to get cheap raw materials, to market products easily and to find plenty of labor. On the other hand, the manufacturers of products made to order, which change with each customer, such as job printing, lithographing and engraving, find it necessary to locate immediately adjacent to the market, the largest market possible.

It is not so imperative that book-printing and publishing be located in New York City. There are many large book-publishing houses that are not located in New York City. This is possible because there is not that close dependence upon the market for orders, nor is there a very large prestige offered in the name of New York City, nor is it necessary to put the product post-haste on the New York market.

With one or two exceptions, the largest and most important magazines in the country are published in New York City. This is true for a variety of reasons.

First in importance is the accessibility of the New York market. The term "market", interpreted in its widest sense, is not only the place where commodities and products may be sold, but also where raw materials, art and genius may be bought. Editors claim that their offices must be located in New York City in order to secure:

1. The best articles from the best authors, who live in New York City and vicinity.
2. The best illustrations from the best artists, who are also to be found in and about New York City.
3. The biggest advertisements from the largest advertisers, which can be secured and made to yield the best results in New York City.

Secondly, the entire printing industry is from beginning to end one of the most skilled of occupations. From the meanest feeder to the most technically-trained engraver,

there is need of accuracy and ability. New York City is by all odds the leading labor market of the country, both in skilled and unskilled labor, and it seems to be extremely difficult to graft a printing establishment on a rural or provincial community.

In the third place, a very important feature of the New York market is its remarkable richness in supplies of all sorts allied to the printing industry. If one of the complicated presses breaks down, it is a matter of very few hours at the most, until a new part and a man direct from the makers is on the ground. The principal manufacturers of all printing goods and printing supplies and machinery are centred in New York City. These facts bring out clearly the cumulative process of congestion. One factor strengthens another and tends constantly to increase the intensity of the congestion of printing and publishing in New York City.

In the fourth place, there is, no doubt, a certain prestige that comes to a magazine published in New York City, and probably this is not due entirely to custom. The best authors are habitués of the metropolis and offer their best stories and their best drawings to the nearest editor, and the outside publishers and magazines get what the New York magazines throw aside.

VIII

Textiles

The textile industry is not largely developed in New York City. Little over 5 per cent of the workers of Greater New York are employed in this line. They are largely employed in such special divisions as silk and silk goods, braid, embroideries and dress trimmings, flax, hemp and jute products. The great textiles of the country, cotton goods, woollens and worsteds, felt, carpets and rugs, hosiery and knit goods, are scarcely represented.

TABLE 23
Reasons for the Location of Plants given by Proprietors or Officers
VIII. TEXTILES

	Manhattan.						Brooklyn.					Queens.				Westchester County.
	50	75	75	100	....	....	10	10	10	20	100	....	20	100	100	
	581	35	30	350	600	350	100	200	1700	100	125	170	270	500	55	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
Per cent. of Product Marketed in New York City..	50	75	75	100	....	....	10	10	10	20	100	....	20	100	100	
Number of Employees	581	35	30	350	600	350	100	200	1700	100	125	170	270	500	55	
Designation of Concern	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
Accessibility of New York Market .....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....
Accessibility of Supplies	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Labor Supply	3	....	....	*2	....	*1	....	3	2	2	....	3	3	1	3	
Transportation Facilities .....	....	....	....	....	....	....	3	2	1	3	....	2	....	3	....
Railroad .....	....	....	....	....	....	....	(3)	(2)	....	(3)	....	....	....	....	....
Water .....	....	....	....	....	....	....	....	....	(1)	....	....	(2)	....	....	....
Trucking .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Saving in Rent, or Cost of Site .....	....	....	....	....	....	....	1	1	3	1	....	1	2	2	1	
Room, Light and Air .....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....
Light, Power and Heat .....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Saving in Taxes and Insurance .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	
Long Establishment .....	....	....	....	....	1	....	....	....	....	4	....	....	....	....	....
Ownership of Property	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Personal or Family Reasons .....	....	2	....	....	2	....	....	....	....	....	....	....	....	....	....

* Negative reasons or disadvantages.

The representative of one of the silk establishments testified that he could at any time get all the skilled labor he wished from Paterson, and even at that moment had many Paterson men employed in his shops. All of these would prefer to remain in New York. He holds the position that workers will follow the factory in moving from one location to another, except when a move is made to a very distant point.

It is not difficult to account for the fact that the textile industry has not grown to larger proportions. The two sections of the country where the textile industry has especially developed are New England and the Eastern South. The former was richly supplied with cheap water-power and, on account of the poor character of the soil, readily became the centre of the textile industry in this country. The latter has recently become prominent through the large available supply of cheap labor, near the sources of the raw materials. There are no great market inducements, no adaptable cheap labor, no cheap power, no proximity to raw materials in New York City to draw the textile industry. While New York City has become the greatest manufacturing centre of finished textile products, it is not by any means prominent as a manufacturing centre for the textiles.

IX

Clothing, Millinery and Laundry

It is commonplace knowledge that New York City produces a very large amount of the ready-made clothing used throughout the country, an amount also great in comparison with the sum total of her other industries. In fact, New York City produces more than one-half of the ready-made clothing in the country, and exactly one-fifth of her own total product of manufactures in clothing. This is a larger proportion than is credited to any other city in the country.

TABLE 24
Value of Clothing Products

Year.	Value of Clothing Manufactured in New York City.	Per cent. of Total Product Manufactured in New York City.	Value of Clothing Manufactured in United States.	Total Per cent.
1905 . . .	\$305,898,981	50.6	\$604,158,289	100
1900 . . .	206,231,336	47.2	436,881,648	100
1890 . . .	119,004,399	37.2	319,967,683	100

TABLE 25
Specialization of Clothing Industry

	Value of Products.		Per cent. of Clothing to all Industries.
	All Industries.	Clothing.	
United States, 1905. . .	\$14,802,147,087	\$604,158,289	4.1
New York City, 1905 . .	1,526,523,006	305,898,981	20.0
United States, 1900. . .	11,411,121,122	436,881,648	3.8
New York City, 1900 . .	1,172,870,261	206,231,336	17.6

It is clearly shown in Table 26 that employers in the clothing business attribute the chief advantages of New York City as a manufacturing centre to the large supply of labor. For many decades the largest proportion of the immigrants to this country have entered by way of the port of New York. The poor immigrant has settled in the metropolis because it offered him boundless opportunities for finding employment. Very little skill, indeed, was required to become a useful member of some over-worked, badly-crowded clothing factory. Thus the immigrant became a

clothing worker, and lived in New York City. He became the main reliance of the clothing manufacturers, the chief asset of the clothing industry in New York City. The manufacture of clothing has flourished in other cities, but in every one it has been the very large foreign population which has made that city successful in the clothing industry.

"Accessibilty of the New York market" plays an important part among the causes of location, but is clearly a secondary cause. First of all, the immigrant made New York City the centre of the industry and, having been made such, it necessarily became the chief centre for the buyers of ready-made clothing. Secondly, the fact that the largest proportion of the clothing industry in the country has been located here has necessitated the location of large selling offices for cotton, woolen, worsted, silk and knit products used in the manufacture of all kinds of clothing. And these brought in their train many auxiliary industries. Hence the great market facilities.

One of the auxiliary industries of clothing manufacture is millinery. It is largely induced by the clothing trade and depends on much the same class of buyers for its market and on similar sources for its supplies. As will be observed in Table 26, "accessibility of the New York market" is given as the most important reason, while "accessibility of supplies" is second. "Labor supply", the foremost reason given by clothing manufacturers, sinks into the third and a rather insignificant place. The labor supply of the millinery industry depends chiefly upon that in the clothing industry and is composed largely of girls and women from families whose fathers and brothers are at work in the clothing factories.

TABLE 26

Reasons for the Location of Plants Given by Proprietors or Officers

IX. CLOTHING, MILLINERY, LAUNDRY, ETC.

	Manhattan.												
Per cent. of Product Marketed in New York City	1	2	5	5	7	10	10	15	15	20	25	33	33
Number of Employees.....	125	250	120	1200	500	1500	150	150	100	750	100	1000	75
Designation of Concern	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Accessibility of Supplies.....	...	3	...	...	...	...	3	...	...	...	2	...	...
Accessibility of the New York Market.....	...	2	2	...	...	...	2	...	3	...	1	...	1
Labor Supply.....	1	1	1	1	1	1	...	...	2	1	...	1	...
Transportation Facilities	1	...	1	...	...	...	...
Railroad
Water	(1)	...	...	...	...	...	...
Trucking.....	(1)	...	...	...	...
Home Work	2	...	...	...	...	...	...	...	...	...	...	...	...
Long Establishment	1	...	...	...	...	...
Personal or Family Reasons	2	...	...	...	...	...

TABLE 26—*Concluded*

	Manhattan.— <i>Concluded.</i>					Brooklyn.						Jersey.	
	80	90	100	....	....	20	33	60	100	100	100	5	....
Per cent. of Product Marketed in New York City.....	175	....	200	200	450	80	500	14	65	2	1200	300	....
Number of Employees	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)
Designation of Concern													
Accessibility of the New York Market.....	1	....	1	....	1	....	....	....	....	....	....	....	....
Labor Supply.....	....	1	2	1	2	....	1	....	2	....	2	....	....
Cheap Labor .....	....	....	....	....	....	....	....	....	....	1	....	2	....
Transportation Facilities.....	....	....	....	....	....	1	2	....	....	3	3	....	....
Railroad .....	....	....	....	....	....	(1)	(2)	....	....	(3)	(3)	....	....
Water .....	....	....	....	....	....	(1)	....	....	....	....	....	....	....
Trucking.....	....	....	....	....	....	....	....	....	....	....	(3)	....	....
Saving in Rent, or Cost of Site.....	....	....	....	....	....	....	....	1	1	2	1	1	....
Consolidation of Manufacturing and Shipping .....	....	....	....	....	....	2	....	....	....	....	....	....	....
Saving in Insurance.....	....	....	....	....	....	3	....	....	....	....	....	....	....
Long Establishment	2	....	....	....	....	....	3	....	....	....	....	....	....

Advantageous as a location in Manhattan seems to be, there are signs of dissatisfaction. Some factories have found that manufacturing under the congested conditions that exist in the centre of the city is uneconomical. The New Jersey concern, a manufactory of hats cited in Table 26, was once located in Manhattan, and although the proprietor preferred that location, was forced out by cramped quarters and high rents. The same is true of many concerns which have moved to Brooklyn and other suburban points. Many of the large factories which have outgrown their crowded quarters in Manhattan have started branch shops in the suburbs, where a considerable portion of their work is done. This arrangement permits a salesroom in Manhattan, but subjects the firm to minimum charges in the manufacturing end of the business.

The large saving in rent or cost of site is again prominent, and "labor supply" is the item of second importance. Among the Brooklyn concerns, transportation facilities seem to play an important part, but they are not as important as in the metal industry. The reason is that a case of clothing will hold a couple of hundred suits. This case may be sent anywhere for from \$2.00 to \$5.00, and the rate on a single suit of clothes amounts to not more than ten cents on a haul from New York to Chicago. These facts illustrate the independence of transportation costs of the manufacturers of clothing.

An industry which produces large, heavy or bulky commodities *must* be located very near its market or the source of its raw material. Which of the two will have the greatest influence depends largely upon the losses in weight in the course of production, the degree of transformation in the material, and the value added to a given quantity of the raw materials in the course of development into the finished product. There may be such a delicate relation between

the two, or some other factor of great importance may enter in, to cause the manufacturer to find his place at some intermediary point. In the latter case the market as well as the field of production is apt to be widely scattered. In the case of clothing, the original raw materials are largely cotton and wool, which may have been raised in the extreme south or in the far northwest. The wool as well as the cotton are usually woven into cloth in New England, or in the South. The cloth now ready for the garment cutter travels from the distant mills to New York City, where the most immobile factor in the clothing industry exists, namely, the clothing operatives. Here, in factory and home, the raw cloth is made into garments, after which a large proportion of the cotton products return to the South and no small part of the woolens go back to the sheep countries of the Northwest. The whole process can be carried on in this round-about fashion, only because the freight rates are very small when compared with the value of the product at each stage of the productive process.

Many of the conditions which have helped to concentrate so large a part of the clothing industry in Manhattan are passing away. Causes making for removal are now at work. It is but a question of time when the shrewd Jew and the scarcely less shrewd Italian will realize the great and often needless expenses he must bear by insisting upon residing in the congested quarters of Manhattan. Even now, with the lines of communication opening in every direction, the population is swarming out along the subway into the Bronx and upper Manhattan, across the Williamsburg and Brooklyn Bridges, into the new additions in the eastern section of Brooklyn. In the new localities the bad living conditions of the East Side of Manhattan are being duplicated without justifiable cause or excuse. What the Jew has already found in his search for a cheap home, the

Jewish manufacturer is just beginning to find out in reference to his factory. In consequence we find new loft buildings housing clothing factories in the recently built-up Jewish and Italian districts of Wallabout and Brownsville. The movement of clothing factories from Manhattan seems to be a growing one, but how far it will go, or what effects it will have on congestion cannot be determined.

X

Food, Liquors and Tobacco

In the establishments classified under the general heading of food, liquors and tobacco, it is sometimes difficult to distinguish sharply between the Primary and Secondary Industries. This basis of distinction for this group may be laid down: Those firms which manufacture commodities of a perishable nature and of such bulk as to render distant shipments uneconomical are secondary. The others are primary. Among the industries classed as secondary are meat slaughtering, the products of which are sold in bulk, bakery products, and others of like character; canned goods, bottled beers and other liquors, tobacco, and the like are primary. We shall discuss here only the primary establishments.

A

Primary Industries

The concerns which were studied are located in Manhattan, Brooklyn, Queens and Jersey City, and were engaged in the following lines: wholesale groceries, cigars, baking powder, chocolate and cocoa, candy, chewing gum, sugar refining, lards, oils and provisions. It will be noted that the weight of reasons is pretty evenly divided between the labor supply and transportation facilities. So far as the food products are concerned, it is probable that transpor-

tation plays a large part, since they are generally bulky and not relatively expensive. Of the firms in Manhattan, which returned the labor supply as the chief advantage, two conducted cigar factories and the third was a large employer of unskilled, cheap, Italian labor.

The labor supply in a cigar factory, where there is a large body of female help, is, of course, the most important item. The rent is also a factor of considerable importance. Transportation, on the other hand, owing to the light weight of the tobacco goods, plays a comparatively small part. The Tobacco Trust has its factories located all over the United States and the officials stated that the tobacco companies usually located their factories near the tobacco-growing regions or near the final market.

The tea importers and handlers afford an interesting example of the tenacity with which some industries hold to Manhattan. These men have had their warehouses in the lower end of Manhattan, near South Street and the foot of Wall, since the Revolution. Of late years the tea vessels have deserted their wharves along South Street and have sought more commodious and convenient quarters in South Brooklyn. Here the Bush Terminal Company has provided one dock for the handling of tea alone, and has added many special features which would be of utility to tea handlers. However, until a few months ago, not one tea merchant had moved to that vicinity and now only one has taken advantage of the facilities offered. The conditions at the Bush Terminal afford practically the same rent, together with a large saving in insurance and the elimination of trucking on all out-of-town shipments. Under the present methods the tea is carted from the South Brooklyn terminals to the Manhattan warehouses. Upon the reshipment of the tea it must be reloaded on wagons and sent to the necessary receiving stations. This involves two truckings with the consequent rehandlings.

TABLE 27

Reasons for the Location of Plants given by Proprietors or Officers

X. FOOD, LIQUORS AND TOBACCO

	Manhattan.						Brooklyn.				Queens.	Jersey.
Per cent. of Product Marketed in New York City	1	10	10	15	20	33	.....	.....	10	50	66	33
Number of Employees	250	175	35	170	1000	700	.....	100	90	100	300	400
Designation of Concern.....	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
Accessibility of New York Market ...	.....	3	.....	.....	.....	3	.....	.....	.....	.....	.....	.....
Labor Supply.....	1	1	.....	3	1	2	.....	.....	1	2	2	3
Transportation Facilities.....	*2	2	.....	2	2	1	1	*1	2	1	3	1
Water .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Railroad ..	.....	(2)	.....	(2)	(2)	(1)	(1)	.....	.....	(1)	.....	(1)
Trucking .....	.....	.....	.....	.....	.....	.....	(1)	(2)	(1)	(3)	.....	.....
Saving in Rent or Cost of Site.....	.....	.....	.....	.....	.....	.....	.....	3	3	1	2	.....
Saving in Insurance .....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Long Establishment.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....

* Negative reasons or disadvantages.

It is quite impossible to account for the inertia of the tea merchants in any terms of commercial economy. The men themselves can make no clear explanation, except to state that they are there because they have always been there and because all the other fellows are there. The real reason probably is that, as all the tea houses are of about the same size and strength, each is afraid to make the first move for fear his competitors will get all the trade, and because buyers will be unwilling to go far from the traditional centre. However, now one firm has made the move we may expect the rest to follow unless the savings are not what have been anticipated.

The case of the tea merchants is the result of high land values in Manhattan. The tea vessels were forced to Brooklyn, not only because better facilities were afforded there, but also because the values of water-front along Manhattan had risen so high as to make such a move economical. Although the same cause probably was active in the case of the tea merchants, nevertheless the immediate reason for their departure will be found in the transfer of the docks of the tea ships to South Brooklyn. Just as the process of congestion of manufactures is a cumulative one, so also are its effects. When one establishment of an industry removes, or some branch of an industry, the others quickly follow suit, unless there is some overwhelming advantage in a Manhattan site.

The concerns located in Brooklyn emphasize the same main features as those in Manhattan. Transportation facilities and the labor supply are most important. The emphasis placed on trucking facilities will, however, be noted for the first time. In this group is included one of the great sugar refineries, whose pre-eminent reason for selecting the present location was its water facilities. The factory, built directly at the water's edge, does away with all carting and

trucking of raw materials, as well as of much of the finished product. Coal is also brought in on lighters. It is worth noting that these refineries were once located in Manhattan.

B

Secondary Industries

By definition, certain reasons for the location of those industries that have been termed secondary are obvious. They are the industries which have grown up with the increase of population, and which have come into existence with the special purpose of ministering to its needs. They are not primarily makers of congestion, but they do increase congestion by adding a burden of their own.

A very large part of the stone cutting and marble polishing industries, and even parts of the metal industry, such as architectural and structural iron and steel, are closely allied to the building industry. They must, therefore, be located near their market and at the same time, the bulky nature of their products requires considerable ground area. The cost of site and rental charges are important. On the other hand, the difference of a mile or two in distance is of little consequence. Many of these concerns, some of which were once located in Manhattan, are now to be found in Queens, Brooklyn and along the New Jersey shore.

It is necessary only to name such industries as newspaper printing, custom clothing, custom dressmaking, cleaning and dyeing, water, light and power, and building, in order to suggest the reasons for their location in New York City.

The situation of the plants in the foods group is rather more complicated. Industries devoted to perishable food products, bulky beverages, such as beer in casks or bottles, mineral waters, bakery products, slaughtering, and others of a similar character are located in all centres of popula-

tion. They may be said to supply local consumption and are therefore to be considered secondary. Owners of these plants in Manhattan think of but one great reason why they are there—the ability to reach directly the New York market. Establishments in the other boroughs are there because of the saving in the cost of the property and find their market in the city of New York. The slaughtering business is confined by city ordinance to certain localities, and hence the range of choice on the part of these firms is small.

Within certain limits, therefore, food manufacturers of the secondary class find it necessary to locate within the city. This is not because of advantages of transportation, labor supply, or any of the other factors we have found existing in other industries, but because of the imperative necessity of being near the consumers.

CHAPTER IV

CAUSES OF THE LOCATION OF INDUSTRIES

THE facts concerning the reasons for the location of manufacturing establishments, given by the proprietors and officers themselves, have been outlined in the preceding chapter. The data as presented were gathered at first-hand and aim to register conditions as seen by the manufacturers themselves. The present chapter summarizes the causes of the location of industries, as given by the manufacturers, and the observations and conclusions of the writer.

Underlying the entire industrial situation in New York City there are certain strong economic currents. Some of them are sucking into the maelstrom the outside manufacturer and the country factory. There are other, perhaps stronger, currents tugging and pulling at the foundations of the urban establishments and their success is attested by the frequent removal of factories from Manhattan. The most important of these economic currents which are making for and against the concentration of population are the following:

- I. The advantages of the market.
- II. The labor market.
- III. Transportation facilities.
- IV. Inertia.
- V. The effect of property.
- VI. Industrial betterment.

I

The Advantages of the Market

The first great fact that stands out in this study of the location of industries, and of the reasons for locating in New York City, is the emphasis which has been placed, by almost every line of industry, on that almost indefinable and sometimes even fanciful advantage, the proximity of the New York market.

One of the great advantages offered by the New York market is the large supply of capital available for establishing new enterprises or extending existing ones. If a bond conversion or stock issue is to be effected, the capital and the promoters are to be found in Wall Street; if ready cash is desired to make large improvements, it may be obtained from the banks of New York City. Among the unquestioned assets of commercial enterprises are good banking connections.

It is not to be wondered at when a small retail dealer declares that he must be situated near his customers. The small retail stores, as well as the larger ones, always endeavor to find a situation to which they believe the people of the city will find it convenient to come from all directions. Manufacturers directly follow this principle; they, too, feel that they must be located near their customers, that their manufacturing plants must be under the immediate supervision of the managerial offices, that any separation of the head of the firm and the shop where the goods are actually made, will permit of all kinds of leakage, waste and bad management. This fact applies particularly to comparatively small firms, and not generally to large corporations. In the case of the latter, the success of the business depends on the capability and efficiency of the men filling subordinate but responsible places in the organization; to these men the

corporation can usually afford to pay very high salaries in return for commensurate services. In smaller concerns, a single individual usually looks after the finances, the selling, and the administration of the business. For such a man it would be quite impracticable to allow the actual manufacturing to become separated from the financial or selling departments.

It is not uncommon to find importance attached to New York City as a purely manufacturing centre, although the reasons usually given and the general attitude of the proprietors is that it is important that the selling end of the business be located here, in order to meet the customers when they come to New York City. This is not far from the truth. Manufacturers find it more convenient and much more satisfactory to do business with customers in their offices rather than by correspondence, or by the comparatively unsatisfactory mail or agent systems. New York City is the meeting-place for all trades and all traders; it is the great mart of the American continent. Every company or corporation of any size or importance has offices, usually its principal offices, in New York City. Thus the advantage of a New York location is evident when the size and far-reaching effects of the New York market are considered.

How far a manufacturing establishment needs to be in close proximity to the customers depends upon the type of industry it represents. A manufacturer whose establishment is the largest of its kind in New York City—and for that matter—in the country, drew this distinction, which seems to contain the whole truth: that those industries which produce products of a standard pattern can locate anywhere, but that industries whose products differ with each particular order must be located in or very near their market, in order to be under the constant supervision of the customers. The distinction exists in the character of the

goods. It is the same distinction that permits the manufacturer of ready-made garments to make his products in any locality which offers any kind of advantages and at the same time permits him to market his product anywhere, while it requires the custom tailor, who takes a single and individual order and produces a garment to the taste and form of a particular customer at a specified time and place, to be located in the immediate vicinity.

This distinction is an inclusive and far-reaching one, and explains in large part the location in New York City, among others, of such an industry as the printing and publishing business, since the products of the press are very largely individual, and every time a separate product is manufactured it is essentially new in character. It also explains why large producers of staple articles need not be located in New York City.

The great central market place also furnishes ample play for the advertiser. The millions of people who live in New York City, riding on the cars, in the subways, on the elevateds, walking in the streets, or even looking out of the windows, make New York City the advertising centre of the country. Besides, there is the constant throng of sight-seers, excursionists, travelers, always coming and going. These conditions have made New York the centre of the advertising business and afford the manufacturer a singular opportunity to become known. The great magazines can usually be reached in New York City by a local advertiser at the eleventh hour but not by a more distant manufacturer. A large factory in New York, which can be seen by the public and which can be exhibited to customers, makes a strong claim to importance. There is also the popular prejudice in favor of any establishment which can use a New York address. The prestige actually acquired and testified to by manufacturers from the fact that

their product is labeled as made in New York City, or perhaps only that the firm or office address is New York City, is a large commercial asset.

Besides being the business centre of the country, around which the great commercial and industrial mechanism revolves, there are particular trades or industries which have become centred in New York City, just as industries have become localized in other manufacturing centres. The very fact that some locality has become the recognized centre of some one line of industry makes that particular locality all the more desirable for that industry. The process is distinctly a cumulative one, and the more concentrated an industry becomes, the stronger are the influences making for concentration. Not only are favorable and advantageous relations among the establishments themselves brought about, but the market becomes an exceedingly economical and advantageous one for the customer. Out of such a concentration of particular lines of business grows specialization, which is only possible when several firms producing the same general lines of products find that each can specialize in some one particular sub-line or sub-division, with mutual profit. For example, in one clothing factory, constituting an entire market in itself, all the various lines of garments must be manufactured in order to provide a clothing merchant with the entire stock of goods. On the other hand, in the case of a specialized market, with many firms manufacturing for the same general market, it is possible for each plant to produce a specialty. Thus Grand Rapids has become the centre of the furniture business, and the different establishments manufacture specialized lines of furniture, chairs, bureaus, office furniture, and so on; similarly in other places where large lines of industries have become specialized. The same movement has been going on in New York City with perhaps even greater force, but it

has been obscured by the many other overshadowing phenomena of the metropolis. There is no other industrial centre in the country with particular lines of industries more highly localized, and consequently specialized, than are the clothing and printing trades in New York City.

In conjunction with a highly specialized market are to be found depots of the supplies which are likely to be needed, and all the subsidiary processes or allied and related industries which profit in some way by the close proximity to the original industries, and are at some point supplementary or complementary. In the former group are the manufactures of printing presses, or type foundries, connected with the printing trades; in the second, the millinery trade, or the shirt-waist trade, not integral parts of the clothing trade, but largely induced by the market facilities of the garment manufacturer. The specialization in millinery has been largely dependent upon the clothing trade, and the same general customers buy in both lines. These are only a few of the most striking examples of an interdependence in the market, which is one of the most complex of economic phenomena.

The New York market, therefore, is an exceedingly important factor in the concentration of manufacturers in that city. The fact that New York City is large and commercially great, makes it a desirable place in which to locate a manufacturing enterprise. It is very difficult to rate the order of importance of the various advantages of location here nor is it necessary to do so. However, a very large and increasing importance should be attached to this element as a factor in the congestion of manufactures in New York City.

II

The Labor Market

As a mere labor centre, New York City cannot be ex-

celled, meaning by that the mere numbers of men and women who are always available as workers. There are several reasons for this great number of workers, reasons which in the labor market are quite apparent. In the first place, the movement of population from the country to the town and from the small town to the city, has brought large numbers of workers. It is quite unnecessary here to consider the causes of these migrations.

In the second place, New York City has been the receiving station for the vast majority of immigrants. Foreign countries have, in fact, filled the labor market of New York with both skilled and unskilled workers. Many abuses have gone hand in hand with the influx of the immigrant. How first one nationality and then another has been exploited by unscrupulous employers; how the more recent arrivals have forced on and up, in the industrial scale, the immigrants of the decade before, it is not necessary to relate. The fact remains that every grade of labor finds a place in New York, from the least skilled laborers to the most skilled. Employers have not been slow to recognize this great and constant source of labor and have come here because of it. Similar conditions exist for the workman, who feels that if he is able to secure work anywhere, and that if any place assures him a variety of opportunity, that place is New York City. The greater the city becomes, the greater attractive force will it exercise. Here again the cumulative process of congestion is evident.

Difficulties with labor, disputes between employer and employee, and the probable results of such contests are very important factors in the New York City labor market. The unions in some trades, such as the printers, the building trades, etc., are very strong, completely organized and aggressive. Other unions are less well organized, partly owing to the smaller numbers which can be organized, and,

in certain occupations, to the large proportion of immigrants, and to the prevalence in some trades of female labor. It is difficult, however, to say whether it is the manufacturer in the city or in the small town who is more liable to suffer from labor difficulties. In the latter case he has grouped about him a loyal and comparatively unified group of employees, many of whom own their homes and have established ties in society, in church, in politics; to such a group of workmen, trade unionism means but little. If, however, trade unionism becomes a factor and organization follows, with accompanying demands for shorter hours and more pay, these men would think long and well of their little homes, their family and social ties, before engaging upon a strike, the outcome of which may possibly mean the loss of many things they greatly prize. It seems that the employers have the upper hand. But if these men do strike, it is very difficult for the employers to install a new labor supply, even to bring workers into the town, to house and feed and protect them, while the strikers watch outside the factory walls. In a manufacturing plant in New York City it is a comparatively easy matter for employees to break away from a particular establishment, because it is common knowledge that there are many other establishments engaged in the same line of business. If the employees are comparatively unskilled, they are almost certain to find employment elsewhere. The employers, on the other hand, feel little responsibility toward any particular group of workmen. They can discharge men with impunity and immediately draw a new supply from the overflowing labor market all about them. These facts seem to indicate that in either case there is comparatively little difference as to the possible final result of a strike. The results are liable to be much more disastrous to both parties when the rupture occurs in an establishment located in a small town. In the great

city, the relations between employers and employees are comparatively loose and can be severed much more readily, with less cost to either, unless the working force is a very large and well organized one, or the dispute is one involving an entire trade.

Wages paid in New York City are comparatively higher than those paid in other cities of the country. It is not a sufficient explanation of this fact to say that the cost of living is higher in New York than elsewhere, because wages are but one item in the cost of production of commodities which are put upon the market in competition with other like commodities produced in other localities by labor receiving wages very much lower. It is difficult to explain this fact satisfactorily. Several employers stated that New York workmen really earned their extra wage through greater productiveness; that the laborer in New York City works at a faster pace than wage-earners in other cities, and that the resulting increase in production is enough to balance the additional wage.

Finally, in reviewing the labor characteristics of the New York market, we must take into consideration the common preference of the laborers for life in New York City. This is spoken of by almost every employer as one of the great hindrances to the removal from New York City. A striking illustration of this preference may be given. A certain large manufacturer of iron and steel goods wished to move a part of his establishment to a small town up the state. He decided on this move because wages were too high in New York City and also because the site occupied was too valuable. He moved his plant, but the workmen refused to follow. After much persuasion twenty men consented to go to the new establishment, but upon rather exceptional conditions. The employer agreed to pay New York wages, and to board and lodge the men in the new town. For this

purpose, he built a large new boarding-house where the employees could have every convenience, plenty of room, air and good food, and, in addition, he paid their carfare to New York City every Saturday night. Near the new plant laborers' cottages were erected, which were awarded prizes at the St. Louis exposition. Twenty men left New York City on the terms indicated. At the end of two years, ten of the employees brought their families to the new town and ten gave up their positions and returned to New York City. The chief reason given in most of the cases was that the wife did not care to leave the city, and usually the employee himself was not over anxious. This nucleus located in the little town did, however, succeed in forming about it a new labor force from residents in that vicinity, and to-day there is an adequate, although limited labor supply.

Another manufacturer writes as follows: "From personal interviews with a number of our employees, I find that the women are the prime movers in selecting such conditions" (that is, "the crowded tenements of the densely populated city"). "When asked for the reason, the husband usually gives the following: That they would be too lonely, too far away from friends, too little opportunity to run across the hall, etc., which is one of the great difficulties that we had to contend with in getting them to come up to Mt. Vernon, but which is being greatly overcome.

