TRANSACTIONS

OF THE

# North Carolina Health Officers' Association

THIRD ANNUAL SESSION

---

Morehead City, N. C.,
Monday, June 16, 1913

## OFFICERS

DR. L. N. GLENN, *President*, Gastonia.
DR. G. M. COOPER, *Vice-President*, Clinton.
DR. W. S. RANKIN, *Secretary-Treasurer*, Raleigh.

*Executive Committee*—Dr. L. N. Glenn, Gastonia; Dr. L. B. McBrayer, Asheville; Dr. J. R. McCracken, Waynesville.

*Legislative Committee*—Dr. W. A. McPhaul, Lumberton; Dr. D. E. Sevier, Asheville; Dr. H. D. Stewart, Monroe.

*Publicity Committee*—Dr. W. S. Rankin, Raleigh; Dr. Sam Ellington, Wentworth; Dr. A. B. Croom, Maxton.

## PROGRAM

MORNING SESSION, 11 O'CLOCK.

President's Address—Dr. L. N. Glenn, Gastonia, N. C.
Secretary-Treasurer's Report—Dr. W. S. Rankin, Raleigh, N. C.
Important Changes Made in the Public Health Laws by the General Assembly of 1913—Dr. L. B. Evans, Clarkton, N. C.
The Part of the Physician in the Execution of the Vital Statistics Law—Dr. W. M. Jones, Greensboro, N. C.
Of What Value are Reported Cases of Tuberculosis and Typhoid Fever to the Municipal and County Health Officer?—Dr. B. W. Page, Lumberton, N. C.
Medical Inspection of Schools—Dr. Aldert S. Root, Raleigh, N. C.
Appointment of Committees on Nominations and Resolutions.

AFTERNOON SESSION, 3 O'CLOCK.

Quarantine, Complete and Partial, and Placarding: To What Diseases Shall These Measures be Applied?—Discussion opened by Dr. W. S. Rankin, State Health Officer, Raleigh, N. C. Continued by Dr. C. S. Maxwell, Beaufort, N. C.; Dr. Joseph Rhem, New Bern, N. C.; Dr. Albert D. Parrott, Kinston, N. C.; Dr. John Blount, Washington, N. C., and Dr. Charles T. Nesbitt, Wilmington, N. C.
After What Diseases, With What, and How Should We Disinfect?—Discussion opened by Mr. Warren H. Booker, assistant to the Secretary of the State Board of Health, Raleigh, N. C. Continued by Dr. C. A. Shore, Raleigh, N. C.; Dr. H. B. Maxwell, Whiteville, N. C.; Dr. William S. Jordan, Fayetteville, N. C.; Dr. J. W. Halford, Lillington, N. C., and Dr. L. B. McBrayer, Asheville, N. C.
How to Handle the Contagions in School Populations—Dr. George M. Cooper, Clinton, N. C.
Report of Committees and Election of Officers for Ensuing Year.

EVENING SESSION, 8 O'CLOCK.

Address by His Excellency Locke Craig, Governor of North Carolina.
The Indications for Combining Municipal and County Health Work—Dr. J. T. J. Battle, Greensboro, N. C.
Fundamental Duties of the Whole-time County and Municipal Health Officers—Dr. Charles O'H. Laughinghouse, Greenville, N. C.
Adjournment.

Fourth annual session will be held in Raleigh, June 15, 1914.

OFFICERS.

DR. G. M. COOPER, *President*, Clinton.
DR. WILLIAM M. JONES, *Vice-President*, Greensboro.
DR. W. S. RANKIN, *Secretary-Treasurer*, Raleigh.

# TRANSACTIONS

OF THE

# North Carolina Health Officers' Association

THIRD ANNUAL SESSION

## ADDRESS OF PRESIDENT, DR. L. N. GLENN.

*Fellow Members of the North Carolina Health Officers' Association:*

We are here today for the third annual meeting of our organization. This organization was very happy in its first officers. In its infancy it was guided and directed by two of our most capable men and has grown to be of some importance. Perhaps no organization has ever grown quite so rapidly in some respects as this. At Hendersonville a year ago this new organization was turned over to the present officers. The present President wishes to very sincerely offer his thanks for the honor conferred upon him at that time and hopes that the labors indulged in during the past year have not been in vain.

Instead of delivering to you today anything like a formal President's Address, recognizing the fact that this is not strictly speaking a literary body but a working body, I conceived the idea of not writing an address, but I wish to review briefly some of the work done during the past year and make some few impromptu suggestions and recommendations as to our future.

During the past year I have communicated with the State Boards of Health and State Health Officers' Associations of several States of the Union. I have secured, wherever possible, ideas and information from the bodies in the different States as to what they were doing and what they were expecting to do. I find, after having communicated with so many of the health workers, that we constitute a working body—not a theoretical body. We are indulging in practicalities, not theories. We are on the firing line, all of us, and that being so, a simple discussion of conditions as they are, I take to be more in place than any attempt at a literary production.

During the past year we have in my county, if you will pardon an illustration of what we are doing, attempted to educate the school children. If I were to attempt a real address to you today I should speak on the education of the children along health lines and on health matters. In our county we have had the coöperation of the teachers

most cordially. The superintendent of education in our county is one of our greatest helpers. Every schoolhouse in the county has not only been opened to us, but he has begged us and urged us to come whenever we pleased and stay as long as we pleased, to dispense anything we might be able in the way of health education. Not less than ninety-five per cent of the school children in Gaston County during the past year have heard health talks. The physicians of the county have surprisingly well rallied to our assistance. The physicians will assist in the work far better if you get the superintendent of education to make out programs and map out routes for the phyicians. They will work for him better than for you. We have discussed with the school children sanitation, hygiene, ventilation, diet, light, heat, filth, cleanliness. We have discussed vaccination, quarantine, disinfection, fumigation, vermin and things of that sort. We have endeavored in the plainest language possible to educate the children along health lines.

About a week after these talks the teachers in many of our schools have called upon the children to write up the health talks they heard the week before. It is really surprising to see and read the compositions that these children have produced. Surprisingly accurate have they been in what they have learned from these talks and very few of these written productions from the children have been erroneous. It is really remarkable. They have picked up in quite a number of instances very valuable pieces of practical work and taken it home with them and applied it in their homes. Our hardware dealers throughout the county have been flooded with orders this summer for screens for doors and windows more than ever before. The children themselves are looking after sanitary conditions around their homes. The children are keeping cleaner schoolhouses; the country churches are being kept better and cleaner; public meeting places of every kind are better looked after; refuse matter of every description is taken care of better than formerly; nuisances of every kind are being abated more readily than ever before, and this work is bearing far more fruit than it ever did before.

What we have been doing in our county can be easily done in any of your counties and is being done to some extent in some of your counties. The parents of these school children have acquiesced with us in this work to a much greater extent than we anticipated. At the beginning some were rather skeptical, but now we can not do too much. We have been begged and pleaded with for health talks in many instances where we were unable to supply them. We hope by this method to bring up a health loving, health knowing population. The school boys of today will be the voters a few years hence. They will be intelligent



voters so far as health matters are concerned. We will not have to beg legislatures to do things for health. The legislators themselves will know about health matters and do the things that ought to be done better than ever before. Our Legislature at present is doing or has done well by us. They have done better for us each succeeding session than before and we take it that it is largely on account of the enlightenment that we are spreading throughout the State. The school girls of today are soon to be the housekeepers and homebuilders and the children raisers of the future. These girls soon to be women are going to be acquainted with health necessities. They will keep cleaner homes than their mothers, cleaner kitchens than their mothers. The back yards will be cleaner than in former days and in every capacity these girls of today are soon to be our health workers of the future. Looking at it from a purely selfish standpoint, if in no other way, it is a paying investment on our part today. You have all had the experience that I have had. You have all tried to do many things in the home that you failed to get done. You have all met deplorable conditions about homes that we were unable to correct. Why? Because of the ignorance about that home. You have not had the coöperation in your work that you should have had in the past and that you will have in the future. The ignorance of the people in the past has allowed the ignorance on the part of the doctor to go on unquestioned. The enlightenment of the future will smoke out the sorry doctor—no question about it. The enlightened public of the near future will ask you about these matters and will demand answers. They will know whether or not you know, and it is going to be your province to know and your knowing will not be in vain. You will have the coöperation that means success.

A very practical illustration is this: For several years past we have had no screens in our county home. It is a splendid building, but had no screens. Every summer we have had several cases of malaria among these helpless, feeble old people, not sick, except malaria. Three years ago I succeeded in having the county home screened—every window and door. Since that time we have not had a single case of malaria among the twenty-six or twenty-eight inmates. I mention that not because it is necessary to be mentioned but because it has been an object lesson in our county and has been told to the children in our schools. That has been a practical lesson to them that means something to them. The children now know what the fly question means, what the mosquito question means, and you all know that a very, very few years ago even the best of us did not know what these questions meant.

My idea then, in recommending work, is simply this: You county

physicans get the coöperation of your county superintendent of education. If you have him with you you have the best ally you can get. He will gladly invite you to discuss health matters with his teachers at his summer school institutes. There is the place to get in your good work. If you will meet with the teachers and discuss with them what these things mean, what their duty is, what an opportunity they have to coöperate with you, and instruct them so as to enable them to look over their school children and tell what child should not be in school, enable them to employ a certain amount of tact with a certain amount of teaching and get the parents to take that child out of the school, you will be doing the best work possible. We recently had a girl seventeen years of age in one of our schools almost dead with tuberculosis. It caused a great deal of trouble to get that girl out of school, but she was expectorating everywhere, all over the school premises; she was in the classes with other children, using the same pencils and books and tablets as the other children. We almost had to force her out. A few years hence it will not be so. You will not send your boys and girls to a school where that kind of a thing goes on. It is the enlightenment of the public school that I would urge upon you; that I beg with you to coöperate in aiding. When this work is done and you bring up a population knowing these matters, the work from that time on will be very, very easy.

To undertake to accomplish this work without public sentiment, without public enlightenment, is an endless, useless task. Only a few years ago we preached prohibition without effect. We got it in the school books, into the school children, and now we have it in the laws. This is the same way. There has never been in the history of this State a time when public sentiment was more receptive of these measures than now. You have never in your experience as physicians had the opportunity placed directly at your disposal that you have now. The people of the State no longer stand for the things they stood for in the past. Take the prisoners, how they are treated today, compared with years gone by. Not a community in North Carolina will stand for prisoners being imposed upon. The brutality of former years is a thing of the past. The public has been enlightened. The good work is going on, it is bearing fruit, and our future is far brighter than the past. That result will be accomplished so soon as you put forth the proper energies. We are getting along well, but we want to get along faster. You will find that very, very seldom will you have any opposition in this endeavor.

This work, then, to be carried on, merely needs a little effort on your part, and you will be well repaid and more than repaid for anything you may do. You have the laboratory at Raleigh to assist you whenever that is necessary; you have our excellent State Board of Health, with its excellent officers, to assist you and coöperate with you. You have every coöperative aid that you need, and if you will but do your part in a work that is easily done, for the people, who are anxious to have it done, your reward will be ample and sure.

I thank you very much.



## REPORT OF SECRETARY-TREASURER.

W. S. Rankin, M.D., Raleigh, N. C.

As the hour for the meeting has already lapsed by an hour and a half, and as our time is short, I am going to ask the permission of the Association to dispense with the reading of the minutes of the last meeting, which are found on pages 639-642 (inclusive) of the Transactions of 1912, and without objection, I will let those who are interested in the minutes look them up in the Transactions.

As Treasurer I report that we have collected $67 and have $53 in the treasury.

## CHANGES IN THE HEALTH LAWS OF NORTH CAROLINA BY THE LEGISLATURE OF 1913.

L. B. Evans, M.D., Clarkton, N. C.

*Mr. President and Fellow Members of the North Carolina Health Association:*

I shall divide this short paper into three parts:

First. Changes in the General Health Laws.

Second. Changes in the laws affecting health.

Third. Changes in the laws affecting the social, moral and mental hygiene of the State, and therefore indirectly affecting health.

1. *The changes in the General Health Laws of any importance are as follows:*

First. The county boards of health are to meet on the first Monday of July of this year and hereafter in the odd years of the calendar on the second Monday in January, and on these dates elect a county physician or county health officer, who is to replace the old county superintendent of health. Now the reason for this meeting in July of this year

is that on the date the county board of education meets, and as there is a new county school law that has made it possible, by the concurrence of the county board of education and the county board of health, for the county board of education to appropriate from their fund a certain amount, not exceeding one-half the county health officer's salary, for the purpose of having the health officer make physical examination of the school children. Again, the new law makes a distinction between the official employed by the county board of health to simply treat sickness in the county and the official whose principal purpose is preventing sickness. The term "county superintendent of health" is confusing and misleading to the people of the county. As the term has been employed it was officially applied to the physician who treats the sick in jail, in the convict camp, and county home, examiner of the old soldiers for pensions and the insane for commitment. It also applied to the same physician who did those things mentioned, but also spent a larger part of his time in the execution of certain measures for the prevention rather than the cure of disease. The new law does not use the term superintendent of health. It recognizes two terms—"county physician," who simply treats the sick, makes commitments, etc., and "county health officer," who gives his whole time to the prevention of disease. It is up to each county board of health whether they shall employ a "county physician" of a "county health officer," depending on whether the duties of the officer is to simply treat the sick dependent upon the county or the duty of giving his entire time to the prevention of disease in the county.

Again the new law takes the right of inspection of county buildings away from the State and gives it to the counties. It also takes the duties of enforcing quarantine law out of the hands of the State and gives it to the county authorities that now have both the power and the responsibility for the proper enforcement of the laws. This principle is in full accord with the fundamental democratic principle of local self-government. (The right of quarantine in cases of bubonic plague, yellow fever, typhus fever and Asiatic cholera is still retained by the State.)

The last and most important change in the general health laws was to increase the appropriation from $18,000 to $26,500.

2. *Changes in laws affecting the general health:*

Under this head I want to mention two laws passed by the last General Assembly. The first of these is known as the vital statistics act. It requires the registration of all births and deaths in North Carolina. It is generally conceded by those most interested in the health of the State



that this is the most important piece of health legislation that was ever passed by a North Carolina Legislature. This law goes into effect July 1st. It is what is termed the "model" law. It embodies the wisdom and experience of the various registration officials not only of the various States of the Union, but of many of the European countries. It is strict and exacting in requiring all such detailed knowledge and data accompanying a birth or death that could be of interest at any subsequent time, either from a social, legal or health standpoint. All this information is kept on permanent record in fireproof vaults at the State Capitol, and can be obtained at any future time by paying a fee barely sufficient to pay for the clerk or official for finding and copying same. This law is like wine—will become more valuable as time goes on, especially the monthly reports of the number of deaths in each county per one thousand inhabitants. A knowledge of the causes of those deaths will be a wonderful aid to the State Board of Health, doubling and redoubling its usefulness as a life saving station, giving them absolute knowledge of conditions throughout the various counties of the State. There were dozens of amendments offered to the bill and a few of them stuck, still it came through in better shape than some of us expected. The amendment most objected to was the one giving the people in the country districts ten days in which to file death certificates. Delays cause difficulty in obtaining accurate data. An appropriation of $10,000 was made for carrying on this work. The total appropriation made by the Legislature of 1913 for health work was about $45,000 per year as against $27,500 heretofore.

Now the other law enacted is one allowing any district which may so desire to form a health district, petition for an election, vote a tax on themselves to eradicate disease and improve their hygienic conditions. This bill was introduced by myself at the request of our able Secretary of the North Carolina Medical Society, Dr. J. A. Ferrell, who hopes by this means and with special help from the Rockefeller fund to create in this State a few model districts, so far as science can make it so, for perfect, healthful living, let the world know of them and invite the world to come and enjoy the benefits of these perfect districts.

Now a few of the laws that I remember that might be construed as affecting the social and moral hygiene of the State and therefore affecting the health are:

(1). The county school law which allows the county school board to pay half the salary of a physician-officer (county health officer) whose duty it will be to examine all school children.

(2). The search and seizure law.

(3). The child labor law.

(4). The law increasing the appropriation to the various State Hospitals and schools for the afflicted.

(5). Six months school term.

(6). Increased appropriation for providing antitoxin and serum.

(7). Compulsory education.

(8). Encouragement in hookworm work.

(9). Amendments to prison laws (reformatory age at State Prison from 16 to 18).

(10). Additional educational qualifications for applicants for medical license. This law goes into effect in 1917, and requires the applicant to have educational qualifications equal to the requirements for entrance to the University of North Carolina.

The fight for better health conditions has not been won. The fight has only begun, and it is up to us as physicians to do our part in carrying out and making popular these various laws. If we fail in educating the people to the value and benefits of these laws, especially the vital statistics law, there is danger of its becoming unpopular to that extent that a demand might be made for its repeal. The last Legislature did more for health than has been done by any previous General Assembly. Our thanks are due to many friends of health, but I would especially mention Dr. Rankin, who was ever on his job; Dr. Cox, of Pitt; Dr. McMillan, of Robeson; Dr. Gordon and Senator Hobgood, of Guilford. However, the passage of these laws would have been an impossibility but for the education of the people to their needs, largely through the efforts of our able State Board of Health.

