illness, it would be well to know to what extent overcrowded and badly ventilated homes are responsible for broken vitality, debility, and exhaustion. Some light has been thrown on this matter by inquiries in England. The Earl of Shaftesbury said before the Royal Commission on Housing: “When we were at The Board of Health some years ago we instituted inquiries in these low and miserable neighborhoods to see what was the amount of labor lost in the year, not by illness, but by sheer exhaustion and inability to do the work. We found upon the lowest average that every workman or workwoman lost about twenty days in the year from sheer exhaustion.” . . . and the wage thus lost “would go a great way toward paying an increased rent for a better house.” 1 That deterioration in health which often does not figure in the death rates is one of the most serious and least observed of the evil results of bad housing.

While New York’s conditions are worse than those of any other American city, the remedial efforts here have been the broadest and best. In many other cities also an awakening has taken place which promises to advance housing reform. However partial and ineffectual our efforts have been up to the present, we can look forward to a slow improvement in the living conditions of the people. But any advance in sanitary living conditions is, at best, but a partial advance. Improvement of conditions in which the people work should go hand in hand with the improvement of living conditions. In this field we have done almost nothing. There is no other nation, comparable industrially to the United States, which is so backward as this country in its knowledge, in its legislation, in its administrative machinery for dealing with the insanitary conditions in factories, mines, and workshops, and in preventing or regulating those dangerous processes in industry which are responsible for a very large number of unnecessary diseases, accidents, and deaths. We have been limiting the power for harm which may be exercised by the individual landlord; but no other country has so much as our own permitted individuals to disregard, to a criminal extent, the health and welfare of employees. I dare say no other nation has so many needless deaths or so many cases of illness wholly due to preventable industrial causes as the United States of America. It is perhaps needless to repeat that these insanitary conditions of home and factory have a mighty bearing on the extent of poverty. The field is one which offers the greatest opportunity for humane and merciful legislation. The workmen who are crushed, crippled, or killed, who contract incurable diseases, who are poisoned, or who are incapacitated by carelessness, insanitary conditions, or dangerous machinery, are so numerous in this day that in a very few
recognized as "marks of trade." Typesetters, telegraphers, tailors, writers, etc., suffer frequently from muscular cramps and similar affictions. Such breakdowns may at first prevent only a free muscular action, but they are likely in the end to result in palsy and paralysis of the over-used muscles. The latter, for instance, happens very frequently to sewing-machine operatives. Shop girls are likely to suffer, as a result of their occupation, from a narrow, contracted pelvis. Varicose veins and ulcers result from continuous standing. Curvature of the spine results almost inevitably from certain employments. These are but a few among many of the physical ills which result from certain specialized occupations.

Even these comparatively slight afflictions are serious to the workman, because he must work or become a pauper. The more terrible and loathsome diseases of occupations, which utterly destroy the workman's health or which cause death, are too many to mention in detail. Those diseases which result from handling or coming in contact with the poisonous materials used in the chemical industries are the ones most generally known. Lead is a commonly used poison. A very large number of workmen are employed in many different industries where they are subjected to the dangers of lead poisoning. The early symptoms of the disease are blue gums, followed by a loosening and coming out of the teeth; but blindness, paralysis, and death in convulsions finally result.1 Miscarriages, still-births, and convulsions occur frequently to women lead-workers who are with child. This is one of the worst of the so-called poisonous trades. The dust-producing trades cause various respiratory diseases, such as miners' asthma, and consumption. Mining, street-sweeping, and file-grinding are the ones most generally known. Bakers, laundresses, tailors, and dressmakers are also subject to certain diseases, resulting from their work and from insanitary conditions, which cause repeated breakdowns and a high death rate. The dangers of work on the railroads have been spoken of elsewhere.