"On the other hand, those who have forced the issue claim that they are much more closely related to their home life than ever before, and that the 'old woman' now is saving every cent she can scrape together to get another piece of furniture or something to make the home more attractive.

"Once you get a pioneer established in a comfortable two-family cottage, a patch of garden, etc., his friends call on him, they see the advantage and the pleasure the children evince at the surroundings and become ambitious for

like locations, which, unfortunately, are not any too plentiful."

It is quite useless to blame a working man for hesitating to move from the city, which is filled with life, pleasure and excitement, to settle in some small humdrum town. The ordinary workman pursues the same monotonous task day after day. It cannot be wondered at that he should hunger after excitement, stimulus and pleasure.

III

Transportation Facilities

New York City is usually considered as without a peer, in this country at least, in the matter of facilities for transportation. There is a rare combination of railroad and water transportation agencies—ocean-going and inland, foreign and domestic. It has already been shown that New York City gained her commercial supremacy by the opening of the Erie Canal and the resulting access to the regions of the West. To-day the Erie Canal carries an almost negligible quantity of the goods brought to New York City; but, with the completion of the new barge canal, it is expected that much of the trade from the Northwest, which has been and is being diverted to other ports, will find its way to New York City. But even as matters now stand, the transportation advantages of New York still remain with some modification. New York City is the terminus of the great Eastern railroads, and through them it has direct communication with all parts of the country. The steamship lines centering in New York Harbor make the most distant parts of the world accessible.

But in spite of the possession of this combination of transportation facilities by railroad and water, is a shipper located in Manhattan as advantageously situated as some shippers located in very much smaller cities or in the sub-

urbs of Greater New York, within that district which has access to the New York rates? The advantages are these: the shipper can truck his goods to the nearest receiving station; all the different roads are within about the same distance; the shipper enjoys the New York City rate; he may, perhaps, gain a little time on a competitor who is located just far enough away not to secure through routage of freights. On the other hand, a shipper located not far from New York City, for example, in New Jersey, will probably enjoy direct track connection with the railroad, and eliminate expensive trucking, both in the receipt of the raw materials and in the shipment of the finished product. He will, however, have to pay cartage charges on all his New York shipments, and his rates to other points are not reduced unless he gets beyond the territory covered by the New York rate. This shipper will probably avoid the crowded condition of New York freight yards and get his freight attended to expeditiously enough to offset the small gain in time which the New York shipper could get by means of through freight shipments.

In the matter of water shipments, New York City clearly outclasses all other ports, and any manufacturers engaged largely in the foreign trade, either exporting or importing, find a location in New York City of immense advantage. On many commodities the combination through rates to the foreign countries are comparatively low. The dock facilities in New York City are by no means the best; delay and inconvenience are common. On domestic water shipments, which do not form an important factor in the sum total of commerce at this port, the facilities are superior, but are patronized only by the local trade.

In many suburban sites, trucking is practically eliminated, and the savings must be taken into account. Cartage is one of the very expensive charges against any firm's busi-

ness, no matter whether the goods handled are large or small, cheap or valuable. A manufacturer of chewing gum, located in Manhattan, had a monthly expense for cartage of over \$300; a manufacturer of blank books pays out \$7,000 to \$8,000 annually. It may be estimated what a manufacturer of heavy or bulky goods would put out in trucking expenses. This expense is, of course, a charge varying with the amount of business done. Not only is the charge for trucking to be reckoned on the finished product, but also on the raw materials and supplies, such as coal. The very slow progress which a team and wagon can make, owing to the congested condition of traffic in Manhattan adds to the cost of trucking and cartage in New York City. Almost all men who have anything to do with the movement of goods within the city of New York complain vigorously and declare that any regularity in the disposition of a team and truck is utterly impossible. In this matter, the very bigness of New York City becomes its chief disadvantage, the very richness of its transportation facilities a hindrance.

Great as is the importance of the New York transportation facilities, they do not play as great a rôle in the manufacturing business as is usually assigned to them. To the ordinary manufacturer in Greater New York, they are expensive on account of the cost of trucking, and are *not* time-saving, because of the chronic congestion of freight handled in the New York freight yards.

IV

Inertia

Inertia is an important factor in the industrial situation in New York City. This factor is strongly akin to the immobility of labor, which will be discussed in another place. Under the general heading of Inertia there are classed all of those influences which, while not active and oftentimes

ill-defined and uncomprehended, tend to hold manufacturing establishments within the city.

First of all, there is long establishment in a given place. A particular firm located here or there many years ago by the father, or even ancestors more remote, has remained ever since, not because of any specific advantage from the situation, but rather because the easiest thing is to stay in the same place. Establishments of this class are not to be confused with those which really derive an economic benefit from a long residence, a reputable career, and from existing business connections. The concerns included are rather those which are here because "my father was", or because "I have been here all my life". The establishment which allows itself to be caught in the snare of habit or custom, is usually the small or mediocre concern, whose offices have heavy wooden railings and high spindle-legged desks, whose proprietor sits at a roll-top desk in the open office, that he may keep an eye on the clerks and accountants. These are the firms which bemoan high rents, and wonder why it is that every year they work a little harder, pay a little higher rent and make a little less profit.

The ownership of property and the adaptation of a particular site may form a very serious and a much more rational ground for not moving, but it is oftentimes inertia that prevents a response to economic advantages which might be acquired at some other point. It is rather difficult to leave a large building or plant especially adapted to some particular business, such as breweries, warehouses, or even factories requiring much less specialized premises. Again the owner utilizing his own property does not respond as quickly to changes in land values as does a renter, whose landlord is constantly endeavoring to make his property more valuable by increasing the rents.

Another and valid reason for not seeking a new location

is the actual cost of moving a plant. In some lines of manufacturing this can very easily be done, but in others it is expensive. Thus one manufacturer, in moving his small brass-working shop from one building to another next door, spent \$1,500. The cost of moving a printing establishment with its great presses, or an iron-working establishment, or a furniture factory, means great loss, delay of work, and many incidental expenses. It would be very easy to underestimate the effects of this factor, but when the issue resolves itself into the practical question whether it will pay to move, present profits usually weigh heavily against possible future gains.

V

The Effect of Property

Of all the factors operating in the industrial system in New York City, probably the most important, as regards the choice of the particular location within or without the city, are those pertaining to property.

First in importance is the ground value. Land values in Manhattan to-day are enormous, but these values are not of sudden development; they have come about slowly through the growing importance of Manhattan and Greater New York as a commercial centre. When the Dutch Governor bought the Island of Manhattan for the traditionally famous twenty-four dollars, he probably paid all that this barren, rocky piece of water-surrounded ground was worth, but to-day, owing to the increase of population of the entire country, and to the growth of commerce, agriculture and manufactures, throughout the entire United States, Manhattan has become the most valuable piece of the world's surface. Its value is reckoned at \$3,123,925,788 (1910).

The great increase in land values has been due not simply to the congestion of population nor to the growth of manu-

factures. To be sure, both the congregation of population and the concentration of manufactures have tended to raise land values; but the reason why land values have risen to such enormous heights is to be found chiefly in the location and geographical formation of the island of Manhattan. The natural advantages for commercial purposes are so great, and the natural disadvantages for a growth of population so large, that when once the process of concentration had begun, every addition to it produced a more than proportional effect. Since land values have become so high, conditions begin to reverse, and although it is still desirable to gain the advantage of the New York market, the labor supply and the transportation facilities, the enormous land values are beginning to drive out even those manufacturers who have been located in New York for some years. It is a problem of vital importance to the manager of any business whether he will invest a large part of his capital in the land upon which he will erect his plant, and retain the advantages which he feels will be his there, or whether he will move out to much cheaper lands and perhaps forego some of these advantages. This problem takes many forms. For instance, whether a plant in Manhattan shall be built ten stories in height, with all the inconvenience, additional maintenance expenses and poor light which such a location would imply, or a site chosen in a suburban locality where a one-story building can be erected, covering perhaps ten times the ground area, with incomparably better light, every convenience and fewer expenses. Or the question may be whether a business can be made to pay upon land which is so valuable.

For an establishment which owns its own site, this question does not present itself so clearly. A proprietor who has inherited a valuable piece of land in Manhattan, upon which there has been established a lucrative business, is apt to dis-

count very largely the capital value of the land he is occupying. On the other hand, a company starting for the first time in Manhattan and finding it necessary to locate in the city itself, must use a large portion of its capital in the acquiring of land, an investment against which it will be necessary to set an interest charge. Without realizing it, the owner of property is possibly giving the use of his property to his customers in the shape of lower prices on commodities, or, more probably, is pocketing a large net income which he calls profits, or, what is even more likely, losing the amount through inefficient management. In a number of instances, proprietors gave ownership of property as a reason for being located where they were. Of these the writer does not recall one where a proprietor would, probably, locate his establishment at that place, were it necessary for him to buy the land. The inherited property or the ownership of property which has greatly increased in real (as opposed to speculative) value, is one of the important causes of industrial inertia, and forms a distinct bar to economic development.

One of the striking examples of the rise in ground values, due to the limitation of the supply, is the almost prohibitive price to which the water-front of Manhattan has risen. Much of the most available water-front in Manhattan is monopolized by railroad companies, gas companies, ferries, coal docks, foreign shipping, etc., and cannot be purchased at any price. It is almost impossible to get any desirable water-front in the outlying boroughs, either in Brooklyn, Long Island City or along the Jersey shore.

Rentals for factory purposes in Manhattan vary from 25 to 40 cents per square foot of floor space, exclusive of power. In the outlying boroughs, Queens, Bronx, Brooklyn and Jersey, in the best manufacturing districts of Wallabout, Greenpoint, and other places, accommodations for manu-

facturing can be had for 15 cents per square foot, which are fully equal to those for which 30 cents is paid in Manhattan. In South Brooklyn, in the Bush Terminal Loft Buildings, space may be had at 25 to 30 cents per square foot, together with accommodations in shipping facilities and saving in insurance. The fallacious explanation has been given that prices are higher in New York City, and therefore, the manufacturers can afford to pay high rents and to use valuable ground. But in the first place, the manufacturers in Manhattan must compete with producers outside of New York City who are operating under more favorable conditions; in the second place, the goods manufactured in New York City are sent out of the city, weighted with additional transportation expenses, to compete in other cities with goods manufactured in more economical producing centres. The explanation of the location of manufactures in New York City cannot be made on the simple ground of any direct monetary return in the economics of production, but must rest on those indirect advantages having to do with financial management and the buying and selling of materials and product.

The high ground values, and the tremendous rise of rents in Manhattan are responsible to a large degree, as was indicated in the statements given by the manufacturers, for the removal of factories from the city. In almost every case, where a manufacturing plant has left the City of New York, the removal was caused by the high land values. Manufacturers desire to reduce their expenses either to enable them to compete more effectively, or to reduce expenses in order to make greater profits. In any case the removal of a manufacturing establishment from New York City to the suburbs is a distinct economic gain for the community. An additional gain is the reduction of so much congesting force as was embodied in the removing establishment. Further, a

part of the population, represented in the labor force or some part of it usually removes, and it is possible that some commodity long in use may be cheapened through the economies of production.

In manufacturing in New York City the insurance risk is a heavy one. The high buildings which have been erected in Manhattan are quite out of reach of any effective fire-fighting. It is necessary, therefore, for property holders of all sorts to pay very high insurance rates. Manufacturers feel this more than many others owing to the nature of the processes in their plants, and to the character of the buildings in which much of the manufacturing in Manhattan is carried on. This is especially true of the clothing industry, as it is, in large part, housed in the most dilapidated and unsafe buildings which the city affords. One manufacturer has reduced his insurance rate from \$3.20 per \$1,000 to thirty cents per \$1,000 by moving from Manhattan to a model factory in Brooklyn. Another establishment, whose stock is very valuable and could be replaced only at very great cost, paid high premiums and lived in constant fear of fire. In the new quarters, as fire-proof as possible, there is little danger from fire and the insurance is trifling. Generally speaking, insurance rates are higher on manufacturing properties than on other property. Likewise the rates in Manhattan are higher than those in other boroughs.

Very important advantages, in search of which manufacturers move out of Manhattan, are room, light and air. For purely economic reasons, manufacturers need these elements in the process of production. As a part of the working machinery, the employees should have them. These elements cannot be obtained in factories located in Manhattan. In certain classes of manufacturing good light is more essential than in others. In the finer grades of printing and engraving work, it is absolutely essential to

fine workmanship. In the heavier metal and wood-working industries light is not so essential. Good light in New York City is, in fact, one of the things which is paid for in the rentals, and, on account of its rarity, commands a correspondingly high price. In order to secure it at a reasonable rate, manufacturers must remove to outlying sections. Pure air is not usually such a necessity in manufacturing processes, but is, nevertheless, quite essential to the well-being of the employees. Attention has already been called to the fact that one or two manufacturers testified to the increased amount of work to be gotten out of employees in New York City, owing to the high tension of the city under which residents of New York always live and work. That fact, in conjunction with the quite prevalent bad air and bad light in manufacturing establishments, means the wearing out and disablement of the workers in New York City much more quickly than in less congested localities.

Space is directly and proportionally paid for in the rentals of any manufacturing business; but the very fact that rentals are so high in New York City has forced the manufacturers to limit their floor space, to crowd their employees and machines into small lofts, with great danger to the health and lives of the workers. These results are especially evident in the garment industries. The processes are such that crowding can be carried to a further degree than in any of the other industries. The influence of the crowded quarters upon the character of the work has led to a noticeable tendency among manufacturers to move out in search of less crowded quarters where more room can be obtained at less cost.

Closely related to the foregoing factors is the inability of manufacturers to secure additional land or space for further expansion of their business. By no class of manufacturers was this element more clearly illustrated than by

the Jewish clothing manufacturers who have moved from Manhattan and are prospering in localities where a few years ago truck gardens flourished. To-day, from among the newly-removed East Side Jewish and Italian families, they not only find plenty of labor for their factories, but mothers and sisters in abundance to work at home. I recall two of these East Siders, who graphically pictured to me what a small place they had had in Grand Street, where the workmen had been cramped and crowded together. They remembered their large gas bills and the often imperfect work. In their new location they occupy large and commodious quarters with windows on three sides. There is plenty of room, not only for the individual workers and the machines, but also to expand the business. They acquired all of these improvements for a smaller rental than they had paid in Manhattan. This is but a single case among very many. The weight of evidence seems, therefore, to be in favor of the removal of industries, and removal ordinarily takes place when a manufacturing establishment outgrows its long-used quarters and finds it necessary to expand.

VI

Industrial Betterment

Those factors which have so far been considered, all of which play a very important part in determining the location of factories in New York City, or in the particular part of the city, are purely economic in character. They do not look further than the direct money return to be derived from following any of the motives indicated. There are, however, a few instances where considerations other than those directly economic have played a considerable part. Any effort toward industrial betterment is usually the result of the efforts of some one man who exerts a very large influ-

ence in the company, or, who is, perhaps, the sole proprietor. It is a rare exception that a group of shrewd business men who compose a board of directors are willing to consider any but economic reasons when confronted by the question of removal.

First among the considerations for Industrial Betterment are those pertaining to the factory itself—the better working conditions. One of the greatest gains that can be made by the removal of a manufacturing establishment from Manhattan to the less congested boroughs or the suburbs, is the improvement of factory conditions and its effect upon the personnel of the plant, physically, mentally and morally. It is quite impossible to secure any statistics showing the relative conditions of factory employees in Manhattan and those in outlying sections. Experience and observation points, however, to the superiority of the latter. In factories located in the less congested districts, there is plenty of room and generally comfortable work places. Air, light and ventilation are good, and the employees are able to maintain a higher standard of efficiency. Crowded conditions of the city are not only physically degenerating, but are also mentally depressing and morally debasing. The mental depression is no doubt due largely to the tension under which the employees are held in the crowded work-rooms, and also to the physical strain caused by bad working conditions. The question of the moral improvement in less congested districts is a difficult one and hardly capable of proof. The suburban manufacturers, if not the employers located near the centre, are, to some extent, able to pick their labor and to weed out the undesirables. This the employer located in the centre of busy Manhattan, where labor goes and comes without any attempt at permanency, cannot do. In the centre of the city the very over-crowding in the factory and work-place makes for looser morals.

In a congested district conditions prejudicial to the greatest efficiency of workmen exist, not only in the factory itself but also in the home. In Manhattan, at the end of a day's work in a crowded factory, the worker returns to a crowded home in a dingy, ill-lighted, ill-ventilated, dirty and often unsanitary tenement. For this he pays a high rent, while in a suburban manufacturing district or almost any outlying section of Greater New York, he could obtain well-lighted, well-ventilated rooms, not closely packed in rows of five and six-story tenements. It is quite undeniable that under these conditions of overcrowding the standards of life, whether they be physical or moral, break down much more easily than in a small town, where neighbors know neighbors and where each adheres to a certain community ideal.

In spite of the fact that the considerations outlined in the last few paragraphs have as their purpose the bettering of conditions, a shrewd and far-sighted manufacturer will perceive other advantages that will flow directly from consideration for the health and comfort of his employees. These will be evident in improved workmanship, in a smaller percentage of ruined goods, in more regular and steady employees, and, most important, the earlier marriage of employees. This latter, all employers testify, has a large effect in improving the character of the workmen and in making them more valuable in a purely economic sense.

There has been a considerable movement of manufactures from Manhattan, which has taken two directions. First, there has been a removal of factories to the outlying or suburban districts of the metropolitan area. This is a distinct movement from the centre of the city to its periphery. In the second place, there has been a movement from the city to more distant points entirely outside the industrial district of New York.

The industrial history of New York City furnishes several instances of the removal of entire industries. Iron foundries have long since ceased to exist in Manhattan; the stone and marble cutters found property too expensive and moved to the Long Island City waterfront; the boot and shoe industry needed air and light, it moved out of Manhattan, many factories going to Brooklyn. Some of the largest industries in the nearby Jersey towns were once located in New York City. The movement is going on slowly but steadily; factories are moving out of Manhattan and others are preparing to leave.

CHAPTER V

THE DISTRIBUTION OF WORKERS EMPLOYED IN MANUFACTURES IN NEW YORK CITY

Manhattan below Fourteenth Street

IN the preceding two chapters the causes of the location of industries have been investigated. The aim has been to set forth the main factors which have brought the various kinds of industries to Manhattan, and the advantages which manufacturers find there. The factors influencing the location of industries in the suburbs have also been considered. Certain strong economic currents have been steadily tending toward the removal of factories from the centre of the city. This is evidenced not only by the answers given by the employers, but also by the number of establishments which have actually removed.

The question now arises: What effect has the location of a factory upon the distribution of its employees? What are the factors which influence the distribution of the workers? Further, what is the effect of the removal of a factory upon the distribution of the employees? What are the differences in effect upon the residences of workers, of a location in Manhattan and one in a near-by suburb?

There were, of course, no available statistics concerning the distribution of the residences of workers. It was necessary, therefore, to collect all the data upon which to base any conclusions. This was done by distributing cards among the workers in factories in Manhattan and in other boroughs.

These cards asked for various important facts, such as sex, nationality, occupation, residence, lines of transit used in getting to work, carfare spent, length of time required in getting to work, and ownership of homes. The cards were filled out by the workers in most of the important industries of the city, and the total number amounted to over 16,000. Statistics were gathered not only from Manhattan but from the other boroughs and from some factories in New Jersey.¹

In presenting the results of the investigation, the attempt has been made to segregate certain main factors which directly affect the distribution of employees. The factors, which have been chosen as most important, are wages, hours of work, and nationalities. Thus any relation between the length of the working day and the distribution of workers can be traced and the effects of nationalities and wages may also be observed. The statistics have not been presented *en masse* for the workers of the entire city, because such a treatment, involving widely diverse situations and locations, would be quite unintelligible. Each locality, which is a unit as related to transit facilities, has been treated separately. The districts so treated are, Lower Manhattan, Upper Manhattan, Brooklyn near Brooklyn Bridge, Williamsburg, South Brooklyn, Erie Basin, Queens, Laurel Hills, Mt. Vernon, and some miscellaneous suburban places.

The data based on the studies of these districts make it possible to study the effect of the different localities upon the distribution of workers. The most important of these comparisons will be those between the congested factories in Lower Manhattan and those in the less densely populated districts in the suburbs.

In the following tables the workers employed in Manhat-

¹ For a description of the methods used see Appendix I.

tan have been divided into two groups: namely, those working below Fourteenth Street and those working above Fourteenth Street. By far the larger of these groups is that composed of persons employed below Fourteenth Street, which is the district of extreme congestion of both population and manufactures. The data for this group have been drawn from almost every type of industry and from every part of the district. This is shown in Table 28, which gives the number of workers in each industry. With one exception the group is homogenous. There was one unusually large establishment located on the West Side, convenient to the Jersey ferries, and this introduced an element of error. The attractiveness of the near-by Jersey suburbs and the ease of reaching them must be taken into consideration in interpreting the accompanying statistics.

TABLE 28

MANHATTAN BELOW FOURTEENTH STREET

Workers Furnishing Data Classified by Industries

Industries.	Number of Employees.	
	Males.	Females.
I. Stone, Clay and Glass.	131	4
II. Metals, Machines and Conveyances	1908	633
III. Wood.	193	5
IV. Leather and Rubber	238	71
VII. Printing and Paper Goods	996	423
VIII. Textiles	5	110
IX. Clothing	995	918
X. Food, Liquors and Tobacco	536	484

Hours of Work

Table 29 presents in summary fashion an analysis of the relation of hours of work to the residences of employees. It will be noted that the percentage of employees living and

working in Lower Manhattan increases steadily with the lengthening of the working day, while conversely the proportion of workers living in Brooklyn and the other outlying districts decreases. The general tendency seems to be that, as the working day increases in length, the employees exhibit a stronger and stronger tendency to live in the district in which they work. Of those workers in Lower Man-

TABLE 29

SUMMARY

Hours of Work and Residences of Male Workers Employed in Lower Manhattan

Hours of Work, per Week.	Proportion of Workers in each Group Living in :			
	Manhattan Below 14th St.	Manhattan Above 14th St.	Other Boroughs.	Jersey.
48-50.59	13.3%	24.0%	51.2%	11.5%
51-53.59	18.8	29.3	34.4	17.5
54-56.59	33.8	20.3	36.8	9.1
57-59.59	49.5	19.4	25.4	5.7
60-62.59	43.6	25.1	26.2	5.1
Per Day.				
8-8.29	12.9	24.6	49.4	12.1
8.30-8.59	14.8	23.5	50.5	11.2
9-9.29	19.1	27.7	37.5	15.7
9.30-9.59	48.3	20.1	25.9	5.7
10-10.29	47.9	20.6	25.6	5.9
All Workers.	28.7	24.2	54.0	11.1

hattan who have an eight-hour day, 12.9 per cent live below 14th Street, very close to their places of employment; but of those working a ten-hour day, 47.9 per cent live below 14th Street.

A decided relation is also shown to exist (Table 30) between the hours of work and the proportionate number of persons walking and riding to work. Thus the per-

centage of those walking to work of the group 48-50.59 hours is 13.1 per cent; this increases to 40.5 per cent in the 60-62.59 hour group; the proportion of all workers in Lower Manhattan who walk to work is 26.3 per cent. The amount of carfare spent, it will be noted, also decreases with the lengthening of the hours of work.

TABLE 30

SUMMARY

Hours of Work and Carfare of Male Workers Employed in Lower Manhattan

Hours of Work, Per Week.	Proportion of Workers in each Group who:		
	Walk to Work.	Pay 10 cents Carfare or less Per Day.	Pay more than 10 cents Carfare Per Day.
48-50.59	13.1%	59.4%	27.5%
51-53.59	20.3	43.5	36.2
54-56.59	26.7	53.0	20.3
57-59.59	42.3	46.5	11.2
60-62.59	40.5	48.0	11.3
Per Day.			
8-8.29	11.3	61.8	26.9
8.30-8.59	18.1	51.5	30.4
9-9.29	18.6	48.6	32.8
9.30-9.59	41.1	43.7	15.2
10-10.29	42.4	45.3	12.3
All Workers.	26.3	49.7	24.0

A most interesting relation is brought out by Table 31, showing the time consumed in getting to work. The length of time required in getting to work is, perhaps, the best measure of the distribution of the workers about their places of employment. It is not subject to arbitrary boundaries, it is not dependent on varying means of transit, but accurately measures the time which a worker is willing to expend in going to and from his work. This measure may be

termed *time-distance*. Among men working the shortest day, only 13.7 per cent live within a time-distance of forty minutes, while no less than 43.6 per cent of the men working from 60-62.59 hours per week live within a time-distance of forty minutes. This includes the time going and coming and means a one-way time-distance of twenty minutes. In

TABLE 31

SUMMARY

Hours of Work and Time-Distance of Male Workers Employed in Lower Manhattan

Hours of Work, Per Week.	Time Consumed in Getting to Work:			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or more.
48-50.59	33.2%	31.0%	28.8%	7.0%
51-53.59	41.7	22.4	24.7	11.2
54-56.59	49.0	28.6	15.6	6.8
57-59.59	59.3	19.2	18.9	2.5
60-62.59	67.0	17.8	12.7	2.5
Per Day.				
8-8.29	31.4	32.7	29.7	6.2
8.30-8.59	36.5	27.1	27.1	9.3
9-9.29	41.4	25.2	23.0	10.4
9.30-9.59	59.0	22.3	14.5	4.2
10-10.29	62.4	17.5	17.4	2.7
All Workers.	47.1	24.2	21.9	6.8

Table 31 and others of a similar nature the sub-groups have been combined, in order to bring out in bold relief the important features which are sometimes concealed in the more detailed tables.¹

The statistics dealing with the relation of hours of work to the distribution of factory workers (Tables 29, 30 and

¹ See Appendix II.

31) indicate some very clear correlations. The conclusion which they suggest is, that the longer the working day, the nearer to their place of work must the workers live.

Table 32 shows the distribution of the female workers. It shows the same close relation of the lengthening of the working day to the place of residence. Thus among the

TABLE 32

SUMMARY

Hours of Work and Residences of Female Workers Employed in Lower Manhattan

Hours of Work, Per Week.	Proportion of Workers in each Group Living in :			
	Manhattan Below 14th St.	Manhattan, Above 14th St.	Other Boroughs.	Jersey.
48-50.59	26.8%	25.9%	40.4%	6.9%
51-53.59	25.0	29.1	31.0	15.9
54-56.59	47.2	18.2	22.3	12.3
57-59.59	58.1	15.2	16.8	9.9
60-62.59	60.1	14.8	22.9	2.2
Per Day.				
8-8.29	27.8	24.8	40.4	7.0
8.30-8.59	19.8	16.8	56.9	6.5
9-9.29	23.9	36.0	20.5	19.6
9.30-9.59	46.8	17.4	24.8	11.0
10-10.29	58.6	15.1	18.2	8.1
All Workers.	40.2	22.2	26.4	11.2

women working 8-8.29 hours per day, 27.8 per cent live below 14th Street, while of those working 10-10.29 hours per day, 58.6 per cent live in the same locality; while of all the female workers in Lower Manhattan 40.2 per cent live in Manhattan below 14th Street. The proportion of females living in the outlying boroughs is greater for the shorter

hour groups, but no very exact correlation can be traced. The data for certain groups and for New Jersey are confused here, as among the males, by the location of certain large firms near the New Jersey ferries.

Although by no means as exact a correlation is evident among the females, as was apparent in case of the males, between hours of work and the numbers walking to work,

TABLE 33

SUMMARY

Hours of Work and Carfare of Female Workers Employed in Lower Manhattan

Hours of Work, Per Week.	Proportion of Workers in each Group who :		
	Walk to Work.	Pay 10 cents or less Carfare Per Day.	Pay more than 10 cents Carfare Per Day.
48-50.59	32.3%	49.0%	18.7%
51-53.59	25.1	51.2	23.7
54-56.59	42.1	40.6	17.3
57-59.59	52.9	34.6	12.5
60-62.59	61.0	32.7	6.3
Per Day.			
8-8.29	31.6	47.9	20.5
8.30-8.59	21.4	63.0	15.6
9-9.29	25.8	48.0	15.6
9.30-9.59	41.7	40.9	17.4
10-10.29	54.8	34.2	11.0
All Workers.	39.2	43.3	17.5

the effect of long hours as against the shorter day, is none the less demonstrable. The effect of long hours is also clear from the increasing time-distance. These facts are shown in Tables 33 and 34.

In the statistics which have been presented, although the relations are not absolutely exact or proportional, the in-

fluence of the lengthening of the working day upon the distribution of workers is clearly marked. It is evident that among the female workers as well as among the males, the longer the working day, the nearer the place of work do

TABLE 34

SUMMARY

Hours of Work and Time-Distance of Female Workers Employed in Lower Manhattan

Hours of Work, Per Week.	Time Consumed in Getting to Work.			
	One Hour or less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or more.
48-50.59	54.4%	22.9%	18.3%	4.4%
51-53.59	51.3	25.8	19.9	3.0
54-56.59	62.3	15.1	18.2	4.4
57-59.59	64.8	16.7	14.7	3.8
60-62.59	83.0	10.3	5.4	1.3
Per Day.				
8-8.29	53.2	23.1	19.3	4.4
8.30-8.59	50.8	29.8	15.6	3.8
9-9.29	52.8	24.4	20.0	2.8
9.30-9.59	59.6	16.4	19.9	4.1
10-10.29	69.1	15.2	12.5	3.2
All Workers.	59.6	20.2	16.7	3.5

the employees live. Comparison of the male and female groups reveals some interesting facts. (See Table 35.)

The most striking fact revealed by this table is the much larger proportion of females living in downtown Manhattan or close to their place of work. The significance of this fact is somewhat lessened when it is considered that 36.2 per cent of the females work the long day from 10-10.29 hours, while only 23.3 per cent of the males are working these hours.

By selecting some of the groups, which show the most exact correlations, we may be able to arrive at some conclusion as to the relative residence mobility of male and

TABLE 35

SUMMARY

Comparison of Total Male and Female Workers Employed in Lower Manhattan, Living in Specified Boroughs

Borough.	Male.	Female.
Manhattan above 14th Street	24.2%	22.2%
Manhattan below 14th Street	28.8	40.2
Bronx	6.2	4.3
Brooklyn	25.0	20.1
Queens	3.9	1.6
Jersey	11.1	11.2

female workers. Comparison of the proportions of the two sexes who walk to work is given in Table 36.

TABLE 36

SUMMARY

Hours of Work and Comparison of Male and Female Workers Employed in Lower Manhattan, who Walk to Work.

Hours of Work.	Male.	Female.
8-8.29	11.3%	31.6%
8.30-8.59	18.1	21.4
9-9.29	18.6	25.8
9.30-9.59	41.1	41.7
10-10.29	42.4	54.8
All Groups.	26.3	39.2

This comparison indicates at once that, in each of the daily hour groups, the proportion of the female workers who walk to work is considerably larger than that of the males. No doubt this is to be partially explained by the fact

that the women workers receive, as a rule, smaller pay than the male employees. Table 37 presents a summary of the comparative distribution of male and female workers as measured by time-distance.

TABLE 37

SUMMARY

Hours of Work and Comparison of Time-distance of Male and Female Workers Employed in Lower Manhattan.