## THE PART OF THE PHYSICIAN IN THE EXECUTION OF THE VITAL STATISTICS LAW.

WILLIAM M. JONES, M.D., HEALTH OFFICER OF GUILFORD COUNTY.

From whatever standpoint we consider the question, either singularly as individuals or collectively as a nation, it is but a natural desire that when we shall have departed this life we leave some lasting record or memorial to posterity as to who we were and what we accomplished.

The record of the achievements of a nation is known as the history of that nation or tribe. That a nation may be a nation and make history as such, and have even a meager record of its achievements, the life and habits of the nomad must be dispensed with, they must settle and form a society or government. Consider for only a moment the



life of the American Indian. Christopher Columbus found him here, and no more today do we know his history than did Columbus four hundred and more years ago. The only history of the American Indian, who is in fact the real American, that coming generations will have access to is certainly anything but favorable. It will put the poor red man down as a bloodthirsty savage, and none of his good qualities will be remembered, as none are recorded. The Indian has no record because of no education, and no civilization for the same reason. Education and civilization are copartners, the one presupposes the other. We know that the best educated nations of the past were the highest civilized and consequently the ones that have left to posterity records of their achievements. These records only consider the nation as a whole, and consider not the individual, except when that individual has really been the head and the brains of the nation, as Socrates, Plato, Cicero, Cæsar and some others.

As a nation we also are making history, are leaving monuments that will resist the ravages of time, which future generations will view with pleasure and pride; but only as we look upon the Pyramids of Egypt—and these certainly have resisted the devastation of time since when no man knows. Then that we advance some in our records, and leave to our children lasting memories, it is necessary that we have on perpetual record some history of the individual as a separate and distinct personality, some way by which he may be distinguished from the mass.

There is but one way whereby a record may be had, and our last Legislature has given us the machinery, in the vital statistics law. This protection to human life is no theory, and I would use some illustrations in substantiation would it not be for me to do so an insult to your intelligence. The first and essential obligation of society and the principal reason for society is that it may protect the lives of its individuals from needless suffering and death, and any community, country or government which does less than this fails in its essential nature and purpose as a government. The law is for the people, and not the people for the law. So the law requiring the reporting of births and deaths is for the benefit of the people, not only as a whole but for every individual. The question may be asked, Of what value are such records any way? How can such records help fight disease? etc. The answer is to ask, What value are ledgers to a banker? Can a bank do business or any corporation or company of whatever nature do business without a set of books? Then how do you expect the Health Department to do its work without records?

A record of births and deaths is as essential to effective, intelligent

health work as are a set of books to a company, and in fact the vital statistics is the ledger of the Health Department. Why do you occupy the office you do, and what is expected of you as a health officer? That you maintain a low death rate or reduce a high one; when you have done this you have successfully performed your obligation to your community. This maintaining of a low death rate or reduction of a high one is dependent upon a knowledge of cause, location, and control. These are the essential factors in the conservation of life and protection of health, and the three are absolutely necessary to successful work. The primary factor is the physician, for if he is not always present at the beginning of a life he is generally on hand at or near the time of departure. Upon him rests the responsibility of notifying the proper authorities. The practicing physician, then, is of fundamental importance. He is the sanitary outpost or picket, who informs the Health Department, and through these reports only can the Health Department inaugurate methods and use means to protect the people. To do effective work in conservation of life and protection of health we must have some means of knowing that we are having an inordinately high death rate, for if our rate is normal and is due only to time and consequent wear and tear of the human machine, then we are expending our time, means and energy upon a perfection, and one that cannot be improved. This we know is not a fact, for we are constantly being brought face to face with deaths of babes, youths and maidens of tender years, and man in the prime of life, and by these we know for a certainty that there is an ample field for work. Knowing, then, that we are having deaths from preventable diseases, we must know what disease or diseases are producing these unnecessary deaths. When this is known, it is absolutely imperative that we know the location. If in a city, what locality, and so with the county and State.

This information we must have from the outside, and one does not have to ask to know who and who only can give this information fully and intelligently. So we do not have to have statistics to inform us of the fact that we are having many deaths that we should not have, many long and anxious hours of waiting by sickbeds of friends or relatives, due to some local conditions that might be remedied, or coming as an epidemic and carrying many away and handicapping others for life. Statistics are necessary to know what the disease is that is causing a high mortality, and where most prevalent, and who but the physicians can give you this information? No one, absolutely none. In a city where a burial permit is absolutely necessary, you might know only that a death had occurred, and where, but by what means you would not know unless



a physician had signed the certificate. He is the only man who can correctly supply this information.

The physicians have ever been prime movers in health work, and from the great majority the State is going to have no trouble in getting reports promptly and accurately filled out. Some are not going to report as they should, and these will have to be forced to do so, by a process of law if necessary. This, however, should not be the case, for the State has granted a license to each physician and has required him to pass a satisfactory examination before a competent body of physicians, and this license is granted that the people might be protected from incompetent and irresponsible men. The physician holding a license does so from the fact that he was adjudged competent. The State protects him, and it is nothing but right that he should give value received and help protect the State. There are few things that a physician could be guilty of that are fraught with so much danger and possess so great a possibility for harm to so many people as a failure to report births and deaths. The physician who willfully violates the law of vital statistics, and fails to make his report promptly and correctly, is not a proper man to hold a license in North Carolina, and some States specify that when a physician violates this law he shall have his license revoked and be subject to a fine or imprisonment in addition. The State is depending upon the physicians to furnish her this information, and it is incumbent upon them that they furnish it promptly and accurately. This is the best possible service that a physician can render his State, and how you report or do not report will be known by future generations for all ages, and upon your acts must and will rest the censure or praise of your children and their neighbors.

If you start right, the future generations of physicians will also keep an accurate account. This is so very necessary that each and every man should take a personal interest. It is no reflection upon your ability that you have many deaths to report, and if these are from one cause, by reporting you may be helped very materially, and help your community in turn. Your neighbor may be having a high mortality from the same cause, and by reporting these vital phenomena, the cause and location can be obtained and measures for control instituted. You can easily see what you have been instrumental in accomplishing when you are able to prevent one death or one case of typhoid fever.

When you insure your house against fire, the company puts a certain per cent on, according to the risk in the neighborhood. If it is good, the risk is low, and, if it is bad, is high. So with human life, and we cannot afford to risk our life—the only one we have—in a neighborhood

where the risk is bad. However, in neighborhoods where the risk is bad, we can change it to a good risk by preventive means. In fire insurance a factory or warehouse may be in a neighborhood where the rate is high, but by installing a sprinkler system as a means of prevention, the risk is very materially lowered. It is entirely unnecessary for me to go further into this matter, and suffice it to say that vital statistics are the most important of all statistics, as they deal with births and deaths of the community, and that to be of value they must be accurate. The physicians, then, are the men and the only men who can furnish them accurately, and we are confident that in a very few years North Carolina will have such an array of statistics as she may well be proud of. She then can tell just what she is getting for her money that is expended for disease prevention and health conservation.

## OF WHAT VALUE ARE REPORTED CASES OF TUBERCULOSIS AND TYPHOID FEVER TO THE MUNICIPAL AND COUNTY HEALTH OFFICERS?

B. W. Page, A.B., M.D., Lumberton, N. C.

The chief aim of a municipal or county health officer is the prevention of disease. With this aim ever before him, his success with tuberculosis and typhoid fever will depend largely upon the extent to which the occurrence of cases of these diseases is reported to him. This is the primary factor in preventing the spread of all communicable diseases. A knowledge of the occurrence and location of each case constitutes a focus from which effective preventive measures can be pursued. Without this knowledge no sanitary measure can be more than partially successful. Knowing the location, a knowledge of the causes is usually obtained by diligent research.

In the case of tuberculosis, the source of infection is often vague if it follows an acute disease that has greatly lowered the vitality of the individual, but in the majority of instances the disease seems to be contracted through direct or indirect contact with another patient. This applies especially to colored people, who spend so much time with the sick. We know that tuberculosis is spread from infected persons, principally by the "droplet method," which requires close proximity on the part of the victim, or by means of particles of dried, infected sputum gaining access to the mucous membrane of the mouth or throat of the susceptible individual.

In the case of typhoid fever, a knowledge of its occurrence is necessary



to discover contaminated wells, to locate milk outbreaks, and to prevent the spread of the disease by flies and by contact. After locating the source of infection, typhobacteria can be administered to those exposed, and by instituting proper sanitary methods the spread of the disease checked.

Although the greatest value of the reports of these diseases is the information they furnish for those directly exposed, this constitutes only a part of their usefulness. The occurrence of the disease in one section has an important bearing on the welfare of every other section of the city or county and it is of value that each community should be kept currently informed of the existing prevalence of these diseases in every other community within the county. Reports of the occurrence of these diseases are the only means by which the health officer can keep informed of their prevalence throughout his jurisdiction.

Following the notification of each case, it becomes the duty of the health officer to inaugurate such measures and insist on such precautions as will protect other members of the community from exposure to the disease or from being affected by the same morbid conditions. Any health officer who does not make use of notifications cannot expect the sincere coöperation of the attending physician.

In conclusion, we may say that the value of reported cases of tuberculosis and typhoid fever to the health officer is simply to furnish him the data for applying the remedy, which lies not so much in drastic laws but in a policy which shall aim at informing the public as rapidly as possible of the basic principles of preventive medicine.

## MEDICAL INSPECTION OF SCHOOL CHILDREN.

Albert S. Root, M.D., Raleigh, N. C.

Gentlemen: I am glad to have the opportunity of discussing with you this afternoon Medical Inspection of School Children, a movement which shows more altruistic forethought than any measure that I know of which touches upon the progress of our civilization.

This is essentially an age of preventive medicine. Never before in all history has such attention been concentrated upon the prophylaxis of disease in every part of the civilized world. We, as physicians, are beginning to realize that our mission is as much to maintain the health of our patients as it is to heal their ills and relieve their sufferings. The oft repeated, time tattered platitude, "An ounce of prevention is worth a pound of cure," has never been so thoroughly realized. The various

State Boards of Health throughout the country have taken the initiative and, activated by their efforts, the State Legislatures are making possible by laws the location and cause of diseased communities.

City sanitation is developing. Municipalities are compelled to observe greater cleanliness in their milk and water supplies, in the method of handling meat, in removing the lurking and breeding places of bacteria. In the realm of scientific medicine the same attitude is taken. We are *preventing* typhoid by vaccination. We have compulsory vaccination laws for smallpox; we are immunizing against diphtheria and tetanus by serumtherapy and are preventing rabies by means of the specific emulsion.

It seems especially fitting, therefore, at this particular time, that we should consider the practical question of maintaining the physical standard of our school children by relieving such physical defects as they may be suffering from. It is my hope that medical inspection in the schools may become a general movement in this State and that all of our large cities will sooner or later make plans for storing up treasures in the health of their public school children.

## MEDICAL INSPECTION OF SCHOOL CHILDREN.

*Introductory:*

In the preparation of this paper I have based my remarks upon the results of study of "backward children"—a research supported by the Russell Sage Foundation and conducted by Drs. Gulick and Ayers, New York; upon the observation of Dr. Cornell, in Philadelphia schools, and upon the results which we have obtained to date from medical inspection of the public school children in the Raleigh township.

*Historical:*

Medical inspection of schools is a movement of recent growth, although it is by no means in its infancy and has long since passed its experimental stage. In France the law of 1833 charged the school committees of the cities and towns with the care of keeping schoolhouses clean. In 1879 the General Council of the Department of the Seine voted to organize a medical service in the schools, and passed an appropriation for the payment of salaries to the physicians.

The first system of medical inspection, in the full modern sense of the term, was that inaugurated in Brussels in Belgium in 1874. So successful was the work that many other cities in Belgium soon adopted the same plan. In Gemany, Leipsic and Dresden were the first cities to have medical inspection—1889. In 1898 the Weisbaden method was generally adopted throughout Germany. This system provides for a



complete physical examination of the child on admission, and a reëxamination in the third, fifth, and eighth years.

In Hungary, medical inspection had its birth in 1887; in Norway in 1899; in Sweden in 1878; in Roumania in 1899; in Moscow in 1888. In Switzerland it has become a national movement. In England the medical inspection act, which went into effect January 1, 1908, is national in its scope and applies to all public elementary schools. In Japan, in 1898, the Minister of Education directed the nomination of salaried school physicians in all public schools.

The first regular system of medical inspection in the United States was adopted in Boston in 1894. In 1897 the New York Board of Health appointed one hundred and thirty-four medical inspectors. In 1895 Chicago, and in 1898 Philadelphia inaugurated medical inspection. In 1911 an attempt was made to determine the scope of medical inspection in the United States. Out of 1,285 cities in this country having organized graded schools, 758 reported. Of these, about 45% have some sort of organized system of medical inspection.

*Development of medical inspection:*

We have to go back in our American history but a trifle over a century to discover that we were a set of rural communities, the urban population at that time constituting but 3.3% of the total population. Now we are an urban nation: 33% live in cities. This movement of population towards centers has rendered essential attention by the communities to the cleanliness of water supply, to sewerage, street cleaning, problems of light and air in dwellings, the isolation of contagious diseases and a thousand other matters which, in a rural community, were important to individual families only.

Our school systems have developed enormously during this period. The school year lasts for nine months. Compulsory education is, in many cases, overrunning the schoolhouse facilities and hence there exists a close, intimate mingling of children from all families. With the advance of civilization there has been a proportionate advance in the school standards, and the curriculum today taxes the energy of the child as never before. With the increasing congestion of population we are losing sight of our school playgrounds, and the active outdoor games of a decade ago are rapidly becoming obsolete. This change from rural conditions, where man made his living largely by the "sweat of his brow" and muscular activity, to conditions of the city, where man's intellect, and not physical powers, determine so largely his success, means that the existing educational agencies must ally themselves with expert medi-

cal officers, who shall see that the health of the children is conserved through the schools.

*Scope of medical inspection:*

Theoretically a complete physical examination should be made of each child in the schools. Public opinion, however, will not permit this to be done, since it necessitates removing the clothes, and hence examination of the heart and lungs is not undertaken unless something abnormal with these organs is suspected.

As it is carried out in most cities (Raleigh included) medical inspection comprises examination for defective vision, enlarged tonsils and adenoids, defective hearing, decayed teeth, nervous disorders, skin, glandular and orthopedic defects, contagious diseases, nonvaccination.

*As to defective vision:*

You are aware, no doubt, that there are thousands and thousands of children in the public schools of America who are beginning life handicapped by serious eye defects, and who are held back in their courses and relegated again and again to the grade below the one in which they should logically stand, on this account. Practically *all* of these children can be relieved by the cost of a few paltry dollars for glasses and many could, by wearing them a few years, discard them for good. On the other hand, with the increased effort of the child to forge ahead with his class, a vicious cycle is created, for the eyestrain grows worse in proportion to the work done.

Twenty-five to twenty-eight per cent of all school children in America have defective vision. Think of what a financial loss to the parents, of what a mammoth economic loss to the nation, this constant repeating of courses means—to say nothing of the physical discomforts and actual physical and psychical suffering these children undergo.

*Nasal obstruction:*

In no better plight are those children who are suffering from nasal obstruction—more frequently due to adenoid growth than to any other cause; frequently due to enlarged tonsils associated with adenoids, or enlarged tonsils by themselves. You all know what the resultant effects of this clogging up of the air passages are. The child is a mouth breather, usually snores at night; has chronic catarrh, and he will tell you that he catches cold with the greatest ease. His general appearance is dull and apathetic on account of depressed mental activity due to lack of air. The bridge of the nose seems swollen; the upper jaw is poorly developed; there is a chronic inflammation of the throat which not infrequently extends to the ear, causing deafness. The voice is of a



characteristic "wooden" quality. The letters "m" and "n" become "eb" and "ed."

Inspection of a group of children suffering from adenoids shows many of them to have stoop shoulders and flat chests, which clearly predispose tuberculosis. The nutrition is usually poor, for the digestion is impaired by swallowing the catarrhal mucus. Scholarship is markedly lowered.

The prevalence of nasal obstruction among the dullards of school has been shown by Dr. Connell in a series of investigations, to be between 28 and 31%. The sufferer neglects his studies; the schoolroom is a chamber of horrors and the charms which life should hold for him have completely faded away. And yet, 12 to 24% of American children are in this plight. After removal of this obstruction to breathing, about two-thirds of the children show a marked improvement, both mentally and physically.

*Defective hearing:*

Two to five per cent of school children at large have impaired hearing. As was noted, adenoids and enlarged tonsils are most frequently responsible for this. It is obvious why such children should be "backward" and, too, why the teacher, in the conscientious performance of her duties, should so frequently visit unjust punishment upon them for apparent inattention and indifference.