These problems of unnecessary and preventable sickness, whether of home or of factory, cannot be solved by the individual. The individual who suffers is in the main powerless to alter conditions. On the other hand, the landlord and the manufacturer not only do not, as a rule, voluntarily improve the conditions, but they are at times even active in preventing humane legislation for bettering sanitary conditions. Dr. J. T. Arlidge, a great specialist on diseases of occupations, says: "When visiting manufactories, the visitor is almost invariably informed that the particular manufacture therein pursued is a very healthy one. Even in cases where the con-
trary is a matter of general knowledge, and demonstrated by statistics, it is no uncommon thing to find the matter treated as of very little moment. If undeniable, the evils are minimized, and the masters and managers are prone to close their eyes to conditions of labor that loudly call for a remedy, and cast the blame more or less upon the workpeople.\footnote{1} Again and again in England and Germany, where many studies of injurious employments have been made, the employing class casts all the blame for high death rates and excessive disease upon the workers, and the landlord class does likewise when opposing sanitary measures for the improvement of tenement-houses. Even in those industries where the workers are degenerating and would become extinct, were it not for new recruits, the employers manifest the same unconcern for their health and accept with great unwillingness any proposed sanitary improvements. So far is the greed for profits carried. The deterioration of an entire people may result if this greed be not restrained.\footnote{See Appendix B, p. 347.} From these facts alone it is fair to assume that, if the sanitary evils of home and factory are to be stamped out, it must not rest with the employers or landlords: it must be done by the community itself.

Any one will realize how fragmentary and incomplete this brief survey is of preventable disease and of preventive measures. We have hardly made a beginning in certain of the fields which have been mentioned. Within the last few years, however, a movement has developed which promises to arouse our people to the wisdom of preventive measures. Within the last decade there have been a multitude of societies formed for the purpose of stamping out the most serious disease which afflicts mankind. Tuberculosis is the great modern plague, more subtle and less generally feared, but far more deadly, than any other plague the world has known.

There was once a Great Black Plague. It was the consternation of the people of the time when it grew and flourished. Those who were able to do so fled from the cities which it ravaged. It lived a year and caused the death of two or three million people. It was probably the result of filthy, undrained streets and vile tenements. "The Great White Plague" has lived for centuries and centuries; it was known before the time of Christ. It has caused the death of millions and millions of people; it will this year cause the death of over one million more. One hundred and fifty thousand people in the United States alone will this year die of the disease. Within the next twelve months not less than fifteen thousand of the people of New York City, some of whom will be our neighbors,
friends, and even perhaps our relatives, will bow down before the Great White Plague. It is a needless plague, a preventable plague. It is one of the results of our inhumane tenements; it follows in the train of our inhumane sweatshops; it fastens itself upon children and young people because we forget that they need playgrounds and because we are selfish and niggardly in providing breathing spaces; it comes where the hours of labor are long and the wages small; it afflicts the children who are sent to labor when they should yet be in school; the plague goes to meet them. It is a brother to the anguish of poverty, and wherever food is scant and bodies half clothed and rooms dark, this hard and relentless brother of poverty finds a victim. It is more kind to the old, who have every reason for dying, than it is to the young, who have no reason for dying. It takes, as it were, an especial delight in mowing down the bread-winners of wage-earning families at the sweetest and most treasured period of their lives, — at the time when they are having the first joys of married life and bringing into the world their little ones. More than one-third of all deaths that occur between the ages of fifteen and thirty-five are due to the Great White Plague. It is a waste of youth prepared for life and labor, cut off by needless death as life and labor begin. For it is a wholly needless and preventable cause of death and of inestimable mourning and anguish among the widows and the fatherless.

The extent of the White Plague is one of the best tests of a high or low state of society; in many ways it is the truest and most accurate of social tests. The number of its victims will indicate the districts in which sweatshops flourish, and the streets in which the double-decker tenement, the scourge of New York, is most often found. Where the death rate from the Plague is greatest there ignorance prevails; drunkenness is rife; poverty, hunger, and cold are the common misfortune.

A prominent physician said a few years ago: "This is a disease which has claimed more victims than all the wars and all the plagues and scourges of the human race. Even in the few short years since Koch's discovery over two million persons on this continent have succumbed to its fatal infection. . . . The annual tribute of the United States to this scourge is over one hundred thousand of its inhabitants. Each year the world yields up one million ninety-five thousand, each day three thousand, each minute two of its people, as a sacrifice to this plague. Of the seventy million individuals now peopling these United States, ten millions must inevitably die of this disease if the present ratio is kept up."
Tuberculosis is more common in the cities than in the country. The death rate from this disease in the cities of over twenty-five thousand inhabitants is about twice that of the rural districts of the state. The tenement districts suffer much more from the disease than do the well-to-do districts. In Paris the death rate is three times as great in the poorest quarters as it is in the well-to-do quarters. In Hamburg the proportion is almost the same. In the First Ward, near the Battery in New York City, fourteen times as many people die from tuberculosis, in proportion to population, as in a certain ward adjoining Central Park.\(^1\) Obviously it is a plague which exists much more among the poor than among the rich.