Hours of Work.	Time Consumed in Getting to Work.			
	One Hour or Less.		101-140 Minutes.	
	Male.	Female.	Male.	Female.
8-8.29	31.4%	53.2%	29.7%	19.3%
8.30-8.59	36.5	50.8	27.1	15.6
9-9.29	41.4	52.8	23.0	20.0
9.30-9.59	59.0	59.6	14.5	19.9
10-10.29	62.4	69.1	17.4	12.7
All Workers.	47.1	59.6	21.9	16.7

It is evident at once from the comparisons of similar groups of men and women workers, that the women, on the whole, live much nearer their places of employment than the men. We find that 59.6 per cent of the women live within a half-hour distance of the factories, while only 47.1 per cent of the men live within the same time-distance of their work. We also find that while 6.8 per cent of the men live seventy minutes or more distant from their work shops, only 3.5 per cent of the women live so far away. On the basis of these facts, then, it appears that men are more mobile in respect to their residence than women. Inspection of the groups reveals the fact that in the one hour or less group, the total variation among the various hour classifications

is only 18.3 per cent in the female groups, while the male groups show a variation of 31.0 per cent. In the other groups greater variation in the male groups is also evident. These facts indicate that the female workers live nearer the factories and are not as free in their choice of residence as the men. The data concerning the hours of work, then, support the conclusion that there is a very close relation between the length of the working day and the distribution of the employees. The closeness of this relation suggests cause and effect—that the short working day permits a scattering of the employees to less congested districts, and that the long working day necessitates a residence near the place of work, hence, in the crowded parts of the city. Not only does this casual connection seem to apply to the extremes of the hour groups, but the distribution of factory employees extends and widens with each shortening of the working day. There is marked difference between the distribution of the males and that of the females; the women workers tend to live much nearer their places of work than the male workers.

The conclusions indicated by the preceding analysis and consideration of the data collected at first hand from workers in Lower Manhattan, may be summed up in the following general propositions:

I. The proportion of workers working and living in the congested districts varies directly with the length of the working day. While the proportion of workers working in the congested districts but living in the suburbs or less densely populated districts varies inversely with the length of the working day.

II. The proportion of workers walking to work varies directly with the length of the working day. Hence, the proportion of workers who pay carfare varies inversely with the length of the working day.

III. The amount of carfare paid tends to vary inversely with the length of the working day.

IV. The distribution of workers, measured by time-distance from their places of employment, varies inversely with the length of the working day.

V. The residence-mobility of male workers, in relation to the length of the working day, is greater than the residence-mobility of female workers.

Wages

Some very important conclusions may be drawn from a consideration of workers classified by wage groups. The workers have been divided, for the purpose of the study of wages, into groups of two dollars each. These groups range from \$4.00-\$5.99 to \$40.00 or more a week. In such a large number of classifications, some of the groups are comparatively small and in comparison with the larger groups are unimportant. In the summary tables which are here introduced and in the conclusions, no special notice will be taken of any group having less than 100 frequencies. Certain disconcerting factors also appear, in these tables, as in the hour groups. However, the employees of the factories near the Hudson River ferries and tubes, are scattered through the various groups, and hence, they disarrange only the groups in which they are especially prominent. These variations will, however, be passed over without further comment.

There is a distinct tendency for a large proportion of the lower-paid groups to reside in Manhattan, and for large proportions of the higher-paid workers to live in the less densely populated districts. This fact accords well with our *à priori* assumptions that it is the poor who dwell in the congested districts. The gradual decrease, as wages increase, in the proportion of those living in lower Manhattan

is surprising and important. These facts are shown in Table 38.

TABLE 38

SUMMARY

Wages and Residences of Male Workers Employed in Lower Manhattan

Weekly Wage Groups.	Proportion of Total Workers Living in :			
	Manhattan. Below 14th St.	Manhattan. Above 14th St.	Other Boroughs.	Jersey.
\$8.00- 9.99	53.8%	15.0%	26.8%	4.4%
10.00-11.99	45.1	21.4	26.6	6.9
12.00-13.99	42.1	24.5	36.4	7.0
14.00-15.99	33.6	27.3	28.2	10.9
16.00-17.99	24.5	20.4	45.4	9.7
18.00-19.99	27.2	23.3	39.2	10.2
20.00-21.99	11.6	25.8	48.0	14.6
22.00-23.99	16.9	25.8	41.2	16.1
24.00-25.99	14.4	18.1	51.7	15.8

In Table 38, as the wages increase from the smallest group, \$8.00-9.99, the proportion of workers residing in

TABLE 39

SUMMARY

Wages and Carfare of Male Workers Employed in Lower Manhattan

Weekly Wage Groups.	Proportion of Total Workers.		
	Walking to Work.	Paying 10 Cents Carfare or Less Per Day.	Paying more than 10 Cents Carfare Per Day.
\$8.00- 9.99	51.9%	37.5%	10.6%
10.00-11.99	41.0	45.1	13.9
12.00-13.99	36.8	51.1	12.1
14.00-15.99	30.2	48.0	21.8
16.00-17.99	21.3	57.4	21.3
18.00-19.99	23.1	48.3	28.6
20.00-21.99	12.1	60.5	27.4
22.00-23.99	18.6	47.2	34.2
24.00-25.99	15.3	51.2	33.5

Manhattan decreases from 53.8 per cent until in the group \$20.00-21.99 the proportion has fallen to 11.6 per cent. A more direct and interesting correlation could hardly be found.

Table 39 shows the proportion of workers in each wage group who walk to work and who pay specified amounts of carfare. There is evident a very close relation between the amount of the wages and carfares. Indeed, it is clear that the proportion of workers walking to work gradually de-

TABLE 40

SUMMARY

Wages and Time-distance of Male Workers in Lower Manhattan

Weekly Wage Groups.	Time Consumed in Getting to Work :			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or more.
\$8.00-9.99	63.8%	17.5%	14.4%	4.3%
10.00-11.99	62.5	16.7	16.8	4.0
12.00-13.99	55.6	20.5	22.5	3.4
14.00-15.99	55.1	21.4	16.9	6.6
16.00-17.99	42.3	30.1	21.0	6.6
18.00-19.99	45.3	23.8	23.8	7.1
20.00-21.99	33.3	32.6	24.9	9.2
22.00-23.99	34.5	26.3	31.3	7.9
24.00-25.99	33.0	23.7	32.6	10.7

creases as the wages rise. This fact seems to indicate at least some connection between the two facts, and the connection may perhaps be a causal one.

The summary Table 40 showing the proportions of the various groups, living at specified time-distances from their places of employment, shows a distinct tendency, as their wages increase, for larger proportions of the workers to live at a distance from the factory. Further, it is evident

that as the wages increase, the distance from the factory increases. There is a gradual decline, for example, in the one hour or less group, with two minor exceptions as the

TABLE 41

SUMMARY

Wages and Residences of Female Workers Employed in Lower Manhattan

Weekly Wage Groups.	Proportion of Total Workers Living in :			
	Manhattan Below 14th St.	Manhattan Above 14th St.	Other Boroughs.	Jersey.
\$4.00- 5.99	60.9%	17.1%	19.1%	2.9%
6.00- 7.99	47.4	12.5	28.5	11.6
8.00- 9.99	42.4	20.3	30.7	6.6
10.00-11.99	32.5	34.6	20.0	12.9
12.00-13.99	24.0	36.6	18.1	21.3
14.00-15.99	6.3	39.6	33.3	20.8

wages increase, indicating that it is, as might be expected, the poorly paid employees who live nearest the factory. It may be concluded on the basis of this analysis of wage data,

TABLE 42

SUMMARY

Wages and Carfare of Female Workers Employed in Lower Manhattan

Weekly Wage Groups.	Proportion of Workers who :		
	Walk to Work.	Pay 10 Cents Carfare or Less Per Day.	Pay more than 10 Cents Carfare Per Day.
\$4.00- 5.99	62.9%	32.4%	4.7%
6.00- 7.99	43.6	43.4	13.2
8.00- 9.99	39.0	44.1	16.9
10.00-11.99	34.9	43.8	21.3
12.00-13.99	27.1	43.0	29.9
14.00-15.99	16.7	47.9	35.4

that there is a close correlation between the wages of the workers and their residence, carfare and time-distance. We

TABLE 43

SUMMARY

Wages and Time-Distance of Female Workers Employed in Lower Manhattan

Weekly Wage Groups.	Time Consumed in Getting to Work.			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
\$4.00- 5.99	78.1%	11.5%	7.6%	2.8%
6.00- 7.99	58.9	20.7	16.4	4.0
8.00- 9.99	62.0	20.4	14.5	3.1
10.00-11.99	61.9	17.0	17.9	3.2
12.00-13.99	49.8	23.1	25.3	1.8
14.00-15.99	33.4	41.6	16.7	8.3

conclude further that there seems to be a causal relation between the two series of facts.

TABLE 44

SUMMARY

Comparison of Wages and Residences of Male and Female Workers Employed in Lower Manhattan.

Male Wage Groups.	Male Workers Living Below 14th Street, Manhattan.	Female Wage Groups.	Female Workers Living Below 14th Street, Manhattan.
\$8.00- 9.99	53.8%	\$4.00- 5.99	60.9%
10.00-11.99	45.1	6.00- 7.99	47.4
12.00-13.99	42.1	8.00- 9.99	42.4
14.00-15.99	33.6	10.00-11.99	32.5
16.00-17.99	24.5	12.00-13.99	24.0
18.00-19.99	27.2	14.00-15.99	6.3
20.00-21.99	11.9		
22.00-23.99	16.9		
24.00-25.99	14.4		

The data on wages for female workers employed in factories in downtown Manhattan, show some results not less interesting than those for the males. The variation in wages is by no means as great as among the male workers. In fact, the only important groups are those between the amounts of \$4.00 and \$15.99.

It is to be noted, in the accompanying analyses of the data in Tables 41, 42 and 43, that the distribution of female employees seems to follow the same general tendencies as were found very prominently indicated in the case of the males; that, as wages increase, the proportion of women living in Manhattan decreases sharply and steadily. The proportions of workers residing in the other boroughs increase correspondingly.

TABLE 45

SUMMARY

Comparison of Wages and Workers Walking to Work, of Male and Female Workers Employed in Lower Manhattan

Male Wage Groups.	Male Workers Walking to Work.	Female Wage Groups.	Female Workers Walking to Work.
\$8.00- 9.99	51.9%	\$4.00- 5.99	62.9%
10.00-11.99	41.0	6.00- 7.99	43.6
12.00-13.99	36.8	8.00- 9.99	39.0
14.00-15.99	30.2	10.00-11.99	34.9
16.00-17.99	21.3	12.00-13.99	27.1
18.00-19.99	23.1	14.00-15.99	16.7
20.00-21.99	12.1		
22.00-23.99	18.6		
24.00-25.99	15.3		

Comparison of the wage data with a view to determining the relative mobility of males and females, with regard to wages, is especially difficult owing to the great differences in wages. It will be possible, by making a few comparisons of the most regular and homogeneous classifications, to

secure some reliable indications. Table 44 shows the proportion of male workers as compared with the proportion of female workers working and living below 14th Street, in the various wage groups. Within the nine groups, from \$8.00 to \$25.99 the proportion of males residing in Lower Manhattan decreases from 53.8 per cent to 14.4 per cent. Within the six groups from \$4.00 to \$15.99, the proportion of female workers falls from 60.9 per cent to 6.3 per cent. This comparison shows the tendency of the women to live near their work and indicates considerably less mobility.

TABLE 46

SUMMARY

Comparison of Wages and Carfare paid by Male and Female Workers Employed in Lower Manhattan.

Male Wage Groups.	Male Workers Paying more than 10 cents Carfare.	Female Wage Groups.	Female Workers Paying more than 10 cents Carfare.
\$8.00- 9.99	10.6%	\$4.00- 5.99	4.7%
10.00-11.99	13.9	6.00- 7.99	13.2
12.00-13.99	12.1	8.00- 9.99	16.9
14.00-15.99	21.8	10.00-11.99	21.3
16.00-17.99	21.3	12.00-13.99	29.9
18.00-19.99	28.6	14.00-15.99	35.4
20.00-21.99	27.4		
22.00-23.99	34.2		
24.00-25.99	33.5		

In each of the other tables, 45, 46 and 47, the comparisons reveal the close attachment of the female workers to their places of work. One explanation of this fact is doubtless the average lower wage, but it cannot be explained entirely on this basis. There is doubtless a greater inclination on the part of women workers to get work near home.

The data which we have considered and analyzed have

indicated clearly the importance of wages in the problem of the distribution of the city's population. In all cases certain general laws seem to be operating. Many of the correlations among the wage groups are really remarkable. In

TABLE 47

SUMMARY

Comparison of Wages and Time-distance of Male and Female Workers Employed in Lower Manhattan.

Male Wage Groups.	Male Workers' Time-distance of one Hour or less.	Female Wage Groups.	Female Workers' Time-distance of one Hour or less.
\$8.00- 9.99	63.8%	\$4.00- 5.99	78.1%
10.00-11.99	62.5	6.00- 7.99	58.9
12.00-13.99	55.6	8.00- 9.99	62.0
14.00-15.99	42.3	10.00-11.99	61.9
16.00-17.99	45.3	12.00-13.99	49.8
18.00-19.99	45.3	14.00-15.99	33.4
20.00-21.99	33.3		
22.00-23.99	33.5		
24.00-25.99	33.0		

all the classifications intimate and seemingly causal connections between increasing wages and constantly widening distribution are evident. The following laws or general principles may therefore be laid down:

I. The proportion of workers working and living in the congested districts varies inversely with wages. Hence, the proportion of workers working in congested districts but living in the suburbs of less densely populated districts varies directly with wages.

II. The proportion of workers walking to work varies inversely with wages. On the other hand, the proportion of workers paying carfare varies directly with wages.

III. The amount of carfare paid varies directly with wages.

IV. The distribution of workers, measured by time-distance from the place of employment, varies directly with wages. Or, the greater the wage, the farther from the factory do the employees live.

V. The residence mobility of male workers, measured by wages, is greater than the residence mobility of female workers.

Nationalities

Before considering the results of the study of the nationalities of workers in Manhattan, it may be well to recall the general distribution of population.¹ The Hebrew, Russian, Austrian and Slavic peoples are crowded into the Lower East Side, below Fifth Street, and East of the Bowery. It is in this region that congestion has reached its maximum. To the north of this district are Germans, with a constantly increasing proportion of Jews and Italians. There is no distinctive settlement on the middle East Side, the population consisting mainly of Scandinavian and Germanic peoples, with a few Irish. In the vicinity of 60th and 70th Streets, the Bohemian settlement is reached. Still farther north, from 100th to 116th Streets, east of Second Avenue, is the uptown "Little Italy", which is rapidly becoming another congested district. Along Third, Lexington, Madison, and Fifth Avenues, in the same neighborhood, the Jews predominate.

"Little Italy" downtown is divided into two sections, the one lying east of the Bowery and extending as far uptown as First Street, the other west of the Bowery and constituting the larger and more populous Italian district. The Greenwich district is largely American, with a growing population of Italians; to the north of Fourteenth Street and

¹ See Chap. II, pp. 31 *et seq.* Population by assembly districts and nationalities.

extending as far uptown as the Negro settlements in the neighborhood of Fifty-ninth Street and the Sixties, are the Irish and Germans, who live in what is known as the Hell's Kitchen district; here are also to be found occasional Italians and Jews.

In the Bronx is to be found a large proportion of Jews, many of the lower strata. In Brooklyn, especially in Brownsville and Williamsburg, there are large numbers of Jews who were formerly East Siders. The population of Brooklyn is by no means as distinctly divided into settlements as that of Manhattan, although in the vicinity of Navy Street there is an Italian settlement, and along Myrtle Avenue a Negro district. In the Wallabout section, some abominable East Side tenements have been reproduced with Jewish signs on the shop windows.

All other factors being equal, the various nationalities tend to concentrate in those sections where there are the homes of their countrymen. Predominance of a nationality in a certain section may not, however, reflect a desire of the people to live in this or that section. The facts are that they first went there to live and afterwards found work. Since the work was in or near the congested districts, they retained their residences there. It is therefore only by comparison of the Manhattan statistics with those of the less densely populated sections of New York City, that we can arrive at some clear understanding of the reasons underlying the congestion of certain races.¹

For the workers employed in the lower part of Manhattan, the essential features of the distribution by nationali-

¹ For all practical purposes, the Jews and Russians may be taken as synonymous, because there are very few Russians in New York City, other than Jews. But since these persons actually returned themselves as Russians or Jews, it was thought best to make the distinction.

ties are shown in Tables 48, 49 and 50. Congestion is often attributed to the inordinate desire of certain races or nationalities to congregate. The Jews and the Italians have each been accused of causing congestion. These recent arrivals have no doubt largely inhabited congested districts, they have doubtless complicated the situation, but it seems unjust and unscientific to assert that congestion is caused by these groups of peoples. In fact the entire reasoning underlying this theory of congestion is based on *à priori* logic and is open to serious objections.

TABLE 48

SUMMARY

*Distribution by Nationalities and Residences of Male Workers
Employed in Lower Manhattan*

Nationalities.	Proportion of Total Workers Living in :			
	Manhattan Below 14th St.	Manhattan Above 14th St.	Other Boroughs.	Jersey.
Germans	10.8%	23.8%	44.5%	20.9%
British	12.5	31.7	38.5	17.3
Americans	13.3	24.6	46.2	15.9
Irish	30.0	38.8	25.0	6.2
Austrians	44.6	31.7	15.8	7.9
Hebrew-Russians	58.3	13.8	26.8	1.1
Italians	61.7	14.4	21.3	2.6
Russians	64.0	10.4	24.8	0.8
Hebrew-Austrians	64.1	12.6	21.4	1.9

This summary, supplemented by the fuller presentation of the nationality groups (see Table III) indicates that the Germans, British and Americans have a decided antipathy for Manhattan and are inclined to scatter to the suburban sections to a much greater extent than any of the other nationalities. The Russian-Jews, Russians (probably almost all Hebrew), Italians, and Austrian-Jews, show the

largest proportion of their numbers in lower Manhattan. The Irish occupy a middle position although their total number in all of Manhattan is large.

TABLE 49

SUMMARY

Nationality and Carfare of Male Workers Employed in Lower Manhattan

Nationalities.	Proportion of Workers who :		
	Walk to Work.	Pay 10 Cents Carfare or Less Per Day.	Pay more than 10 Cents Carfare Per Day.
German	9.2%	56.6%	34.2%
British	15.4	48.1	36.5
American	15.3	49.9	34.8
Irish	35.4	49.2	15.4
Austrian	33.7	55.4	10.9
Hebrew-Russian .	44.4	51.2	4.4
Italian	55.3	33.7	11.0
Russian	52.0	47.2	0.8
Hebrew-Austrian..	48.5	44.7	6.8

TABLE 50

SUMMARY

Nationalities and Time-Distance of Male Workers Employed in Lower Manhattan

Nationalities.	Time Required in Getting to Work :			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
German	30.1%	31.0%	27.2%	11.7%
British	31.8	22.1	30.7	15.4
American	33.9	28.0	27.9	10.2
Irish	59.2	21.7	17.5	1.6
Austrian	63.3	15.9	17.8	3.0
Hebrew-Russian..	68.2	16.1	15.0	0.7
Italian	70.2	13.6	14.2	2.0
Russian	66.4	20.0	12.8	0.8
Hebrew-Austrian .	77.7	17.5	4.8	

No doubt, a contributing factor in the distribution of the different nationalities, aside from racial tendencies to form distinct colonies, is the fact that it is largely the Hebrews and Italians who are employed for long hours at small pay. These elements, as we have already found, are of great importance.

The nationality groups among the females are not as

TABLE 51

SUMMARY

Nationalities and Residences of Female Workers Employed in Lower Manhattan

Nationalities.	Proportion of Workers Living in :			
	Manhattan Below 14th St.	Manhattan Above 14th St.	Other Boroughs.	Jersey.
British	18.2%	29.1%	36.3%	16.4%
German	23.1	25.2	29.7	22.0
American	23.5	25.3	35.0	16.2
Irish	32.9	40.3	18.1	8.7
Hebrew-American ..	46.0	32.2	20.6	1.2
Austrian	64.3	21.4	11.9	2.4
Hebrew-Russian....	71.3	12.3	16.4	
Italian	75.7	8.5	10.5	5.3
Hebrew-Austrian ...	81.1	13.5	2.7	2.7
Russian	79.1	6.0	15.0	

large as the males, but the summary comparisons given in Tables 51, 52 and 53 will at least indicate their general tendencies.

On the whole, the residential distribution of the females of the various nationalities shows the same features as that of the males. The British, Germans and Americans have the smallest proportions residing in lower Manhattan and a much larger proportion of their number in the outlying districts and New Jersey.

TABLE 52

SUMMARY

Nationalities and Carfare of Female Workers Employed in Lower Manhattan.

Nationalities.	Proportion of Workers who:		
	Walk to Work.	Pay 10 cents Carfare or less Per Day.	Pay more than 10 Cents Carfare Per Day.
British	21.8%	43.7%	34.5%
German	25.3	54.9	19.8
American	24.3	49.7	26.0
Irish	41.6	49.7	8.7
Hebrew-American.	33.3	60.9	5.8
Austrian	59.5	38.1	2.4
Hebrew-Russian..	60.9	32.9	6.2
Italian	75.2	21.4	3.4
Hebrew-Austrian .	62.2	35.1	2.7
Russian	70.1	22.4	7.5

TABLE 53

SUMMARY

Nationalities and Time-Distance of Female Workers Employed in Lower Manhattan

Nationalities.	Time Required in Getting to Work:			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
British	49.1%	20.0%	25.5%	5.4%
German	50.5	23.1	18.7	7.7
American	46.5	25.9	23.0	4.6
Irish	67.8	22.1	10.1	
Hebrew-American.	66.6	19.5	11.5	2.4
Austrian	69.0	23.8	4.8	2.4
Hebrew-Russian..	78.1	11.6	7.5	2.8
Italian	85.2	6.8	7.1	0.9
Hebrew-Austrian .	94.6	5.4		
Russian	77.6	10.4	4.5	7.5

The three leading nationalities, British, German and American, show in this comparison a much smaller proportion living within a half-hour's distance of their place of work, and a much larger number living over seventy minutes distant, with the interesting exception of the Russians.

A summarized comparison of the males and females as grouped by the nationalities may throw additional light on the question of the relative mobility of men and women, which has already been considered under hours and wages.

TABLE 54

SUMMARY

Comparison of Nationalities and Residences of Male and Female Workers Employed in Lower Manhattan

Nationalities.	Proportion who Live in:					
	Manhattan Below 14th St.		Other Boroughs.		Jersey.	
	Male.	Female.	Male.	Female.	Male.	Female.
German	10.8%	23.1%	44.5%	29.7%	20.9%	22.0%
British.....	12.5	18.2	38.5	36.3	17.3	16.4
American	13.3	23.5	46.2	35.0	15.9	16.2
Irish	30.0	32.9	25.0	18.1	6.2	8.7
Hebrew-American..	31.1	46.0	38.5	20.6	1.1	1.2
Austrian	44.6	64.3	15.8	11.9	7.9	2.4
Hebrew-Russian ...	58.3	71.3	26.8	16.4	1.1	
Italian.....	61.7	75.7	21.3	10.5	2.6	5.3
Russian.....	64.0	79.1	24.8	6.0	.8	15.0
Hebrew-Austrian ..	64.1	81.1	21.4	2.7	1.9	2.7

The importance of the comparison given in Table 54 lies in the proportion of the various nationalities living in lower Manhattan, in the most congested sections, nearest their work. The striking feature is that in each group the females show a larger and usually a very much larger proportion of

their total residing in this section. Tables 55 and 56 strengthen these results. In each nationality larger proportions of the women workers walk to work. In measuring distribution by time-distance the nearer residence of the females is very well shown.

TABLE 55

SUMMARY

*Comparison of Nationalities and Carfare of Male and Female Workers
Employee in Lower Manhattan.*

Nationalities.	Proportion of Total Workers who:					
	Walk to Work.		Pay 10 cents Carfare or less per day.		Pay more than 10 cents Carfare per day.	
	Male.	Female.	Male.	Female.	Male.	Female.
German	9.2%	25.3%	56.6%	54.9%	34.2%	19.8%
British	15.4	21.8	48.1	43.7	36.5	34.5
American	15.3	24.3	49.9	49.7	34.8	26.0
Irish	35.4	41.6	49.2	49.7	15.4	8.7
Hebrew-American .	23.3	33.3	68.9	60.9	7.8	5.8
Austrian	33.7	59.5	55.4	38.1	10.9	2.4
Hebrew-Russian . .	44.4	60.9	51.2	32.9	4.4	6.2
Italian	55.3	75.2	33.7	21.4	11.0	3.4
Russian	52.0	62.2	47.2	35.1	0.8	2.7
Hebrew-Austrian .	48.5	70.1	44.7	22.4	6.8	7.5

In all the data presented showing comparisons between males and females among the nationality groups, the striking features are the much nearer residence of the females, the smaller proportion walking to work, and the smaller average time-distance in almost all the groups. As between the sexes within the various nationality groups, the conclusion seems almost irresistible that the women workers live much nearer the factory than the men. These facts would seem to indicate that, in the various nationality

groups, the residence mobility of men is greater than that of women.

The investigation of nationalities does not give a clear-cut result, as did the investigation of hours of work and wages. A tendency of the recent immigrants, or the nation-

TABLE 56

SUMMARY

Comparison of Nationalities and Time-Distance of Male and Female Workers in Lower Manhattan

Nationalities.	Time Required in Getting to Work :			
	One Hour or Less.		101-140 Minutes.	
	Male.	Female.	Male.	Female.
German	30.1%	50.5%	27.2%	18.7%
British	31.8	49.1	30.7	25.5
American	33.9	46.5	27.9	23.0
Irish	59.2	68.8	17.5	10.1
Hebrew-American ...	55.6	66.6	14.4	11.5
Austrian	63.3	69.0	17.8	4.8
Hebrew-Russian	68.2	78.1	15.	7.5
Italian	70.2	85.2	14.2	7.1
Russian	66.4	94.6	12.8	
Hebrew-Austrian	77.7	77.6	4.8	4.5

alities which have recently immigrated, to live in congested downtown Manhattan is indicated. The real test of the effect of nationality on congestion will be the comparison of the distribution of those in Manhattan and those in other parts of Greater New York.

Summary

Analysis and consideration of the data returned by workers in factories in lower Manhattan indicate certain broad general principles or laws, which seem to govern the dis-

tribution of the factory population in New York City. This distribution or scattering of the population, and the desire or ability to live near by or at some distance from the place of employment has been termed residence-mobility. Among the various groups or classes of workers which have been segregated from time to time in the preceding pages, various degrees of residence-mobility are found to obtain. This variation, it has been found, conforms to certain definite principles. Under conditions existing in lower Manhattan, these principles, which have already been stated in full, may be summarized as follows:

I. Residence-mobility of male and female workers varies inversely with the length of the working day.

II. Residence-mobility of male and female workers varies directly with the amount of wages.

III. Nationalities which have been among the recent immigrants, particularly from eastern and southern Europe, tend to exhibit a less degree of residence-mobility than those which have been immigrating in large numbers to this country for a longer period, namely, the peoples of western and northern Europe.

On one point our data do not leave us with questionable conclusions, namely, the relative residence-mobility of male and female workers. The classification showing hours of labor, indicates the greater variability of residence in the male groups. Similarly the classification of wages shows much greater mobility on the part of the males. Each nationality group shows a strong tendency among the females to live nearer the factories. It would seem then that a further principle is indicated:

IV. The residence-mobility of male workers is greater than that of female workers.

The importance of this analysis is that it shows the preponderating influence of the conditions of labor upon the

lives of the workers. Long hours and low pay have compelling force and necessitate the residence of the over-worked and underpaid in the over-crowded and congested districts of New York City. It has not been found merely that the extremes of the working day and the wage scale show this effect, but that each and every group responds to added or subtracted stimuli. The conclusion indicated is irresistible, that the factory and the workshop is the predominant factor in the lives of these workers, and that the factories in the crowded sections of Manhattan are largely responsible for the problem of congestion of population which confronts the city in these districts.

CHAPTER VI

THE DISTRIBUTION OF WORKERS EMPLOYED IN MANUFACTURES IN GREATER NEW YORK AND ENVIRONS

THE workers employed in the factories located above 14th Street in Manhattan, from whom information has been collected, form by no means a homogeneous group. The factories include shoe and wood manufactures, printing, slaughtering and cigar making, and even storage warehouses. They are located in various parts of this section of Manhattan; some are on the West Side, others are on the East Side, some are near 14th Street, still others are as far uptown as 75th Street. It will be reassuring, then, if we find the same general tendencies operating as were indicated by the analysis of the statistics of the workers employed in Lower Manhattan.

The data for Upper Manhattan are not as numerous nor as well distributed among the industry groups as might be desired. No special attempt was made to secure a large number of data from the uptown factories. These factories are not located in the extremely congested districts nor are they located in as favorable positions as the suburban establishments. They are, therefore, not especially useful in our study of congestion, and the presentation of the data here aims merely to represent this large and important section of the city and not to study it with thoroughness. The total number of males who furnished information is 608 and the number of females is 954.

Reference to the statistical tables in this section reveals at once that there are no wide differences between the hours and wages groups, and that all the groups show similar tendencies as regards residence-distribution. The nationality groups are divided rather more evenly.

TABLE 57

SUMMARY

Hours of Work and Distribution of Male Workers Employed in Manhattan Above 14th Street

Residence.	Hour Groups.		All Workers.
	9-9.29 Hours Per Day.	10-10.29 Hours Per Day.	
Manhattan above 14th St....	60.2%	79.5%	73.2%
Manhattan below 14th St....	13.0	7.7	10.2
Brooklyn	12.0	4.9	6.7
Jersey	4.6	1.5	3.0
Walk and Carfare.			
Walk	36.1	56.3	51.3
10 cents or less	43.5	32.9	34.9
11 cents or more	20.4	10.8	13.8
Time-distance.			
One hour or less	64.9	85.6	80.4
61-100 minutes.....	11.1	7.5	8.2
101-140 minutes.....	19.4	5.6	9.1
141 minutes or more.....	4.6	1.3	2.3
Number of Workers	108	453	608 ¹

The classification of males by daily and weekly hours of work in Tables 57 and 58 indicates exactly the same ten-

¹ This total and similar totals in the tables which follow are larger than the sums obtained by adding the sub-groups given, since the smaller sub-groups are not presented in these tables.

dencies as were found to exist among the workers in Lower Manhattan. In the groups divided on the basis of daily hours, namely, 9-9.29 and 10-10.29, there is a marked difference in distribution. Most of the 10-hour men live in

TABLE 58

SUMMARY

Weekly Hours of Work and Distribution of Male Workers Employed in Manhattan Above 14th Street.