*Decayed teeth:*

From 10 to 75% (increasing with age) of the public school children have decayed teeth. There is no more effective way of producing a poorly nourished child than by neglecting the teeth, for the products of decay, constantly being swallowed, act as so much poison to the system, destroying the red blood cells of the body; and in addition the food, improperly masticated, is not penetrated by the digestive fluids—hence the child's nutrition is not kept up to the normal mark. Our records show a vast majority of poorly nourished children to have decayed teeth. I believe that they are more the *cause* than the *result* of the poor nutrition.

*Nervous disorders:*

Nervous disorders are noted in the medical inspection. Not infrequently an apparently unruly child will be found to have "St. Vitus' dance." Habit spasm is not uncommon in school children. Epilepsy is sometimes met with. Nervous children without definite disease should be watched and overstrain avoided.

*Orthopedic defects:*

Orthopedic defects, *i.e.*, stoop shoulders, spinal curvature, and skeleton deformities from any cause, should be recorded and the proper system of exercise prescribed for them in the school. Perhaps the seats are too low or the desks too high. About 3 to 10% of school children have some sort of orthopedic defect.

*Contagious diseases:*

Public schools are a public trust. When a parent delivers his child to their care, he has a right to insist that the child under the supervision of the school authorities shall be safe from harm. Therefore, such diseases as are of a contagious nature should be detected and segregated, for the protection of the other children. Wherever medical inspection has been inaugurated and conscientiously carried out, epidemics have been checked or avoided.

Causes for exclusion from school are usually for the following diseases:

(1) Diphtheria,
(2) Scarlet fever,
(3) Tonsilitis,
(4) Acute sore throat,
(5) Measles,
(6) German measles,
(7) Chicken pox,
(8) Mumps,
(9) Whooping cough,
(10) Pediculosis (head lice),
(11) Ringworm,
(12) Impetigo,
(13) Scabies (itch),
(14) Nonvaccination.

*School hygiene:*

Nor does medical inspection stop here. School hygiene is a very essential factor for the development of the child. The questions of school ventilation, school furniture, lighting and cleaning, are of paramount importance. An enthusiastic teacher, deeply interested in imparting knowledge, is too prone to overlook the fact that the windows are all closed, that the room temperature has become too high and that the air has become stale and stuffy. Perhaps the schoolrooms are not always aired at the recess hour. Too often the janitor has failed to sweep away the germ laden dust.

In consideration of what I have said—and as a recapitulation—the specific objects of medical inspection are:

1. The detection and correction of physical defects.
2. The detection and exclusion of cases of contagious diseases.
3. The maintenance of good hygienic conditions in school.
4. The correlation of medicine and pedagogy in order to produce the maximum of efficiency in the school system consistent with the preservation of health.



*Practical consideration of medical inspection of school children:*

Wherever a new movement is instituted, and especially one which touches upon a thing so vital to the parents as their own child's comforts or discomforts, it is to be expected that there will be some questioning, some objections, some obstacles in the way of the movement. Hence, embodying medical inspection into the school plan will necessitate an educational campaign of greater or less degree, wherever it is inaugurated. I well remember the groups of indignant mothers who used to assail me each morning when I reached the school, each one whetting her wrath against the others'. When they would find that the horrors of the examinations to which their children had been subjected were fabrics of the latters' imagination, and that they had suffered practically no inconvenience, much less harm, from being examined, they would at once realize the true significance of the work and lend their coöperation.

Given tact in dealing with the child and with the child's parents, absolute fairness and squareness in dealing with the child's family physician, and the coöperation of the school board, and you have the immediate requisites for the medical inspection of school children.

And let me emphasize the necessity of the local physicians coöperating with the medical inspector, for unless this relation exists you need not expect results. In order to establish this the school physician must be constantly on his guard lest he infringe upon the rights of the family doctor. It should be an absolute rule, stipulated by the Board of Education, that the medical inspector shall treat none of the children for the defects he may find in the school examination, unless he be their family physician. Where physical defects are found a notice is sent to the parents of the child requesting them to call in their family doctor for advice, and at the same time a notice is sent to the family physician apprising him of such defects. In this way the most cordial relations are made to exist and all work for the mutual benefit of the child.

## RESULTS OF MEDICAL INSPECTION IN THE RALEIGH SCHOOLS: PHYSICAL DEFECTS FOUND.

The present year began its school session in Raleigh with the introduction of medical inspection. This is the first and only system in the State, so far as I know, which has adopted it. While it is too early to anticipate the practical results, I feel that we have accomplished something already.

We have seen to it that practically every child in the Raleigh schools

has been vaccinated, either by the family physician or the medical inspector. I have personally vaccinated over 800 since the beginning of the school year.

Exclusive of measles and German measles, 132 cases of contagious diseases have been excluded from the schools. In the case of the two former dieases, the epidemics were so widespread and the number of children suspected of having these diseases so numerous, that an accurate estimate of those excluded could not be kept.

90 cases of pediculosis capitis were excluded,
9 cases of impetigo contagiosa,
6 cases of whooping cough,
7 cases of chicken pox,
3 cases of discharging ears,
2 cases of acute tonsilitis,
2 cases of ringworm,
3 cases of scabies,
5 cases of acute sore throat,
2 cases of boils,
3 cases of pink eye,
12 cases of hookworm disease were detected and treated.

Physical examinations of 1,909 children were made, 1,332 white and 577 negroes—in eleven schools. In this connection the results are interesting, as seen from the following comparative statistics.

| | *Average weights for Raleigh school children.* | | *Average Weights for American school children (based on weights of 64,000 children).* |
|---|---|---|---|
| For 8 years | 55.29 lbs. | (87 examined) | 53.59 lbs. |
| 9 years | 61.58 lbs. | (181 examined) | 58.50 lbs. |
| 10 years | 66.43 lbs. | (234 examined) | 64.50 lbs. |
| 11 years | 75.81 lbs. | (257 examined) | 70.06 lbs. |
| 12 years | 81.80 lbs. | (266 examined) | 77.72 lbs. |
| 13 years | 90.40 lbs. | (259 examined) | 86.66 lbs. |
| 14 years | 102.64 lbs. | (185 examined) | 96.66 lbs. |
| 15 years | 111.81 lbs. | (189 examined) | 107.00 lbs. |
| 16 years | 126.16 lbs. | (131 examined) | 116.55 lbs. |
| 17 years | 127.48 lbs. | (62 examined) | |
| 18 years | 124.51 lbs. | (21 examined) | |
| 19 years | 123.85 lbs. | (7 examined) | |
| 20 years | 114.67 lbs. | (2 examined) | |



| | *Average heights of Raleigh children. (1 inch deducted for shoes.)* | *Average heights of 64,000 American school children.* |
|---|---|---|
| For 8 years | 49.36 inches | 48.11 inches |
| 9 years | 51.36 inches | 49.85 inches |
| 10 years | 53.26 inches | 51.99 inches |
| 11 years | 55.42 inches | 53.90 inches |
| 12 years | 57.35 inches | 56.47 inches |
| 13 years | 59.70 inches | 58.41 inches |
| 14 years | 60.97 inches | 60.70 inches |
| 15 years | 62.66 inches | 62.17 inches |
| 16 years | 64.09 inches | 63.15 inches |
| 17 years | 64.01 inches | |
| 18 years | 64.76 inches | |
| 19 years | 65.42 inches | |
| 20 years | 63.42 inches | |

*Average weigh's of white and negro children compared:*

| | *White.* | *No. Examined.* | *Negro.* | *No. Examined.* |
|---|---|---|---|---|
| For 8 years | 55.29 lbs. | 82 | 62.80 lbs. | 5 |
| 9 years | 61.39 lbs. | 160 | 63.50 lbs. | 21 |
| 10 years | 64.95 lbs. | 176 | 70.93 lbs. | 58 |
| 11 years | 74.92 lbs. | 177 | 77.65 lbs. | 80 |
| 12 years | 80.42 lbs. | 172 | 84.34 lbs. | 94 |
| 13 years | 88.21 lbs. | 158 | 93.80 lbs. | 101 |
| 14 years | 102.44 lbs. | 103 | 102.77 lbs. | 82 |
| 15 years | 109.84 lbs. | 101 | 114.20 lbs. | 88 |
| 16 years | 122.48 lbs. | 100 | 121.11 lbs. | 31 |

*Average heights of white and negro children compared:*

| | *White.* | *No. Examined.* | *Negro.* | *No. Examined.* |
|---|---|---|---|---|
| For 8 years | 49.35 inches | 82 | 52.55 inches | 5 |
| 9 years | 51.14 inches | 160 | 53.04 inches | 21 |
| 10 years | 53.00 inches | 176 | 54.06 inches | 58 |
| 11 years | 55.32 inches | 177 | 55.50 inches | 80 |
| 12 years | 57.47 inches | 172 | 60.62 inches | 94 |
| 13 years | 59.48 inches | 158 | 61.76 inches | 101 |
| 14 years | 61.16 inches | 103 | 62.63 inches | 82 |
| 15 years | 63.44 inches | 101 | 61.14 inches | 88 |
| 16 years | 64.39 inches | 100 | 60.02 inches | 31 |

*Defective vision:*

Average for American school child ..... 25-28%
Average for Raleigh schools ..... 23.8%
Among white children ..... 22.6%
Among negro children ..... 25.1%

*Nasal Obstruction:*

Due to *enlarged tonsils* and *adenoids:*
Average in Raleigh schools ..... 8%
Among white children ..... 8.7%
Among negro children ..... 6.5%

Due to *enlarged tonsils:*

| | | |
|---|---|---|
| Average in Raleigh schools | 5.9% | |
| Among white children | | 4.8% |
| Among negro children | | 8.5% |

Due to *adenoids:*

| | | |
|---|---|---|
| Average in Raleigh schools | 7.5% | |
| Among white children | | 7.5% |
| Among negro children | | 7.6% |

*Nasal obstruction, all causes:*

| | | |
|---|---|---|
| Average for American school child | 12-24% | |
| Average for Raleigh school child | 21.4% | |
| Among white children | | 21% |
| Among negro children | | 22% |

*Defective hearing:*

| | | |
|---|---|---|
| Average for American school child | 2-5% | |
| Average for Raleigh school child | 4.4% | |
| Among white children | | 5.4% |
| Among negro children | | 2.0% |

*Decayed Teeth:*

| | | |
|---|---|---|
| Average for American school child | about 50% | |
| Average for Raleigh school child | 47.7% | |
| Among white children | | 48.5% |
| Among negro children | | 45.7% |

*Nervous Children:*

| | | |
|---|---|---|
| Average for American school child | 5-20% | |
| Average for Raleigh school child | 12.1% | |
| Among white children | | 12.4% |
| Among negro children | | 12.1% |

*Orthopedic Defects (stoop shoulders, spinal curvature, etc.):*

| | | |
|---|---|---|
| Average for American school child | 1-20% | |
| Average for Raleigh school child | 4.7% | |
| Among white children | | 4.2% |
| Among negro children | | 5.9% |

*Nutrition:*

| | |
|---|---|
| Good in Raleigh schools | 71.1% |
| Fair in Raleigh schools | 21.9% |
| Poor in Raleigh schools | 7.0% |
| Impaired nutrition among white children | 29.8% |
| Impaired nutrition among negro children | 30.1% |

About 50% of retarded children were found to have physical defects.

I regret that I cannot at the present time tell you how far the parents have complied with the requests to have their children treated. I can only give you an idea by the hurried cursory investigation which was made several weeks before the closing of the schools: 155 children had had their teeth worked upon; 40 their vision corrected by glasses; 26 were operated upon for enlarged tonsils or adenoids or both; 9 had received treatment for defective hearing. In other words, 230 children had had their defects treated.



There are others who have reaped the benefit of the school examination and many parents are deferring treatment for their children until the ensuing summer. The epidemic of measles, which was so widespread in this city from January to the close of the schools, was a serious obstacle to this work of reparation.

DISCUSSION.

DR. ALBERT ANDERSON: I don't want to discuss this paper, but I want to emphasize Dr. Root's favorable work at Raleigh during the year. I believe the school board has taken a very important step in securing his services and I hope that other towns will follow in Raleigh's footsteps. I believe this work will obtain better health results than in any other way. I believe that other towns will notice this work of Dr. Root. In carrying out medical inspection it is an education along preventive lines. I think we ought to lay much stress upon this work.

DR. C. W. STILES: Wilmington has instituted school inspection. There are some methods used by Wilmington that are slightly different from those in Raleigh. In Wilmington the parents are invited to be present at the inspection of their children, and the boys are stripped to the waist; the girls are stripped to their underclothing to the waist. The inspection is a very rigid one and involves a study of each child, lasting from three to five hours. In addition to a physical examination there is also a mental inspection. This is made by a physician who has had long experience as a school teacher and six years training as a psychiatrist. Dr. Thomas has convinced me that any medical inspection should be combined, if possible, with a mental examination. The two examinations together can have much better results than the two alone. There is no trouble in Wilmington in getting the children to be inspected. The policy was adopted of presenting the matter to the Woman's Club and to the Chamber of Commerce, and getting their coöperation, and the members of these two organizations started the fashion by sending in their children first, and the children came in more rapidly than they could be taken care of. This inspection will extend through the summer months, independent of the schools. A full schedule is kept of every examination and the family physician, at the request of the parents, has access to that schedule, which gives the full and complete

examination. The conditions under which the inspection has started in Wilmington are most favorable.

In addition to this medical inspection and the mental inspection a study will be made of the surrounding sanitary conditions under which the child is living. It is hoped that the inspection at Wilmington will be as exact as ever undertaken. Some of us interested in Southern conditions believe that medical inspection of the public schools represents one of the most important public health problems of the South, and an effort will be made in the near future to extend the general inspection throughout the South. I will say here by way of parenthesis that nearly all the inspection going on today is based upon European or Northern principles of inspection. In the South the problems are slightly different and I think it in the interest of the entire South to bring our results together as a basis for the problems that the other Southern States will have to solve.

Dr. R. H. Lewis, of Raleigh: I want to say that the committee is very much pleased with Dr. Root's work in Raleigh, and showed their appreciation by unanimously and cordially reëlecting him.

## QUARANTINE, COMPLETE AND PARTIAL, AND PLACARDING: TO WHAT DISEASES SHALL THESE MEASURES BE APPLIED?

Discussion Opened by W. S. Rankin, M.D., Raleigh, N. C.

I think I have won the reputation in the past of taking a rather radical position on quarantine matters, and I am here to assure you that I shall sustain my reputation now in that particular respect.

In opening this discussion on quarantine, which is today practically confined to four common diseases—measles, whooping cough, scarlet fever, and diphtheria—I should like to discuss the question under three headings: First, the ineffectiveness of quarantine; second, the explanation of this ineffectiveness; and third, I wish to suggest certain ways to make quarantine more effective.

Now, when this question of preventive medicine began to absorb our attention, it was almost our unanimous opinion that the most preventable of all diseases, and the ones that we would "stamp out" most easily, to use an old familiar term, were the four diseases that I have mentioned. We thought that they were, of all diseases, the most easily preventable, and we would demonstrate to the people what could be done by reducing the mortality from these diseases—the number of



deaths per thousand per year. I am here to say that during the last twenty-five years we have barely touched the mortality of any of them by our quarantine and disinfection. The only one of the four diseases that has been decreased in its mortality—the number of deaths per year per thousand of the population—since 1890, is diphtheria, and that is due to antitoxin, not to quarantine and disinfection.

Now, let us look at the facts. Take measles: In 1890—that is as far back as I could go with the census reports in my office—in 1890 the mortality from measles was 13.5 per 100,000 of the population. In 1900, ten years later, the mortality from measles had dropped just one point, to 12.5 per 100,000 of the population. I have here before me the mortality rates for the next ten years, and I see that in 1904 the mortality was up to 11.0; in 1906 it was 12.1; in 1910 it was 12.3. So we have to our credit, as preachers of preventive medicine, a reduction in the mortality of measles, according to the census reports of the United States, of from 15.5 to 12.3. Anything in prevention there?

Now, let's take some more. The mortality from scarlet fever in 1890 was 13.6 per 100,000, in 1900 10.2, and in 1910 it was 11.6. Have we done anything with that, more than to barely touch it?

Take whooping cough. In 1890 the mortality was 15.8, in 1900 it was 12.1, in 1910 it was 11.4. If you will take the yearly mortality between 1900 and 1910 you will see that the fluctuations are just like the fluctuations on fever charts. The mortality of whooping cough in 1906 was 15.1, just about what it was in 1890.

What do these facts prove? It appears that so far as these three contagious diseases are concerned, we have made no headway either in prevention or in treatment. We have practically the same mortality.

Now, if we take diphtheria, you will see that there has been a tremendous decline. The decrease in the mortality of diphtheria amounts in absolute figures to 55,000 deaths a year less than we would be having in the United States if we had the same mortality in diphtheria that prevailed formerly. The mortality in 1890 was 97.8; in 1900, four years after the introduction of antitoxin, it dropped to 43; in 1910 we got it down to 21.4, where it is now, fluctuating around 20.