Certain tenements become infected with the disease. We have recently heard of the “Lung Block” with its frightful death rate. We have also heard of the “Ink Pot” with its many deaths from tuberculosis. Mr. Ernest Poole, in describing the conditions in this tenement, says: “It has front and rear tenements five floors high, with a foul, narrow court between. Here live one hundred and forty people. Twenty-three are babies. Here I found one man sick with the Plague in the front house, two more in the rear—and one of these had a young wife and four children. Here the Plague lives in darkness and filth—filth in halls, over walls and floors, in sinks and closets. Here in nine years alone twenty-six cases have been reported. How many besides these were kept secret? And behind these nine years—how many cases more?

“Rooms here have held death ready and waiting for years. Up on the third floor, looking down into the court, is a room with two little closets behind it. In one of these a blind Scotchman slept and took the Plague in ’94. His wife and his fifteen-year-old son both drank, and the home grew squalid as the tenement itself. He died in the hospital. Only a few months later the Plague fastened again. Slowly his little daughter grew used to the fever, the coughing, the long, sleepless nights. The foul court was her only outlook. At last she, too, died. The mother and son then moved away. But in this room the germs lived on. They might all have been killed in a day by sunlight; they can live two years in darkness. Here in darkness they lived, on grimy walls, in dusty nooks, on dirty floors. Then one year later, in October, a Jew rented this same room. He was taken, and died in the summer. This room was rented again in the autumn by a German and his wife. She had the Plague already, and died. Then an Irish family came in. The father was a hard, steady worker, and loved his children. The home this time was winning the fight. But six months later he took the Plague. He died in 1901. This is only the record of one room in seven years.”\(^1\) Miss
Brandt of the New York Committee for the Prevention of Tuberculosis is authority for the statement that one house in Chinatown has a record of thirty-seven cases in nine years; another house has a record of twenty-five, and still another of nineteen. In the “Lung Block” there have been two hundred and sixty-five cases of tuberculosis reported to the Board of Health in nine years. Mr. Ernest Poole, who knows the conditions in this block also, says that this is probably not more than half the actual number. In other words, there have probably been over five hundred cases of tuberculosis in this one block during the last nine years. The disease is one which affects especially residents of the tenements and the workers in certain trades, as, for instance, printers, tailors, bookkeepers, dressmakers, bakers, cigar-makers, potters, stone-cutters, file-grinders, dyers, wool-carders, etc.

To know why these classes of people are affected, let us for a moment consider how the disease is spread. A person having consumption can, it is said, expectorate in a day seven billions of germs or bacilli. These germs or bacilli are the only cause of the disease. The sputa or expectorations from the diseased lungs dry and afterward become a pulverized dust which is blown about through tenements, theatres, street cars, railway trains, offices, and factories. In fact, the infection is disseminated wherever tuberculous sputum becomes dry and pulverized. The germ is killed by sunlight and lives but a short time in the open air, but it will live for months in darkness or in places artificially lighted. Every consumptive, therefore, who is careless about his sputa—and most consumptives are careless who have not been trained to discretion by having lived for some time in a sanatorium—becomes, in consequence, a centre of infection. Those about him are very likely to contract the disease; those living in the same rooms or working in the same factory or office, are the ones most liable to the infection, especially when they are delicate, overworked, underfed, or underclad.