Residence.	Hour Groups:				Total for all Workers.
	48-50.59 Hours Per Week.	51-53.59 Hours Per Week.	57-59.59 Hours Per Week.	60-62.59 Hours Per Week.	
Manhattan above 14th Street.....	36.0%	71.0%	73.8%	80.3%	73.2%
Manhattan below 14th Street.....	18.0	8.7	4.9	8.2	10.2
Brooklyn.....	22.0	4.4	4.9	4.8	6.7
Jersey.....	10.0	7.2	3.3	1.3	3.0
Walk and Carfare.					
Walk.....	24.0	40.6	44.3	58.2	51.3
10 cents or less.....	36.0	46.4	39.3	31.9	34.9
11 cents or more.....	40.0	13.0	16.4	9.9	13.8
Time-distance.					
One hour or less....	44.0	73.9	82.0	86.2	80.4
61-100 minutes....	14.0	11.6	6.5	7.7	8.2
101-140 minutes...	28.0	14.5	11.5	4.6	9.1
141 minutes or more.	16.0			1.5	2.3
Number of Workers.....	501	69	61	392	608

Upper Manhattan and less of them live in Brooklyn or New Jersey. Fewer of the nine-hour men walk to work and, on the whole, they live farther from their work. The same facts are evident in the groups showing weekly hours

of work. Hence it seems clear, as was the case in Lower Manhattan, that the shorter working day or week permits greater residence-mobility on the part of the workers and does not confine them to localities in the immediate vicinity of their places of employment.

The workers as differentiated by wage groups are not well enough distributed to make our conclusions infallible. The general residence-distribution of the male workers reveals the same tendencies that were found among the workers in Lower Manhattan. The lower paid workers live near the factory, while a considerable proportion of the better-paid men live in other boroughs, pay more carfare and live at a greater time-distance. A rather close correlation is to be noted in Table 59 between wages and time-distance among the male workers, especially in the group designated as "one hour or less".

There is scarcely any difference in residence distribution (see Table 60) among the various wage groups of the female workers. Only three groups of any size result, and the workers even within these are closely grouped between \$6.00 and \$10.00. The small distinctions preclude conclusions as to the effect of wages on residence-distribution among the female workers.

The nationality groups in Table 61 show some very interesting facts. The only important groups among the males are the Americans, Germans, Russians, Austrians, Irish and Jews. The Russians are doubtless all Jews, and likewise most of the Austrians.¹ The Irish show a very large proportion living above 14th Street, while the Russians show the largest proportion residing in Lower Manhattan.

¹ The inability to state exactly the nationality and the race is due to the nature of the schedules used, as explained in the discussion of methods in Appendix I.

TABLE 59

SUMMARY

*Wages and Distribution of Male Workers Employed in Manhattan
above 14th St.*

Wage Groups.	Number of Workers.	Residence.			
		Manhattan above 14th St.	Manhattan below 14th St.	Brooklyn.	Jersey.
\$10.00-11.99	83	79.5%	19.3%	0.0%	1.2%
12.00-13.99	145	69.8	11.3	5.7	2.8
14.00-15.99	101	79.3	8.1	4.6	2.3
18.00-19.99	93	72.2	3.8	13.9	1.3
20.00-20.99	47	68.8	6.2	12.5	0.0
22.00 or more.	69	55.7	15.7	10.0	11.4
All Workers.	608	73.2	10.2	6.7	3.0

	Walk and Carfare.		
	Walk.	10 cents or less.	11 cents or more.
\$10.00-11.99	69.9	28.9	1.2
12.00-13.99	48.1	39.6	12.3
14.00-15.99	56.3	33.9	9.8
18.00-19.99	39.2	40.5	20.3
20.00-20.99	39.6	39.6	20.8
22.00 or more.	35.7	35.7	26.6
All Workers.	51.3	34.9	13.8

	Time Consumed in Getting to Work.			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
\$10.-11.99	94.0	6.0		
12.-13.99	82.1	6.6	6.6	4.7
14.-15.99	84.5	8.0	6.9	1.2
18.-19.99	76.0	5.0	15.2	5.1
20.-21.99	66.7	20.9	12.4	4.1
22.00 or more.	63.7	13.0	17.5	5.8
All Workers.	80.4	8.2	9.1	2.3

TABLE 60

SUMMARY

*Wages and Distribution of Female Workers Employed in Manhattan Above
14th Street*

Wage Groups.	Number of Workers.	Residence.			
		Manhattan above 14th St.	Manhattan below 14th St.	Brooklyn.	Jersey.
\$6.00- 7.99	163	89.6%	4.6%	2.9%	1.1%
8.00- 9.99	512	84.0	5.4	3.0	1.2
10.00-11.99	213	84.5	7.0	3.8	1.4
All Workers.	954	84.7	5.5	3.2	1.6

	Carfare.			
	Walk.	10 Cents or Less.	11 Cents or More.	
6.00- 7.99	71.1%	22.0%	6.9%	
8.00- 9.99	64.1	28.5	7.4	
10.00-11.99	64.8	28.2	7.0	
All Workers.	64.7	27.0	8.3	

	Time Consumed in Getting to Work.			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
6.00- 7.99	91.9%	2.9%	4.0%	1.2%
8.00- 9.99	90.9	3.5	4.4	1.2
10.00-11.99	92.4	2.8	4.3	.5
All Workers.	90.2	3.9	5.0	.9

TABLE 61

SUMMARY

Nationalities and Distribution of Male Workers Employed in Manhattan Above 14th Street

Nationalities.	Number of Workers.	Residence.			
		Manhattan above 14th St.	Manhattan below 14th St.	Brooklyn.	Jersey.
American	162	71.0%	3.1%	6.8%	7.4%
German	103	69.9	4.9	11.6	3.9
Russian	69	63.8	27.5	8.7	0.0
Austrian	49	91.8	6.1	0.0	0.0
Jews	64	64.1	18.7	9.4	0.0
Irish	48	89.6	0.0	0.0	4.2
All Workers ...	608	73.2	10.2	6.7	3.0

	Walk and Carfare.		
	Walk.	10 Cents or Less.	11 Cents or More.
American	39.5%	42.0%	18.5%
German	51.5	24.3	24.2
Russian	56.5	33.3	10.2
Austrian	73.5	26.5	
Jews	34.4	51.6	14.0
Irish	66.7	29.1	4.2
All Workers....	51.3	34.9	13.8

	Time Consumed in Getting to Work.			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
American	74.7%	11.2%	11.7%	2.4%
German	71.8	7.8	16.5	3.9
Russian	79.7	10.1	7.3	2.9
Austrian	100.0	0.0	0.0	0.0
Jews	76.5	15.7	4.7	3.1
Irish	91.7	4.1	2.1	2.1
All Workers. ..	80.4	8.2	9.1	2.3

TABLE 62

SUMMARY

Nationalities and Distribution of Female Workers Employed in Manhattan above 14th St.

Nationalities.	Number of Workers.	Residence.			
		Manhattan above 14th St.	Manhattan below 14th St.	Brooklyn.	Jersey.
Americans	116	75.9%	4.3%	9.5%	4.3%
Italians	297	97.3	0.3	0.0	0.3
Austrians	128	82.0	0.0	2.3	1.6
Hungarians	194	88.7	5.1	3.1	0.0
Jews.	69	58.0	34.8	5.8	0.0
All Workers	954	84.7	5.5	3.2	1.6

	Walk and Carfare.		
	Walk.	10 cents or less.	11 cents or more.
Americans.	50.0%	24.1%	25.9%
Italians	74.8	23.9	1.3
Austrians	61.7	25.0	13.3
Hungarians	79.9	15.5	4.6
Jews	26.1	69.6	4.3
All Workers.....	64.7	27.0	8.3

	Time Consumed in Getting to Work.			
	One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes or More.
American	75.0%	10.3%	12.9%	1.8%
Italian	97.3	2.0	0.7	0.0
Austrian	87.5	5.5	5.4	1.6
Hungarian	93.3	1.0	4.7	1.0
Jews	88.4	7.2	4.4	0.0
All Workers.....	90.2	3.9	5.0	0.9

The other nationalities vary considerably in the matter of residence. As measured by time-distance the Germans and Americans live farthest from their work; the Jews and Russians follow closely. There is, however, a marked difference in the direction which these nationalities take. The Americans scatter quite indiscriminately, except that very few of them live below 14th Street in Manhattan. The Germans also contribute a very small proportion of the population of Lower Manhattan; they seem to favor Brooklyn, Queens and Jersey. The Russians, on the other hand, aside from those living in Manhattan above 14th Street, are many of them living in Lower Manhattan, and the remainder in Brooklyn and the Bronx. No very distinct tendency is evident. These data seem to confirm the general conclusion, on the basis of the statistics from Lower Manhattan, that the Americans and older immigrant nationalities show a greater residence-mobility.

The female nationality groups are not the same as the male groups (see Table 62). The important nationalities are Americans, Italians, Austrians, Hungarians and Jews. A very large proportion of the Jews lives in Lower Manhattan. As among the other nationalities there are no great differences, except that the Americans show large proportions in Brooklyn and New Jersey. The Americans also show a smaller average time-distance from their work, while the Italians show a very decided preference for a residence near their place of work.

The general conclusions, then, which were formed on the basis of the data for workers in Lower Manhattan, are further supported by the analysis of the returns of workers in the uptown factories. Residence-distribution varies inversely with the length of the working day and directly with the wages. Certain nationalities seem inclined to live in the more congested sections. The rigor of these general

laws, if we may so denote the tendencies which we have found to exist, is much greater among the workers in the factories located in the more congested districts. Hence, the proportion of workers of all grades who live near their places of work is much greater than in the case of Lower Manhattan.

The Metropolitan Life Insurance Company

The Metropolitan Life Insurance Company has been chosen for comparative purposes as representative of the better class of clerical labor. This company occupies offices in its new building included by 23rd St., 4th Ave., Madison Ave., and 24th St. All parts of Manhattan are easily accessible by the convenient subway and elevated lines; street car lines also converge about this point. The ferries are accessible, but only after a street-car ride. The Grand Central Station is not beyond walking distance, but is more easily reached by a direct surface line.

From this one establishment data were returned for over 3,000 people. The hours for the majority of the employees are from 9 to 5, with one hour for lunch, and a half-holiday on Saturday throughout the year. The manual laborers employed about the building work eight hours per day and forty-four per week. It was not possible to obtain complete wage statistics, but on the average, the entire force is better paid than any other group with which we have dealt in this study.

The most noticeable fact brought out by the statistics analyzed in Table 63 is the wide territory over which these people are scattered. Among the men, only 76.1 per cent live in Greater New York, and only 41.8 per cent of the total live in Manhattan. The remainder are scattered over New Jersey, 16.3 per cent; remote New York State Counties, 7.1 per cent, and Connecticut, .5 per cent. Among the

various classes of employees, a smaller proportion among the clerks, bookkeepers and agents were found to live in the city, while a larger proportion of those returning themselves

TABLE 63

SUMMARY

Comparison of Distribution of the Male Employees of the Metropolitan Life Insurance Co. and Male Factory Workers Employed in Manhattan. Above and Below 14th Street Manhattan

Residence.	Workers Employed in Manhattan Below 14th St.	Workers Employed in Manhattan Above 14th St.	Workers Employed by Metropolitan Life Insurance Company.
Manhattan	52.9%	83.4%	41.8%
Brooklyn	25.1	6.7	19.6
Queens	3.9	2.1	4.4
Staten Island	0.5	0.0	0.0
Bronx	6.2	4.6	9.2
Jersey	11.1	3.0	16.3
New York remote	0.3	0.2	7.1
Connecticut	0.0	0.0	0.5
Number of Workers	5,002	608	1,620
Walk	26.3%	51.3%	11.0%
10 cents or less	49.7	34.9	40.3
11-20 cents	19.8	10.2	23.8
21-50 cents	4.1	3.4	23.0
51 cents-\$1.00	0.1	0.2	1.6
\$1.01 or more	0.0	0.0	(3)
1 hour or less	47.1%	80.4%	33.8%
61-100 minutes	24.2	8.2	24.4
101-140 minutes	21.9	9.1	24.1
141-180 minutes	6.3	2.3	14.0
3 hours-3 hours, 59 minutes.	0.5	0.0	3.1
4 hours-4 hours, 59 minutes.	0.0	0.0	0.5
5 hours-5 hours, 59 minutes.	0.0	0.0	0.1

as managers, professional classes, lawyers and physicians, stenographers and boys live in Greater New York. This would seem to indicate that it is the middle clerical classes

which scatter and tend to live in the suburban parts of New York City, and that both the lowest paid employees, who cannot afford to go out of the city, and the higher paid, who can afford to live in the city, however anomalous the statement may sound, remain in Greater New York.

Some interesting comparisons may be drawn between the total groups, working below 14th Street, above 14th Street, and the employees of the Metropolitan Life Insurance Company. These comparisons are shown in Table 63. It will be noted that of the three groups, the smallest proportion of the Metropolitan Life Insurance Company's employees live in Manhattan. Correspondingly large proportions live in the suburbs. Similarly larger proportions of the factory employees walk to work, while the insurance company's employees pay a much larger amount of carfare. Very small percentages of the factory workers live farther than two hours and twenty minutes from their work. A considerable proportion of the higher-paid clerical workers, 17.7 per cent, spend more than two hours and twenty minutes each day in going to and coming from work.

The results are equally interesting for the females. They too show a tremendous tendency to scatter all over the territory surrounding New York City. A considerably larger proportion (86.9 per cent) of the women live in Greater New York (see Table 64). Although not quite as large a proportion live in Manhattan, a considerably larger number live in Brooklyn. Those living out of the city are distributed as follows: New York remote, 3.9 per cent; New Jersey, 8.9 per cent; Connecticut, .3 per cent.

A comparison of the various groups working in Manhattan reveals some interesting contrasts. The clerical workers, working relatively short hours, and getting good wages, live farthest from their work, pay the most carfare and take the longest time in getting to work and back to their homes.

TABLE 64

SUMMARY

Comparison of Distribution of the Female Employees of the Metropolitan Life Insurance Co., and Female Factory Workers Employed in Manhattan Below and Above 14th Street

Residence.	Workers Employed in Manhattan Below 14th St.	Workers Employed in Manhattan Above 14th St.	Workers Employed in Metropolitan Life Insurance Co.
Manhattan	62.4%	90.2%	39.3%
Brooklyn	20.1	3.2	36.9
Queens.....	1.6	3.1	2.1
Staten Island	0.3	0.0	0.5
Bronx.....	4.3	1.8	8.1
Jersey.....	11.2	1.6	8.9
New York remote.....	0.1	0.1	3.9
Connecticut.....	0.0	0.0	0.3
Number of Workers	2,648	954	1,565
Walk	39.1%	64.7%	8.0%
10 cents or less.....	43.4	27.0	43.1
11-20 cents.....	15.3	6.0	34.1
21-50 cents.....	2.2	2.3	14.4
51 cents or more	0.0	0.0*	0.4
One hour or less	59.6%	90.2%	25.7%
60-100 minutes	20.2	3.9	27.6
101-140 minutes.....	16.7	5.0	31.2
141-180 minutes.....	3.4	0.7	11.7
3 hours-3 hours, 59 minutes	0.1	0.2	3.4
4 hours-4 hours, 59 minutes	0.0	0.0	0.4

These comparisons serve to bring out more strongly than ever the binding effect of hours of labor and of wages. The wages in a good many of these groups are not much more than the wages in some of the better paid trades, for example, the printers, lithographers and high-grade mechanics. Many of these women clerks are earning scarcely more than some of the girls working in the factories that we have considered. The crucial point, therefore, is the length

of the working day. The shortest working week in manufacturing is forty-four hours, and but a very small proportion of the workers have this. The 53-hour week is, perhaps, the commonest. These office workers, on the other hand, work only seven hours per day, not more than 39 per week. They can, of course, live at a distance. It doesn't cost any more, as a general proposition, when rent and car-fare are reckoned together; but the time does count.

Brooklyn near Brooklyn Bridge

The workers in two establishments returned the data which have been classified under the locality designated as Brooklyn Bridge. The factories located at this point are subject to somewhat peculiar conditions. Both plants are located near the Brooklyn terminus of Brooklyn Bridge, and near the Catherine Street Ferry. Both are within easy walking distance of Manhattan, and within a $2\frac{1}{2}$ -cent fare on the Bridge local cars, and a two-cent fare on the Ferry. By all these means of transit, easy access to the crowded lower East Side districts is afforded. As a residential section, this part of Brooklyn is even more undesirable for the average working man than Manhattan. Therefore the choice of residence, for the worker, lies between Manhattan's crowded districts, with a very small fare or none at all, and Brooklyn, less crowded, but with a greater fare. Analysis of the data concerning these workers reveals the somewhat unexpected fact that by far the largest proportion lives in Brooklyn.

Among the male workers there are only two groups, 9-9.29 and 10-10.29, which are of importance. In view of the local conditions, as already explained, it is not surprising to find that the proportion of the long day workers living in Manhattan is larger than that of the workers employed for a shorter day.

These groups of workers, as analyzed in Table 65, follow the same general laws of distribution which were operative in the case of the workers employed in Manhattan. This is especially true of the relation of the hours of work to carfare and time-distance. These data reveal the same restricting effect of long hours of work.

TABLE 65

Hours of Work and Distribution of Male Workers Employed in Brooklyn near Brooklyn Bridge

Residence.	Hour Groups.		All Workers.
	9-9.29 Hours Per Day.	10-10.29 Hours Per Day.	
Manhattan above 14th St..	2.9%	5.3%	4.7%
Manhattan below 14th St..	6.5	20.3	15.9
Bronx, Queens, Richmond and Jersey.....	8.5	6.7	7.3
Brooklyn.....	82.1	67.7	72.1
Walk and Carfare.			
Walk	22.0	27.7	25.4
10 cents or less	70.7	58.5	62.8
11 cents and more.....	7.3	13.8	11.8
Time-Distance.			
One hour or less	40.3	65.7	57.0
61-100 minutes	37.8	23.8	28.3
101-140 minutes	15.9	9.4	11.8
141 minutes and more	5.0	1.1	2.9
Number of Workers....	246	452	698

The female workers fall into two main hour classes, which are distributed in similar ways. The proportion of each residing in Brooklyn is very large, being 93.6 per cent and 92.7 per cent. The percentage in each group who walk to work is almost equal, 33.5 per cent in the 9-9.29 hour

group, and 32.1 per cent in the 9.30-9.59 hour group. Some peculiarities in the time-distance classifications warrant the fuller analysis given in Table 66.

TABLE 66

SUMMARY

Hours of Work and Time-Distance of Female Workers Employed in Brooklyn near Brooklyn Bridge

Hours of Work Per Week and Per Day.	Number of Workers.	Time Consumed in Getting to Work.			
		One Hour or Less.	61-100 Minutes.	101-140 Minutes.	141 Minutes and More.
51-53.59	236	45.7%	31.4%	15.2%	7.7%
9-9.29					
54-56.59	137	54.7	19.7	21.9	3.7
9.30-9.59					
All Workers....	373	49.1	27.1	17.7	6.1

The data concerning wages, in this section, are very unsatisfactory. A large proportion of the frequencies among the males are concentrated in two large groups, namely, \$12-13.99 and \$18-19.99, from which conclusions can scarcely be drawn. The female wage groups are even more unsatisfactory. One group, \$6.00-7.99, contains 67.8 per cent of the frequencies.

The statistics regarding nationalities for this locality, as given in Table 67, are exceedingly interesting and instructive, on account of the large proportions of Italians and Jews. With due regard to the fact that Manhattan is so much more easily reached from these factories than most of the desirable residential parts of Brooklyn, it is surprising to find that Manhattan, where the populous colonies of foreigners, especially Italian and Hebrew, flourish, receives but a small proportion of these same nationalities.

Although larger proportions of the Italians and Hebrews than of Americans and Germans live in Manhattan, the attraction of Manhattan as a home does not seem to be very strong. Hence, so far as our data go, it is evident that with the two alternatives open, even foreigners of our recent immigrant stocks prefer to live outside of crowded Manhattan.

TABLE 67

SUMMARY

Nationalities and Distribution of Male Workers Employed in Brooklyn near Brooklyn Bridge

Residence.	Nationalities.			
	American.	Italian.	Jews-Russian.	German.
Manhattan above 14th St.	3.9%	3.8%	6.7%	1.6%
Manhattan below 14th St.	1.2	34.0	39.3	4.6
Queens, Bronx, Richmond, and Jersey	8.2	6.7	0.0	16.9
Brooklyn	86.7	55.5	54.0	76.9
Walk and Carfare.				
Walk	27.4	31.1	6.7	7.7
10 cents or less	64.8	54.1	75.7	86.2
11 cents and more	7.8	14.8	17.6	6.1
Time-Distance.				
One hour or less	49.6	71.8	64.9	26.2
61-100 minutes	37.9	17.2	16.2	49.2
101-140 minutes	10.1	9.1	16.2	2.7
141 minutes and more	2.4	1.9	2.7	9.2
Number of Workers	256	209	74	65

Large proportions of the Italians and Hebrews live within a half-hour of the factories and many of the Americans and Italians walk to work. The various nationality groups among the females are so small that their analysis would be

unprofitable. Considerable disparity is evident in Table 68 as to the nature of the distribution of the male and female groups.

TABLE 68

SUMMARY

Comparison of Distribution of Male and Female Workers Employed in Brooklyn near Brooklyn Bridge

Residence.	Male.	Female.
Manhattan above 14th St.....	4.7%	1.6%
Manhattan below 14th St.....	15.9	1.9
Brooklyn	72.1	93.3
Queens, Richmond, Bronx and Jersey.....	7.3	3.2
Walk and Carfare.		
Walk	25.4	33.0
10 cents or less	62.8	63.3
10 cents and more	11.8	3.7
Time-Distance.		
One hour or less	57.0	49.1
61-100 minutes	28.3	27.1
101-140 minutes.....	11.8	17.7
141 minutes and more.....	2.9	7.1
Number of Workers	698	373

Although a much larger proportion of the women workers live in Brooklyn, the peculiarities of this locality assert themselves, and we find that a smaller proportion of the women live within a half-hour's distance from the factories. It is hazardous to base conclusions on this comparison, but there is an evident tendency among the females to live in Brooklyn, even at the sacrifice of additional time.

The group of workers employed in Brooklyn near Brooklyn Bridge conforms to the same tendencies as were found among the workers in Manhattan, with the exception of the

TABLE 69

SUMMARY

Comparison of Hours of Work and Distribution of Male Workers in Lower Manhattan and Brooklyn near Brooklyn Bridge

Hour Groups.	Proportion of Workers in Each Group Residing in Manhattan Below 14th St.		Proportion of Workers in Each Group Residing in Brooklyn.	
	Working in Lower Manhattan.	Working in Brooklyn.	Working in Lower Manhattan.	Working in Brooklyn.
9- 9.29	19.1 %	6.5 %	24.6 %	82.1 %
10-10.29	47.9	20.5	19.8	67.1
All Workers.	28.7			

	Proportion of Workers in Each Group who :					
	Walk to Work.		Pay 10 Cents or Less Carfare Per Day.		Pay More than 10 Cents Carfare Per Day.	
	Working in Lower Manhattan.	Working in Brooklyn.	Working in Lower Manhattan.	Working in Brooklyn.	Working in Lower Manhattan.	Working in Brooklyn.
9- 9.29	18.6 %	22.0 %	48.6 %	70.7 %	32.8 %	7.3 %
10-10.29	42.4	27.7	45.3	58.5	12.3	13.8
All Workers.	26.3	25.4	49.7	62.8	24.0	11.8

	Time Consumed in Getting to Work.			
	One Hour or Less.		101-140 Minutes.	
	Working in Lower Manhattan.	Working in Brooklyn.	Working in Lower Manhattan.	Working in Brooklyn.
9- 9.29	41.4 %	40.3 %	23.0 %	15.9 %
10-10.29	62.4	65.7	17.4	9.4
All Workers.	47.1	57.0	21.9	11.8

nationalities. A closer comparison of the data in Table 69 for those workers employed in Manhattan and for those employed in Brooklyn, furnishes a basis for estimating the effect of a location in Brooklyn upon the distribution of the factory employees.

The most important finding in the investigation of this group of workers is the relatively small proportion who live in Manhattan, in spite of its accessibility. This fact is important because it shows the effect of concentrating industries in Manhattan, and demonstrates what a difference exists when the factories are located only just outside.

TABLE 70

SUMMARY

Comparison of Nationalities and Residence of Male Workers in Lower Manhattan and Brooklyn near Brooklyn Bridge

Nationalities.	Proportion of Workers in each Group who Live in:			
	Manhattan.		Brooklyn.	
	Employed in Lower Manhattan.	Employed in Brooklyn.	Employed in Lower Manhattan.	Employed in Brooklyn.
American.....	37.9%	5.1%	31.9%	86.7%
Italian	76.1	37.8	15.3	55.5
Jews-Russian....	72.1	46.0	22.9	54.0
German	34.4	6.2	27.2	76.9

Other facts of importance are: that the proportion of workers paying more than 10 cents carfare per day is much less among the Brooklyn employees; that the time consumed by the Brooklyn workers is very much less than that used by the workers employed in lower Manhattan. Every

fact points to the advantage of the Brooklyn location in the matter of distribution of the workers. The same tendencies are exhibited, it must be noted, in the distribution of the Brooklyn workers as were operative in governing the distribution of workers in Manhattan. However, these laws operate with less rigor.

It is in the nationality groups, however, that the most striking changes occur. This is shown in Table 70.

These facts fail to coincide with the tendencies shown to exist in Manhattan. With the crowded downtown colony of Little Italy easily accessible, only 37.8 per cent of these Italians live in lower Manhattan. In fact the nationalities as such do not show the same tendencies that they did in Manhattan. Nor do the small number of Italians and Hebrews who live in Manhattan substantiate the theory that congestion is in large part due to these people. The facts do, however, with undeniable clearness indicate that the workers prefer to live near their places of employment. This is the tendency despite nationality, which may be urging them to live among their countrymen. These facts indicate that the recently-arrived Italian or Russian Jew does not prefer to live in the congested districts. They are found to reside near their places of work, and when the two alternatives are open to them, the larger proportion embraces the opportunity to live among decent surroundings. The fact that a large number still live in Manhattan probably results from inertia, inability to find suitable cheap accommodations in the suburban boroughs, other members of the family being employed in Manhattan, et cetera. The important fact is, however, that of this group working in Brooklyn, there are more than 50 per cent less Italians, and almost 50 per cent less Russians and Jews living in Manhattan, than of the groups that were employed in Manhattan.

Williamsburg

The Williamsburg district is well situated in reference to transit facilities. There were, at the time these data were collected, several ferries which made Manhattan easily accessible, crosstown street car lines, transferring to almost all the Brooklyn lines and one elevated road, which was, however, rather inaccessible to the workers employed in shops located near the water front.

Analysis of the data from this locality as given in Table 71 shows that almost all of the workers live in Brooklyn and Queens, and that a *very small* proportion lives in Manhattan. Only 3.9 per cent of the male workers and .4 per cent of the females reside in Manhattan, while 94.9 per cent and 4.7 per cent of the women and 86.8 per cent and 8.5 per cent of the men live in Brooklyn and Queens respectively. These workers live in Brooklyn and Queens in spite of the fact that Manhattan is easily reached by means of a short ferry ride. The fact that less than half of the men walk to work, emphasizes the fact that workers do not care to live in Manhattan. No doubt one explanation is that a large proportion of the workers can live within a half-hour's distance of the factories. They have also dispensed with the additional distance, the crowded, slow-going means of transit out of Manhattan. Consequently the less crowded and more desirable sections of Brooklyn and Queens have been made accessible.

The data, as a whole, from this locality are so homogeneous that there is little variation between the sub-groups. Hence it cannot be determined whether or not the tendencies in the distribution of the factory workers in Manhattan exist among the workers in Williamsburg. Hours of work have a scarcely appreciable effect in this group. The wage groups, on the other hand, for both sexes, indicate decreasing proportions walking to work, and smaller numbers

living within an hour's time-distance of their places of employment.

Only a few of the nationality groups are large enough to warrant their use as a basis for any conclusions. The Americans, Italians and Germans show the same tendency which was noted in these nationalities in case of the workers employed near Brooklyn Bridge. Of the Italians, for example, 87.7 per cent live in Brooklyn, and only 3.5 per

TABLE 71

SUMMARY

Distribution of Male and Female Workers Employed in Williamsburg

Residence.	Male Workers.	Female Workers.
Manhattan above 14th Street.....	2.2%	0.0%
Manhattan below 14th Street	1.7	0.4
Brooklyn	86.8	94.9
Queens	8.5	4.7
Walk and Carfare.		
Walk	47.5	69.7
10 cents or less	47.8	29.9
11 cents and more.....	4.7	0.4
Time-Distance.		
One hour or less	72.5	78.0
61-100 minutes	17.4	15.7
101-140 minutes	7.5	5.1
141 minutes and more	2.6	1.2
Number of Workers.....	771	528

cent of the whole group live in Manhattan, although all could conveniently do so.

The analysis of the data returned by the workers in Williamsburg, furnishes additional evidence for questioning the theories which assert that nationality is one of the chief causes of congestion. They also throw doubt upon the

theory that nationality is one of the fundamental factors in determining the distribution of factory workers. These data affirm the conclusion that workers, no matter what their nationality, desire to avoid the crowded and congested sections of Manhattan, and do so when the location of the factory permits it.

South Brooklyn

South Brooklyn is one of the most promising manufacturing sections in Greater New York. The Bush Terminal Company has built immense docks there, and has erected large model loft buildings. Transportation facilities are the best in the vicinity of New York City. On the other hand, the manufacturers declare that the housing facilities in the neighborhood are insufficient. The transit conveniences are not of the best. One line of ferries connects with South Ferry, Manhattan, but it is a long ride and the boats are not frequent. Surface cars and elevated lines are near by. Connection with some parts of Brooklyn is easy, but Manhattan is comparatively difficult of access.

These facts account in some measure for the very great proportion of workers, namely, 95.8 per cent of the males and 95.3 per cent of the females, who live in Brooklyn. None of the female employees live in Manhattan and only 2.3 per cent of the males. Queens attracts an appreciable percentage, 4.7 per cent, of the women.

The majority of all workers in this group walk to work. (See Table 72.) A smaller proportion, however, is found among the women, although both sexes live about the same time-distance from the factories. The wage groups are not sufficiently varied to give results of value. There are only two important nationality groups, the Americans and Italians; the latter show a strong tendency to live very near the factories, and more of them walk to work than of the

TABLE 72

SUMMARY

Distribution of Male and Female Workers Employed in South Brooklyn

	Male Workers.	Female Workers.
Manhattan above 14th Street	1.7%	0.0%
Manhattan below 14th Street	0.6	0.0
Brooklyn	95.8	95.3
Queens	1.1	4.7
Walk and Carfare.		
Walk	68.9	51.9
10 cents or less	27.2	47.3
11 cents and more.....	3.9	0.8
Time-Distance.		
One hour or less	83.8	85.3
61-100 minutes	7.3	6.2
101-140 minutes	6.4	2.3
141 minutes and more	2.5	6.2
Number of Workers.....	357	129

Americans. The prominent feature brought out by these data is the predominant influence of the place of work upon the location of residence: the desire is strong on the part of both Italians and Americans to reside near their work.

Erie Basin

The Erie Basin, although a great manufacturing center, is remarkable for the paucity of its transit facilities, especially of its connections with Manhattan. It is not surprising to find, therefore, that almost all the employees in the two large establishments studied live in Brooklyn. A very large proportion of the workers walk to work, although the neighborhood for residence purposes is an unpromising one. Only 2.5 per cent of the employees live in Manhattan, al-

though it would be just as easy to reach, either as regards time or carfare, as many parts of Brooklyn in which they actually reside.