So you see that our quarantine and disinfection have not "stamped out" these diseases that appeared in the beginning so easy of extermination. Moreover, if you will take what I regard, and what those to whom I have talked about this subject regard as the greatest book on the prevention of disease, "Sources and Modes of Infection," by Chapin, you will see that the author states that he has examined the mortality rates from these diseases in cities where they quarantine measles and

cities where they do not quarantine measles, in cities where they disinfect after scarlet fever and in cities where they do not disinfect after scarlet fever, that is in cities where quarantine is rigid and in cities where quarantine is lax, and he finds the mortality rates practically the same. That is a poor showing for prevention, isn't it?

That is the first point I want to make. I will start out with something discouraging and try to build up. I will not go into any further details on that point—that our quarantine and disinfection have been futile.

What is the explanation? Why, the explanation is that until a few years ago we misunderstood the fundamental thing in handling these diseases, *i.e.*, the nature of the contagion. The discovery of the mosquito as the carrier of the disease that we used to think was airborne, that disease we used to think could be carried by a letter from New Orleans to New York, unless the letter was disinfected—the discovery that the mosquito and the mosquito alone carried that disease, yellow fever, confirming a parallel discovery of a few years before in regard to malaria, made the people think more of intermediate hosts and less of air infection.

Dr. Doty, the recent health officer of New York, has done something that would appear to some of you as almost criminal. Doty says that in handling smallpox and typhus fever, two diseases that were thought to be airborne, and two of the most contagious of contagious diseases—in handling these diseases in 1900, when he had some 840 cases of the two diseases and some fifty attendants, he never required those attendants to put on white suits when visiting the patients. That was in New York, and no cases of secondary infection occurred in the families of the attendants. The old idea of air infection is something that is passing, and passing rapidly.

In the hospitals of Paris they started out a few years ago to put cases of whooping cough, measles and scarlet fever all in the same ward. They got no cross infections. They did put in partitions at first, glass partitions such as you see in offices, that did not touch the walls. I believe that was in the Pastuer hospital. After that worked very well they took down the partitions and put up screens, ordinary cloth screens, and I believe now they have done away with the screens. They have had no cross infections. They have done the same thing in England.

These diseases are not airborne. We have concentrated our fire upon the idea that they were all these twenty years, and we have accomplished nothing. These diseases are not carried by fomites. What is the explanation of our failure? How are these diseases carried? We have



misunderstood the nature of the contagion. We found that there was a carrier for malaria, for yellow fever, and for typhoid fever in numerous cases. There are a lot of cases of typhoid that never even go to bed. I have heard Dr. Osler say he believed there were cases of typhoid fever that never went to bed. He believed it was possible for people to have typhoid fever and never think themselves sick, much less call in a physician. I remember one case of a nurse who was in bed only two days from typhoid fever. Her symptoms were so slight that one of the most positive Widals I ever saw was questioned. The only way in which we did find that she had typhoid fever was that the typhoid bacillus was cultivated from her intestine. There are many cases of typhoid carriers.

It is perfectly reasonable to discard the old idea of air infection and to recognize the man himself, the person with the germs, as the principal means of spreading the disease.

Take the case of measles and scarlet fever. Anderson and Goldsberger have shown that you can convey measles from person to person by taking the blood of a patient with measles and injecting it into another person. You can take the blood of a patient who has measles and inject into a monkey, and then transmit the disease from monkey to monkey. This is a germ that is such an obligate parasite, that has lived so long in human tissues, that you cannot grow it in any kind of media. Is it reasonable to think that this germ, which you cannot cultivate in blood serum, or in cultures that approximate, as nearly as we can approximate, human tissues—is it reasonable to suppose that this germ will live in an old dry scale for three weeks or longer? That it is going to live in a dry place, or in the sunshine? It is not reasonable. The same thing is true, probably, of scarlet fever. The germ that probably produces scarlet fever has not been cultivated outside of the human body, and is it reasonable to suppose that this germ, probably so fixed in its habitat, will live on this floor in a dry scale indefinitely?

Now, we know, and I think the evidence will prove to the unbiased, open mind, that these four diseases are carried principally by unrecognized or missed cases, by atypical cases, and by carriers. Anderson and Goldsberger have shown that you can take the secretion from the nose and mouth of a case of measles for the first forty-eight hours, before the eruption begins, and reproduce the disease in monkeys. After forty-eight hours you cannot do that. The infective agent does not live very long. They found that you can take the blood of a patient, if you take it twenty-four hours after the eruption, and reproduce the disease in monkeys, but you cannot do it twenty-four hours after the eruption

has appeared. They found, and I think all the men who are doing the research work on this disease find that the most infective period is the first four days, when nobody can recognize it, unless there is an epidemic, and then the physician would not suspect it. You have a job to quarantine measles. It is spread before you can recognize it. What are you going to do about that?

Dr. Chapin, who in my opinion is the most exact health officer in this country, says that you can prevent, even when you have the strictest quarantine, only from seven to fifteen per cent of the cases of measles that occur in an ordinary epidemic. What are you going to do with measles? Is not the carrier, the child we have ignored, is not it the sufficient explanation of the failure to reduce the mortality of this disease?

Take whooping cough, another disease like measles in the way it is carried. You cannot recognize a case until it whoops, two weeks after the disease begins. The organism that produces whooping cough is most abundant in the nasal and mouth secretions before the whooping begins. That stage lasts, instead of four days, as in the case of measles, for two weeks.

I might mention here, in talking about mouth and nose secretions, that this experiment has been done: A bacteriologist has gone into a room fifty feet long (I don't know how wide or how high), has exposed plates to the air and found that there was no *B. Prodigiosi* (germs) in the room, that the air was free from them. Then he sprayed his nose and throat with a normal salt solution containing a culture of *B. Prodigiosi,* and going back into the room, placed his plates around the room, on the mantel, etc. Then he went into one corner of the room and sneezed and coughed. After six hours he put those plates into an incubator and got colonies of *B. Prodigiosi.* This experiment shows that when you or I sneeze or cough we expel particles of mucus, secretions from our nose and throat, with such force that we throw them fifty feet. This bacteriologist has shown that he could spit fifty feet, and that he could spit in such finely divided particles that they will remain floating in the atmosphere for six hours.

What will you do when a child has whooping cough and, before it is recognized, goes to school, gives one hard cough, and sprays the whole crowd? It is a pretty hard proposition.

Now, mind, these two diseases—measles and whooping cough—spread before they are recognizable by anyone. Take scarlet fever. Scarlet fever is most contagious at the height of the eruption. Now, there have been epidemics of scarlet fever that have been closely examined, and



what has been found? It has been found that where there is one case of scarlet fever that is recognizable, where there is one case in bed, there are three or four cases walking around the streets, atypical cases, missed cases.

I should like to read you just a paragraph from this book I swear by, Chapin on "Sources and Modes of Infection," on the missed cases, the atypical cases of scarlet fever:

"*Atypical Scarlet Fever*: As the bacteriologist cannot help us, we have to rely on clinical evidence, which is much more uncertain and difficult to secure. The layman and the inexperienced physician are apt to scoff at the suggestion of scarlet fever unless the patient has a high fever and is as red as a lobster. But all who have seen much of this disease know that it is exceedingly common to see cases with a scarcely discernible indefinite rash lasting for only a few hours, a rise in temperature of only a degree or two lasting also only a few hours, and the merest trace of sore throat. Sometimes the rash may be entirely absent and even the fever may escape the most careful observation. In institutions and families such cases, considered doubtful at first, or perhaps entirely neglected, prove to be the origin of typical symptoms in others. Every health officer will recall many such cases. They are the missed cases which are such a factor in the maintenance of this disease. There are many references to them in the reports of health officers and in medical literature. Among others who report such atypical cases are Newsholme, Caziot, Welch and Schamberg, Cameron, Butler, Lesarge, Thresh, Corlett, Ludke, Kerley, and Thornton and Mader referred to below. In most of these missed cases there were some slight symptoms, though overlooked or misunderstood at the time. In Manchester, in 1906, there were discovered 229 missed cases, mostly of a mild character. From these 139 other cases had developed.

"*Number of Atypical Cases*: It is difficult to estimate the number of atypical cases of scarlet fever. Probably it varies according to the extent and severity of the outbreak, and for other reasons. Newsholme has reported a mild outbreak in which the number of sore throats without the presence of eruption was 215, while the number of typical cases of scarlet fever was only 38. Butler, at Wellesden, studied the incidence of sore throat in families where there was reported scarlet fever, and found that 31.2% of 1266 persons in such families had sore throats, while only 2.8% of 1644 persons living in families where there was no scarlet fever had sore throat. In a school with 300 children Thornton found 31 typical cases, 19 cases with no rash and slight sore throat, and 46 cases in which only desquamation was noticed."

There is the explanation of the facts, why we have not done anything, practically, in the control of these three diseases. Whooping cough and measles can not be recognized until the damage is done. In scarlet fever there are two or three or four cases, missed cases, atypical cases, walking through the streets, where one case is quarantined. You know about diphtheria, that there is at least one carrier walking about the street to every case you have penned up.

I should not like to say as much as I have said without going further because some people will say that I ought not to be health officer because I don't believe in quarantine at all. *I do believe in more effectual quarantine than we have ever had.* I believe in seeing these other sources besides simply the person who is visibly sick. The more I study the diseases of the social organism, of the body politic, in contradistinction to the individual body, the more I believe that we are going through the same stage in regard to diseases of the social organism that doctors went through in handling individual diseases. We used to believe that we could take a book and read the descripton of a disease and go out and find all the cases of that disease. Now we find that we can not do that, and the same thing applies to the body politic. These cases have got to be handled according to local conditions and each case by itself, and not by rule of thumb methods.

Let us take the case of measles. A case of measles is reported to the whole time health officer, say of Guilford County. The first essential is that the teacher know something of epidemiology. When she hears of the first case of measles in school, when the case has been in school three or four days, she should know that nine to fourteen days later she will have some more cases. She should teach school one week longer and then disband school for a week. By the end of that week all the cases of measles will have developed and she can open school again, admitting all those who have had measles, not admitting anybody who has a cold or who has not had measles.

Some health officers think the thing to do is to close school. Suppose a case of measles develops in a high school. The health officer or the teacher should find out what children have had the measles. Perhaps forty-five out of fifty have had it. The teacher sends the children who have not had measles home, but the school is not disbanded.

If you once grasp the true nature of the infection you will quit doing things by rule of thumb. A point I want to make is that the majority of these diseases start during the school period, and if we can manage the contagious diseases in school, we will cut down the mortality from what it has been during the last twenty-five years. To handle it through the school period we have to make rudimentary epidemiologists out of our teachers. I believe it can be done by spending three or four hours with the teachers. In attacking these contagious diseases let the health officer recognize that the teacher who brings these children together so that contact infection can take place, must start the campaign. Let the health officer go out and get the coöperation of the preacher and other persons who have influence, bring the people together and tell the parents their duties under the circumstances. You have to work first through your teachers. Put them on the firing line. Teach them something about the fundamental principles of epidemiology. When you hear of an epidemic get the grown people together and explain things to them. That is the only way you can fight these diseases.



DISCUSSION.

DR. I. W. FAISON: I do not belong to the Health Officers' Association but I do belong to the medical profession of North Carolina, and I am a man who has a great deal to do with child life. Dr. Rankin has said a great many things I heartily support and agree with. He has well taken care of himself—he has made a brief of absolute defense before he has been attacked; he has covered his retreat well before he advanced.

Dr. Chapin, of Providence, is a great health officer. There are other great men in this country along this line besides Dr. Chapin. One is Dr. Doty, who was a classmate of mine. I see so much suffering and death among children that I feel that it is better to go a little wrong and enforce quarantine a little further than to let up, though we may be wrong. Now, I do not put in the same class, when I discuss these diseases, measles and whooping cough, scarlet fever and diphtheria. I look upon two of them as contagious diseases. These are measles and scarlet fever. Now it may be true, and is true, that there is a specific cause for each of these diseases. It is absolutely true that the germs causing these diseases have not been isolated and cultivated. Neither were the germs of poliomyelitis, until 1913, and maybe in 1914 or 1915 or 2013 the germs of measles and scarlet fever may be discovered. The trouble I find is that our quarantine is not rigid enough. Our people are not exactly ripe for it.

I have sat by the bedside and seen children in my town die with whooping cough within the past six weeks. Some person carried it. That is true. Dr. J. Lovette Morse, one of the best pediatricians, says they ought to be quarantined six weeks, or until the germ is absent. This gentleman of Providence is not any better than Dr. Morse, and I prefer to follow the teaching of Dr. Morse to any other man I know who has

to do with children. I believe in quarantining the minute one child in the community shows that he has whooping cough. The minute any child who has a cold goes to any school when there is an epidemic of whooping cough, he ought to be put under strict quarantine.

I believe in outdoor air for whooping cough. I believe it is the best remedy. I have never seen the time when the conditions of North Carolina weather were bad enough to make me house a child with whooping cough.

Now, measles is not so bad as whooping cough, but it is the most contagious of all contagious diseases. It is *the type* of all contagious diseases. Its cause is unseeable, unculturable, unknowable at the present time.

If possible no child under five years of age should have contagious or infectious diseases. It not only tells on him the first five years but during the next fifty-five years. We are told that most cases of tuberculosis are infected under five years of age. My experience has been that the first five years is the most important period of the human life. That is what made me study child diseases. It is in that period in which the child ought to be kept well, and though we may be a little wrong in quarantine, for the Lord's sake give them the benefit of the doubt.

It has been the rarest thing in my experience that I have had two cases of scarlet fever in the same house in same epidemic. I do not expect to have two in the same house, but I quarantine as soon as I suspect that it is scarlet fever. The suspected case is isolated at once and the result is that I have never had two cases in the same house. In the face of all the scientific knowledge on the face of the earth that is good enough for me.

I hoped to hear Dr. Rankin discuss the quarantine of smallpox. He did not. During the past month two young students developed cases of smallpox at the State University, the educational pet of the State. The authorities called on Dr. Rankin and Dr. Richard H. Lewis to go over and see what to do. They went, found the cases of smallpox as reported. They proceeded at once to put these young fellows in strict quarantine. It came out in the daily papers next morning all over North Carolina that they had quarantined these cases and that it would be safe for the people to attend the oncoming commencement. This they did, after going to the Legislature and getting the law compelling quarantine of smallpox repealed. I want to commend them for this quarantine, and insist that it was right.

Furthermore, I want to say if it is right and best to quarantine the smallpox at Chapel Hill so the people of the State can attend the commencement I contend that it is right to quarantine at Charlotte and all over North Carolina for the protection of our babies.



DR. CHAS. W. STILES: This is not the first time we have heard Dr. Rankin talk about quarantine. Some of us have been on the opposite side of the fence in this matter. I want to say that this is the first time I have ever heard Dr. Rankin make his point clear, the first time I have understood his position. It seems to me that it can be summarized in this way, briefly: Dr. Rankin is not arguing against a rigid quarantine, but for a more rational quarantine. I think Dr. Rankin would be, under some circumstances, the most rigid quarantine man in this State, if he considered that circumstances called for that kind of a policy. I want to surrender to Dr. Rankin. I have never understood his position before, but I am with him now.

DR. RANKIN: We are going to have some more radical stuff after dinner. I think Dr. Faison will talk some more. There is not a man in North Carolina I admire more than this gentleman. He is always ready to fight at any time, anywhere, under any kind of conditions. He comes out in the open and strikes. What I started to say is this: I know something about what will come out in the discussion of disinfection this afternoon. Disinfection and quarantine are so closely related that I move that we adjourn now and postpone discussion until after dinner.

Adjournment for dinner.

## AFTERNOON SESSION

DR. L. B. MCBRAYER: I want to make a few remarks in regard to Dr. Rankin's deductions from his statistics. I would like to submit that things have been changing in the last few years. Twenty-five years ago, when he began his statistics, our population was very largely rural, compared with what it is today, and everyone knows that when people are isolated contagion does not spread. With the means of transportation and with the increase of the thickly populated communities, with increase of good roads, it is very easy for a resident of Asheville to visit towns in the middle of the State and contract typhoid fever from bad water and bad privies and go back to Asheville and have typhoid fever. The same is true of all the other diseases. I agree with Dr. Rankin most heartily in what he said in regard to measles, with one exception. He stated that the germs of measles and scarlet fever did not live outside the human body. I know, however, that that was simply

a matter of overexuberance in his discussion of the subject, because he later corrected himself and stated that these germs had not yet been discovered. With his method of handling measles I agree most fully, except that I think that parents should be required to keep the child on their own premises, not only the child who has measles, but also the other children who are not immune to measles. The matter of dismissing school a week after a case has developed in a school child seems to me the solution of the problem. I must say that in the main I agree with Dr. Rankin in his opposition to quarantine of smallpox. Of course there are exceptions, as were stated—the University and Asheville. We quarantine smallpox in Asheville not because, I think, as a rule we ought to, but on account of the commercial side of it, on account of the many visitors we have, because I believe that any citizen of North Carolina who wants to have smallpox ought to be allowed to have it.