Dr. Hermann Biggs, the General Medical Officer of the Board of Health, says that there are thirty thousand persons in New York City suffering from tuberculosis. There are therefore about thirty thousand centres in the city disseminating the infection. Where conditions are favorable, as, for instance, in certain offices, factories, sweatshops, and tenements, the disease is constantly spreading. As a result, there are “Lung Blocks,” and, doubtless, if it were known, “lung factories” and “lung sweatshops” also. This dry, pulverized dust is the most important of the means of spreading tuberculosis throughout all parts of the city, so that, I do not doubt, a consumptive of the sweatshop, spraying the garments he sews by sneez-
ing or coughing, may convey to some delicate lad or girl in a far-distant part of the country or in a wealthy part of the city the disease which the sweatshop has given him. A virulent cause of consumption is the spray discharged from the nose, lungs, or mouth of the consumptive invalid. As before mentioned, those near the person suffering from tuberculosis are very likely to contract the disease. Children playing about on the floor, kissing or embracing the diseased mother or father, taking the milk from a tuberculous mother, so often contract the disease that the mass of people have an almost unshakable belief that it is inherited. Eminent physicians, however, say that the disease is not inherited. Professor Koch, who twenty-two years ago discovered the cause of tuberculosis and thus opened the way for saving millions of lives, says in an instructive interview on the subject: “The last three or four weeks of life are the most deadly in the spread of infection. . . . His every cough, sneeze, or effort at speech sends forth a spray laden with bacilli in virulent form deadly to the poor wife and children around him. . . .” He speaks further of the dying consumptive who sets “this terrible spray in operation.” In another place he says, “it is not cruelty to isolate these cases; it is the truest and highest kindness. . . .

“In all other infectious diseases we attack infection at its source; cases of small-pox, of leprosy, of diph-

theria, of plague, are isolated, but cases of tuberculosis in their last stages, the most deadly stage of the most deadly disease of all, are still allowed throughout Europe to spread further infection broadcast in the midst of their already destitute families. This fact does not yet seem to be learned. When it is, and when we have these homes for the hopeless cases adjoining every city, then tuberculosis will pass from the midst of us.”

Let us consider whether it is an economy on the part of society to ignore the spread of tuberculosis and to do little more than to furnish the consumptive with a place in which to die. The state has gone little farther than that in this country. We need not, for the moment, consider what is kind, what is humane, what would be doing unto others as we would have others do unto us if we had consumption. We need only consider cold figures and the economics of the disease. Dr. Hermann Biggs, who has spent a good part of his life in doing invaluable work for New York and is one of the few physicians of this country who have carefully studied the social consequences of individual diseases, has recently said in an important lecture on tuberculosis that the average cost to society of preparing a man for usefulness is $1,500. This is in the nature of a grant from parents or state, which the child, when he becomes a man, is expected to return to the community by his labor.
Considering that 10,000 people every year die of tuberculosis in New York, the natural conclusion is that New York loses annually about $15,000,000. The cost of their nursing, food, medicines, attendance, as well as the loss of productive labor, adds a further loss to the municipality which Dr. Biggs estimates at $8,000,000. Upon the same basis it is estimated that the annual loss in the United States from tuberculosis alone is $330,000,000.\footnote{1} It should be noted that this is an annual loss. Each consumptive un-}
cared for infects some one near him; he passes his disease on to others; he leaves a legacy of death to friends and neighbors. The 120,000 consumptives who die this year yield 120,000 consumptives who are to die next year, and so on continuously. It is cheaper in every way to cure a consumptive in a sanatorium than it is to let him die in a hospital or in a public institution of some kind, but to let him die in a hospital or institution of whatever kind is cheaper than to let him die in his tenement. What we are doing now is just the wrong thing. As Dr. J. H. Pryor has said, \textquoteleft\textquoteleft We must care for the consumptive in the right place, in the right way, and at the right time, until he is cured; instead of, as now, in the wrong place, in the wrong way, at the wrong time, until he is dead.\textquoteright\textquoteright It is cheaper and it is infinitely more humane.

It is unquestionably the duty of society to care for the victims of this disease. It is a social disease. Society is responsible for its continuance. If I contract the disease when in a theatre, a factory, or a public building or when riding in a street car, or if I move into a tenement which has just been vacated by a consumptive, or if I live in a tenement where a consumptive was permitted to spit on the floors in the hall, or if I am compelled by poverty to live in a dark, unventilated room, which the law should everywhere prohibit, I know that society is to blame for my having contracted the disease, because society alone through its board of health and governmental agencies, can prohibit careless expectoration, can disinfect tenements, can compel notification of diseases, can confiscate sweatshop garments. It alone can remove centres of infection by powers which it alone has.

Many years ago I was engaged in taking into the country a great many small children from one of the poorest districts of one of our largest cities. The little ones were gay and active and could hardly be kept quiet or in hand during the journey. One little girl, in a condition of extreme anæmia, with bright eyes and a very delicate little frame, found herself so easily exhausted in play that she came to sit by me and talk. I discovered from my short conversation with her that her father had been ill for several months, that he \textquoteleft\textquoteleft coughed and coughed\textquoteright\textquoteright