TABLE 73

SUMMARY

Distribution of Male Workers Employed in Erie Basin District

Residence.	
Manhattan above 14th Street	2.1%
Manhattan below 14th Street	0.4
Brooklyn	96.1
Queens	0.6
Walk and Carfare.	
Walk	40.8
10 cents or less	53.5
11 cents and more.....	5.7
Time-Distance.	
One hour or less	64.5
61-100 minutes	21.3
101-140 minutes	10.8
141 minutes and more	3.4
Number of Workers.....	490

The group as a whole is homogeneous and its various classes, either of hours, wages or nationalities, are unimportant. (See Table 73.)

Queens—Near the 34th Street Ferry

Several manufacturing establishments recently moved from Manhattan have located in Queens. Some of these are near or easily accessible to the Long Island Ferry operated between Long Island City and East 34th Street, Manhattan. Most of the plants can be reached on foot from this ferry, although surface cars may be had. The only part of Brook-

lyn that can be reached easily is the Greenpoint section, which in many ways is undesirable as a residence district. Hence it is much easier to come to Manhattan than to Brooklyn. Housing facilities in Queens are quite inadequate and only a small proportion of the workers can be accommodated.

TABLE 74

SUMMARY

Distribution of Male and Female Workers Employed in Queens near the 34th Street Ferry

Residence.	Male Workers.	Female Workers.
Manhattan	33.6%	20.6%
Queens	26.5	78.1
Brooklyn	37.5	0.0
Walk and Carfare.		
Walk	30.2	23.3
10 cents or less	38.1	58.9
11 cents and more	31.7	17.8
Time-Distance.		
One hour or less	40.0	57.5
61-100 minutes	27.1	41.1
101-140 minutes	24.4	1.4
141 minutes and more	8.5	0.0
Number of Workers	328	73

The larger proportion of the workers, both male and female, lives in Brooklyn and Queens. Of the males, only 33.6 per cent lives in Manhattan and of the females only 20.6 per cent. Although a very large part of the female employees lives in Queens and a considerable proportion of them pays carfare, and a large group lives within a short time-distance of the factories. In regard to hours of labor (see Table 75), a rather peculiar state of affairs is evident.

The percentage of long day workers who live in Manhattan is larger than the short day workers. This is partially explained by reference to the time-distance groups which show that in time Manhattan is closer than the other districts.

The prominent nationalities are American (30.8 per cent), Italian (11.0 per cent), German (15.9 per cent).

TABLE 75

SUMMARY

Male Workers Employed in Queens near 34th Street Ferry

Residence.	Hour Groups.		
	42-44.59 Hours Per Week.	48-50.59 Hours Per Week.	57-59.59 Hours Per Week.
Manhattan	26.5%	30.0%	56.3%
Queens	17.0	35.0	40.6
Brooklyn.....	54.3	30.0	3.1
Walk and Carfare.			
Walk	34.5	30.0	20.3
10 cents or less.....	38.4	40.0	34.4
11 cents and more	27.1	30.0	45.3
Time-Distance.			
One hour or less	33.4	42.5	56.3
61-100 minutes	24.3	23.7	37.5
101-140 minutes	33.3	20.0	4.7
141 minutes and more.	9.0	13.8	1.5
Number of Workers.	177	80	64

A slightly larger proportion of the Italians live in Manhattan, but about the same proportion of each walk to work; a very much smaller percentage of Americans, however, live within an hour's distance.

This group, although peculiar, still emphasizes the fact

that, if given a chance, the employees are willing to leave Manhattan. A large number of these people, it is worth noting, were employed in Manhattan up to a few months of the time when these statistics were gathered. Yet only a very small proportion now lives there.

Laurel Hills

The section of Greater New York known as Laurel Hills is located in Queens, near the boundary of Brooklyn, on the banks of the slimy, oily Newtown Creek, and is about as forlorn and inaccessible as could well be imagined.

TABLE 76

SUMMARY

Distribution of Male Workers Employed at Laurel Hills

Residence.	Male Workers.
Brooklyn.....	27.9%
Queens	72.1
Walk and Carfare.	
Walk	94.2
10 cents or less.....	5.6
11 cents and more.....	0.2
Time-Distance.	
One hour or less	93.3
61 to 100 minutes.....	2.1
101 to 140 minutes.....	4.5
141 minutes and more.....	0.1
Number of Workers.....	1,018

Two large chemical companies located here collected data for the statistics given, at considerable trouble to themselves. All told, 1,018 cards were returned and among them all only 7.5 per cent were for Americans. The predominant nationalities were Poles (49.0 per cent), Russians (20.7 per cent),

and Irish (17.3 per cent). The great bulk of this labor is of the very lowest, unskilled type. In fact, 77.8 per cent of the total number of workers were earning less than \$12.00 per week. The hours for about 95 per cent of the workers were 10 per day.

It is not surprising, therefore, to find that about 95 per cent of the employees walk to work, and that nearly one-half of this number live within a half-hour's walk of the works. Of the other grades of employees, who are better paid, and a few of whom have slightly shorter hours, the tendency to scatter away from the factory is observed.

These foreign laborers, Poles, Russians—mostly Jews—and Irish, live very near their places of work and very few of them go even so far as to live in adjacent colonies of their own people. In this neighborhood there is great need of more decent houses and transit facilities are lamentably lacking. Although reached by navigable water and surrounded by excellent labor supplies, Laurel Hills remains a forlorn and unpromising section of the city.

Mt. Vernon

Mt. Vernon presents a very interesting study in the distribution of employees, and in some respects occupies a unique place among the examples that are here cited.

The city of Mt. Vernon is not primarily a manufacturing center. It is a suburban town, with a population largely dependent on New York City, composed of the salaried classes. The property is high in value and not well adapted to the requirements of a working population. Nevertheless there have recently been moved to Mt. Vernon from New York City, three important establishments, from two of which complete data have been obtained. Both are engaged in the metal trades; one works short hours, the other long hours; the one employs skilled metal workers, the

other a fair grade of mechanics, the former being on the whole somewhat better paid. In both establishments, the nationalities are widely but equally varied.

It will be noted in Table 77, that 20.4 per cent of the total live in Manhattan, 24.2 per cent in the Bronx, and 46.1 per cent in Mt. Vernon; that 44.1 per cent walk to work, that

TABLE 77

SUMMARY

Hours of Work and Distribution of Male Workers Employed in Mt. Vernon

Residence.	Hour Groups.		
	48-50.59 Hours Per Week.	54-56.59 Hours Per Week.	All Workers.
Manhattan	29.4 %	7.1 %	20.4 %
Bronx	28.6	17.6	24.2
Mt. Vernon.....	31.7	69.4	46.9
Walk and Carfare.			
Walk	27.0	69.4	44.1
10 cents or less.....	35.7	25.9	31.7
11 to 20 cents.....	27.0	4.7	18.0
21 cents and more....	10.3	0.0	6.2
Time-Distance.			
One hour or less	36.5	76.5	52.6
61-100 minutes	4.0	3.5	3.8
101-140 minutes	19.1	10.6	15.6
141-180 minutes	40.4	9.4	19.5
181 minutes and more.	14.3	0.0	8.5
Number of Workers.	126	85	211

52.6 per cent take less than one hour in going to and from work. On the other hand, the very extraordinary proportion of 28.0 per cent, over one-quarter of the total number, use over two hours and twenty minutes. Even more sur-

prising is the length of time spent on transportation in a few cases, which is as high as six (6) hours per day.

Upon careful comparison of the two groups, as may be made with the classification showing hours of work, interesting results are obtained. (See Table 77.) There is no doubt that the working day is here the fundamental factor. It is quite inconceivable, that if the shorter day were lengthened, to one equal in length to the other, men would still consume from four to six hours in merely getting to work. The nationalities are similar and the differences in wages paid are very small.

The condition of these workmen in Mt. Vernon emphasizes the importance of adequate housing facilities. One of the manufacturers complained that he could not get the best labor on account of this deficiency. This, of course, is inevitable, for no good workman cares to spend so much of his time doing nothing, especially while riding on uncomfortable cars.

Suburban Factories

Several concerns located at suburban points throughout the city are grouped here as Suburban Factories. All are in Greater New York, but located in the outskirts. One is in Brooklyn, in the 24th Ward, about 8 miles from Brooklyn Bridge; one is in Greenpoint; one in Queens on the water front, but midway between Long Island City proper and Astoria; one is at College Point; and the last in the Bronx. Although in widely differing parts of the city, it will be recognized at once that these places have one feature in common, namely, a suburban character caused either by actual distance or poor transit facilities. The distribution of the employees among the boroughs by residence is shown in Table 78.

TABLE 78

SUMMARY

Distribution of Residences of Male and Female Workers in Specified Suburban Factories

Residence.	Males.				
	(1) Brooklyn. ¹	(2) Brooklyn. ²	(3) Queens. ³	(4) Queens. ⁴	(5) Bronx. ⁵
Manhattan	12.1%	4.1%	9.0%	0.4%	32.3%
Brooklyn	86.7	87.3	26.1	0.7	4.6
Queens	1.0	6.8	64.2	0.0	1.5
Bronx	0.2	1.8	0.7	0.0	50.8
College Pt., Queens	0.0	0.0	0.0	94.9	0.0
Queens, elsewhere	0.0	0.0	0.0	4.0	0.0
Jersey	0.0	0.0	0.0	0.0	3.1
Westchester Co.	0.0	0.0	0.0	0.0	7.7
Number of Workers ..	497	220	134	448	65

	Females.				
	(1) Brooklyn. ¹	(2) Brooklyn. ²	(3) Queens. ³	(4) Queens. ⁴	(5) Bronx. ⁵
Manhattan	1.4%	0.7	0.0%	1.1%	0.0%
Brooklyn	97.9	87.7	0.0	0.0	0.0
Queens	0.7	11.6	0.0	0.0	0.0
College Pt., Queens	0.0	0.0	0.0	84.9	0.0
Queens, elsewhere	0.0	0.0	0.0	14.0	0.0
Number of Workers ..	142	406	..	172	..

¹ Located in Brooklyn, 25th Ward, about 8 miles from the Brooklyn Bridge. Manhattan is accessible for a 5 cent fare by a very fast line of trolleys. The entire time from this factory to Manhattan is less than one hour. The surrounding section is an admirable one for working men. Hours per day, 10½; per week, 60.

² Located in Greenpoint, Brooklyn. Manhattan is accessible by ferry, fare 5 cents, and within twenty minutes. It is relatively closer in time than Queens, which is not less than twenty minutes walk, or about 5 minutes by car. However, the adjacent part of Queens furnishes no very good residential neighborhoods for working men. The

It will be noted from the foregoing facts that none of these establishments is so far from Manhattan as to absolutely prohibit the employees from living there. In one or two cases the unattractive neighborhoods would seem to encourage a Manhattan residence. In view of these illustrations there seems to be no ground for the view that workmen love to live in the very heart of the most congested section of Manhattan. This view would seem to be an *à priori* error. The facts are further illustrated in Table 79.

The facts that in establishment (1), 68.2 per cent of the employees ride to work and that still 86.7 per cent live in

immediate vicinity is an excellent neighborhood for cheap houses. Hours per day, $9\frac{1}{2}$; per week, 56.

³ Located in Queens, on the East River waterfront, about midway between the 34th St. Ferry and Astoria. Manhattan can be reached only by car and ferry, and is at least 40 minutes distant; fare 10 cents. Brooklyn is more easily reached; twenty minutes distant; fare 5 cents, although usually another fare is required to carry the workman to the more desirable residence districts. A twenty minute walk is a possible alternative. The immediate vicinity of this factory is forbidding, although there are many cheap houses; cheap in more senses than one. Hours per day, 9; per week, 50.

⁴ Located at College Point, Queens. This is the most suburban of all the factories considered in this group. It is fully an hour and a quarter from Manhattan, including a long car ride and ferry trip at a cost of ten cents. Brooklyn offers no inducement and is 50 minutes distant. At College Point itself there is a scarcity of houses, especially at a low rental. However, the immediate neighborhood or that accessible by a short car ride is attractive. A long ferry ride to Manhattan, for 10 cents, may also be made, but the trips are at long intervals and the time consumed is about forty-five minutes. Hours per day, 10; per week, 58.

⁵ Located in the Bronx, comparatively near Manhattan, it is in fact very easily accessible for five cents and a quarter of an hour's car ride. The immediate vicinity is building up with tenements of the familiar East Side type, and this offers no special inducements beyond convenience in time or saving in carfare. The beautiful and attractive suburban towns of lower Westchester are accessible from this point. Hours per day, 8; per week, 44.

TABLE 79

SUMMARY

Carfare and Time-Distance of Male and Female Workers in Specified Suburban Factories

	Males.				
Walk and Carfare	(1)	(2)	(3)	(4)	(5)
Walk	31.8%	69.6%	53.7%	95.3%	43.1%
10 cents or less	63.4	22.7	35.8	3.6	16.9
11 to 20 cents	4.8	5.9	7.5	0.9	27.7
21 cents and more	0.0	1.3	3.0	0.2	12.3
	Females.				
Walk	65.5%	75.6%	0.0%	86.0%	0.0%
10 cents or less	33.1	22.7	0.0	12.8	0.0
11 to 20 cents	1.4	1.7	0.0	1.2	0.0
21 cents and more	0.0	0.0	0.0	0.0	0.0
	Males.				
Time-Distance.					
One hour or less	70.0%	76.8%	64.9%	97.1%	52.3%
61-100 minutes	16.9	13.2	22.4	0.9	24.6
101-140 minutes	10.9	7.3	10.5	1.1	9.2
141-180 minutes	2.0	2.7	2.2	0.9	9.3
181 minutes and more ...	0.2	0.0	0.0	0.0	4.6
	Females.				
One hour or less	87.3%	89.9%	0.0%	90.7%	0.0%
61-100 minutes	8.5	7.4	0.0	6.4	0.0
101-140 minutes	2.8	2.7	0.0	1.7	0.0
141-180 minutes	1.4	0.0	0.0	1.2	0.0

Brooklyn, and only 12.1 per cent in Manhattan, substantiate the thesis that workingmen do not wish to live in the congested districts or in Manhattan. Similar conclusions hold in regard to the other establishments.

The same tendencies in relation to hours and wages, that have been found in Lower Manhattan and in other places, are in evidence in these establishments. They indicate that the conclusions drawn heretofore apply to all groups, however small, and not to a majority which has, in the grand total, weighted out of existence a minority to which these conclusions do not apply.

An examination of the nationality groups in Table 80, although these are sometimes numerically small, reveals tendencies similar to those found elsewhere. In factory (1) there are a number of Italians and Jews. In spite of the fact that the great proportion of the recent immigrants of these peoples live in Manhattan, the workers in this plant do not live there but they do live near their place of work.

TABLE 80

SUMMARY

Nationalities and Residence of Workers in Suburban Factory (1)

Residence.	Nationalities.		All Workers.
	Italians.	Jews.	
Manhattan above 14th St.	2.7%	1.0%	2.4%
Manhattan below 14th St.	14.3	21.4	9.7
Brooklyn.....	82.4	77.6	86.7
Queens.....	0.6	0.0	0.0
All Workers.....	36.6	19.7	100.0

This group of factories, although widely separated in location, has one feature in common, namely, distance from Manhattan. The results of our examination suggest the conclusion that manufacturers in suburban sites within accessible distance of Manhattan *do* remove their workmen from the congested districts, and moreover, that the work-

men, when given the chance, *prefer* to live in the less crowded sections. This is true even of the much-maligned Italian and Jew.

The proprietors of these factories will admit no difficulty whatever, past or present, in securing all the labor they want. Their only difficulty, they claim, is insufficient housing facilities for the workmen already employed in their plants.

Central Brooklyn

Two factories, not located in the suburbs, but in the central part of Brooklyn are considered here. One is within a stone's throw of the Long Island Station, Brooklyn, with all parts of Manhattan easily accessible by the subway. The other is in a central, better-class residential district of Brooklyn, with excellent surface and elevated facilities, scarcely a half-hour from Brooklyn Bridge.

The data given in Table 81 need little comment. They tend to corroborate the conclusions already drawn from the group of suburban industries. In each case Manhattan is easily accessible. In the one establishment, which is near the subway, there are many Italians and Jews. Again we find that they do not live in Manhattan. This establishment, (1), in addition to having a large number of Italian and Jewish workers, is a clothing factory, the ear-mark *par excellence* of congestion. Although the returns are not especially full, being only about 15 per cent of the total number of employees, the employer has stated that they are representative. There is indicated a decided disposition on the part of the employees to live outside of Manhattan.

TABLE 81

SUMMARY

Distribution of Male and Female Workers Employed in Central Brooklyn

Residence.	Males.	
	(1) Near Subway.	(2) Residential Brooklyn.
Manhattan.....	7.4%	1.5%
Brooklyn.....	91.9	86.4
Queens	0.7	9.1
Jersey	0.0	2.3
Nassau County.....	0.0	0.7
Number of Workers.....	135	132

	Females.	
	(1) Near Subway.	(2) Residential Brooklyn.
Manhattan.....	0.0%	0.7%
Brooklyn.....	100.0	91.8
Queens	0.0	7.1
Jersey	0.0	0.2
Bronx	0.0	0.2
Number of Workers.....	90	831

Walk and Carfare.	Males.	
	(1) Near Subway.	(2) Residential Brooklyn.
Walk.....	51.9%	49.2%
10 cents or less	48.1	43.2
11 to 20 cents.....	0.0	4.6
21 cents and more.....	0.0	3.0

	Females.	
	(1) Near Subway.	(2) Residential Brooklyn.
Walk	65.6%	46.6%
10 cents or less	34.4	52.5
11 to 20 cents	0.0	0.7
21 cents and more.....	0.0	0.2

TABLE 81.—(Continued.)

Time-Distance.	Males.	
One hour or less	81.5%	78.0%
61-100 minutes.....	10.4	13.6
101-140 minutes	6.6	6.1
141-180 minutes	1.5	2.3
	Females.	
One hour or less	78.9%	78.6%
61-100 minutes	14.4	17.0
101-140 minutes	6.7	3.4
141-180 minutes	0.0	0.8
181 minutes and more	0.0	0.2

* * * * *

In summarizing the mass of information which has been presented in Chapters V and VI, several points of considerable importance as bearing on the problem of congestion should be emphasized. Chief among these is the overpowering weight which the location of the place of work has upon the residences of the workers. In each of the various groups, in the outlying places as well as in Lower Manhattan, the workers always exhibit a distinct tendency to live in the immediate vicinity of their places of employment. In the most congested districts a large proportion of them find it impossible to secure adequate or comfortable living quarters. Hence we find that the workers employed in Lower Manhattan take on the average a longer time in getting to and from work than the workers in any other group. Nor do we find that the workers employed near Manhattan show any tendency whatever, that could be interpreted as indicating a preference for the congested districts. If, therefore, this mass of evidence has any weight, either by reason of its amount, or its representativeness, the oft-repeated theory of congestion—that it is the result of

the preference of the people, the gregarious instinct—is disproved.

Among the various industrial factors which have been segregated and their influence studied, the length of the working day or week seems to be of special importance. The constant and close relation which has been found between the length of the working day and the distribution of the workers, is quite remarkable. It would scarcely have been a surprising discovery to have found, that twelve-hour workers lived nearer their place of employment than eight-hour workers. But interest and importance at once attaches itself to the discovery, as first made in the group of workers employed below Fourteenth Street in Manhattan, that a half-hour added or subtracted from the working day can be easily measured in the distribution of the workers. Here again the intense congestion of Lower Manhattan brings this tendency into boldest relief, but it should not be forgotten that it is found in almost every group, and in each locality however remote from the congested districts.

It would be an almost meaningless truism to state that it is the poor who live in the congested districts. It would be quite useless to contend that congestion is due to low wages. The material that has been analyzed here brings to light the important discovery that not only is it the workers earning low wages that form the congested population, but that with each additional dollar in the weekly pay envelope, the distance from the place of employment is increased, and by so much is congestion decreased. This does not at all mean that an arbitrary raising of the wage scale or any part of it would solve the problem or ameliorate the present conditions. It means merely as wages increase fewer and fewer of the workers must live in the congested districts. Not because they do not prefer to live near their work, but because they find those places occupied by others

whose necessity is greater than theirs, and because their rising standards force them to seek less crowded and better accommodations.

The influence of immigration and the distribution of the various nationalities have been carefully considered. It was quite evident in Manhattan that large numbers of our immigrant people live very near their places of employment and in the congested districts. In view of the fact that our foreign population is the most unskilled, and therefore, the lowest paid, and that it is employed in industries working the longest hours, the tendency to live in congested districts near the work places cannot occasion very great surprise. This tendency—and the fact that aliens form the largest part of our most congested population is admitted—has been frequently seized upon as the explanation of congestion, and hence these theorists have logically enough demanded restriction of immigration as a remedy for congestion. However, if congestion were due to the desire or willingness of our alien population to live in congested districts, we should expect those employed within a reasonable distance of Manhattan to make every effort to live there. But this is exactly contrary to the facts as brought out in the preceding study. The Italians, Jews and Slavic peoples, who have oftenest been indicted for congestion, have proved themselves innocent and their positive unwillingness to live in Manhattan, when escape is offered, is evidenced by every group of workers in the factories outside of Lower Manhattan.

Throughout the various groups that have been studied, the women workers have uniformly responded to the same industrial influences as the men. Both hours of work and wages have had the same effect upon the distribution of the women workers as upon the men. These differences have, however, been found, that the men live uniformly at

a greater distance from their place of employment than the women, and that the tendencies which were so strong in the case of the men operate with less strength in the case of the women.

These tendencies, which need not be dignified by the name of laws, may be formulated as follows:

A working population tends to live in the immediate vicinity of its place of employment, although extreme congestion of population forces workers to seek homes at greater distance from their work places.

The distribution of a working population is greatly influenced by such industrial factors as hours of work and wages. The degree of distribution may be termed residence-mobility.

The residence-mobility of a working population varies inversely with the length of the working day or week. The longer the working day the intenser the congestion.

The residence-mobility of a working population varies directly with the wages of labor. The workers earning the lowest wages are the most congested.

The nationality or race of the workers has no appreciable effect upon the residence-mobility of a working population.

Female workers tend to live nearer their places of employment than male workers. Female workers, therefore, exhibit a less degree of residence-mobility than male workers.

The factors influencing residence-mobility seem to operate with less vigor in the case of female workers than in that of the male workers.

CHAPTER VII

CONCLUSIONS AND REMEDIES

IN order to bring together in compact form the evidence upon which my conclusions are based, I shall briefly summarize the preceding chapters.

The importance of New York City as a center of population rests primarily on the natural advantages and peculiar character of its site. As the direct result of the natural position of the city it was particularly benefited by the opening of the Erie Canal and the development of steam transportation. Thus the port of New York is the natural gateway to the continent.

In the 19th century there began in the United States, as well as in other countries, a movement of population to the cities. In New York City, and especially Manhattan, it has been greatly accentuated by the arrival of crowds of immigrants. Here the phenomenon of concentration, because of geographical limitations and the lack of transit facilities, has finally become a phenomenon of congestion.

In consequence of the commercial advantages of the port and its wonderful transportation facilities, ocean-going and inland, New York City has become the market-place of the New World. Owing to the same causes, together with the abundant and diversified labor supply, it has become the chief manufacturing center of America. Hence a second kind of concentration has been going on, namely, that of factories, which has finally led to congestion in the Borough of Manhattan.

Congestion of population and congestion of manufactures are, however, problems quite distinct. While each is the result of similar causes, congestion of manufactures has become an additional and inciting cause in the further concentration of population, inasmuch as it requires large additions to the working population. Concentration of manufactures, thus has a greater cumulative effect than a mere aggregation of people. It is the immediate problem which this essay has attempted to investigate. The attempt has been made to trace the effects of the concentration of manufactures on the congestion of population. This problem involved two distinct questions: first, why are manufacturing plants located in New York City, especially in Manhattan? and second, how are the workers distributed about these factories? For the solution of neither of these problems were data available, nor did *à priori* methods suffice. In order to deal with the problem of the causes of the location of industries, it was found to be advantageous to divide all manufacturing establishments into two classes, primary and secondary. For each group an inquiry was made among the manufacturers themselves, as to the principal reasons for the locations of their establishments.

The principal factors determining the location of industries were found to be the following:

The Advantages of the Market.

Inertia.

The Labor Market.

Transportation Facilities.

Industrial Betterment.

The Effect of Property.

Some of these factors are distinctly tending to bring factories into the city, and to retain those which are already located there. The causes which are almost exclusively so directed are the advantages of the market and inertia. The

strongest factors tending toward removal are the effects of property and the attempts at industrial betterment. Both of these are active and powerful. The two other factors, namely, transportation facilities and the labor market vary in different industries; the former seems to be no longer an especial advantage to the New York manufacturer; the latter is in many industries a considerable asset. If the situation has been correctly analyzed, there seems to be ample reason why factories should be removing from Manhattan and seeking sites in the suburbs, and why still others should be moving entirely away from Greater New York. That these assumptions are correct is evidenced by the large numbers of plants and factories which have removed from the city.

The second part of this inquiry dealt with the distribution of workers about the factories. In each case a clear and close dependence upon the place of work was evident. The workers evidently preferred to live as near the factories as they could. Marked differences were found to exist between the workers employed in the congested districts of Manhattan and those employed in factories outside of Manhattan. The latter grouped themselves much more closely about the establishments than the workers in Manhattan. Determining factors in the distribution of the workers were the hours of work and wages. Nationality or race, on the other hand, did not play an important part. So far as could be determined, the Italians and the Jews live as near their work as they can. Little Italy and the Ghetto, in most congested Manhattan, seem to have little effect on the workers employed in the other boroughs.

As a result of these conclusions it is not too much to infer that there is a strong movement of manufactures from Manhattan. This movement may not be strong enough to entirely rid Manhattan of factories, but it will, no doubt, bring

about a considerable change in the industrial complexion of the city. It further seems evident that the workers will in the future as they have in the past, endeavor to live near their places of work. The workers will follow the factories to suburban locations and will desert the congested sections of Manhattan for the less crowded outlying districts.

The facts presented suggest many remedies for the problem of congestion of population. Many solutions have been urged, some of which our study of the industrial phases of congestion has emphasized. The most important of these are:

- (1) Improved transit facilities.
- (2) Restriction of immigration.
- (3) Limitation of the working day.
- (4) Introduction of the minimum wage.
- (5) Prohibition of tenement manufacture.
- (6) Removal of the slum population to farm colonies.
- (7) Education of the people.
- (8) Erection of cheap houses in the suburbs.
- (9) City planning, including the segregation of factories.
- (10) Founding of suburban industrial centers.

(1) *Improved Transit Facilities*

The various means of transit as a factor in the distribution of the working population have been referred to as little as possible heretofore. Almost no use has been made of the large amount of material furnished on the schedules returned by workers concerning the means of transit used in getting to work. This apparent neglect of the subject of transit is due, not to a lack of appreciation of its importance, but rather to a recognition of the vastness and difficulty of the problem. Indeed, another monograph might easily be devoted to that subject alone. Public officials of the city and state who have for years been studying this problem have scarcely attained a satisfactory solution.

Each new addition to the already widely varying methods of transit seems to have been made just too late, and before its completion the need for other facilities has begun to press upon public attention and to demand official action. It is superfluous to recount the need or to urge the improvement of rapid transit in and about New York City. The pertinent question now to be solved is how new subways, tunnels and bridges are to be paid for. This is a problem in municipal finance and scarcely comes within the scope of this essay. The study which we have made may, however, indicate where additional lines of transit may be added, so as to assist in distributing the factory workers of the crowded manufacturing districts. But a consideration of the effects of rapid transit upon the congested population especially in lower Manhattan may be of value.

The data collected from workers in lower Manhattan, show that a very small proportion of them reside in the Bronx. This is also true of Manhattan above 14th Street (see Table I). In fact, only 5.5 per cent of the workers below 14th Street reside in the Bronx, and 2.9 per cent of those working in other parts of Manhattan. The proportion of factory workers residing in Westchester County is negligible. On the other hand, large numbers of all classes of workers, even those working the longest hours and receiving the lowest wages, live in Brooklyn and Queens. 23.4 per cent and 4.6 per cent respectively of the workers in lower and upper Manhattan, lived in Brooklyn and 3.1 per cent and 2.8 per cent lived in Queens. Moreover, among the establishments located within easy distance of the Jersey ferries, there were very large proportions of employees residing in Jersey. The conclusion seems clear that the workmen, especially in downtown Manhattan, very much prefer Brooklyn, Jersey and Queens, to the Bronx. And yet, the subway and elevated roads,

both on the East and West sides, give as good and perhaps quicker service to the upper parts of the city than do the Hudson Ferries and the elevated or surface lines operating to the West and East.

Not only is it obvious that workers in Manhattan under the present conditions have not found the Bronx and the upper extremes of Manhattan desirable, but the natural location and geographical condition of the island hamper the development of that section. The difficulty and expense attendant upon the building of a north and south subway in Manhattan is well recognized. But even when completed, a long, uncomfortable and tiresome journey lies before the downtown worker in going to and from his work. The tunnels under the Hudson River have provided very quick service to Jersey, where workmen can secure even more congenial homes than in Manhattan or the Bronx. The tunnels have not been in operation long enough to effect the shifting of population which they may in time accomplish. It seems clear, however, in view of the wide stretches of undeveloped land in New Jersey, in Brooklyn and in Queens, and in view of the apparent willingness of workmen to live in these sections, that the greatest effect upon the congested population of Manhattan will result from the building of additional East and West transit lines.

No reliable statistics are available to enable us to gauge the effect upon the distribution of the population in the most crowded districts to be attributed to the opening of the subway or the building of the Williamsburg Bridge. That both of these new means of communication have caused a considerable shifting of the population of the city is evident. The number of new buildings and the rise of real-estate values along the Broadway and Lenox subways, and the growth and development of East New York, as a direct result of the Williamsburg Bridge, are well known

phenomena. But so far as it is possible to judge, there is no apparent decrease in the population of lower Manhattan. On the other hand, there has been a very apparent increase in all the outlying districts which have been brought into closer communication with the heart of the city.

A very large proportion of the commuters are clerical and salaried workers, and an exceedingly small portion can be classed as laborers or factory workers. This disparity was shown by the comparison which was made of the factory workers in Manhattan and the employees of the Metropolitan Life Insurance Company. This condition of affairs is due to many causes, foremost among which is the high charge for commutation into New York. The analysis of our data has shown clearly how few of the factory workers pay over twenty cents per day in getting to and from work. Usually a city fare is required after leaving the railroad. Commutation at the rate of ten cents per day will scarcely take the passenger out of sight of the skyscrapers of Manhattan. It is evident that at present few factory employees make use of commutation privileges. With cheaper rates they would doubtless do so. Low rates might be furnished to workingmen as is done in many places in Europe, by running special trains during certain hours. These trains are usually not as good as the regular trains, and are usually run at earlier and later hours. It is not in the least doubtful that many workmen would be only too glad to take advantage of reduced fares, if they could be taken in fairly quick time to distant and inexpensive localities.

The unfortunate accompaniment of the new and improved means of transportation is that the housing conditions and often the living conditions characteristic of the most crowded districts of Manhattan are being reproduced in the suburbs. Tenement houses, with small, cramped apartments, often devoid of light and air, three, four and



even more stories in height, are being erected in sparsely populated sections. Often these tenement buildings are erected in the midst of pastures and open fields. Rapid transit alone, then, has not remedied congestion, but has rather spread the overcrowded and unhealthy conditions. It may be doubted whether rapid transit, unaccompanied by other measures, can remedy the evils of congestion of population. Additional means of rapid transit are sorely needed, but they form a partial and incomplete solution for the problem of bad living conditions in New York City.