There is another point, that is the helpless babies and children that Dr. Faison talks about so eloquently and feelingly. It seems that they ought to be protected against the ignorance and viciousness of their parents. While we require in Asheville that all school children be vaccinated before they go to school, and enforce this law, you might not be able to enforce it in every place in this State. There is a good deal of trouble in as intelligent a county as Guilford in enforcing compulsory vaccination, even for school children. That forms a very serious obstruction to the abolition of quarantine for smallpox.

Dr. Rankin spoke of the missed cases and the carriers and charged them up with a great deal of distribution of the contagion in these diseases, and that is largely true, I am sure. But what we have to do is to act on the knowledge we have, and, as Dr. Faison said, give the innocent and helpless the benefit of the doubt. I have two instances that are interesting to me, and perhaps would be interesting to you. One of the missed cases of scarlet fever was sick and stayed out of school two days. The child was in the kindergarten. The child returned to school and there was not a child in the entire kindergarten of about eighteen that developed the disease. However, in the family of five all the family had it except the largest girl, about eighteen years old. None of it was very serious and no physician was called at all and it was only reported by the teacher, who heard that the children at the house had an eruption. Upon examination it was found that they all had had scarlet fever. The balance of them stayed out of school for a longer period of time than this child in the kindergarten, all of which



makes one doubt whether or not scarlet fever would be classed along with measles as a contagious disease.

Now, in regard to diphtheria carriers, we have also had a little experience that may be of interest to you. We noticed one day that we had more cases of diphtheria than we ought to have in Asheville. In checking them over we found that seven of the fourteen cases were under school age, that five of the seven going to school were in one school and in one grade, and that two of the seven were in another school. Upon investigation it seemed that three of the five children had played with one of the others while it was sick in the first part of the disease. Two or three days later some other cases broke out in the same grade and it occurred to us that it was time to get busy. We went out and swabbed the throats of a dozen children in that grade and ten of them showed diphtheria germs. We dismissed that grade, continued to swab the throats, and in the course of a few days we found that 100 children out of 500 in that school were diphtheria carriers. We issued an order to close school for a week to give time to get our bearings and catch up with the work, and notified the children they would not be allowed to return until they had a certificate stating that their throats were free from diphtheria germs. We also closed the picture shows to children, and the Sunday schools, hoping thereby to confine the infection to that school. We had three or four other cases occurring within the first week after we closed the school and after that no other cases, and it was interesting from the fact that we had in that school so large a number of carriers that ordinarily are overlooked and that ordinarily continue to distribute the disease. It is my opinion that had we not taken rather drastic measures we would have had an epidemic of diphtheria.

*Question:* What did you do to get rid of them?

*Answer:* We did almost everything but used the solution of staphylococci, but most of them disappeared in a few days. A few held on for a long time. We used carbolic acid, bichloride of mercury, nitrate of silver, in fact, I think almost everything along that line was used. None of it did much good. Certainly it did not seem to in those cases that hung on for quite a long while.

That does not argue to my mind against quarantine in diphtheria any more than the fact that the large number of murderers loose today argues against the law forbidding murder. We don't pass a law expecting that everybody will obey it, but hoping that the large majority will obey the law and that those who disobey will be punished and thereby deter others from violating the law, but a good many escape in

spite of all we do and it is probably the same way with a good many of the infectious diseases. But our vigilance should be all the greater on account thereof.

Dr. I. W. Faison: It happened in my town last fall that one boy in a family of three children went to school and one day I was called to see the little girl who did not go to school. She had a case of diphtheria. The mother was very much upset to know why that little girl who did not go anywhere had diphtheria. I had a swab made of the boy's throat and found it full of diphtheria germs. They were given, of course, antitoxin and it cured them and in the course of four or five days the germs disappeared. Now these germs in the child's throat may remain indefinitely, how long we do not know. The last time I was in New York I was at a children's clinic with a friend of mine—a physician. In November he reported being called by the board of health to make a visit and found a little girl with a case of diphtheria well developed. He treated the little girl, she promptly got well, and three days successive examination of swabs of the throat showing three successive negative reports they turned her loose. When he examined again the boy's throat he found the bacilli, though the boy was well. He then took the ground that as long as the child was well he would let him alone. He kept the boy in the hospital from April to November, making a culture every week, every culture showing the bacilli. In November he sent him out on the street and produced a little pharyngitis and cold. As soon as the time went around after the exposure he developed diphtheria. He was given antitoxin, the throat swabbed out and in a little time was cured.

About scarlet fever, you will find that statistics show that when children are exposed to scarlet fever about 50% take it. In measles about 90 to 95% take it.

Dr. J. Allison Hodges: Ordinarily, gentlemen, I would not have anything to say in such a meeting as this, except of course that my interest is always with the medical profession of this State. Having, also, been for a number of years a member of this board of health, and being a member at the time I left, I take a great deal of interest in such matters as are engaging your attention today. I want to call attention to two fallaices that seem to me are not given sufficient importance before the people of the different counties and these two fallacies I believe are largely responsible for the increase in the mortality rate of the contagious diseases mentioned here this afternoon.

One of these fallacies is calling any form of scarlet fever by the name



of "scarlatina," and the parents presuming that they have to contend with a small enemy instead of a tremendous one. Now I believe if these gentlemen in the counties would teach and preach to the people and to the school teachers of the county that there is no such thing as scarlatina it would eliminate a fallacy that would do much towards the betterment of our mortality statistics in that one disease.

Then another thing is this: It seems to me that when we resolve our work into its last analysis the teachers, aided and abetted by the county superintendent of education, are the most forceful means that we have for the propagation of health and preventive knowledge. All of us know that no law is any stronger than the public sentiment that is behind it. Now then, it seems to me, and I simply make the suggestion, but not as an outsider, I assure you, if some practical lectures could be given to the school teachers, on such simple subjects as "sore throats" or "coughs," and let the physicians indicate to the school teachers the dangers of a sore throat, what potentialities there may be in a simple sore throat, of what diseases this simple sore throat may be a symptom, etc.; show them how sometimes it is the first danger signal of muscular rheumatism, how that muscular rheumatism leads to an endocarditis, either simple or more serious; tell them how these simple coughs that the children have, these coryzas, are symptomatic of some of these contagions that we have been discussing here this afternoon, and I believe that the combined influence of the doctor and the teacher and the parents would be of the greatest assistance in the betterment of these statistics.

It is a curious fact to me, living as I do at present on the border line between the North and the South and seeing numbers of parents from both sections, to note the different light in which Northern people view such an apparently insignificant thing as a sore throat or a simple cough as compared with our own people, who simply let their children run wild and take no notice of such symptoms. With the Northern people I notice that it is a signal that the child shall be put to bed and be treated for several days. With us it means as a rule that the child is a little bit sick, but not sick enough to be restrained. I believe that the teaching of these Northern parents is due, in large measure, to the physicians, who presumably have more time and get more money than we do to talk about such things, and this may have had the effect of frightening these mothers and the result has been for the best interests of the child. It is a fact that people used to think—I have heard it time and again and possibly some of you may have heard it—that children must have these contagious diseases. That is one of the great fallacies that preventive medicine has had to confront. I believe

that a great many parents believe that it is a necessity at some time before puberty, and they really regard it as best that the child have these diseases before puberity, and for that reason they are more careless than they would otherwise be. I believe it is our duty as physicians to inculcate into these parents the fact that in the early years of life there is less resistance, that it is fallacy to believe that their children should have these diseases, and especially that they should have them in the earlier and tender years of life. I am sure that all I have said is absolutely familiar to you, but I call attention to the fact because I have noticed in talking recently to different gentlemen from different sections that there seems to be a little disappointment in preventive measures in contending with contagious diseases, because, as Dr. Rankin has shown us, there has been no decrease in the statistics. I wish to say that I believe we should be proud of what we have done. When I hear such discussions as this and compare it with twenty years ago, when with some of our fellows we discussed the same proposition, I wish to say that a new light has dawned and a new future seems to me to be before the medical profession of this State, and it is to their credit that this great improvement in sanitation and hygiene and preventive medicine has been made. When I hear today, as I have heard, that a member of this body is willing to do what he can in his county for $50 a year to benefit the people of his county, I repeat, it is all to the credit of the medical profession of North Carolina and we need not despair. In another ten years we will see the great improvement Dr. Rankin desires in his statistics.

DR. RANKIN: In the first place, I want to say that Dr. Faison's reference to the University case left a little more sting than any other subject he touched. I want to confess that it got pretty close to me. But it illustrates the particular point that I want to make in handling these contagions. Just as there is no general rule by which you can treat any individual, so there is no general rule by which you can treat disease in the body politic. I believe it would be the rankest folly for the people of Atlantic City to adopt the policy I advocated for North Carolina in regard to smallpox. The only thing for those people to do is to have compulsory vaccination and quarantine too. It is the same in this town. Let the people of the town announce no quarantine, and it would seriously affect the industries of the town. I believe in compulsory vaccination. I do not care a thing about quarantine. Let the people understand they cannot keep up quarantine without compulsory vaccination. I have one fixed opinion for North Carolina—no quarantine for smallpox.



Now, I use that to illustrate the fact that there are very few general principles of universal application in health work, just as in individual disease.

Dr. Faison stated that the first five years of life are the most important, so far as the fatality of these contagious diseases are concerned. That is a fact, undoubtedly, but children under five in nine cases out of ten contract disease from children in the schools. So I want to emphasize again that the central point of attack is through the school teacher and the school population.

Dr. McBrayer makes a good point in behalf of preventive medicine that I neglected. He says that even if we have not decreased the fatality of these diseases, the fact that we have been able to hold it down with the increase in population is a point in our favor. It is a point, but such a small one that we would not care to call attention to it.

In regard to getting rid of diphtheria carriers, I read an editorial in a recent number of the *Journal of the American Medical Association,* in which it was stated that you can not do anything with the carriers now, the present means of treatment proving ineffectual, but that the work of Schiotz with his staphylococcus culture gives very promising results. He notes that a number of carriers failed to have the germs in their throats after simple pharyngitis. It looks as if we are going to find something in that to handle carriers of diphtheria with.

As to the fact that children can come into a room and contract measles and not scarlet fever, it is true, but it has been shown in the hospitals that you can put children in rooms occupied by children with contagious diseases, provided you have trained nurses who employ all of the careful antiseptic restrictions that they employ in surgical cases. In that case 100 children could come into a room where there is a case of measles and not take it. That is the case in Paris.

Dr. Hodges makes a strong point on that word "scarlatina." I wish it were swept out of the dictionary.

Finally and lastly, I want to thank Dr. Stiles for stating in a few words just the position I hold. It is not, gentlemen, that I love quarantine less, but I love a hundred times more the more important restrictive measures. I believe in the quarantine of measles and whooping cough and scarlet fever and diphtheria, and so does the man who has influenced me very largely in my views, Dr. Chapin, and I want to close with one chapter from his book.

*"Isolation of Villages.* The efficacy of isolation under such circumstances is well illustrated by the history of outbreaks of the common contagious diseases in the smaller cities, townships, and villages of Michi-

gan. The data given in the annual reports of the board of health of that State are of great epidemological interest, and my discussion of the subject on another occasion is here given.

"Only those places are considered which have remained free from the disease for at least sixty days, and this unfortunately is never true of a city of any considerable size. The outbreaks reported are arranged in groups, one in which isolation and disnfection were both enforced, one in which they were both neglected, and one in which the reports did not state with sufficient exactness what restrictive measures were carried out. The following is a summary of some of the tables in the report:

| | *Number of Cases per Outbreak.* | | | *Number of Cases per Outbreak.* | |
|---|---|---|---|---|---|
| | *Restrictive Measures Not Enforced.* | *Restrictive Measures Enforced.* | | *Restrictive Measures Not Enforced.* | *Restrictive Measures Enforced.* |
| Typhoid fever, 10 years.. | 5.82 | 3.13 | 1900.. | 6.72 | 2.22 |
| Diphtheria, 14 years..... | 11.12 | 2.11 | 1900.. | 4.85 | 1.71 |
| Scarlet fever, 14 years... | 11.95 | 2.32 | 1900.. | 10.43 | 2.53 |
| Measles, 11 years..... | 48.30 | 3.03 | 1900.. | 27.60 | 4.67 |
| Smallpox ..... | ..... | .... | 1900.. | 32.00 | 3.80 |

"*Isolation Effective.* Several things are to be noted in connection with these figures. In the first place, isolation and disinfection accomplish very much in preventing the extension of all these diseases. The number of facts is so great, the outbreaks of each disease running into the hundreds, and the difference between good and bad sanitation is so manifest in each one of the years for each one of the diseases, that the success achieved must be a very real one. It appears certain that isolation and disinfection as practiced in the smaller communities of Michigan reduce the cases of contagious disease in round numbers from 45 to 95%.

## VALUE OF TERMINAL DISINFECTION.

WARREN H. BOOKER, C.E., ASSISTANT SECRETARY, STATE BOARD OF HEALTH.

Disinfection is about the only other thing that beats quarantine when it comes to a haphazard, go as you please, hit and miss general policy. The practice of disinfection varies all the way from absolutely no attempt at disinfection, even in the case of typhoid and tuberculosis, to "disinfection gone mad" as in the case of chickenpox, or the disinfection of an empty house when the family returns from the summer vacation, or even "disinfecting" ordinary earth where it is excavated from cellars and postholes.



We know the cost of disinfection is enormous. I had no way of finding out what it really does cost our State annually, but just to give you an idea of what some other folks spend for disinfection I wish to call your attention to the following figures which show the cost of disinfection in a few large cities five years ago:

*Cost of Disinfection in One Year—*

| | |
|---|---|
| Boston | $20,123.49 |
| New York | 55,369.41 |
| Philadelphia | 24,115.75 |
| Baltimore | 6,603.78 |
| Washington | 5,786.00 |

Now if there is any part of our public funds which to my mind require to be expended judiciously it is our miserably inadequate public health funds. If more lives can be saved by spending our money for disinfectants let's disinfect, but if more lives can be saved by employing whole time county health officers, public health nurses, distributing literature or some other way, let's try to get the most for our money.

Now right at this point it might be interesting to take a little straw vote, just here among ourselves, for our own information, to find out where we really do stand on this question. I have prepared a blank chart here which we can fill out in a few moments if everybody will vote promptly. (The straw vote showed the following results. Several of the health officers failed to vote.):

TABLE SHOWING THE PRACTICE OF HEALTH OFFICERS PRESENT IN THE MATTER OF DISINFECTING OR FUMIGATING AFTER CERTAIN DISEASES.

| *Disease.* | *Disinfecting.* | *Not Disinfecting.* |
|---|---|---|
| Measles | 4 | 14 |
| Whooping cough | 6 | 14 |
| Scarlet fever | 25 | 0 |
| Diphtheria | 25 | 0 |
| Smallpox | 17 | 3 |
| Tuberculosis | 15 | 2 |
| Typhoid | 10 | 9 |
| Pneumonia | 0 | 25 |

**(This table, while it can scarcely be said to be truly representative of the practice in North Carolina, yet it indicates that perhaps a fourth of our health officers practice some kind of terminal disinfection after measles and whooping cough, and practically all disinfect after scarlet fever and diphtheria.)**

For some years the value of terminal disinfection in the case of several of the communicable diseases has been questioned largely because the increased rigor and the increased efficiency of disinfection was not followed by a decrease in the prevalence of these diseases or a decrease in the number of secondary cases occurring. These observations have

been particularly true in the case of scarlet fever and diphtheria. In fact we are beginning to learn that some of the contagious diseases are not nearly so contagious as we used to think they were. In the average family the chances of children contracting scarlet fever even at the most susceptible age is only one in three and for adults it is one in fifty. Now we will all have to admit that the danger of contagious disease from infected things is a whole lot less than from infected persons. The infected person is the hotbed for these germs. In him they are continually developing in enormous numbers while in the case of objects they are dying rapidly.

In scarlet fever and diphtheria a careful study seems to indicate that an extension occurs in only about six or seven per cent of the families. Most of this secondary infection occurs before the disease is recognized, or among families known to have visited infected households. When there is no interfamily communication there is little spread of the disease.

The theory of infection by objects never had a very good basis. Of course, there are reported cases where infected objects appear to have been the connecting link between the infected persons and those contracting the disease, but the percentage of these cases to our total cases is comparatively low. Even in these reported cases there is almost never any real evidence that the disease has been caused by infected objects. There is usually only a possibility or even a probability, while a demonstration that infected objects were the cause of disease would be almost unique. Experience indicates that where objects are under suspicion, persons have been found to be the bearers of the objects or otherwise closely related and as stated above persons are far more apt to be the bearer of germs fresh from the factor for germs than are objects.

The idea of infection from objects is an ancient theory, founded when we knew quite a bit less about communicable diseases than we do now. Witness malaria and the miasmatic air, or yellow fever and the objects on shipboard. In fact this theory has been maintained largely because it afforded the only explanation of the phenomena of disease extension. When other and better explanations are at hand this old theory may be questioned and it is up to those that would uphold this theory to back it up with some good direct observation or experiments if they wish to see it stand.