(2) *Restriction of Immigration*

The distribution of workers employed in factories in Manhattan and other sections of Greater New York shows that there is a tendency among certain nationalities to gravitate to the congested districts.¹

The Italians and Jews from southeastern Europe have in recent years contributed the largest quota to our immigrant population. Unable to speak our language, largely unskilled and in humblest circumstances, the advance guard of these immigrant nationalities found a ready occupation in the clothing trades, where knowledge of English was wholly unnecessary and skill was easily acquired. Working early and late, these foreigners made their homes in groups or colonies in lower Manhattan, in close proximity to the factories. With the influx of large numbers of these same alien peoples, the colonies in lower Manhattan grew into the Italian and Jewish quarters. Their standards differ from those of the average American, and they crowd into tenements in the congested districts under conditions hardly decent. But if given the opportunity, there is little doubt

¹ See Chapter V, especially distribution of workers employed in lower Manhattan, as classified by nationalities. Pp. 136 *et seq.*; tables V and VI.

that these same aliens will leave the congested districts and seek better homes in the suburbs.

On the other hand, there is a constant stream of new immigrants pushing and crowding their way into the lower ranks of the workers of Manhattan, and not only filling up the room left vacant but overcrowding the already insufficient dwellings. These new arrivals with low standards and self-sacrificing ambitions create the most difficult problem.

One remedy urged on every hand, for this, as for a variety of social ills, is the restriction of immigration by exacting higher and stricter qualifications for admission to this country. The salutary results in different directions of more adequate restriction cannot be doubted; but how the problem of congestion would be vitally or even greatly affected by it is a different matter.

Under more stringent immigration laws, many of the lowest classes of immigrants would, no doubt, be kept out of the country. Some of these groups are to-day living in the congested districts—how many we do not know. The mere lessening of the volume of immigration would somewhat affect congestion, but even then we should have no guarantee that the more desirable classes of aliens would not live in the crowded districts. The attraction of the factories would still remain and under prevailing conditions it is probable that just as large a *proportion* of workers would desire to live near them. While the restriction of immigration might to some extent relieve the worst crowding and slightly raise the standards of the immigrants as a class, it is not apparent that it would prove a vital, far-reaching remedy for congestion in New York City.

However, something might be done to relieve the situation by the establishment of an efficient and extensive system of distribution of newly-arrived immigrants, either by

private or governmental agencies. Some way might be found of sending immigrants to labor markets where the demand is keener than in New York City, of distributing new arrivals over wider areas than at present and of encouraging their settling in outlying sections. Suburban colonies composed of the various nationalities might be possible.

(3) *Limitation of the Working Day*

The distribution of employees in factories in New York City, shows a close relation between hours of labor and the distribution of the workers by residence. This relation seems so intimate as to suggest that the long day necessitates the nearby residence of the workers, while a short working day permits a wider distribution by residence.

Theoretically, then, a simple and apparently effective remedy for congestion would be the shortening of the working day. This solution which sounds so easy and so feasible, is in fact, one of the most difficult social reforms to put into practice. While it cannot be said to be absolutely impossible of attainment, it is one of the most distant goals of a progressive social program. Many attempts have been made to limit the working day, but beyond some success in a few states in curtailing the hours of children and women, and of certain dangerous trades, nothing has been done in this country. The current interpretation of the law seems to have set up an almost insurmountable obstacle in this direction.¹

It is doubtful, however, whether the shortening of the working day would more than palliate the real congestion problem. There would doubtless always be a large proportion of the workers in downtown Manhattan to whom

¹ A rather interesting fact in this connection is that the average working day in New York City is shorter than in the state as a whole.

the convenience of a nearby residence would be the paramount consideration. A shorter day undoubtedly makes it possible to live at a considerable distance from the place of work. A shorter working day enforced by law might, therefore, better conditions to some extent. This proposed solution of the problem, however, is not fundamental. It would not prevent a recurrence of overcrowding due to increase of population.

(4) *Introduction of the Minimum Wage*

A reform which has been urged in many quarters but which has met with little public favor, is the establishment by law of a minimum wage. The correlation shown between wages and residence distribution, makes it pertinent to consider how far the establishment of a minimum wage would affect the problem of congestion.

Economic history is replete with unsuccessful attempts to regulate wages, and but few successful results are on record. At the present time any effort to regulate wages seems even less likely to succeed than any other project of social reform. Wages are not regulated by what men need or by what men ought to have, but by what the laborers are worth to the employers. Although wages in certain industries have been forced to very low levels, on account of the influx of cheap foreign labor, it is difficult to imagine any practical or feasible plan for regulating the wage level by law.

Any problem involving the minimum wage as a solution of the evils of congestion, is open to the criticism which was urged in the case of a limitation of the hours of work. The prohibition of the lowest wages will merely raise the wage scale, or weed out the most incompetent. The lowest paid workers will still be forced to remain in the immediate vicinity of their places of employment, while the better paid

workers, who are subjected to less stress, will scatter to more distant parts. The result will be simply a change in nominal wages, and the comparative status of the workers will remain as before.

The minimum wage would affect at best but a small proportion of the great body of workers. It would not greatly affect the status of the great mass of workers, nor would it greatly mitigate the rigor of over-crowding and congestion.

(5) *Prohibition of Tenement Manufacture*

One of the evils commonly associated with tenement houses, bad living conditions, and an over-worked and over-crowded alien population is sweating and tenement manufacturing. Although often confused, these two industrial excrescences are quite distinct. "Sweating" is a contract system in vogue among branches of manufacture which do not need to complete all the processes in one factory, but are able to parcel out unfinished materials for their final or partial completion. This unfinished work is taken by contractors and may or may not be manufactured in the tenements. As a matter of fact, the typical "sweat shop", so-called, of to-day, is a small and crowded shop, to which the contractor brings his materials and in which he drives his employees at top-speed, through a long day.

Tenement manufacture is most prevalent in the poorest and most congested districts. An almost innumerable variety of articles are manufactured in the tenement houses, the work being done largely by women, often assisted by children. A considerable portion of the women engaged in this work are, no doubt, wholly dependent upon it for their slender livelihood. The great majority, however, merely endeavor to eke out the meager earnings of other members of the household, and are willing to work for the extremely

low rates of wages paid in these industries. Under these conditions, it is obvious that the tenement workers must live close to the place where this work is given out. It has been said, therefore, that the prohibition of this work in the tenements would materially lessen the desire for, or need of residing near the factory, that is, in the congested districts.

In view of the study of the causes of the location of the clothing industry in the city, and also of the principles of distribution of the working population, it would seem that tenement manufacture is not an important cause of congestion. At best, tenement production is a parasitic industry, subsisting upon the weakest of a vast working population. It is safe to say that the opportunities for tenement work will follow any shifting of the population and that the contractors will seek in other sections as they have already done in the Bronx and in Brooklyn, those who, for the sake of a pittance, will turn the home into a workshop.

The prohibition of tenement manufacture should be earnestly sought because, in the long run, it will raise the standards of many of our poorest workers. The wage scale in many industries will, perhaps, be raised. But the cessation of home work cannot greatly affect the distribution of the large population in the crowded districts.

(6) *Removal of the Slum Population to Farm Colonies*

The most Utopian scheme advanced for the solution of the congestion problem is the removal of large numbers of people from the crowded parts of New York to the smaller towns and even to the farms throughout the state and country. This is a proposal which involves the artificial resistance of a strong, almost irresistible, economic movement of population towards New York City; it proposes to set up an artificial counter movement. The very basis of the proposal is weak.

It is unnecessary to consider seriously, or at length, the practical obstacles to the removal of a group of people from Manhattan, in a number sufficient to alter appreciably conditions, to say nothing of solving the problem of congestion. To secure the consent of the people, to find places for them elsewhere, to provide work, quite neglecting the matter of the expense, would be gigantic if not impossible tasks. And even conceding that such a plan might be carried out, what would prevent a repetition of the old conditions? Although similar operations have been successful on a very limited scale, the most vivid imagination can scarcely picture success sufficient to afford the congested population of New York City adequate relief.

(7) *Education of the People*

The education of the people is to-day one of the potent factors making for social reform. Great social movements are being carried forward to an apparently successful issue by persistently and consistently telling the people what ought to be done and how to do it. No doubt the education of the masses as to what are their needs, and their instruction as to ways to meet them, will become increasingly efficacious in the improvement of living conditions.

The Exhibit of Congestion of Population, and later the Tuberculosis Exhibit, both at the Museum of Natural History, together with the smaller traveling exhibits, have made a deep impression upon the mass of the people. The Congestion Exhibit brought forth meager fruit where here and there a house-wife realized the unhealthfulness of her home surroundings and sought relief in the suburbs. It failed to drive home its lesson, because it failed to propose an efficient and fundamental remedy.

Much, however, can be done through the agency of the schools, evening lecture courses, churches, settlements,

newspapers and a host of other agencies, in setting forth the evils and harmfulness of a residence in the crowded districts. In addition, consideration should be given to the advantages of a suburban home and where these are to be found, what are the costs of living there, and how efficient are the means of communication with the center of the city. In spite of its usefulness, education of the people is a slow process, and it may be doubted whether it will accomplish much in directly relieving congestion. Constant agitation and urging on public attention of some far-reaching and fundamental remedies must, however, precede and accompany their introduction and success.

(8) *Erection of Cheap Homes in the Suburbs*

A considerable degree of success has been attained in many European cities both by private and public agencies in furnishing decent and inexpensive homes for the working classes. In this country efforts in this direction have been confined to private individuals or firms and the results, while not without success, have been meager. A satisfactory solution of the housing problem in New York City is much more difficult than anywhere else in the country. If workmen's dwellings are expected to yield a fair return on the investment, success becomes problematical. In spite of these difficulties, some very commendable model tenements have been erected in the city. But as best, a tenement is a poor home.

More than once in the course of my interviews with employers in the suburbs, I have heard complaints that workmen could not get decent houses to live in. The casual observer of living conditions in Brooklyn and Queens is struck by the scarcity of cheap houses suitable for workingmen. And this need is being met only by the erection of tenements such as may be found in the most thickly crowded sections of Manhattan.

The building of good, substantial houses, to be let at low rents, would be a most useful philanthropy. Unless carried out on a very large scale, such an enterprise could exercise but a small effect upon the congestion situation. But in view of the many developments in the suburbs, suited to higher-class patronage, colonies of workmen, within an easily accessible distance of New York City, would no doubt be successful, and would immeasurably improve the living conditions of a great number of people.

(9) *City Planning, including the Segregation of Factories*

It has already been shown that there is a distinct tendency among manufacturers to remove from Manhattan and to locate in the outlying suburbs. Efforts at relieving congestion should seek to further this natural economic movement. We have also discovered that the factory workers are greatly benefited by the removal of manufacturing establishments to the suburbs, and that the tendency is strong to live in the immediate vicinity of their places of employment. The endeavor should be made, however, to prevent the repetition of bad living and working conditions in the suburbs. Important factors in the campaign for the relief of congestion of population in Manhattan are: first, the removal of factories from Manhattan, and their distribution according to some comprehensive plan throughout the outlying suburbs; second, the enactment of laws to prevent the reproduction of bad living and housing conditions in the other neighborhoods. This is city planning.

In adopting methods of city planning suitable to the conditions in New York City, there are certain chief aims to be sought.

First, the districts bordering the water front and other lines of communication, railroads and navigable creeks, are now largely devoted to manufacturing, receiving and dis-

patching freight, and the general uses of commerce. These sections could, then, be reserved for these uses, and the location of factories, warehouses and distributing plants, in other parts of the city prohibited. Within manufacturing areas, the heights of the buildings, their character and condition should be regulated, as well as the proportion of any given area which might be built upon. Unless some such plan as the foregoing be adopted, those manufacturing establishments removing to Brooklyn, Queens, or the Bronx, will speedily invade the residential districts. Indeed, such a tendency can already be observed.

Second, there is crying need for a drastic and efficient building law for the city of New York. For the healthfulness of her citizens, and the protection of their property, stricter building regulations must be demanded. Specific improvements, which suggest themselves as meeting well-known abuses, are the limitation of the heights of buildings, raising the minimum amount of air space required per person, restriction of the proportion of the lot which may be built upon, the improvement of the sanitary requirements and provision for more efficient inspection. The setting aside of large areas for parks, playgrounds, schools, libraries, hospitals and other public buildings, could be made most easily and economically, in advance of the actual needs.

An important feature of any building code should be the recognition of the fact that conditions are different in various sections of the city. It should be clearly recognized that conditions in the suburbs are different, essentially different, from those in the heart of Manhattan, and that they should be made amenable to a stricter and a better code. This principle of a really efficient building law has not been recognized in our present tenement law, and until it is recognized, conditions similar to those in Manhattan will repeat themselves in other boroughs.

Third, if New York is to compete successfully with other seaports and is to keep abreast of the most improved methods of shipping, additional and improved facilities for the handling and transportation of freight must be introduced. Antiquated and expensive methods of handling freight will doubtless give way to speedier and more economical modern methods, such as are in use in South Brooklyn. A part of this problem, namely, the improvement of the water ways and water front in and about the city, can be carried out only by a public agency, that is, by the Federal, State or Municipal authorities. The improvement of Jamaica Bay, which presents great possibilities, and the dredging and deepening of other parts of the harbor are changes which are being urged on many sides. Limited advances in this direction can be brought about by private corporations. We have already seen one such successful attempt at unifying commerce and manufactures at a favorable site on the water front. A similar development would doubtless meet with success, on one of the great railroads.

Last, the part of the great city plan, which is already recognized, is the improvement of the means of communication within the city and between the city and even distant suburbs. With the dispersion and segregation of the factories of the city, the rapid transit problems would be immeasurably simplified. The concentration of a great body of workers in lower Manhattan would be relieved and transit facilities would then have to be provided only for those engaged in trade and commerce. With the distribution of the factory districts to the outskirts of the city, workmen's suburban trains would not need to be operated into the heart of the city. Thus the country districts would be brought into close contact with the manufacturing districts of a great city.

For example, in Paris, where for many decades factories

have been prohibited from running riot over the city, the manufactories are located largely outside of the city wall. Congestion of traffic in the subways and street cars is unknown, and many of the workers eat their lunches in their own homes. There is no great problem there of gathering up the people from the suburbs and carrying them into a highly-congested area during one or two rush hours and then bringing them out again at the close of the day's work. There are no highly-congested districts in Paris, either of population or of manufactures.

No doubt the most difficult part of the foregoing program for relief of congestion of population in New York City to put into practical operation, and the part which would doubtless be subject to the greatest opposition, is the proposal to remove manufacturing establishments from Manhattan and to segregate them in specified districts in the suburbs. However, if I have correctly analyzed the currents of economic movement, certain groups of industries will offer little resistance, beyond the stagnating influences described as inertia. Real-estate interests will doubtless predict dire disaster. But if the steady growth of the city continues, the factory buildings will be only temporarily vacant. Certain other industries will find locations outside of the central city extremely inconvenient, others will find them even advantageous. Such differences could be adjusted without great difficulty.

Many methods might be suggested for forcing the removal of manufacturing establishments. The most efficient means of accomplishing this end are direct legislation, taxation, based either on the heights of the buildings or upon the number of workmen to a given area, prohibition of an increase in the working force, payment of a bonus, or direct compensation for removal. Any one of these alone would perhaps be inadequate.

In spite of the apparent impracticability of these proposals, a sane, thorough-going attempt to induce or compel manufacturers to take their plants out of the city, would not, I believe, be unsuccessful. A similar policy inaugurated in Paris compelled the most objectionable factories to remove at once, and gradually succeeded in getting the others out. No such movement could hope for success if it attempted to remove all of the industries at once. But if, by gradually eliminating the most obnoxious, by raising higher and higher the standards of working conditions for the factories in the crowded parts of the city, by prohibiting the location of more factories, and even by giving a cash bonus when the difficulties, owing to a large equipment, were great, a large part of the manufacturing could be transferred to the suburbs. With the factories would go the employees, and a large part of the people who had formerly resided in congested districts.

(10) *Founding of Suburban Industrial Centers*

In spite of the confidence expressed in the efficacy and practicability of city planning, the most fundamental proposition of which is the segregation of factories, it may appear to some as radical or even unwarranted. To utilize the same economic forces, but in a less imperative fashion, the establishment of suburban industrial centers may be urged. To-day there are numerous examples of large manufacturing plants in the immediate vicinity of New York City, forming small industrial communities. They are on the whole successful, and some of the largest plants in the city or vicinity are so situated. These firms find ordinarily that they have no surplus funds to devote to acquiring land and building homes for their workmen. The land surrounding any new enterprise of this sort is usually acquired by the land speculator, who is likely to build shoddy and inadequate houses.

No matter how undesirable the speculative features of the suburban land development companies are, certain benefits have resulted from their operations. While they no doubt have exacted large profits for opening, developing, advertising and selling suburban areas, and inflated land prices, they have, nevertheless, induced large numbers of people to leave Manhattan and to find homes in suburban districts. They have developed and improved some of the finest residential property in the vicinity of New York City; restricting property, laying out beautiful avenues and parks, and forcing the erection of decent and often beautiful homes. The real-estate companies have not, however, to any very large extent aided the working classes. Their appeal has been directly to the middle and salaried classes. They have, however, affected to a degree the wage earners by lessening the demand for homes in the city. But houses for the working people are still insufficient in the outlying boroughs.

An objection, which may be offered at this point, is that some of the facts cited in an earlier chapter seem to show that any plan involving the removal of factories from the city, cannot be successfully carried out, because workmen will not leave New York City, and will not move to the country. This objection brings forward two very important points upon which the success of establishing suburban industrial centers stands or falls. First, the location must not be far from Manhattan; in fact it must be in the very immediate vicinity. Second, there must be definite and constant, but not patronizing efforts to replace the amusements of the city with adequate substitutes.

The latter point is especially well illustrated by the most notable example of a suburban development along the lines suggested. Letchworth, England, the First Garden City, is the place. This, with some adaptations, could be made to fit very well the conditions of suburban New York. The

most interesting phase of Garden City, touching the problem at hand, is the success which has been attained in effecting the removal of industries from the large centers, particularly London. The advantages offered are cheap rents, low rates, transportation facilities, convenient access to London and a good labor supply, with excellent opportunities for securing additional workers. Living and working conditions are superior to those of other cities, especially to those of London.

The success of Garden City is ascribed¹ to two fundamental considerations, on which hinge the success or failure of such a suburban center. These are: (1) the grouping of industries which will provide employment for all the members of a workman's family; (2) the provision of means of recreation and amusement to take the place of those of the city. These factors distinguish enterprises such as Garden City from numerous unsuccessful attempts to graft a manufacturing establishment onto a rural community, or to make the workers contented to live in the country town where there are no amusements or excitements.

The formation of suburban industrial centers, if worked out in the vicinity of New York City, would simply utilize dynamic forces already present and operating throughout the community. There are two very strong outgoing currents in New York City, the one of population, the other of factories, and yet congestion increases in intensity and manufactures multiply in lower Manhattan. The middle and upper classes are moving to the suburbs. There is scarcely a question but that a model village in the vicinity of New York, planned as above suggested, could easily and rapidly fill its houses with tenants of the salaried city

¹ Mr. W. H. Gaunt, Estate Agent, in conversation with the writer in the course of a visit to Letchworth in the summer of 1908.

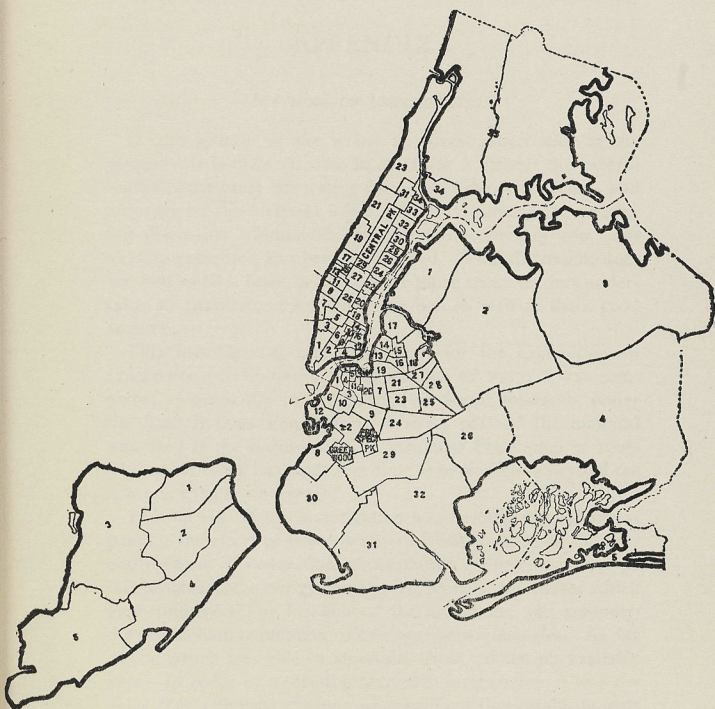
classes.¹ It does not require a sanguine temperament to believe that some industries could readily be induced to move and locate in an attractive and advantageous situation. The discouraging feature is that the number of industries which any one company or any single center could affect would be miserably small. If such an attempt were to have a decided effect upon the congestion problem, a widespread and determined movement would be necessary among people able and willing to carry such projects to a successful culmination.

The problem of congestion of population is of vital importance to the welfare of the City of New York. I have not, in the preceding pages, considered at length the evils resulting from congestion, but these are easily and usually clearly recognized. The difficulties of the problem are also evident. It is necessary, therefore, that any program for the relief and remedying of congestion must be comprehensive to be effective and that it must be prosecuted with vigor. Some of the remedies advanced in the foregoing discussion have been almost useless, others have been inadequate, still others are apparently impracticable. A thorough-going attempt to relieve congestion must unite public and private energies and means, in certain well-defined directions. No one proposal which has been advanced in the preceding pages would summarily end congestion; there must be organized a general, broad, inclusive program of opposition and prevention. The first object should be to prevent the recurrence of crowded conditions in parts of the city not now affected; the second, to ameliorate conditions, in the congested districts; and the last, to root out the evils in the worst sections. City planning, in its full significance, the

¹ Note the example given in the previous chapter in connection with the Metropolitan Life Insurance Company, page 156.

establishment of suburban centers, the provision of low-rent homes for workmen, and the improvement of transit facilities, are the remedies most strongly to be insisted upon. With such a program, constructive in character, the worst evils of congestion might be gradually eliminated.

Chart D



APPENDIX I

METHODS OF INVESTIGATION

IN the opinion of the writer an investigation such as the present one is only valuable in so far as it affords the careful reader opportunity for testing for himself the effectiveness and accuracy of the methods used. For that purpose the following discussion of methods employed in collecting the facts already presented has been introduced. This discussion does not aim to be a brief in defence of those methods, but undertakes to analyze and criticize their bad as well as their good features.

This investigation was undertaken for the Committee on Congestion of Population in the autumn of 1907; it was completed subsequently in the Bureau of Social Research, under the Russell Sage Foundation. A small part of the material was used at the Exhibit of Congestion of Population in 1908. The entire study has since that time extended quite beyond the scope originally anticipated.

The purpose of the investigation was to determine so far as possible the effect of concentration of industries upon the general problem of congestion of population. The two phases of this problem were recognized at once, namely, the causes which have influenced the location of the industries, and secondly, the effect upon population of the location of factories. As far as the writer was able to ascertain, there existed no available data. In order to secure the necessary information, it was decided that a first-hand study of manufacturing establishments should be undertaken. The manufacturers should be questioned as to their reasons for locating their factories in New York City. The study aimed to include other establishments

nearby, which had removed from New York City. The reasons were to be sought. On account of the complexity of the subject, correspondence was not used and all information was obtained by interviews. A schedule was used in these interviews, which aimed to record the reasons for location of the factory and also to discover the distribution of the employees. In the first of these it was fairly successful, in the second it failed signally. The various schedules which were used are given here in full. (See schedules A, B and C.)

SCHEDULE A.

INVESTIGATION OF THE REASONS FOR THE LOCATION OF FACTORIES IN MANHATTAN AND THE BRONX.

Date..... Investigator.....
 Name.....
 Business..... Class.....
 Location in New York City (Street and Borough)..... Date.....
 Previous location if outside of New York within the last 5 years.....
 Name of Proprietor or President..... Residence.....
 Proportion of product used in New York City.... U. S.... Abroad....
 Area occupied..... In New York.....
 If outside of New York within the last 5 years
 (a) Ground area occupied.....
 (b) Approximate number of square feet of floor space in factory.....
 (c) Number of different floors used.....
 Rent.....
 Date of Location

Reasons for locating in New York

Please indicate whether any of the following reasons led to the locating of your industry in New York City, and at exact location chosen and order of importance. (Number on the left side).

1. Accessibility of New York Market.....
2. Saving in rent or cost of site.....
3. Saving in taxes
4. Saving in insurance
5. Better transportation facilities
- (a) Railway rates
- (b) Ocean rates
6. Cheapness of supplies
7. Accessibility of large supplies.....
8. Cheaper labor
9. Cheaper capital

Please indicate whether any of the following reasons led to the removal of your industry from New York City, and to exact location chosen and order of importance.

1. Saving in Rent or cost of site.....
2. Saving in taxes
3. Saving in insurance
4. Better transportation facilities
- (a) Railway rates
- (b) Ocean rates
5. Cheapness of supplies
6. Accessibility of large supplies.....
7. Cheaper capital
8. Cheaper labor
9. Less danger of labor difficulties
10. Large supply of (a) Skilled laborers.....
- (b) Unskilled laborers.....
11. More elastic and diversified labor market.....
12. Better surroundings for your employees.....
13. Personal or family reasons. What.....
14. Any other reasons

[Reverse]

INFORMATION REGARDING EMPLOYEES.

	In New York		Present Location	
	Male	Female	Male	Female
1. Number of employees				
(a) Skilled workers				
(b) Unskilled workers				
(c) Office force, clerks, etc.				
(d) Total				
2. Hours of labor of force.....				
(a) Skilled workers				
1. Hours of work				
2. Rate of pay				
3. Predominating nationalities ...				
(b) Unskilled workers				
1. Hours of work				
2. Rate of pay				
3. Predominating nationalities ...				
(c) Office force, clerks, etc.				
1. Hours of work				
2. Rate of pay				
3. Predominating nationalities ...				

	Male	Female
3. How many of those employed in New York are now employed in your works
1. Skilled workers
2. Unskilled workers
3. Office force, clerks, etc.
4. Total
4. (a) How many of these moved out from New York
1. Skilled workers
2. Unskilled workers
3. Office force, clerks, etc.
4. Total
5. Within what area do your workers live and number of each.		
$\frac{1}{2}$ mile. 1 mile. $1\frac{1}{2}$ miles. 2 miles or over in N. Y.		
(a) Skilled workers
(b) Unskilled workers
(c) Office force, clerks, etc.
(d) Total
6. How many of them have purchased homes?
(a) Skilled workers
(b) Unskilled workers
(c) Office force, clerks, etc.
(d) Total
Steadiness of employment
What proportion of the workers have permanent employment.....
(a) Skilled workers
(b) Unskilled workers
What are the slack times of the year?
" " " busy " " " "
Which of the reasons you suggest still hold and are there any additional reasons?
Are the conditions better than in the city as to light, space, air, sanitation, etc.
Do you make any effort to furnish homes for your workers?.....
If so what provision
If not, did you consider at any time making such provision?
What deterred you from doing so?
Do you make any provision for recreation for your workers?.....
Do you make any provision for education of your workers?
What was the attitude of your workers toward the change?.....
Has any improvement in morals and efficiency of the force been noted since the change?
Remarks

[Reverse]

INFORMATION REGARDING EMPLOYEES.

	Male	Female
1. How many of those employed in Manhattan are now employed in your works?		
(a) Earning over \$2.50 a day		
(b) Earning under \$2.50 a day		
(c) Hours per day		
(d) Predominating nationalities		
2. How many of these moved out from New York?		
(a) Earning over \$2.50 a day		
(b) Earning under \$2.50 a day		
3. In what Boroughs do your workers live?		
(a) Manhattan		
(b) Bronx		
(c) Brooklyn		
(d) Queens		
(e) Richmond		
(f) Jersey		
(g) Other		
Steadiness of employment?		
What proportion of the workers have permanent employment?		
(a) Skilled workers		
(b) Unskilled workers		
What are the slack times of the year?		
What are the busy times of the year?		
Do you make any welfare provisions for your workers?		

These are all on the same general plan. Schedule A dealt with the factories which had moved into New York City or had been located there for some time. Schedule B dealt with factories which had removed from New York City to the suburbs or had been located there for some length of time.

The most important general criticisms of schedules A and B are as follows:

(1) They are entirely too complicated, both in form and in subject-matter. For this reason they could not be successfully used by mail. These schedules were handled personally by the investigator, and severely tried both his own and his subjects' patience.

(2) Much of the information sought could not be given

by one man in any factory. For example, points 5 and 6, on the reverse side of Schedule A.

More particular criticisms of specific items are the following: "Rent?" was an impertinent question which often met with a justifiable rebuff; (reverse) 1, only a very vague line can be drawn between skilled and unskilled; 2, "rate of pay" varies widely, especially in higher grades of labor; "Predominating nationalities", always elicited vague and often inexact answers; 3 and 4 would have done very well if the establishment had come from a long distance, but a move from one part of New York City to another, rendered these questions useless; 5 and 6, no large employer had exact information. Other and less important criticisms readily suggest themselves.

Schedule C was designed to meet some of the most prominent defects in Schedules A and B, but was only partially successful. Points I and II on the obverse side, were decided improvements enabling the investigator to check merely personal whims, or prejudiced answers. On the reverse, the elimination of skilled and unskilled, and the substitution of a definite wage division clarified the otherwise confused statistics.

However, in endeavoring to utilize this mass of material, the writer found that of the pertinent information, only the minimum which has been considered in Chapter IV could be used. In general, the statistics were entirely untrustworthy, due to ignorance rather than intentional falsification, on the part of the proprietors and officers interviewed.

Certain letters of introduction are herewith reproduced. These letters were used by the investigators in securing interviews with proprietors and officers of manufacturing establishments. In some cases they were addressed to some particular individual, in other cases to the firms only, and in still others, merely "To whom it may concern". These letters were signed by an officer of the organization who was usually unknown to the addressee. In the latter part of the investigation, the writer found a personal card just as satisfactory, although it required a little more explanation.

Little difficulty was experienced in getting access to the principal men of the establishments; but after having once gained an audience, two difficulties confronted the investigator.

In the first place, the men in charge of large industries and manufactures did not know why they were located on the particular site where they happened to be. The ignorance of some of them was quite astounding. They gave answers such as: "Why, we are here because we are here." "We find no especial advantage here." "That is a funny question, I have never given it a thought." "My father was here, and I have just stayed." Men of affairs, some of them conducting large businesses, admitted that they did not know anything about the advantages which they were enjoying, or the disadvantages under which they were laboring. They had never looked closely into the factors which determine industrial success or failure.

The second great difficulty lay in the inexact form of the schedule. There are two distinct phases of the problem which have to do with the location of industries in New York City. They are indicated by the following questions: (1) Why are industries located in New York City? (2) Why are establishments located in a particular part of Greater New York? Many men held that the answer to the first was self-evident, that this was a matter of common knowledge. Others recognized the distinction involved, but confused the two. Still others entirely disregarded one or the other. In view of these difficulties the general tables compiled from the answers have value only when properly interpreted. In addition there enters into the situation something of a personal equation. The particular mood of the investigator and the methods of putting questions may have determined more or less the category in which the answer was placed. Then again, the state of mind of the employer no doubt greatly influenced the replies. A man who had just finished a long strike was not apt to be very enthusiastic about the labor market. Another who had just had a large consignment of goods delayed in transit was

likely to berate the transportation facilities. In spite of all precautions, it was impossible to eliminate all of these personal factors.

Certain classes of proprietors gave intelligent and extremely valuable answers. The managers of firms which had recently moved from Manhattan, of course, had very clear and definite reasons for such removal. Officers of another group, namely, of establishments which had seriously considered moving out of Manhattan, but had decided not to do so, had ready opinions and arguments to present. The proprietors of establishments moving into Manhattan, Greater New York, or the surrounding territory, and of new firms locating establishments for the first time, had carefully considered the situations and made an intelligent selection of sites.

On account of the failure to obtain concrete facts concerning the distribution of the working population from employers, another method was employed. It was evident that these facts were to be had only from the workers direct. A card, which is reproduced herewith, was therefore prepared for distribution among the employees of factories, where the employers were willing to coöperate. The only difficulty encountered was the trouble and annoyance which the distribution would cause to both the employer and the employees. Working people are as a rule very suspicious of any attempt to get information from them, to "investigate" them. Employers often feel this rather keenly and hesitate about giving consent, not because of the little annoyance to themselves, but generally because of the offense it may give to the workmen.

This card was constructed with a view to obtaining the maximum amount of information by means of a minimum number of questions in the simplest possible form. A question concerning age was not of great importance. Conjugal condition might be urged as an important factor in the distribution of the working population in New York City, especially in the suburban establishments, where homes are owned; but the small number of homes owned makes the immobility of

labor traceable to that cause negligible. The New York laborer does not hesitate to move his family at any time, and is scarcely less mobile in reference to home or residence than the unmarried man. Immobility due to the employment of wives and children in a certain locality would not have been brought out by a question concerning conjugal condition, nor could these facts have been obtained except by a very much more complicated questionnaire.

The inquiry made about nationality is perhaps open to considerable criticism. It is not definite, as it does not ask for the birthplace of the worker or the birthplace of his or her parents, but simply "of what nationality do you consider yourself to be"? In answering, an American born man of German descent might return himself as a German, while a man born in Germany, but a naturalized citizen, might return himself as an American. The question is admittedly vague. However, it will, without a very great error, give the approximate distribution of the principal nationalities.

Perhaps the most important item of the schedule pertained to the specific occupation of the workman. All reference to wages and hours of labor were omitted from the schedule, as it was unnecessary to get this information from the workmen themselves. It was an easy matter to get from the employer the exact amount of wages paid in specific occupations, as well as the hours of work.

The remaining four items on the schedule, including residence, method of transportation, carfare and time consumed in getting to work, have to do directly with the problem of congestion. As will be seen from the following discussion of the changes of this schedule, some of the items caused more or less difficulty. This little schedule which was designed to meet the needs of the workmen and therefore calls for certain characteristics, went through many changes before a satisfactory form was attained.

Simplicity, brevity and a maximum of information were the cardinal features sought for. Card No. 1 was the result.

CARD FOR WORKERS IN FACTORIES¹

[1]

1. Male or Female
2. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English
(Check proper one or write if another)
3. Specific Occupation
4. Residence
 - (a) Borough
 - (b) Street and No. or near what intersecting Streets
5. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train
(Check method used)
6. Carfare daily
7. Time (going and coming)
8. Do you own your house
(The name of the worker is not requested)

A manufacturer suggested that a useful sentence and one which would simplify the problem of distribution and collection within the factory, should replace the phrase, "Card for Workers in Factories". Card No. 2 embodied this suggestion and the word "underline" was substituted for "check." In tabulating these cards after they had been filled out, more or less confusion was found in items 6 and 7. Carfare one way was put down when the amount was clearly an impossibility. Confusion was also found in regard to time, some persons returning time one way and others time both ways.

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [2]

1. Male or Female
2. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English
(Underline proper one or write if another)
3. Specific Occupation

¹ The cards used were of the standard three-by-five size.

4. Residence
 - (a) Borough
 - (b) Street and No. or near what intersecting Streets
5. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train
(Underline method used)
6. Carfare daily
7. Time (going and coming)
8. Do you own your house
(The name of the worker is not requested)

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [3

1. Male or Female
2. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English
(Underline proper one or write if another)
3. Specific Occupation
4. Residence
 - (a) Borough
 - (b) Street and No. or near what intersecting Streets
5. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train
(Underline method used)
6. Carfare daily (going to work) coming from work
7. Time (going to work) coming from work
8. Do you own your house
(The name of the worker is not requested)

Card No. 3 was especially designed to obviate these difficulties. Still difficulty arose in the question relating to time, some workers insisting on putting down the time at which they went to work, rather than the time it took them to get to work. Hence, card No. 4 attempted to clear up these difficulties and added at the same time other nationalities.

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [4

1. Male or Female
2. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English, Jew, Negro, Romanian, Scotch, Swiss, Norwegian, Swede, Dane.
(*Underline proper one, or write another*)
3. Specific Occupation
4. Residence
 - (a) Borough
 - (b) Street and No. or near what intersecting Streets
5. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train
(*Underline methods used*)
6. Carfare daily (both ways)
7. Time (consumed getting to work—one way)
8. Do you own your house
(The name of the worker is not requested)

Again difficulty in the carfare and time questions (6 and 7) appeared, due to the fact that carfare was asked both ways and time only one way. These errors, however, were small, due entirely to carelessness. A graver difficulty appeared in connection with the nationality item. Many persons, in answer to this question, merely underlined Jew, or merely Russian. In the one case entirely omitting the nationality, while in the latter introducing an error, since very few Russian-born persons in this country are other than Russian Jews. In order to overcome these difficulties changes were made which resulted in card No. 5. Carfare and time were both asked for one way only.

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [5

1. Male or Female
2. Race—Hebrew, etc.
(*write any other*)
3. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English, Roumanian, Scotch, Swiss, Norwegian, Swede, Dane, Negro.
(*Underline proper one, or write any other*)

4. Specific Occupation
5. Residence
 - (a) Borough
 - (b) Street and No. or near what intersecting Streets
6. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train.

(*Underline methods used*)
7. Carfare daily (one way)
8. Time (consumed getting to work—one way)
9. Do you own your house?

(The name of the worker is not requested)

The number of nationalities was increased, and the following item was added:

2. Race—Hebrew, etc.
(*write any other.*)

This item proved, in the making, and subsequently in use to be one of unending difficulty. Hebrew proprietors objected to being singled out, others objected that they were not a race, others that religion was a matter of no one's concern. The reader may wonder why "Negro" was put among nationalities. The Hebrews would have taken immediate offense at being singled out and put in a separate class with the Negroes. Jewish proprietors, indeed, objected to the arrangement of card No. 4, where Jew and Negro accidentally occurred side by side. The answers to question 2, in card No. 5, varied from Caucasian to Roman Catholic. A hurried change in the type was made and card No. 6 was the final result. The union label made little apparent difference in the returns.

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [6

1. Male or Female
2. Hebrew or Christian?
(*Underline or write any other*)
3. Nationality—American, Italian, German, Austrian, Hungarian, Pole, Russian, French, Irish, English, Roumanian, Scotch, Swiss, Norwegian, Swede, Dane, Negro.
(*Underline proper one, or write any other*)

4. Specific Occupation

5. Residence

(a) Borough

(b) Street and No. or near what intersecting Streets

6. Method of getting to work—Walk, Surface, Elevated, Subway, Ferry, Train.

(*Underline methods used*)

7. Carfare daily (one way)

8. Time (consumed getting to work—one way)

9. Do you own your house?

(The name of the worker is not requested)

Card No. 5 introduced an entirely new departure by placing on the reverse of the card a short succinct explanation. To this was added in No. 6, the name of the parties under whom the investigation was being conducted. This almost insignificant explanation reduced to a minimum the difficulty of distribution. No questions were then asked as to "whys and wherefores".

[*Printed on back of card.*]

[5

The object of this card is to secure definite information concerning the distribution and congestion of population in Manhattan. Any remedy to be proposed must be based on facts.

[*Printed on back of card.*]

[6

The object of this card is to secure definite information concerning the distribution and congestion of population in Manhattan. Any remedy to be proposed must be based on facts. This investigation is being conducted by The Bureau of Social Research under the auspices of the Russell Sage Foundation.

One card, No. 7, was made up on an entirely different plan, at the suggestion of a manufacturer who had been in very close personal touch with his employees. It will be noted that the information to be elicited is identical, but there is the

personal appeal which distinguishes it from the other rather impersonal, although perhaps more exact, statements. As far as could be observed in the tabulation, the results obtained were not different.

FILL OUT AND DEPOSIT WITH YOUR FOREMAN [7
WE DO NOT WANT YOUR NAME

1. Are you male or female? 2. Hebrew or Christian?
3. In what country were you born?
4. What do you work at? (Particular Occupation.)
5. Residence
 - (a) City or Borough
 - (b) Street or number
6. How do you get to work—Walk, Surface Car, Elevated, Subway, Ferry, Train.

(*Underline the one you use*)
7. How much carfare do you spend daily in getting to your work (one way only)?
8. How much time do you spend in getting to work (one way only)?
9. Do you own your own house?

READ THE OTHER SIDE OF THIS CARD.

DO NOT SIGN YOUR NAME.

In distributing these cards, two methods were used by the employers. The cards were put in the pay envelopes of the employees, or were distributed among the workmen, and later deposited with the foreman of the department. The latter method was by far the most satisfactory and generally yielded very full returns. In some cases over 90 per cent of the working force supplied the information. Usually, however, between fifty and seventy-five per cent of the employees filled out the cards. In a few factories employing persons who could not read or write English, the cards were filled out by one of the office force, who got the details directly from the workers. We believe, however, that usually those employees who were unable to fill the cards out themselves do not appear

in the returns. No doubt a large percentage objected to filling out these cards because they feared it had to do with trade union affairs, or was a swindle. In one factory employing about 650 hands, the entire force became suspicious and only 75 men returned the cards properly filled out. The proprietor, however, consented to try the experiment again and suggested that notices should be posted throughout the factory, stating the object of the cards. This was done and elicited about 500 new replies, bringing the total up to about 575 cards returned out of 650 employees.

Certain letters which were used in connection with the distribution of these cards, and subsequently in obtaining the wages in the various occupations, are reproduced here. They afford examples of a class of letters which are important in the work of investigation and which are exceedingly difficult to write.

The investigator made a visit to each manufacturer and secured his coöperation in the distribution of the cards among his employees. The cards were then sent by mail accompanied by Letter IV. The total number of employees, male and female, was requested in order that the proportion of the employees that had filled out the cards might be ascertained. The hours were necessary for a correlation of hours, with residence, carfare and time-distance.

I

To whom it may Concern:

This letter will introduce to you the bearer, Mr. ———, who is making an investigation of congestion of population in New York City. He desires to find out the causes for the location of manufactures, and the distribution of employees engaged in manufacturing in New York City.

Any information which you may see fit to give him will be greatly appreciated by this organization.

Sincerely yours,

II

Mr. John Smith,
c/o P. K. Roe & Son,
Brooklyn, N. Y.

Dear Sir:

This letter will introduce to you the bearer, Mr. ———, who is making an investigation of land values in Brooklyn and Queens, with a special view to the desirability of various sites for the location of factories; also the advantages and disadvantages felt by manufacturing plants already located in the different parts of these Boroughs.

Mr. Henry Jones has referred us to you, among other prominent shoe manufacturers, as being able to give us the data we desire. We have thoroughly discussed the subject of our investigation with Mr. Jones and he has allowed us to use his name.

Any information which you may see fit to give Mr. ——— will be greatly appreciated by this organization.

Sincerely yours,

III

Messrs. J. R. Doe & Company,
Brooklyn, N. Y.

Gentlemen:

This letter will introduce to you the bearer, Mr. ———, who is making an investigation of land values in Brooklyn and Queens, with a special view to the desirability of various sites for the location of factories; also the advantages or disadvantages felt by manufacturing plants already located in the different parts of these Boroughs.

Any information which you may see fit to give him will be greatly appreciated by this organization.

Sincerely yours,

IV

Dear Sir:

I am enclosing the cards which you consented to have your employees fill out.

Since calling on you I have secured the coöperation of a number of employers in your neighborhood, and the information should be exceedingly valuable, especially if the returns are full. When all the data are in, we sincerely hope that we can make some recommendations which will assist in relieving and ameliorating conditions in the congested sections of the city. At any rate we shall have made an

attempt to help relieve a bad situation and one which merits careful thought and painstaking investigation.

When returning the cards will you enclose the following information:

Total number of employees:

Male,
Female.

Hours worked per day:

Hours worked per week:

I am asking these items in order to facilitate our classification, to find out approximately the proportionate number filling out the cards, to learn how long the working day is for these workers. Will you also enclose a firm card so that these cards will not get mixed with those from other establishments, until the final tabulation.

I am very greatly indebted to you for your courtesy and trouble in this matter, and I assure you that due acknowledgment will be made of your assistance.

Thanking you sincerely, I am,

Very truly yours,

V

Dear Sir:

I have received the cards which your employees filled out and am greatly indebted to you for your assistance.

It was my original intention to classify these cards by occupations, but the large number of the cards which I have received makes such a classification impracticable. I am therefore asking the different manufacturers to give me the approximate weekly wage for each occupation, as named in the enclosed list, which is compiled from the cards returned by your employees. If any of your work is done by the piece, I would like simply the weekly amount which an employee of average ability can earn under normal conditions.

The whole object of this request, you will note, is to give me data by which I can divide the cards into groups representing various classes of workers.

The wages for no particular firm will appear as such, but will be grouped with about 10,000 other employees from the lower section of **Manhattan**. If you desire to see me personally concerning this, I shall be glad to call.

I hope that you will be able to furnish me with this information, and I wish to express my thanks, and that of the Sage Foundation, for your favors and courtesies.

Thanking you sincerely, I am

Very truly yours,

VI

Dear Sir:

In accordance with our conversation, I sent you, some time since, the cards which you consented to have filled out by your employees and returned to me. Having as yet received no reply, I presume that the cards have, for some reason, been delayed and hope that it will be convenient for you to send them at an early date.

Almost all the establishments have already returned the cards, and as each was chosen because it was representative of some particular line of business or distinctive locality, the value of this investigation will be greatly enhanced by prompt and full returns from each district. The data so far received have proved very interesting and the results of this study of the congestion and distribution of population will doubtless be exceedingly useful.

If the postage which I enclosed in my former letter is not sufficient, let me know and I will send an additional amount.

Awaiting an early reply, I am

Very truly yours,

After the cards had been returned and a list of the specific occupations had been compiled, this list was sent to the proprietor, accompanied by Letter V. In some cases, of course, we failed to receive an answer, but in the majority of cases the wages for the various groups were forthcoming.

Letter VI was sent to delinquents, to whom cards had been sent but who had not returned them. This letter was an especially difficult one to write. The man to whom it was sent, had consented to do us a favor, but had failed to keep his promise. We wanted the information which he could furnish. The letter must not offend but must bring a reply, and as a result a considerable number of replies were received.

A proper question may arise as to whether data secured in this way are reliable. There is danger that the returns were maliciously falsified or jokingly misinterpreted. This was the case with a very few cards. Among all the cards received, only thirteen had to be discarded. They were either illegible, evident misstatements, or contained insufficient information. No doubt some persons were inclined to throw aside the cards, but this tendency does not seem to have attached to any particular class of men. Two checks operate on the results of

these statistics; first, the general knowledge of the subject on the part of employers and superintendents whose estimates in many cases correspond closely to the returns from the workmen; second, the various groups both of occupations and nationalities, usually represented all the divisions of labor within the factory and usually all the nationalities in that trade.

In the collection of statistics, a vital question is always: Are the data representative? It is necessary in this case therefore to ascertain, How far are these returns representative of the workers employed in New York City?

First, are the various groups of industries adequately represented? Table A shows the number of employees, male and female, in the various groups of industries in New York City, and the number from whom data for this study have been gathered.

TABLE A

Distribution of all Factory Workers in Greater New York and Number from whom Statistics were Collected. Classified by Industries and Sex¹

	Total Number of Employees in Greater New York.		Employees from whom Statistics were Collected.			
	Male.	Female.	Male.	Per Cent of Total.	Female.	Per Cent of Total.
I	10,395	809	656	6.3	60	7.4
II	71,646	5,809	2,568	3.5	707	12.1
III	30,303	2,247	498	1.6	5	0.2
IV	20,015	8,682	1,654	8.2	606	6.9
V	11,424	4,215	1,238	10.8	406	9.6
VI	616	173	....	0.0	....	0.0
VII	39,959	19,929	1,842	4.6	1,065	5.3
VIII	9,563	15,081	128	1.3	250	1.6
IX	96,577	98,340	1,262	1.3	1,839	1.97
X	43,091	19,387	827	1.9	502	2.6
XI	5,728	6	....	0.0	....	0.0
XII	370	8	....	0.0	....	0.0
Total.	339,687	174,686	10,673	3.14	5,440	3.11

¹ See Report of Bureau of Factory Inspectors N. Y. State Dept. of Labor, 1908, for year ending Sept. 30, 1908.

A sum total of 16,113 cards were filled out by workers engaged in manufactures in Greater New York, which is over 3 per cent of the total number of factory employees. Almost equal proportions of males and females were returned, 3.14 per cent of the males and 3.11 per cent of the females. Of the various industry groups, those of comparatively small importance are not represented, namely, VI, paper pulp; XI, water, light and power distribution; XII, building industry. In other industry groups, the proportional representation varies considerably. In the textile group (VIII), only 1.3 per cent of the males, and 1.6 per cent of the females are represented in the returns, but in the chemical group, (V), 10.8 per cent of the males and 9.6 per cent of the females. The largest of all the industry groups, the clothing (IX), is not as well represented as the writer would wish. Very great difficulty was experienced in collecting the information from the clothing trades, because of the large number of foreigners who could not read or write English, the small average size of the establishments, and the low grade of intelligence among many of the proprietors. There were, however, some noteworthy exceptions.

In considering the representative character of the data, it should be noted that the cards actually filled out and returned, are not exhaustive of the establishments visited. In a few cases where the investigator personally filled out the schedules, or the employer detailed a clerk for the purpose, every employee at work furnished the required information. In other factories, where the employees were exceptionally intelligent, and where our requests met with ready coöperation on the part of managers and foremen, more than three-quarters of the employees filled out the cards. In some establishments only a very small proportion returned the cards. In the majority of cases, from 40-60 per cent of the working force filled out and returned the schedules. No compulsion was exercised on the part of the employers in getting the information, and the employees who felt disinclined did not fill out the schedules. However, proprietors and foremen as-

sured the writer that so far as they were able to judge, the employees who complied with the requests were representative of the entire body and that no one class of workers was more largely represented than any other.

The summaries of the workers employed in factories, as given in the report of the State Department of Factory Inspection are not sufficiently detailed to enable a comparison to be made by industries in the various boroughs.¹ However, a general comparison, showing the proportion of workers by boroughs from whom data have been gathered may be made.

TABLE B

Comparison of Total Workers, Male and Female, in the Different Boroughs and Number of Workers from whom Statistics were Collected

	Total Workers in Factories.		Workers from whom Data were Collected.			
	Male.	Female.	Male.	Per Cent. of Total.	Female.	Per Cent. of Total.
Manhattan below 14th St. ²	321,488	....	5,002	....	2,648	....
Manhattan above 14th St. ²	160,368	....	485	....	48	....
Manhattan and Bronx ...	260,790	146,275	5,445	2.08	2,696	1.8
Brooklyn	86,555	31,757	3,300	3.8	2,499	7.9
Queens	16,742	2,877	1,928	11.5	245	8.5
Richmond	6,521	958	....	....	....	....
Greater New York	370,608	181,867	10,673	2.88	5,440	2.99

¹ These facts could be obtained from the Report of Bureau of Factory Inspectors, New York State Dept. of Labor, Part II, Table IV, pp. 96-124, but only at the cost of great labor, and without, we believe, yielding adequate returns.

² The totals here are from the same statistics as were presented on p. 42, Chapter III, and are not exactly comparable with the figures given in the other tables, for the reason explained in the second foot note on that page. The totals here include both males and females.

The smallest proportional amount of data was secured from Manhattan, due to the very great number of employees working there. On the other hand, a few large corporations in the other boroughs make an appreciable percentage of the total.

The statistics collected were chiefly from large concerns. Of the 112,361 workers in establishments employing from 1-19 people, our data do not include an appreciable percentage. There is, however, as far as could be observed in preparation of these statistics, little difference in the conditions existing in the small and large plants.

The second point of importance in determining the representativeness of our data, concerns the proportion of the various hour groups obtained. The accompanying table endeavors to ascertain the representativeness of the various hour groups.

TABLE C

Distribution of all Workers in Greater New York and Proportion for whom Data were Collected, Classified by Hours of Labor

Hours per Week.	Total Workers in Greater New York.	Workers Returning Data.	Per Cent of Total.
51 hours or less	65,152	3,479	5.3
52-57 hours	316,225	7,719	2.4
58-63 hours	164,608	5,582	3.4
Over 63 hours.....	6,490	70	1.1

In the matter of wages there are no statistics by which it is possible to check those collected in this investigation. The same is true of the nationalities. It may be stated, however, that the wage statistics were carefully checked by the wage scales reported by the trade unions,¹ and any statements of exceptional wages were verified before being admitted to our classification.

¹ Cf. Report of Bureau of Labor Statistics, N. Y. State Dept. of Labor.

APPENDIX II—TABLE I

Distribution of Male Workers Employed in Manhattan below Fourteenth Street by Daily and Weekly Hours of Work, Showing Residence, Carfare and Time-Distance

Hours per Week.								Hours per Day.									
48-50:59.	51-53:59.	54-56:59.	57-59:59.	60-62:59.	63 and more.	Total Number.	Per cent. of all Workers.	Total Number. Per cent. of all Workers.	8-8:29	8:30-8:59.	9-9:29.	9:30-9:59.	10-10:29.	10:30-10:59.	11 and over.	Total Number.	Per cent. of all Workers.
1151 23.0	1555 31.1	748 14.9	1056 21.1	454 9.1	38 .8	5002 ....	.... 100.		802 16.0	332 6.6	1909 38.2	681 13.6	1163 23.3	77 1.5	38 .8	5002 ....	.... 100.
Per cent. of Each Group.									Per cent. of Each Group.								
24.0	29.3	20.3	19.4	25.1	18.4	1209	24.2	Residence. Manhattan above 14th St. Manhattan below 14th St. Bronx. Brooklyn. Queens. Jersey. Richmond. Above Bronx. Suffolk.	24.6	23.5	27.7	20.1	20.6	29.8	18.4	1209	24.2
13.3	18.8	33.8	49.5	43.6	50.0	1438	28.7		12.9	14.8	19.1	48.3	47.9	22.1	50.0	1438	28.7
7.7	6.7	6.2	3.8	5.7	5.3	308	6.2		6.7	10.5	6.7	5.9	4.0	2.6	5.3	308	6.2
37.7	22.0	24.5	19.4	18.1	21.0	1255	25.1		38.0	34.3	24.6	16.5	19.8	20.8	21.0	1255	25.1
4.8	4.3	5.2	2.0	2.2	5.3	194	3.9		4.7	4.8	4.9	3.1	1.6	5.2	5.3	194	3.9
11.5	17.5	9.1	5.7	5.1	....	556	11.1		12.1	11.2	15.7	5.7	5.9	18.2	....	556	11.1
.2	.9	.8	.2	.2	....	25	.5		.1	.3	.9	.3	.2	1.3	....	25	.5
.8	.4	.1	....	....	....	16	.3		.9	.6	.3	.1	....	....	....	16	.3
....	.1	....	....	....	....	1	.0		....	....	.1	....	....	....	....	1	.0
Per cent. of Each Group.									Per cent. of Each Group.								
13.1	20.3	26.7	42.3	40.5	50.0	1317	26.3	Walk and Carfare. Walk. 10 cents or less. 11 cents to 20 cents. 21 cents and more.	11.3	18.1	18.6	41.1	42.4	23.4	50.0	1317	26.3
59.4	43.5	53.0	46.5	48.2	50.0	2485	49.7		61.8	51.5	48.6	43.7	45.3	61.0	50.0	2485	49.7
80.4	30.5	17.4	10.4	9.5	....	992	19.8		19.5	23.5	27.6	13.4	11.4	10.4	....	992	19.8
7.1	5.7	2.4	.8	....	....	205	4.2	21 cents and more.	7.4	6.9	5.2	1.8	.9	5.2	....	208	4.2
Per cent. of Each Group.								Per cent. of Each Group.									
13.7	21.1	23.1	34.0	43.6	39.5	1231	24.6	Time-Distance. 40 minutes or less. 41 to 60 minutes. 61 to 80 minutes. 81 to 100 minutes. 101 to 120 minutes. 121 to 140 minutes. 141 to 160 minutes. 161 to 180 minutes. 181 minutes and more.	12.1	17.8	20.4	30.4	38.1	27.3	39.5	1231	24.6
19.5	20.6	25.9	25.3	23.4	31.6	1125	22.5		19.3	18.7	21.0	28.6	24.3	22.1	31.6	1125	22.5
11.5	4.7	7.1	6.4	7.9	7.9	364	7.3		11.7	11.1	5.7	7.2	5.7	9.1	7.9	365	7.3
19.5	17.7	21.5	12.8	9.9	7.9	844	16.9		21.0	16.0	19.5	15.1	11.8	10.4	7.9	844	16.9
27.5	24.0	15.0	18.7	12.3	13.1	1059	21.2		28.2	26.2	22.3	14.2	17.1	24.6	13.1	1059	21.2
1.3	.7	.6	.2	.4	....	34	.7		1.5	.9	.7	.3	.3	....	....	34	.7
4.0	6.4	3.9	1.6	1.6	....	198	3.9		4.2	3.6	5.8	2.8	1.5	6.5	....	198	3.9
2.6	3.8	2.4	.8	.9	....	120	2.4		1.7	4.8	3.7	1.2	1.0	....	....	120	2.4
.4	10.	.5	.1	....	....	26	.5		.3	.9	.9	.2	.2	....	....	26	.5

TABLE II

Distribution of Female Workers Employed in Manhattan below Fourteenth Street by Daily and Weekly Hours of Work, Showing Residence, Carfare and Time-Distance

Hours per Week.								Hours per Day.									
48-50:59.	51-53:59.	54-56:59.	57-59:59.	60-62:59.	63 and over.	Total Number.	Per cent. of all Workers.	Residence.								Total Number.	Per cent. of all Workers.
433 16.4	930 35.1	318 12.0	737 27.3	223 8.4	7 .3	2648 ....	.... 100.	Total Number. Per cent. of all Workers.								2648 ....	.... 100.
Per cent. of Each Group.								Per cent. of Each Group.									
25.9	29.1	18.2	15.2	14.8	14.3	587 1065	22.2 40.2	Manhattan above 14th St. Manhattan below 14th St. Bronx. Brooklyn. Queens. Jersey. Richmond. Above Bronx.								587 1065 113 534 42 296 8 3	22.2 40.2 4.3 20.1 1.6 11.2 .3 .1
26.8	25.0	47.2	58.1	60.1	71.4	113 534	4.3 20.1	Walk and Carfare.								113 534	4.3 20.1
4.6	5.0	2.2	3.6	5.8	....	42 296	1.6 11.2	Walk.								42 296	1.6 11.2
33.7	21.6	18.5	12.5	16.1	....	8 3	.3 .1	10 cents or less.								8 3	.3 .1
1.2	2.8	1.6	.7	.5	....			11 cents to 20 cents.									
6.9	15.9	12.3	9.9	2.2	14.3			21 cents and more.									
.7	.4	....	....	.5	....			Time-Distance.									
.2	.2	....	....	....	....			40 minutes or less.									
								41 to 60 minutes.									
								61 to 80 minutes.									
								81 to 100 minutes.									
								101 to 120 minutes.									
								121 to 140 minutes.									
								141 to 160 minutes.									
								161 to 180 minutes.									
								181 minutes and more.									
32.3	24.8	42.1	52.9	61.0	57.1	1035 1150	39.1 43.4	33.3								1035 1150	39.1 43.4
49.0	51.4	40.6	34.6	32.7	42.9	405 58	15.3 2.2	21.4								405 58	15.3 2.2
15.0	21.7	14.5	11.1	4.5	....			25.5									
3.7	2.1	2.8	1.4	1.8	....			41.7									
								54.8									
								57.1									
								42.9									
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																

TABLE III

Distribution of Male Workers Employed in Manhattan below Fourteenth Street, by Weekly Wages, Showing Residence, Carfare and Time-Distance

	\$4.00-5.99.	6.00-7.99.	8.00-9.99.	10.00-11.99.	12.00-13.99.	14.00-15.99.	16.00-17.99.	18.00-19.99.	20.00-21.99.	22.00-23.99.	24.00-25.99.	26.00-27.99.	28.00-29.99.	30.00-31.99.	32.00-33.99.	34.00-35.99.	36.00-37.99.	40.00 +	Not Noted.	Total Number.	Per cent. of all Workers.
Total Number.....	53	92	160	173	473	1283	319	909	588	485	215	35	1	51	1	7	3	21	133	5002
Per cent. of all Workers.	1.1	1.8	3.2	3.5	9.5	25.6	6.4	18.2	11.7	9.7	4.3	.7	.0	1.0	.0	.1	.1	.4	2.7	100
Residence.	Per cent. of Each Group.																			1209	24.2
Manhattan above 14th St.	17.0	26.1	15.0	21.4	24.5	27.3	20.4	23.3	25.8	25.8	18.1	20.0	....	27.4	....	42.9	33.4	19.0	20.3
Manhattan below 14th St.	62.2	47.8	53.8	45.1	42.1	33.6	24.5	27.2	11.6	16.9	14.4	8.6	....	17.6	100.	14.3	33.3	9.5	33.1	
Bronx.....	1.9	3.3	3.7	5.2	1.5	5.4	6.9	6.3	9.7	8.7	9.8	2.9	....	11.8	....	....	....	19.0	2.3
Brooklyn.	15.1	15.2	19.4	19.1	21.3	17.4	34.2	28.4	32.8	28.4	37.2	37.1	100.	31.4	....	42.8	....	28.6	21.0
Queens.....	3.8	3.3	3.7	1.7	3.0	4.7	3.4	3.5	4.8	3.1	3.2	2.9	....	5.9	....	....	....	14.3	3.8
Jersey.....	....	3.2	4.4	6.9	7.0	10.9	9.7	10.3	14.6	16.1	15.8	25.7	....	5.9	....	....	33.3	4.8	18.0
Richmond.....	....	1.1	....	.6	.4	.4	.3	.8	.7	.2	.5	....	....	....	....	....	....	....	1.5
Above Bronx .....	....	....	....	....	.2	.3	.6	.2	....	.8	.5	2.8	....	....	....	....	....	....	....
Suffolk.....	....	....	....	....	....	....	....	....	....	....	.5	. .	....	....	....	....	....	....	....
Walk and Carfare.																				1	.0
Walk	54.7	41.3	51.9	41.0	36.8	30.2	21.3	23.1	12.1	18.6	15.3	5.7	19.6	100.	14.3	33.4	9.5	34.6	1317	26.3
10 cents or less.	37.7	46.7	37.5	45.1	51.1	48.0	57.4	48.3	60.5	47.2	51.2	51.5	47.1	71.4	33.3	47.6	38.3	2485	49.7
11 to 20 cents.....	7.6	12.0	8.1	12.7	10.8	18.2	17.5	24.3	22.6	26.8	24.7	31.4	100.	27.4	14.3	33.3	28.6	23.3	992	19.8
21 cents and more	2.5	1.2	1.3	3.6	3.8	4.3	4.8	7.4	8.8	11.4	5.9	14.3	3.8	208	4.2
Time-Distance.																				1231	24.6
40 minutes or less	45.3	28.3	30.0	40.5	29.8	29.4	23.5	24.7	13.6	15.7	16.7	11.4	....	21.6	100.	57.1	33.3	4.8	23.3	
41 to 60 minutes.	28.3	35.9	33.8	22.0	25.8	25.7	18.8	20.6	19.7	18.8	16.3	17.1	....	13.7	....	....	....	9.5	21.8
61 to 80 minutes.	3.8	3.2	6.9	6.3	7.0	6.4	7.8	7.5	9.0	8.2	7.0	2.9	....	17.7	....	28.6	....	9.5	6.0
81 to 100 minutes	7.5	11.9	10.6	10.4	13.5	15.0	22.3	16.3	23.6	18.1	16.7	20.0	....	9.8	....	....	....	28.6	27.8
101 to 120 minutes.	13.2	16.3	14.4	16.8	20.3	16.3	20.7	22.9	24.0	30.3	31.2	31.4	100.	23.5	....	14.3	66.7	23.8	14.3	
121 to 140 minutes.....	1.9	1.1	....	....	.2	.6	.3	.9	.9	1.0	1.4	....	....	3.9	....	....	....	....	....
141 to 160 minutes.....	....	2.2	1.2	2.3	1.9	3.6	5.0	4.1	5.3	5.4	4.7	8.6	....	7.8	....	....	....	19.0	3.0
161 to 180 minutes.....	....	1.1	1.9	1.7	1.3	2.3	1.3	2.9	3.1	1.7	4.6	8.6	....	2.0	....	....	....	4.8	3.8
181 minutes and more.	1.22	.7	.3	.1	.8	.8	1.4	26	.5