But there are other modes of infection besides from objects. Direct contact is the most obvious method of infection. True, not many people come into contact with the contagious sick, but did you ever stop to think of the abundant opportunity for contact between the general public and the convalescent, the healthy carriers and the mild unrecognized cases? In view of all these known and unknown sources of infection the only wonder is that we do not have more cases than we do. If infection from objects were as effective as we used to think it was there would be far more contagious diseases than we have.



In weighing the evidence of infection from objects and infection by contact the most important point of all is the matter of the virulence of the germs. In the case of objects they have become cold, dried and inactive, while in the case of carriers, etc., they are fresh, live and virulent. This is, in my opinion, the most important consideration of all.

These considerations and others, therefore, were what led such men as Chapin and others to question the value of terminal disinfection, particularly in the case of diphtheria and scarlet fever. In March, 1905, terminal disinfection after diphtheria was discontinued in Providence with the result shown in the accompanying table:

PROVIDENCE (DIPHTHERIA).

DISINFECTION.

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1902 | 530 | 8 | 1.51 |
| 1903 | 706 | 7 | 0.99 |
| 1904 | 780 | 19 | 2.44 |
| 1905 | 140 | 2 | 1.43 |
| Total | 2,156 | 36 | 1.67 |

NO DISINFECTION.

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1905 | 422 | 5 | 1.18 |
| 1906 | 407 | 6 | 1.47 |
| 1907 | 570 | 7 | 1.23 |
| 1908 | 917 | 17 | 1.85 |
| 1909 | 639 | 3 | 0.47 |
| Total | 2,955 | 38 | 1.28 |

From this table it will be seen that the secondary case rate was not increased after disinfection was discontinued. In other words it seems that ordinary terminal disinfection has no effect on diphtheria. In Baltimore terminal disinfection with check tests was continued through the same years in which it was discontinued in Providence.

The following table is given for Baltimore to serve as a control with reference to Providence:

BALTIMORE (DIPHTHERIA).

DISINFECTION AND CHECKS.

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1903 | 1,096 | 20 | 1.82 |
| 1904 | 1,241 | 18 | 1.45 |
| 1905 | 962 | 17 | 1.77 |
| 1906 | 1,172 | 22 | 1.87 |
| 1907 | 867 | 21 | 2.42 |
| 1908 | 837 | 10 | 1.19 |
| 1909 | 756 | 14 | 1.85 |
| Total | 6,931 | 122 | 1.76 |

After such satisfactory experience in Providence with diphtheria without terminal disinfection it was decided to discontinue disinfection after scarlet fever with results indicated in the following table:

PROVIDENCE (SCARLET FEVER).

DISINFECTION.

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1904 | 1,220 | 23 | 1.88 |
| 1905 | 454 | 6 | 1.32 |
| 1906 | 615 | 12 | 1.95 |
| 1907 | 809 | 10 | 1.24 |
| 1908 | 389 | 3 | .77 |
| 1909 | 75 | 3 | 4.00 |
| Total | 3,562 | 57 | 1.60 |

NO DISINFECTION.

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1908 | 52 | 1 | 1.92 |
| 1909 | 552 | 16 | 2.90 |
| Total | 604 | 17 | 2.81 |

The following table from Baltimore where disinfection and checks were used is given as a control:

BALTIMORE (SCARLET FEVER).

| *Year.* | *Cases.* | *Recurrences.* | *Per Cent.* |
|---|---|---|---|
| 1903 | 1,224 | 10 | 0.89 |
| 1904 | 1,222 | 21 | 1.72 |
| 1905 | 615 | 12 | 1.95 |
| 1906 | 577 | 7 | 1.21 |
| 1907 | 436 | 11 | 2.52 |
| 1908 | 1,262 | 17 | 1.34 |
| 1909 | 456 | 6 | 1.31 |
| Total | 5,792 | 84 | 1.44 |



The results, both in the case of diphtheria and scarlet fever indicate, that within the limits of error terminal disinfection is of little or no value.

In general the number of recurring cases in families is believed to be a measure of the value of disinfection. Others claim that this is not a fair test because there are about as many recurrences after return hospital cases as after terminal disinfection and that the recurrences are, therefore, largely due to carriers.

The accompanying table from the experience of Boston shows the time at which secondary cases occurred after the fumigation in a number of fumigations after scarlet fever and diphtheria. All these cases were fumigated within forty-eight hours after reporting or removing to the contagious disease hospital.

RECURRING CASES AFTER DISINFECTION.

| | *Diphtheria 2,675 Fumigations.* | *Scarlet Fever 1,748 Fumigations.* |
|---|---|---|
| 1 to 3 days | 4 | 3 |
| 4 to 7 days | 15 | 9 |
| 1 to 2 weeks | 8 | 4 |
| 2 to 3 weeks | 6 | 2 |
| 3 to 4 weeks | 2 | 2 |
| Over 4 weeks | 13 | 7 |
| 3 to 33 days. | 1 to 30 days. | |
| 1 to 34 days. | 1 to 32 days. | |
| 1 to 35 days. | 1 to 33 days. | |
| 2 to 37 days. | 1 to 40 days. | |
| 1 to 48 days. | 2 to 42 days. | |
| 2 to 50 days. | 1 to 57 days. | |
| 1 to 53 days. | | |
| 1 to 54 days. | | |
| 1 to 58 days. | | |

The main point of the table is that it does not indicate that terminal disinfection was of great value when it is remembered that many of these secondary cases were exposed to the original case as well as to the same source of infections as the original case.

Both theory and facts, so far as the data go, indicate that terminal disinfection is of little value in the case of diphtheria and scarlet fever. The very feebleness of the germs of influenza, cerebrospinal meningitis and pneumonia indicate that inanimate objects have little or no part in the extension of the disease and that terminal disinfection is of no value. In diseases in which there are a number of carriers, missed cases and infectious cases up and about, disinfection can be of very little value.

These general views in regard to disinfection seem to be gaining ground rapidly. The periodical disinfection of schools is falling into disuse and Kerr, the chief medical inspector of schools in London, claims that schoolrooms can rarely be at fault in school outbreaks of contagious diseases.

A very great part of this matter of disinfection seems to be like the armor plate industry. If we did not have armor plate manufacturers we would miss a great many near wars and if we did not have manufacturers of disinfectants we would miss many good chances to catch something—nobody knows what.

But someone asks would you pass up the whole matter of the contagious diseases, without any effort to prevent its spread? Oh, no, that is not the idea. The patient is the hotbed for the germs. Direct your attention there. Get at the root of things. Devote all the well meant energies formerly directed toward terminal disinfection toward obtaining scrupulous cleanliness in the care of the patient. Plenty of soap and water daily on the things directly in contact with the patient and on the hands of the nurse will do much to prevent the spread of the disease in the family. Teach the patient and the public the utmost care in regard to everything coming from the patient, such as his fecal matter, urine, sputa, his soiled clothes, bed linen, dishes, unconsumed food, etc. Terminal disinfection on the whole is a mistake. It detracts attention from the main issue, namely, the importance of contact infection and the necessity for personal cleanliness. It is not a harmless custom either, but it is positively injurious in that it focuses attention of the layman upon unimportant modes of infection. Moreover it costs money.

Now as health officers we have at least two more very important diseases about which nothing has been said—typhoid and tuberculosis. In the case of typhoid there is not much chance that anything will escape to objects in a room which terminal disinfection could reach. In typhoid the utmost care should be used to thoroughly disinfect all the discharges from the patient. This should be done whether the discharges are later emptied in sewers or otherwise disposed of. Perfect cleanliness in typhoid as in the other diseases contemplates the entire absence of flies, mosquitoes, and other insects from the sickroom and everything connected with the sickroom.

One of the best and cheapest disinfectants for fecal and other discharges in chlorinated lime, or choride of lime or bleaching powder, as it is sometimes called. A pound can costs fifteen cents and makes four gallons of solution, enough for one day. For the hands of the nurse a 1 to 1,000 solution of bichloride of mercury is good. Soiled bed linen and clothing should be boiled for thirty minutes, or a three per cent carbolic acid may also be used.



This brings us to the last important disease requiring disinfection with which we as health officers have to deal, namely, tuberculosis. Now all the experts on tuberculosis assure us that a careful consumptive is not dangerous to live with. Now it would seem that if a live tuberculous person is safe to live with his house should not be dangerous after he is dead. Personally I have always felt that a consumptive was not quite so safe as when he is dead. For that reason I am not quite willing to take the advanced ground that after the death or removal of a consumptive, particularly a careless consumptive, we should not make a thorough cleaning, disinfection, if you please, of his apartments. However, I wish you to appreciate my point: If a consumptive has been careless all his life, at least through his sickness, his family will gain little or no security by the rite of disinfection after his death.

As everybody knows, however, practically all the importance, all the value of disinfection in the case of tuberculosis is in disinfecting every particle of matter that is given off by the patient. Bedside disinfection to be sure, but the ideal way would be to begin years before that, begin just a little before the coughing and spitting. I shall not attempt to tell such an audience anything about the details of handling tuberculosis—you are all familiar with the difficulties and the usual well known methods. My only point is in questioning the value of terminal disinfection in many cases of tuberculosis and in urging closer attention to the patient himself from the very beginning.

Now in conclusion let me state that while in my opinion the general attitude toward terminal disinfection is that it is of very little or no value in the ordinary contagious diseases yet if in a community, particularly in a small community, a particular contagion develops in one or two cases we would doubtless be justified in taking more than ordinary precautions to stamp it out than would be warranted in the event that there was a well established epidemic, such as the statewide epidemic of measles last winter.

In the wind up the whole thing resolves itself largely into an economic problem. We have so much money. We have urgent need for one hundred times as much. How shall we spend what we have? We cannot do everything. Naturally you say do that which will net us the greatest saving in human lives. So far the data does not seem to indicate that very much is to be expected from expenditures for terminal disinfection.

DISCUSSION.

DR. C. A. SHORE: Dr. Stiles used the word this morning that I think is very fitting. He spoke of "rational" quarantine. I think in disinfection our problem is altogether one of rational disinfection. If we limit the term disinfection to fumigation there is no doubt but that it has been overrated as a means of doing good. On the other hand, there is rational disinfection to be done in most diseases. When we know the infecting agent the problem is simplified, for we can apply rational disinfection. Where we do not know the infecting agent, it is much more difficult. It would be criminal, of course, not to disinfect after typhoid and tuberculosis—disinfect the bed clothing and excreta in typhoid, and the sputum in tuberculosis. Wherever we can we should find out the rational method of disinfection.

DR. J. W. HALFORD: Discussing the matter of what diseases we should quarantine, or after what diseases we should disinfect, I can speak of my own experience in public health work, covering a period of several years. I believe that the money we have spent in fumigation, especially, has largely been money thrown away. As regards the exanthemata, all of you have come into contact with persons suffering from chronic diseases who date their troubles from a previous attack of measles, and so frequently have I encountered cases of tuberculosis dating their trouble from a previous attack of measles that I am almost inclined to believe that that should be considered a primary symptom of the white plague. At any rate, those people having measles frequently develop tuberculosis, and we should use some method of quarantining until we have found out the cause of this disease, and the other diseases we have had under discussion. I think it would be very unwise, even in the face of the data produced here, to do away with disinfection, but we should disinfect in a sane manner. As applied in the average country home, it is labor thrown away.

In regard to smallpox, I believe that our statistics show that we are having a smaller number of cases of smallpox in Harnett County through our present method of handling this disease than we had formerly. I think it was very wise to discontinue the quarantine of smallpox. It saves hundreds of dollars that were thrown away each year, and that accomplished nothing. I believe our county will show a smaller number of cases of smallpox now than it did under the former method of quarantining.

As regards the agent we use for fumigation, of course formaldehyde is the only agent, because it leaves no damage behind. As to the education of the public in these matters, that is a stupendous task, and we are taking it very slowly, especially in some of the backward counties.



DR. L. B. MCBRAYER: I have enjoyed the papers and discussion very much, and I desire to congratulate Mr. Booker upon the interesting way in which he presented his side of the case. I am glad that the thing has been really tried out. A great many statements that are made are the creation of some one's imagination or quotations from other people. Mr. Booker quoted from some one else in this particular instance, but he had authority for his statements. That is the trouble with a great many things. Somebody says them and everybody repeats them. We get information that is not correct.

In regard to fumigation, in the city of New York they practice as a routine the planting of the *B. Prodigiosus,* as Dr. Rankin has described, and they expect their fumigation to kill it and to get no growth from cultures. We have done that in Asheville in various cases, and we intend to make it an occasional occurrence, trying out the man who does the fumigation to see whether he is doing it properly. In every instance where we have tried it there has been no growth.

Now, I am perfectly willing to take my chances with tuberculosis or anything else, if I know that proper hygiene and proper disinfection are carried on at the time. If there was no quarantine I would prefer, especially after tuberculosis and typhoid fever, that we have terminal disinfection.

I asked a health officer once why he continued to use the ——— method of disinfection instead of formaldehyde. He said he did it for the moral effect on the people. If you use this method, it is not understood by the laity, and it looks as though you are doing something, while if you go and disinfect with a formaldehyde candle or with permanganate, there is nothing to distinguish you from an ordinary citizen. That may be one way of educating the people. If, so, it may be money well spent.

DR. W. S. RANKIN: There is this thing that has not been said in this discussion that I want to say about the efficiency of terminal fumigation, namely, that there are certain laboratory experiments, in addition to the statistics which you have heard, that cast doubt upon the value of terminal fumigation. Experiments show that if you take a sterile thread, dip it into a bouillon culture of any kind of a germ, put the thread, after drying it, into a room, closely seal the room and fumigate with any commercial disinfectant, then take the thread after it has remained in the "disinfected" room six hours and place it in a sterile

bouillon, you will get no growth. The conclusion which has been drawn in the past from this test is that the germs on the thread were killed by the "disinfectant." The error of this conclusion is readily shown by the following laboratory test: A sterile thread is exposed to the fumigation process in a well sealed room, and after the proper time has elapsed—six or eight hours—placed in sterile bouillon. Pure cultures of any pathogenic germs will now fail to grow when planted in the sterile bouillon that has received the sterile thread which was exposed to the fumigation. This is due to the fact that the thread exposed to the formaldehyde absorbed enough formaldehyde gas so as, when placed in the sterile bouillon, to render the bouillon antiseptic, thereby preventing the multiplication of any pathogenic germ. In the first test the dry germs on the dry thread were living when placed in the sterile bouillon, but the formaldehyde carried into the bouillon by the thread prevented their growth. This is proved by the fact that pathogenic germs in a dry condition, and exposed to formaldehyde are not killed, and it is only when the germs are moist, that is when culture is on some liquid, semiliquid or gelatinous media that they are killed.

Again, I do not want to be misunderstood, I still believe (the word "still" is used advisedly here), in disinfection after the four contagions, but I do not believe that disinfection is worth one-hundredth as much as careful sanitation during the course of the disease.

DR. L. N. GLENN: As regards the second part of this discussion, what we shall use in disinfection, when I first took charge of the county health work of Gaston County the county spent quite a sum of money every year in buying these loud smelling disinfectants that the man tried to sell to the board of commissioners, who knew no better than to buy them. These things were used in our county jail and convict camps. The county authorities thought that they were doing wonders. I succeeded after a while in getting the commissioners not to buy any more of that stuff. We have a very modern and excellent jail, with city water, concrete floors, and that jail is scrubbed and flooded with water at least once every month, oftener if necessary. If a prisoner is especially active in keeping himself dirty he is isolated. In our chain gang the same thing applies. We formerly used straw for bedding in the stockade, but we quit that because you can not keep it clean. We now use ordinary cheap mattresses which are put on the floor. The floor is scrubbed thoroughly with soap and water once a week. The mattresses are slept on at night and carried out in the morning by the house boy and placed on what we call the scaffold, in the sunshine. Just before the prisoners come in from the roads the mattresses are put back in the cells. Since we have adopted this plan I have not seen any kind of vermin about the camp. Our conclusion is that if you use plenty of soap and water and proper care about these places you are just as well off without any disinfectant.



Every prisoner that comes to our jail, no matter if it were one of you gentlemen, is stripped and given a head to foot bath with hot water and soap and is scrubbed thoroughly and a prison suit put on. Unless you do that you will have lice, and sometimes it is a pretty decent looking white fellow who brings them in. The prisoners are bathed regularly once a week and oftener if they wish. It is routine practice to give the man his initial cleanup before he goes into the cell. It is the only method I know of that will keep the jail free from lice.

## HOW TO HANDLE THE CONTAGIONS IN SCHOOL POPULATIONS.

GEORGE M. COOPER, M.D., CLINTON, N. C.

The discussion of this subject must of necessity be brief. If the program committee had given me the question reading "How are the Contagions Handled?" I could, so far as concerns one North Carolina county, answer—they are not handled. And as long as petty politics plays an important part in the selection of school trustees and of underpaid teachers they are not going to be handled. Furthermore, as long as some families and individuals have a little more "pull" with the powers that be than others equally as worthy of consideration, so long will the problem remain the same.

There is only one way to deal with any school contagion and that is send the child home and keep him there until he is well. And to send the child of Banker Jones home with the measles at the same time plain John Smith's boy has to go on account of whooping cough, when Jones happens to be chairman of the board of trustees, etc., and young Jones may be barely skimping along just over on the right side of grade promotion, requires a little bit of nerve all along the line. But it is the only way to protect the rest of the school from measles.

One way to handle the ordinary troublesome school contagions is to somehow get the public to comprehend the fact that measles and whooping cough are just as dangerous as diphtheria. Doubtless every man here was struck with the report of Census Director Durand recently, in which the registration area of North Carolina shows up bad with a high mortality from measles and whooping cough, and with a low mor-

tality from the popularly horrible diseases of scarlet fever, diphtheria and smallpox. To my mind the reason seems clear, that is, the public does not regard the socalled diseases of childhood with the apprehension they should and therefore makes it impossible to isolate the victims, because no law is any stronger than the public or popular opinion behind it.

To properly handle contagious diseases among the schools the whole business must be revolutionized, the entire system changed, and it cannot be accomplished without the coöperation of, not only the teachers in the schools and the superintendent of schools, but also the boards of education and the local trustees. We must impress upon every man whose child is stopped from school that it is done without discrimination and for the best interest of the public, that he must be willing to sacrifice his individual liberty for a few days on behalf of that larger liberty of the community. In other words, in the language of the Golden Rule, he must do as he would be done by.

We must have a different system of reporting the presence of disease in a community, that is, less dependence put on doctors and more on families, because of the fact that so many dangerous diseases are never seen or treated by physicians.

We must have a whole time health officer for each county, with the proper assistance, who will enforce the law without fear or favor.

We must overcome that terribly fatalistic creed, opinion, or belief, that graveyard of all efforts of preventive medicine, that age old argument, that perhaps nothing would happen anyhow. The typhoid germ might be swallowed and maybe there would be no typhoid, the child might be exposed to whooping cough but perhaps he would not catch it, or by good luck, not die if he did.

We must have a rigid medical inspection of schools. We must have the better coöperation of better teachers. And how can we have better, more intelligent teachers, unless the State is willing to pay them a living wage? "Is not the laborer worthy of his hire?" The average negro cotton picker in our Carolina fields enjoys a greater annual income than do one-half the women rural school teachers of our State. Pay them a sufficient salary and demand character, ability and high moral standards in return and then, and not until then, will we get the service our schools and the health our population deserves.

And now in conclusion, to make our great State the desirable abode to which our climate, location and diversity of soils and conditions and occupations entitle us, we must, as professional men who love our profession and its standards as we do life itself, continue to battle for human rights in preference to property rights.



With apologies to Dr. Rankin and the Indiana State Board of Health, I will relate the following: Some time ago one of the wealthiest farmers of our county had a lot of pure bred hogs; cholera appeared among them and in response to an urgent message the North Carolina State Agricultural Department sent an expert veterinary surgeon down there from Raleigh to give the well hogs prophylactic treatment. The man drove sixteen miles in the country, administered the serum, and the cost to the farmer was just the cost of the serum, not exceeding fifty cents per hog. A few weeks later I had occasion to treat a young man in the town of Clinton through a severe attack of typhoid fever—an especially sad case. His father died of tuberculosis. He was the oldest son and chief support of his widowed mother. A brother was helpless at the time as result of a broken leg. Several of the family were exposed, and being of tubercular disposition made prophylaxis doubly important. I therefore appealed to our county board of health and on to the State Board of Health for at least free typhobacterin. I was told sadly that there was no appropriation and that nothing could be done. There was no "Balm in Gilead" for the widow and her children. They might die of typhoid fever. A great State and a rich county were powerless to help them under the present laws.

The State Agricultural Department must by all means spare no amount of money to save a wealthy farmer's fine hogs, but the State Board of Health had no legal right to save the children of a widowed mother. I do not blame the State Agricultural Department. I do not blame the State Board of Health. And in view of what the last Legislature did for us I cannot censure that body. But I do hold that an indifferent, careless, selfish public is responsible for this state of affairs.

How long must it be before people will begin to ask themselves the question, "Is not the life more than meat, and the body than raiment?" Some day we shall teach a new science in our public schools, and in our colleges and universities—the science of humanity as taught by a wandering Teacher of men nineteen hundred years ago.

### DISCUSSION.

DR. I. W. FAISON: I want to thank Dr. Cooper for his paper. What he has said is true. When you go out among the people of this State and see what is going on you feel like throwing up your hands in holy horror and leaving.

During the past year I have had the privilege of making talks in three or four little towns. I was up in a mountain town a few weeks ago to make a speech to the civic club. I was introduced by the mayor of that town, who was a graduate of Chapel Hill. I took it for granted that he being a man of education, I would be perfectly free to say anything about the mayor. I happened to ask the crowd if they had whooping cough in the town. Some local physician answered "Yes, a hundred cases." I then opened a battery on them and mowed down everything in sight by saying there was a law sufficient to protect the school children of the State from it and that it was the duty of the mayor to see it; that if he would not take the bull by the horns and protect the town when the time came for the next election they should put in a new mayor. At the close of the meeting I was told that the mayor had forced the health authorities and the school authorities to take his child, who had whooping cough, back into the school.

That is what is going on in our State. That is why I take the position that we have to have laws for these things. All this talking about education is very pretty, but it is not worth a whit without something behind it.

DR. JOHN A. FERRELL: Many years have rolled by since the Charlotte gentleman lived in Sampson County. He has not kept himself posted on the remarkable progress that has been made in the county of his nativity, otherwise he would not have made the statements concerning the educational and health work there. I would like to inform him that Sampson has provided more with which to pay its health officer than has Mecklenburg County. It may have paid only eight or ten dollars per month in the past, but it is now asking Dr. Cooper to serve at $2,000 a year, and if that is not enough to secure him more will be paid.

The educational work looking to this step has been going on for years under the able direction of Mr. L. L. Matthews, county superintendent of schools, and Dr. G. M. Cooper, the tactful and effective county superintendent of health.

The remarkable ability of Dr. Cooper is evidenced by the fact that a Republican board of commissioners and a Democratic board of education have met on common ground. Each board has appropriated money for the express purpose of employing Dr. Cooper for his entire time. With the splendid progress that has been made in Sampson County in school work, in health work, in the culture and refinement of its people, in farming, in road building, I venture the assertion that my good friend would not now recognize it as the section he left.



## A NEWLY DEVELOPED INFLUENCE OF LOCAL HEALTH POLITICS UPON STATEWIDE DEVELOPMENT OF PUBLIC HEALTH AND STATEWIDE REDUCTION OF DEATH RATES.

CHARLES WARDELL STILES, LL.D., CITIZEN OF NORTH CAROLINA.

The present paper does not deal with the *origin* of certain facts, but taking the facts as existing, it invites attention to an interesting result. It is written not in my capacity as a Federal officer, but as a resident of the State of North Carolina.

Several cities and counties in this State have awakened, with commendable energy, to the fact that their death rates have been unnecessarily high and there has developed a desire among many of their citizens to do all within their power to protect human life within the city or county borders. Movements to this end have been instituted, but harmony has not been prominently present either in the local governing bodies or among the citizens; in fact a condition has arisen that might be referred to as local health politics and much energy that might well have been directed toward reducing the death rate of the women and children of the locality has been wasted in factional squabbles, personal invective, and nursing sore feelings.

It is not my purpose to enter into any discussion of the merits or demerits in the premises, for as a Federal officer I must carefully avoid even the appearance of attempting to influence local elections or of taking sides in local factional differences of opinion. But I am persuaded that you will not deny me the right and the duty as a legal resident of this State to defend the good name of the State when I find this in jeopardy in respect to any particular point.

Several years ago Durham elected a certain man as health officer. This official started in to clean up the city—and any of us who had been there certainly knew that this task was of sufficient magnitude to occupy his entire time for some weeks and that it was sufficiently important to justify his being left free to do that work rather than to use his time in building political fences—so to speak. You all know what happened: Dr. Mann's life was almost a burden because of the constant fight that was made against him in his efforts to decrease the daily diet of human excreta consumed by his fellow citizens, and he served but a relatively short time as Durham's health officer.

Not long ago, also, Wake County endeavored to appoint a health officer who should do what he could to protect the lives of the women and chil-

dren against disease. You recall the general history of the incident. A self-governing county proved itself unable to govern itself in this particular incident, and in accord with the law a State official had to step in and settle certain local questions.

About two years ago. Wilmington elected a health officer and one might almost say that ever since then fighting for or against him has been the chief occupation of a goodly number of the residents of that city. Recently New Hanover County has elected this same man, Dr. Nesbitt, as full time county health officer, and since his recent election arguments for or against Nesbitt have certainly been the chief topic of conversation in that locality.

Permit me to emphasize the point, gentlemen, that I am not taking sides in the question whether or not Mann, McCullers, or Nesbitt, are individually or collectively knaves, asses, incompetents, or great men. I am placing before you the fact that they were elected in accordance with law to fulfill certain duties as health officers and that much of their time that rightly belonged to the protection of the lives of the women and children of their respective localities has been used, by force of circumstances, to answering objections, criticisms, and attack. If you have these two points clearly in your mind, permit me to pass to the next thought in my paper.

About two weeks ago I received from one of the best known men in this State—not a physician, by the way, a letter in which he told me that the city in which he lived was thinking of putting in a full time health officer and he asked whether I could recommend a man for the place. I replied immediately to the general effect that at the moment I had no one especially in mind, but I would think over the matter, that in a few days I would be in Washington, D. C., and New York, and coming in contact with other men interested in public health matters I would see who was available and would write him later.

Upon my taking up the subject with a number of men, this is the reply I received, in substance:

"In view of the treatment North Carolina gives to any local health officer who tries to do his duty, as indicated by the treatment accorded to Mann by Durham, to McCullers by Wake County, and to Nesbitt by Wilmington, we do not care to advise any men to take a position as local health officer in that State."

Thus, gentlemen, you see that the treatment accorded to health officers in this State is becoming a matter of comment, and that factional differences in three counties are giving to the State at large a dark black-and-blue spot surrounding the eye.



In reflecting over the situation the following thoughts force themselves forward in my mind:

If any city or county hopes to have a health officer who is thoroughly acceptable to every lawyer, preacher, physician, grocer, banker, property owner, real estate agent, and in addition to every ownerless dog in town, that city will either be so clean that there will be nothing for the health officer to do, or it will be a city whose inhabitants are a mass of consummate idiots. Ergo, there will always be differences of opinion in any earthly city, whose inhabitants are rational mortals, in regard to the principles, policies, and personality of any health officer who is worth the price of a haircut.

Going out from this premise, it is clear that if there is only one government in a city, both sides to the controversy can not have their own way as to whether Dr. Tweedledee or Dr. Tweedledum is elected. Assuming now that Dr. Tweedledee receives 50.1 per cent of the votes and Dr. Tweedledum receives 49.9 per cent, or assuming that the vote stands 50.1 per cent for Dr. Tweedledee and 49.9 per cent against him, the point arises, What should the 49.9 per cent—the minority—do? Should they continue the preëlection fight until they wear out the health of Dr. Tweedledee and the patience of his supporters, or should they accept the American principle that the majority rules?

To my mind the answer to the question depends entirely upon the answer to another question, namely, In this matter, is their chief concern a desire to conserve human life—especially the lives of our North Carolina women and children—and a desire not to bring the name of our State into disrepute, or are their personal, political or professional preferences of greater importance than the health and lives of their wives and children? In other words, which would they prefer to bury, their personal preferences or their wives and children? To reduce the subject to this question may sound harsh, but it is thoroughly logical and thoroughly kind, on this account: Every hour of a health officer's time and every particle of his mental and physical strength that are taken away from his legitimate duties as health officer and turned to public health politics means robbing the women and children of a community of that much protection to their health and life, and *who knows* whether it may not be exactly that distraction of the health officer that may cause or permit an unsanitary condition to continue that will result in the death of your wife or my wife or child?

Gentlemen, as a legal resident and as an actual resident of this State, I call upon you as American men, men to whom the lives of women and children are dearer than the lives of self, let us have an end to public

health politics; let us recognize that the majority, not the minority, rules; let us help rather than impede the work of the health officer, whether he be Tweedledee or Tweedledum, and even if he be our bitterest personal enemy and, in our opinion, a scoundrel—for who would refuse to pull an oar in a boat even with a murderer if that boat were trying to make for a woman or child sinking in midstream? Gentlemen, a health officer who differs with us in principle, practice and politics, can save more human life with our aid than without it, and if he is the legally elected health officer it is our duty in justice to our families to support him and to work with him. The man or the organization who or which opposes the work of any health officer in this State, for any reason whatsoever, is doing an injustice to your wife and to my wife, to your daughter and to my daughter, and if (by reason of distracting the attention of any legally elected health officer, be that health officer knave, ass, incompetent, or phenomenon) your wife or my wife, your child or my child contracts typhoid fever or some other infectious disease and dies as a result, the man or the organization that caused the distraction, which was responsible for the occurrence, will be morally responsible for the death that results.

Further, the men or the organization who continue the preëlection duties beyond the election day are assuming the tremendous responsibility of warning away from North Carolina well trained health officers, in face of the fact that the supply is not equal to the demand.

In the name of all of the sick of the State of North Carolina, let us have an end to discord; let us all shake hands, kiss and make up, pull together and coöperate, bury our differences of opinion instead of our children, and protect the good name of the State from further reflections such as I have brought to your attention.

Durham, Raleigh, and Wilmington public health squabbles have assumed more than a local aspect and if such things go on much longer they will not only result in keeping the better class of men out of public health work, but will be a great impediment to a Statewide reduction of the death rate.

In the name of Dr. Rankin's vital statistics, Dr. Ferrell's hookworms, and Dr. Booker's flies, let us get together and have harmony.

DISCUSSION.

Dr. Arch. Cheatham: I wish to say in behalf of Durham that I think Dr. Stiles' criticism is unjust. I want it understood that Dr. Mann and myself have always been friends. There are always two sides to every question, and only one side of this question has gone



out, to the detriment of my town and county. Politics was not the cause of Dr. Mann's not being retained. Dr. Mann is a man well up in sanitary science, but he is not an effective man. He was not in the habit of pushing his ideas after they were promulgated, but he let them take care of themselves. The board of health, composed of honorable gentlemen who had given great study to the question of public health, finally decided that they would rather have a man who would act as well as talk, and Dr. Mann was not reëlected to fill the position which he had been filling for years. As to whether they were right or wrong, they were on the ground and they were above reproach. This question has gone out in a shape which is a reflection on my town and which I resent. It is unjust. I can not say that we were active for two or three years after Dr. Mann's withdrawal or failure to be elected in our town. I did all I could to hold up his hand and the rest did what they could. I can give the details if any one wishes to go into the matter. There is no politics in our town in the way of health administration. I am the unfortunate victim of a recent election and I hope to try to do something to remove that stigma upon my town and State.

On motion of Dr. Chas. O'H. Laughinghouse the President appointed as members of the Nominating Committee, Dr. John A. Ferrell, Raleigh, N. C.; Dr. D. A. Stanton, High Point, N. C.; Dr. L. B. McBrayer, Asheville, N. C.

Meeting adjourned.

## NIGHT SESSION

## THE INDICATIONS FOR COMBINING MUNICIPAL AND COUNTY HEALTH WORK.

J. T. J. Battle, M.D., Greensboro, N. C.

The indications for combining municipal and county health work are, upon investigation, quite reasonable and urgent. It has been well said by Emerson that "Any great institution is the lengthened shadow of one man." The greater opportunity which is afforded a man the greater work he can accomplish. The combined work of town and county is an enlarged opportunity over either alone. As the municipal and rural citizens are in constant communication with each other and the one dependent upon the other, so much so that their welfare could be managed along the same lines, a plan of mutual efficacy to each could

be mapped out and with one in control could be executed to the advantage of both.

If any contagious disease should appear in either place it could be better controlled if all the machinery were centered in one officer. If each county in the State were properly organized with a competent superintendent of health and these directed by our able and most efficient Secretary of the State Board of Health, we could in two or three years greatly reduce our present rate of mortality. The average mortality of Ohio, Pennsylvania, New York, New Jersey, Michigan, and Indiana is 14.4 per thousand. North Carolina should most assuredly equal either of these, yet ours is 18.7, making a difference against us of 4.3. With the State's population of 2,206,000 this excess death rate causes a loss of 9,030 lives annually. Looking at this from a financial viewpoint and taking $1,700 as the value of an average life, and multiplying by the 9,030, it figures out the enormous sum of $15,300,000 loss in money value each year. With the hundred counties in the State, if $1,500 were added to what is already being paid out for professional services in each county, equaling $150,000 for the entire number, there is no question but that the above estimated saving could be realized. For every dollar expended that would mean a saving of one hundred dollars, besides the 40,000 cases of needless sickness each year. There is no better work, nor greater than conserving health and preventing premature death from both an humanitarian and a financial viewpoint.