TABLE IV

Distribution of Female Workers Employed in Manhattan below Fourteenth Street by Weekly Wages, Showing Residence, Carfare and Time-distance

	\$4.00-5.99.	6.00-7.99.	8.00-9.99.	10.00-11.99.	12.00-13.99.	14.00-15.99.	16.00-17.99.	18.00-19.99.	20.00-21.99.	22.00-23.99.	24.00-25.99.	30.00-31.99.	34.00-35.99.	Not Noted.	Total Number.	Per cent. of all Workers.
Total Number.....	105	988	655	564	221	48	7	12	16	2	6	1	1	22	2648	....
Per cent. of all Workers.....	4.0	37.3	24.8	21.3	8.3	1.8	.2	.5	.6	.1	.3	.0	.0	.8	....	100.
Residence.	Per cent. of Each Group.															
Manhattan above 14th St....	17.1	12.5	20.2	34.6	36.6	39.6	42.8	25.0	25.0	....	66.7	100.	....	18.2	587	22.2
Manhattan below 14th St. ...	60.9	47.4	42.4	32.5	24.0	6.3	14.3	16.7	6.3	....	....	....	....	54.5	1065	40.2
Bronx	1.9	3.1	5.6	4.4	3.6	10.4	....	16.7	6.3	....	....	....	....	9.1	113	4.3
Brooklyn	14.3	24.0	22.0	14.0	13.1	20.8	28.6	25.0	43.7	100.	16.7	....	100.	18.2	534	20.1
Queens	2.9	1.1	2.7	1.4	.9	....	....	....	....	....	....	....	....	....	42	1.6
Jersey	2.9	11.6	6.6	12.9	21.3	20.8	14.3	8.3	18.7	....	....	....	....	....	296	11.2
Richmond .....	....	.2	.5	.2	.5	2.1	....	....	....	....	....	....	....	....	8	.3
Above Bronx .....	....	.1	....	....	....	....	....	8.3	....	....	16.6	....	....	....	3	.1
Walk and Carfare.																
Walk	62.9	43.6	39.1	34.9	27.1	16.7	14.3	16.7	12.5	....	....	....	....	54.6	1035	39.1
10 cents or less	32.4	43.2	44.0	43.8	43.0	47.9	42.8	58.3	62.5	100.	66.7	100.	....	40.9	1150	43.4
11 cents to 20 cents	4.7	11.4	14.8	18.6	29.4	22.9	28.6	16.7	18.8	....	16.7	....	100.	4.5	405	15.3
21 cents and more .....	....	1.8	2.1	2.7	.5	12.5	14.3	8.3	6.2	....	16.6	....	....	....	58	2.2
Time-Distance.																
40 minutes or less	45.7	32.8	35.6	32.6	29.0	16.7	14.3	16.7	12.5	....	16.7	....	....	45.5	877	33.1
41 to 60 minutes	32.4	26.1	26.6	29.3	20.8	16.7	28.6	33.3	12.5	....	33.3	100.	....	27.3	702	26.5
61 to 80 minutes	6.7	6.6	5.8	3.4	27.0	8.3	....	8.3	37.5	....	16.7	....	....	4.5	148	5.6
81 to 100 minutes	4.8	14.1	14.5	13.6	20.4	33.3	28.5	25.0	12.5	50.0	16.7	....	....	4.5	387	14.6
101 to 120 minutes	6.7	16.0	14.0	17.7	24.9	16.7	14.3	16.7	12.5	50.0	....	....	100.	18.2	431	16.3
121 to 140 minutes .....	.9	.4	.4	.2	.4	....	....	....	6.3	....	....	....	....	....	11	.4
141 to 160 minutes	1.9	2.8	2.0	2.6	.9	8.3	....	....	....	....	16.6	....	....	....	65	2.5
161 to 180 minutes .....	.9	1.2	.8	.4	.9	....	14.3	....	6.2	....	....	....	....	....	24	.9
181 minutes and more .....	....	....	.3	.2	....	....	....	....	....	....	....	....	....	....	3	.1

TABLE V
Male Workers Employed in Manhattan below Fourteenth Street by Nationalities, Showing Residence, Carfare and Time-Distance

	Americans.	Italians.	Germans.	Austrians.	Hungarians.	Poles.	Russians.	French.	Irish.	British. ¹	Hebrew Americans.	Hebrew Austrians.	Hebrew Hungarians.	Hebrew Poles.	Hebrew Russians.	Hebrew Turks.	Hebrew Miscellaneous. ²	Hebrew Unclassified.	Scandinavians. ³	Canadians. ⁴	Bohemians.	West Indians and South Americans. ⁵	Negroes.	Greeks.	Slavs. ⁶	Miscellaneous. ⁷	Not Noted.	Total Number.	Per cent. of all Workers.	
Total Number	2214	501	444	101	68	41	125	36	240	104	93	103	66	31	441	25	62	34	62	24	35	16	6	24	26	39	41	5002	....
Per cent. of all Workers	44.3	10.0	8.9	2.0	1.4	.8	2.5	.7	4.8	2.1	1.9	2.1	1.3	.6	8.8	.5	1.2	.7	1.2	.5	.7	.3	.1	.5	.5	.8	.8	5002	....
Residence.	Per cent. of Each Group.																													
Manhattan above 14th St.	24.5	14.6	23.7	31.7	28.0	17.1	10.4	19.4	39.2	30.8	40.9	12.6	31.8	32.2	13.8	....	25.8	32.4	29.0	58.3	80.0	37.5	83.3	45.8	15.4	46.2	25.0	1209	24.2
Manhattan below 14th St. ..	13.3	61.7	10.8	44.6	58.8	65.8	64.0	25.0	29.6	12.5	30.1	64.1	48.5	45.2	58.3	96.0	32.3	50.0	4.9	4.2	2.9	37.5	....	37.5	50.0	12.8	12.5	1438	28.7
Bronx	7.3	3.8	9.9	....	3.0	2.4	8.0	5.6	4.6	2.9	11.8	2.9	7.6	....	3.2	....	14.5	....	4.9	....	2.9	6.3	16.7	4.2	....	5.1	10.0	308	6.2
Brooklyn	31.9	15.1	27.3	8.9	7.4	9.8	14.4	5.6	19.2	33.6	15.0	18.5	9.1	9.7	22.9	4.0	21.0	17.6	38.7	29.2	....	18.7	....	....	....	23.1	45.0	1255	25.1
Queens	5.7	1.6	6.8	5.9	1.4	....	2.4	....	1.2	1.0	1.1	....	....	3.2	.7	....	1.6	....	3.2	....	11.4	....	....	....	34.6	5.1	5.0	194	3.9
Jersey	16.0	2.6	20.9	7.9	1.4	4.9	.8	44.4	6.2	17.3	1.1	1.9	3.0	9.7	1.1	....	4.8	....	16.1	4.2	2.8	....	....	12.5	....	7.7	2.5	556	11.1
Richmond .....	.9	.6	.4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.1	....	....	....	....	....	....	....	25	.5
Above Bronx .....	.4	....	.2	1.0	....	....	....	....	....	1.9	....	....	....	....	....	....	....	....	3.2	....	....	....	....	....	....	....	....	16	.3
Suffolk .....	....	....	.2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.0
Walk and Carfare.																														
Walk.	15.3	55.3	9.0	33.7	34.3	63.4	52.0	22.2	35.4	15.4	22.6	48.5	30.3	38.7	44.4	88.0	19.4	38.2	9.7	20.8	5.7	25.0	....	62.5	46.2	18.0	15.0	1317	26.3
10 cents or less	49.8	33.8	56.8	55.4	61.3	26.8	47.2	30.6	49.2	48.1	68.8	44.7	65.2	48.4	51.2	12.0	62.9	58.8	53.2	62.5	80.0	75.0	83.3	25.0	42.3	56.4	65.0	2485	49.7	
11 cents to 20 cents	28.4	10.6	28.8	7.9	4.4	9.8	.8	44.4	12.5	28.8	6.5	5.8	4.5	12.9	3.9	....	16.1	3.0	25.8	16.7	2.9	....	16.7	12.5	11.5	17.9	20.0	992	19.8
22 cents and more	6.5	.4	5.4	3.0	....	....	....	2.8	2.9	7.7	2.1	1.0	....	....	.5	....	1.6	....	11.3	....	11.4	....	....	....	...	7.7	....	208	4.2
Time-Distance.																														
40 minutes or less	16.9	48.5	9.5	27.7	25.0	53.7	42.4	33.3	35.4	18.3	20.4	39.8	24.2	22.5	39.7	16.0	17.8	20.6	9.7	20.8	8.6	31.3	50.0	33.3	46.2	23.1	10.0	1231	10.0	
41 to 60 minutes	17.1	21.5	20.7	35.6	36.8	21.9	24.0	8.3	23.8	13.5	33.3	37.9	47.0	42.0	28.5	84.0	30.7	38.2	17.8	29.2	51.4	50.0	33.3	54.2	15.4	23.1	20.0	1125	22.5	
61 to 80 minutes	8.7	4.2	5.9	3.0	8.8	4.9	7.2	....	7.9	5.8	8.6	6.8	7.6	....	5.9	....	9.7	14.7	11.3	12.5	5.7	6.2	....	....	15.4	7.7	7.5	365	7.3
81 to 100 minutes	19.2	9.2	25.2	12.9	14.8	9.8	12.8	36.1	13.8	16.3	23.7	10.7	18.2	6.5	10.2	....	17.7	14.7	25.8	20.8	14.3	12.5	....	....	11.5	15.4	22.5	844	16.9
101 to 120 minutes	27.1	14.4	26.1	17.8	13.2	9.7	12.8	13.9	16.7	28.8	14.0	4.8	3.0	16.1	14.3	....	12.9	11.8	24.2	16.7	14.3	....	....	....	3.9	28.2	35.0	1059	21.2
121 to 140 minutes998	1.9	3.2	.7	1.6	4.2	34	.7
141 to 160 minutes	5.8	1.2	7.4	2.0	1.5	....	.8	5.6	1.2	6.7	....	....	....	3.2	.7	....	4.8	....	4.8	....	2.9	....	16.7	....	3.8	....	5.0	198	3.9
161 to 180 minutes	3.4	.8	3.6	1.04	8.7	6.5	4.8	4.8	2.8	8.3	3.8	2.5	120	2.4
181 minutes and more	1.9	....	.7	....	....	....	....	2.8	....	....	....	....	....	....	....	....	....	....	1.6	....	....	....	....	....	....	....	....	26	.5

¹ British—English, 71; Scotch, 30; Welch, 3—Total, 104.

² Hebrew—Italian Hebrews, 2; German Hebrews, 21; Austria-Hungarian Hebrews, 2; French Hebrew, 1; English Hebrews, 10; Roumanian Hebrews, 14; Scotch Hebrew, 1; Bohemian Hebrews, 4; Belgian Hebrew, 1; Cuban Hebrew, 1; Greek Hebrews, 3; Hollander Hebrew, 1; Spanish Hebrew, 1—Total, 62.

³ Scandinavians—Norwegians, 18; Danes, 17; Swedes, 27—Total, 62.

⁴ Canadians—Canadians, 22; French Canadians, 2—Total, 24.

⁵ West Indians and South Americans—Cubans, 4; Porto-Ricans, 4; West Indians, 3; Costa-Rican, 1; Bermudian, 1; Brazilians, 2; Argentinian, 1—Total, 16.

⁶ Slavs—Romanians, 14; Lithuanians, 8; Slavs, 4—Total, 26.

⁷ Miscellaneous—Swiss, 11; Belgians, 2; Australians, 2; Iclander, 1; Japanese, 2; Chinese, 1; Armenian, 1; Hollanders, 2; Persian, 1; Turks, 5; Spanish, 9; Swedish-Irish, 1; German-Irish, 1—Total, 39.

TABLE VI

Distribution of Female Workers Employed in Manhattan below Fourteenth Street by Nationalities, Showing Residence, Carfare and Time-Distance

	Americans.	Italians.	Germans.	Austrians.	Hungarians.	Roumanians.	Russians.	British. ¹	Irish.	Miscellaneous. ²	Not Noted.	Hebrew Americans.	Hebrew Austrians.	Hebrew Russians.	Hebrew Unclassified. ³	Total Number.	Per cent. of all Workers.
Total Number	1374	411	91	42	21	21	67	55	149	46	31	87	37	146	70	2648	....
Per cent. of all Workers.....	51.9	15.5	3.4	1.6	.8	.8	2.6	2.1	5.6	1.7	1.2	3.3	1.4	5.5	2.6	....	100.
Residence.	Per cent. of Each Group.															Total Number.	Per cent. of all Workers.
Manhattan above 14th St. ...	25.3	8.5	25.2	21.4	23.8	4.8	6.0	29.1	40.3	23.9	25.8	32.2	13.5	12.3	24.3	587	22.2
Manhattan below 14th St. ...	23.5	75.7	23.1	64.3	61.9	85.7	79.1	18.2	32.9	39.1	45.2	46.0	81.1	71.3	48.6	1065	40.2
Bronx	4.7	3.2	4.4	4.8	9.5	4.8	3.0	1.8	2.7	6.5	....	8.0	....	4.1	4.3	113	4.3
Brooklyn	27.5	6.6	22.0	4.7	....	4.7	11.9	29.1	15.4	26.1	12.9	10.3	2.7	12.3	21.4	534	20.1
Queens	2.2	.5	2.2	2.4	....	....	....	5.4	....	2.2	3.2	2.3	....	....	....	42	1.6
Jersey	16.2	5.3	22.0	2.4	4.8	....	....	16.4	8.7	2.2	12.9	1.2	2.7	....	1.4	296	11.2
Richmond.....	.5	.2	....	....	....	....	....	....	....	....	....	....	....	....	....	8	.3
Above Bronx .....	.1	....	1.1	....	....	....	....	....	....	....	....	....	....	....	....	3	.1
Walk and Carfare.																Total Number.	Per cent. of all Workers.
Walk	24.3	75.2	25.3	59.5	42.8	76.2	70.1	21.8	41.6	34.8	38.7	33.3	62.2	60.9	41.4	1035	39.1
10 cents or less	49.7	21.4	54.9	38.1	47.6	19.0	22.4	43.7	49.7	52.2	42.0	60.9	35.1	32.9	50.0	1150	43.4
11 cents to 20 cents	22.8	2.7	16.5	....	4.8	4.8	7.5	30.9	7.4	13.0	16.1	4.6	2.7	6.2	8.6	405	15.3
21 cents and more.....	3.2	.7	3.3	2.4	4.8	....	....	3.6	1.3	....	3.2	1.2	....	....	....	58	2.2
Time-Distance.																Total Number.	Per cent. of all Workers.
40 minutes or less	23.6	66.2	25.3	26.2	19.0	61.9	43.3	21.8	45.0	32.6	29.0	26.4	29.7	32.9	22.9	877	33.1
41 to 60 minutes	22.9	19.0	25.2	42.8	38.1	23.8	34.3	27.3	22.8	28.3	48.4	40.2	64.9	45.2	42.8	702	26.5
61 to 80 minutes	6.5	1.5	12.1	11.9	4.8	4.8	7.4	3.6	8.0	2.2	6.5	3.4	....	2.7	8.6	148	5.6
81 to 100 minutes	19.4	5.3	11.0	11.9	28.6	....	3.0	16.4	14.1	17.4	3.2	16.1	5.4	8.9	10.0	387	14.6
101 to 120 minutes	22.2	7.1	18.7	4.8	9.5	9.5	4.5	25.5	10.1	15.2	9.7	11.5	....	7.5	15.7	431	16.3
121 to 140 minutes .....	.8	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11	.4
141 to 160 minutes	3.6	.5	6.6	2.4	....	....	1.5	3.6	....	4.3	....	1.2	....	.7	....	65	2.5
161 to 180 minutes .....	.9	.2	1.1	....	....	....	6.0	....	....	....	3.2	1.2	....	2.1	....	24	.9
181 minutes and more .....	.1	.2	....	....	....	....	....	1.8	....	....	....	....	....	....	....	3	.1

¹ British—English, 38; Scotch, 17—Total, 55.² Miscellaneous—Egyptian, 1; Greek, 1; Bohemian, 1; Hollander, 1; Negroes, 3; Canadians, 4; Norwegians, 3; Spanish, 1; Swiss, 4; Swedes, 4; Poles, 13; French, 10—Total, 46.³ Italian, 1; English, 4; Roumanians, 15; Hungarians, 14; Germans, 16; Poles, 7; Not Noted, 13—Total, 70.

The method of the investigation, selecting at random the establishments to be investigated, and the fair apportionment among the various industries and hour groups in the city, indicate that the statistics secured are representative of the workers in factories in Greater New York. It is quite possible that some of the actual percentages would be seriously changed by the addition of a larger number of schedules.¹ No doubt the percentages in some of the smaller nationality groups, for example, would be greatly affected. If, however, any general results are obtained, from an analysis of this material, they may be held to be indicative of general conditions in New York City, and representative of the great body of factory employees.

¹ The writer had occasion during the preparation of this monograph to present some of the statistics collected,—a part of those included in Manhattan. They were criticised at that time on the ground of their inadequacy. Later he materially added to these data, multiplying them several times. The general results were identical in each set of statistics, and in more than one set of figures, the percentages were strikingly similar.

APPENDIX III

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New York City Commission on Congestion of Population. Report of the Commission. *City Record*, March 7, pp. 1830-1903.

The report is divided into the following five sections:

- I. Conditions of congestion of population generally throughout the city.
- II. Effects of congestion of population and room overcrowding.
- III. Causes of Congestion.
- IV. Methods adopted in this country and in foreign countries to prevent congestion of population and room overcrowding.
- V. Recommendations for relieving the present and future congestion of population and room overcrowding in this city.

The report of this commission is based almost entirely upon oral testimony taken at public hearings, there is a minimum of original investigation. The conclusions and recommendations which are numerous and far-reaching in their consequences seem scarcely warranted by the array of facts presented. The report as a whole, however, is doubtless the best complete statement of the problem yet presented.

New York City Commission on Congestion of Population. Supplementary Report of the Commission. *City Record*, March, 10, 1911, pp. 2038-2052.

Presents additional material concerning congestion and contains the testimony of several witnesses before the Commission.

New York City, Tenement House Department, First Report of, 2 Vols., 1902-03.

A mass of intensely valuable material bearing on housing conditions in New York City. Contains an exhaustive survey of conditions, an analysis of the organization of the Tenement House Department and a block study of the population in 1900 by nationalities. It is illustrated throughout and contains many maps showing population, charts, diagrams and statistical tables.

New York City. Tenement House Department.

Second Annual Report, 1903-05.

Third Annual Report, 1906.

Fourth Annual Report, 1907-08.

These reports contain valuable information on Tenement House conditions and describe the work of the Tenement House Department. All contain valuable maps and statistics.

Palmer, Lewis E. Congestion in Boston. Survey, April 30, 1910, pp. 173-176.

Summarizes report of Housing Committee of Boston—1915. Gives results of a small investigation.

Poor in great cities, The. R. A. Woods, Jacob A. Riis, Willard Parsons, Walter Besant, and others. 400 p.

A series of popular articles on slum conditions in New York, London, Boston, Naples, incidentally bears on congestion.

Pope, Robert A. The co-partnership principle. Proceedings, Second National Conference on City Planning, Rochester, 1910, pp. 104-106.

The writer believes that the common owning and administration of homes will assist materially in relieving congestion.

Porter, H. F. J. Industry and congestion. Survey, Mar. 25, 1911, pp. 1063-1064.

A summary of the Congestion Commission's findings in regard to congestion of industries.

Pratt, Edward Ewing. Relief through proper distribution of Factories. Proceedings, Second National Conference on City Planning, Rochester, 1910, pp. 107-112.

The writer analyses the causes of industrial congestion and on the basis of this analysis maintains that industries can and should be removed to the suburbs.

Riis, Jacob A. How the other half lives. New York, 1890, 304 p.

The first of Jacob Riis' books which aroused public interest to a realization of the living conditions in New York. A series of pen pictures of the life of the poor.

— — — The battle with the slum. New York, 1892, 465 p.

A popular story, as only Mr. Riis can tell it, of the tenement district of New York and the measures taken for its improvement.

Rowntree, B. Seebohm. Poverty: A study of town life in York. London, 1902, 452 p.

Invaluable as a study of a city population. Deals with standards of living, poverty, housing and social institutions. Discussion of congestion only incidental.

Russell, Charles Edward. The slum as a national asset. *Everybody's Magazine*, Feb., 1909, pp. 170-180.

A magazine story of congestion, contains some well worded striking paragraphs, a few figures and a short description of German work.

Seager, Henry R. Where people live that work in congested districts. Charities and the Commons, Vol. XX, pp. 39-43.

Describes briefly the distribution of workers and the factors entering into the situation.

Sherman, P. Tecumseh. Congestion of manufactures in New York City. New York State Department of Labor Bulletin, Sept., 1908, pp. 303-323.

An excellent article describing industrial congestion in New York City. Concentration of industries is shown in a series of statistical tables. The causes of congestion of industries are given as:

I. Immobility of old establishments.

II. Advantages as a transportation center.

III. Labor advantages.

IV. Convenience of local delivery.

V. Advantages of propinquity to allied industries.

— — Manufacturing and congestion. Survey, Mar. 25, 1911, pp. 1064-1065.

The writer takes up the recommendations of the Congestion Commission and criticizes each.

Sims, G. R. How the poor live. London, 1898, 150 p.

A superficial description of the poorer section of London. Of small value.

Speranza, Gino C. The Italians in congested districts. Charities and the Commons, Vol. XX, pp. 55-57.

Discusses the Italian and shows the psychological side of the problem.

Stella, Antonio. The effects of urban congestion on Italian women and children. Medical Record, May 2, 1908.

A rather detailed study of death rates in a number of New York blocks largely inhabited by Italians. Of considerable value.

Stoy, Elinor H. Growth of the slum in our cities. Arena, March, 1907, pp. 234-238.

A sentimental discussion.

United States Commissioner of Labor. Slums of Baltimore, Chicago, New York and Philadelphia. Seventh Special Report, 1894, Washington, 620 p.

A mass of valuable statistical material collected by a special investigation of the Bureau of Labor.

Veiller, Lawrence. Housing reform. New York, 1910, 213 p.

Chapter II, "Congestion and overcrowding" is of interest. Distinguishes between congestion, land overcrowding, and room

overcrowding. Advances *à priori* theory of congestion, that "as a rule, people live in cities because they like city life."

- — Social value of playgrounds in crowded districts. Charities and the Commons, Aug. 3, 1907.

Points out need of playgrounds in congested districts and calls attention to physical effects.

- — The safe load of population on land. Proceedings, Second National Conference on City Planning, Rochester, 1910, pp. 72-79.

Insists on distinction between room overcrowding and land overcrowding. States that mere numbers is not a criterion of congestion, but that the method of housing is important.

- Waldman, Morris D. Charitable relief and congestion. Survey, Mar. 25, 1911, pp. 1061-1062.

Clean-cut adverse criticism of report of Congestion Commission. He says: "One must marvel at the courage and assurance of the commission to submit to the searching scrutiny of a wise mayor and an intelligent public opinion such sweeping recommendations after so hasty an investigation."

- Walton, J. Barnard. Relation of congestion to juvenile delinquents. Thesis, New York School of Philanthropy, 1907-8. Mss.

A first-hand study of juvenile delinquency in congested districts, introduces some interesting statistics and maps showing distribution of delinquents and relation to population.

- Webber, Gustavus A. Congestion in Philadelphia. Proceedings, Second National Conference on City Planning, Rochester, 1910, pp. 58-60.

A brief and not valuable discussion of the housing problem.

- White, Gaylord I. Upper East Side, its neglect and its needs. Charities and the Commons, July 16, 1904, pp. 748-751.

Calls attention to absence of social work on the Upper East Side and points out that bad conditions are increasing.

- — City block in 1896: A study of Gold Street, between Concord and Tillary Streets, Brooklyn. Charities and the Commons, Oct. 13, 1900, pp. 2-6.

A detailed study of the population of a single block.

- Wilcox, Delos F. Taxation and congestion. Survey, March 25, 1911, p. 1068.

A brief critique of taxation recommendations of congestion commission.

- Wilkins, W. G. The annual cost of our slums. Progress, July, 1910, pp. 161-171.

Deals with mortality and morbidity and congestion, cites statistics of small value.

Witmer, Lightner. The restoration of children of the slums. Psychological Clinic, Feb. 15, 1910, pp. 266-280.

A remarkable account of the physical deterioration of two children in a slum environment, and the scientific methods of their restoration.

Wright, Henry C. Transit and congestion. Survey, March 25, 1911, pp. 1066-1067.

Summary of transit findings of Congestion Commission, points out defects in the report.

— Rapid transit in relation to the housing problem. Proceedings, Second National Conference on City Planning, Rochester, 1910, pp. 125-135.

A practical consideration of the problem of distributing an urban population into the thinly populated suburbs by means of rapid transit.

VITA

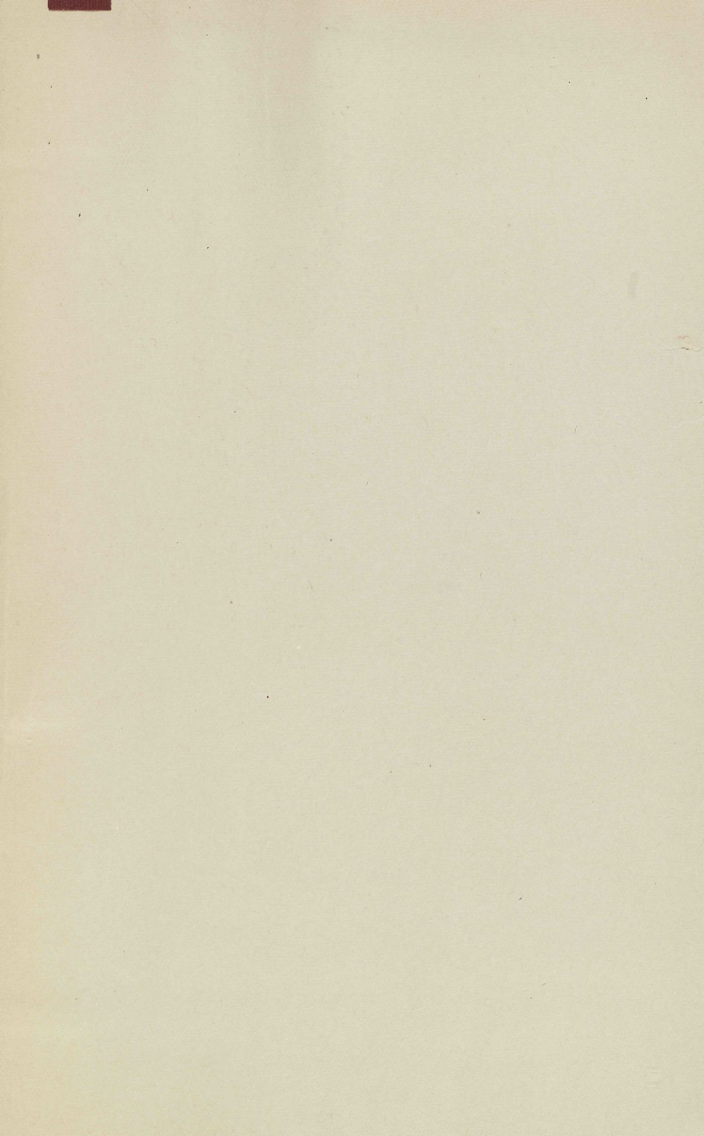
THE author of this monograph, Edward Ewing Pratt, was born at Streator, Ill., in 1886. He received his elementary training in the public schools of that city and at the Oberlin Academy, Oberlin, Ohio. His college work with the exception of one summer at the University of Chicago was done in Oberlin College, from which he received the degree of A. B. in 1906.

In 1906-7 he held the George Foster Peabody Fellowship in Economics and Sociology at Tulane University, New Orleans, La., and received the degree of M. A. from that institution in 1907. He was University Scholar in Economics at Columbia University in 1907-8; Junior Fellow in the Bureau of Social Research, Russell Sage Foundation, 1908-9, and at the same time Honorary Scholar in Social Economy at Columbia University. He graduated from the New York School of Philanthropy in 1909. He held a Senior Fellowship in the Bureau of Social Research in 1909, and resigned to accept a Lectureship in Statistics at the New York School of Philanthropy. He now holds the position of Assistant Professor of Economics and Statistics at the New York School of Philanthropy.

In economics and allied subjects, the author has studied under Professors Ernest L. Bogart and A. B. Wolfe, of Oberlin College; William Hill, of the University of Chicago; Morton A. Aldrich, of Tulane University; J. B. Clark, E. R. A. Seligman, H. L. Moore, H. R. Seager, E. T. Devine, S. M. Lindsay, John W. Burgess and Frank-

lin H. Giddings, of Columbia University; Roswell C. McCrea, Carl Kelsey and others of the New York School of Philanthropy.

He is a member of the American Economic Association, American Statistical Association and the National Conference on City Planning:



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