Again, the State's population is increasing at the rate of only 31,247 per year. With these 9,030 people saved it would add twenty-nine per cent to the increase.

There is only one way to stop this drain upon the State's vitality and that is to have a superintendent of health in each county. In having only one instead of two, one hundred high priced men's salaries could be saved and one hundred would harmonize better than two hundred. Dividing responsibility oftentimes lessens efficiency. If the sanitary work in the Panama Canal Zone had been divided between two or more men it is safe to say that the time for the ships to pass through would be delayed months, or even years. But with a Gorgas in control the result has been marvelous, and would that every county commissioner in North Carolina could visit that Zone and try to comprehend what can be done by sanitation and realize that in their hands rests the opportunity to save 9,030 lives and over $15,000,000 to the State annually.

And if our people must be better educated to comprehend this work of so great and vital interest to each citizen, and with demonstrations on



every hand and every turn that with improvement of sanitation, *pari passu* lessened death rate, it does seem that our leaders and law makers would pass a compulsory education law instead of attempting to ride into popularity for another election by straddling a makeshift.

May the day be hastened when each county will have a superintendent of health and then will the State begin another era of prosperity, for an investment in health will net an hundredfold return.

DISCUSSION.

DR. J. M. PARROTT: I don't suppose that there is a man present who does not realize the very great importance of health work in North Carolina and I am sure that the people of North Carolina as a whole are beginning to realize the true worth of the work that has been done in the past. I am very much struck with the idea of Dr. Battle of the combination of the county and municipal health officers in the hands of one man. I don't believe that there is a county in North Carolina so densely populated that would require the exclusive time of two men. There is no doubt that concentration of authority brings with it the responsibility needed for success. The people of North Carolina have placed the board of health as our representatives in this work, on trial. They are looking to see what will be accomplished. I am very much of the opinion that if we fail to show results from all this expenditure of money and of work incident to this campaign that the people of North Carolina will not do away with health work, but will have it done in spite of us. They have placed the ammunition in our hands, they are assisting us, and unless we move forward and obtain results, we need not be surprised if the people take this matter into their own hands and literally run over the profession in this matter.

Now as to increase of saving life; the work does not mean really any more by the actual saving of life as the increase of the efficiency of the living man; not so much in saving the boy as increasing the efficiency of that boy. I believe the correct course to pursue is outlined by Dr. Battle in his paper.

# FUNDAMENTAL DUTIES OF THE MUNICIPAL AND COUNTY HEALTH OFFICER.

CHAS. O'H. LAUGHINGHOUSE, M.D., GREENVILLE, N. C.

The problem of the cost of living is so complex that an attempt to solve it would lead one into a study of all phases of life, but the deeper we delve into the solution of the question, the stronger is the conviction that normal and economical living depend principally upon the physical, mental, and moral efficiency of the individual who lives.

Of the deaths each year 43% might be postponed, 50% of serious illness might be obviated. The average human life might be prolonged over twelve years; 4% of the citizenship of the United States are on the sick list constantly. From a standpoint of money the State suffers annually more than $10 per capita, without counting the economic loss of 12.3 years that might be added to the average life.

The increased vital efficiency of the citizens of the State which would result from a conservation of the present waste of health would, if expended in labor, increase the earnings of those whose health is impaired; lessen the burden of those who are at present unnecessarily ill, and in direct ratio relieve the purse and time of those who are well but burdened with some dependent, made so by disease.

There may be no relation between waste of health and rise in prices, nor is there evidence that waste of health lowers the rate of wages, but it is beyond controversy that sickness, oft repeated and of long standing, lowers personal efficiency, which sooner or later means deterioration in earning capacity; therefore one of the fundamental duties of a municipal and county health officer is to reduce to the minimum this phase of the cost of living.

No business, great or small, can grow satisfactorily unless it submits itself to inventories and audits. In no other way can its assets and liabilities be obtained; in no other way can its strong and weak points be discovered; in no other way can leaks be stopped. In fact bookkeeping, inventories and audits are nothing more or less than the foundation on which business efficiency is built.

Our last Legislature enacted a vital statistics law, which requires the registration of births and deaths, along with age, sex, place, cause of death, etc. Under this law we will know where, when and how people die. It is the State's plan of inventory, the State's plan of audit, the State's system of bookkeeping in its health department. It is the yardstick by which the health officer and his work are measured. It



is the gantlet that not only the health officer but his community must run.

A knowledge of the death rate of any given community can now be had for the asking; and unless the death rate is lessened in a given community it is *prima facia* evidence of incompetence on the part of the health officer. The State is now in a position to and will compare each community, one with the other; therefore health officers should put forward every effort to make thorough knowledge and familiarity with the State's vital statistics law common property to all citizens of the State. It is the only safe way to guide public health officers. It is to public health what bookkeeping is to business. The wise merchant studies his records of profit and loss and expands along the lines where he can get the best interest on the capital invested. So with the modern health officer. The various causes of death and inroads of disease in his territory indicate the end to which he should direct his efforts. His own experience and the experience of others, as tabulated by vital statistics, tell him which phalanx of the enemy can be most profitably attacked. For example, there were 732,538 deaths in the registration area of the United States for 1909; 558,068, or 76% of the whole, were due to only eleven causes; 314,359 were due to typhoid fever, diphtheria and other epidemic diseases, tuberculosis, pneumonia and other respiratory diseases, diarrhea of infants, and accidents—all of which are preventable.

The importance of vital statistics can not be more promptly disseminated than by calling on the medical profession as a whole to aid in making known the purpose of the law, its intent and what it hopes to attain. A knowledge of the when and where and the wherefore of disease is essential to all public health work.

The primary factor in procuring morbidity reports is in the practicing physician who comes in direct contact with disease. Upon him rests the responsibility of giving correct information to the local health officer; he is therefore of fundamental importance in collecting vital statistics data. He is the sanitary outpost and it is only through his report of cases and conditions that information can be had. No health officer can be of proper service to vital statistics, nor can he inaugurate proper measures for the protection of his community, in the absence of such notification from the individual physician. Therefore another of the fundamental duties of the health officer is to bring, not only the public in his community, but physicians as well, to a proper realization of their personal, practical, daily duty to public health.

Physicians ofttimes appear to hold lightly their responsibility in re-

porting cases which they should report; due, no doubt, to lack of appreciation of the importance of and necessity for such notification. After having had the question emphasized and explained by the local health officer no physician is a good citizen who persists in neglecting this duty to his community, to his State, and to his profession. Inasmuch as he does not do his part—and his part, by the way, is a part that no one else save himself can do—he stands convicted of not being interested in his community's welfare nor in the prevention of disease. With the great interest that has been shown in public health in recent years, any lack of coöperation on the part of the practicing physician should be a thing of the past, and I believe it will be, when local health officers give this important and fundamental question the attention it should rightfully have.

The crowning purpose of the local health officer is to promote physical efficiency and prevent death and disease in a manner that requires the smallest possible expenditure of the public's convenience, time, and money. The ways and means of accomplishing this are so devious, and the points of attack are so numerous, that thorough knowledge of public health weapons and what is most necessary to attack, is one of the fundamental properties of a health officer.

Let this knowledge be broad enough and deep enough to force you to convince the public that it is time to break away from the bondage of former precedence and wage war against inefficiency, disease and death with modern business sagacity and economy. A tendency of the times is not only to belittle the past attainments of medical men as health officers, but to discount their ability to cope with the complex problems of today and the future. The sociologists, biologists, and engineers who are disseminating these ideas seem to have forgotten that the advance in sanitation and hygiene have come through physicians, and generally through those in charge of health work; and that progress has been in spite of politics, general ignorance, and public apathy. We hear daily of the wonderful achievements in digging the Panama Canal. After the French engineers had failed because of their lack of sanitary knowledge a physician came along and made possible this the greatest engineering feat of history. It was the physician who changed Panama from a pesthouse of disease to a "garden of prosperity and health," and without the physician neither the project nor the place would have been perfected.

Medical men, therefore, should look to their laurels and see to it that only capable doctors are health officers. Intelligent, honest, fearless physicians with a broad social outlook, with an energizing and organizing force that can bring humanity to such thorough appreciation of the value of preventive medicine that the health officer will be looked upon as an essential business proposition, more so, even, than life and fire insurance presidents. Such physicians are the only kind of men that can fill adequately the place of health officers. The job is too big for weaklings, and I long to see the day when public opinion says they need not apply. Your teaching, your efficiency, your realizing and doing the things that make perfection in the administration of North Carolina's department of public health, will not only make the State's department or mar it, but it will influence your own community as well.



Another necessary departure from this bondage of precedence is a relegation to a position of obscurity, most, if not all, of the time honored duties of the local health officer and replacing them by undertakings worth while. For example, the average citizen believes that the chief function of the health officer is to keep the neighbor's back yard clean, to inspect plumbing, and to disinfect after contagious disease, when actually these are duties of minor importance.

The only important relation of garbage to disease lies in the fact that it breeds mosquitoes and flies. So leave the garbage to the civic leagues and others who are following the "city beautiful" flag: as soon as you can bring them to a proper realization of their duties to public health. From the pathogenic theory dates the fear that miasma may emanate from a pinhole in a sewage pipe and fly here and there to seize upon helpless victims. Bacteriological studies now show that if a man places his mouth at the top of a house drain and breathes drain or sewer air for twenty-four hours he would have less danger of acquiring disease than if he had drunk a quart of untreated water from a polluted stream. Leave all this to the plumbers, whose prices, by the way, are more likely to bring famine than are the holes they stop to bring pestilence or plague. Sewage treatment and sewage treatment only is the thing to be desired, and that only in so far as it affects the pollution of streams from which we procure our drinking water.

Again it is a recognized fact that communicable diseases do not arise from decomposing organic matter, but from the excreta of infected persons; so relegate to the past general room disinfection by the burning of sulphur and formaldehyde gas. It is all useless and the public should know that such waste of time and money are simply as "incense burned to the memory of bygone theories of disease." It is a fact that disease germs are, for the most part, if not entirely, carried from gross particles of excreted material from the human body, hence there has arisen a new conception of disinfection. It is now a personal proposition and is

useless—beyond efforts—to disinfect the patient, his clothes, his bedclothes and his excreta. Take the money that has been spent for disinfectants and buy lumber and plans to construct sanitary privies and you will have given the strongest blow to the eradication of disease.

Quarantine, as it is now practiced, is a farce. There is no quarantine that is not backed up by public sentiment. Let's break away from this superannuated precedent and evolve a quarantine that comes through a familiarity of the public with the process of contagion sufficient to make the individual, or the family, voluntarily isolate contagious disease. Successful and practical quarantine means personal isolation, nothing more.

There are institutions in the various counties of the State known as county jails, convict camps, and county homes. These places hold the neighborhood's "ne'er do wells"—those whose avocation is crime and whose vocation is hoboism. There are a few deserving paupers, no doubt, but as a whole they are made up of the seniles of society, the feeble minded freaks, the erstwhile "peaches" of prostitution, the recruits from the army of alcoholics, the victims of venery, the flotsam and jetsam on humanity's sea.

Are they, or can they be made an asset to the State? I answer, "No." Can death be prevented or life be prolonged among this class? I answer, "No." If I am incorrect let me ask, in the event it can be done, what's the use? Yet in most of the counties of the State the care of criminals and paupers is the paramount duty of the superintendent of health. Let's break away from this precedent. House them, feed them, clothe them, amuse them adequately and well, weep over them—if you will—pity them as much as you care to, but employ the time of a county health officer in a more profitable way. A doctor can do nothing for this class of humanity but give them pills for purges, morphine for misery, and laudanum for laziness. They don't need a doctor; they need a nurse. Give them what they need; let them go and turn your attention to the medical inspection of schools and take the fifty per cent of children with defective teeth; and twenty-five per cent with hookworms; and the twenty per cent with defective eyes; and the twenty per cent with enlarged tonsils; and the 10 per cent with adenoids; and the five per cent with defective ears; and the two per cent with feeble mindedness, and put them in position to correct these deficiencies wherever and whenever it is possible. Where a State—for its own protection—compels a child to go to school it pledges itself not to injure itself by injuring the child, and in neglecting the medical inspection of schools you are feeding the mill that makes pauperism and crime, besides



we are spending in the public schools of North Carolina each year more than *five millions of dollars* to educate the State's children—fifty per cent of which are failing to get what the State would give because of physical defects that could be remedied, largely. Waste, woeful, shameless waste: waste of money, manhood, womanhood; waste of happiness, intelligence, morality; waste of efficiency and that which efficiency, intelligence and morality brings; simply because we, as health officers and physicians, are not bringing the people to a realization of their children's needs.

We have the knowledge to realize and take up the tasks of preventive medicine, the opportunity is ours, it is here, it is now. If we but supply the necessary information and energy public health work, in its broadest and truest scope, will go forward by leaps and bounds; there will grow out of it a higher sense of public duty, a more ideal, unselfish, and productive citizenship that will more fully realize its deep obligation to the medical profession; and in this mutuality of confidence and regard the medical profession will take a new and grander place in the community and the community and the profession will receive rewards of which neither has ever dreamed.

---

## Presentation of Cane to Dr. R. H. Lewis

DR. G. G. THOMAS:

*Mr. President, and Gentlemen of the Association of County Health Officers:*

It is a moment of great embarrassment, but one of still greater pleasure, in which I have acceded to the request of your President to give to Dr. Richard H. Lewis this testimonial from this body.

Early in the evening I was warned that Dr. Lewis would be made recipient of this token of your regard and in all loyalty to him I took him off in a corner and told him to get ready for some such event. I was doing this out of the kindness due my friend, and I walked into the hall to hear the presentation ceremonies, and to my surprise I was asked to be the speaker on this occasion. It is, therefore, in the midst of my embarrassment a great pleasure to feel that you committed to me this expression of the fact that the health officers of North Carolina admire, respect and love Dr. Lewis, and they are manifesting this by this material evidence of their regard. It does not mean in its suggestion that it is a period or a full stop in his great work for public health, but

only a comma, if I may follow out the figure—a short halt for this refreshing exercise, in which to say to him how great has been his work, and how thorough is our appreciation of it. What can I say to you, Dr. Lewis? As long as you live, Doctor, and afterwards for generations longer that we dream of, the history of your work in sanitation in North Carolina will be known to all men and be deservedly prominent. It is difficult for me to say all that wells up in my heart now and do justice to you and your great record, and, therefore, I feel that I can not better speak for these, your friends, than to follow out the course of your whole life as I have known it and to say very simple things. There never has been a time since I have known you when you were not true to the best instincts of boyhood and manhood, and since you have reached manhood you have been always a useful citizen. No doubt has ever been cast upon your motives or measures by the public men to whom you appealed for help. You have never made a statement that you could not easily and promptly prove. All of this is the result of honest, earnest endeavor and simplicity of life and speech, and, therefore, now as simply as I can say it, I wish to say for your friends here, many of whom will live longer than you or I, that this cane which I am presenting to you is a manifestation always of their and my affection, undoubted confidence and respect for you. It is not intended to be a support for you, doctor, but a shepherd's crook. Take it and continue to guide these, your friends, and matters of health in the State as you always have and as long as you live. And may God bless you!

Dr. R. H. Lewis: *Mr. President and Gentlemen*—I am sorry I did not understand the full meaning of Dr. Thomas' remark—that something was going to be done to me, and I have not prepared anything at all to say, but I do wish to say that my heart is full of gratitude for this evidence of your affection. It has been a great pleasure to me as far as lay within my power to advance the welfare of the people in North Carolina along the lines of public health, and I can assure you that this evidence of appreciation is one of the most gratifying experiences of my life. I won't admit that I am a very old man, but I am getting on in years, and when you arrive at that stage you will realize more than now the meaning of evidence of affection, especially from those younger than yourself. I wish to express my appreciation to my dear friend, Dr. Thomas, of the handsome presentation. He speaks from his heart, I am sure, and therefore with partiality. I really can not tell you how deeply touched I am and I shall take this evidence of your affection home with me and preserve it and transmit to those who follow after me as one of the most precious heirlooms to be found in my family. I thank you, gentlemen, from my heart.



---

Dr. Wm. M. Jones: I would like to make a motion that we extend vote of thanks to the Medical Society of North Carolina for the publication of the Transactions of the Health Officers of North Carolina in their last year's Transactions, and that it may be continued for the next ensuing year.

Motion was seconded and passed and a vote of thanks is extended the North Carolina Medical Society for induding our Transactions in theiir volume.

Report of Nominating Committee:

For President, Dr. G. M. Cooper, of Clinton.

For Vice-President, Dr. William M. Jones, of Greensboro.

For Secretary and Treasurer, Dr. W. S. Rankin, of Raleigh.

The above report adopted.

Dr. G. M. Cooper's speech of acceptance:

Gentlemen, I sincerely appreciate this honor you have conferred upon me. I have made no scramble for it, and therefore appreciate it all the more. I feel the responsibility involved in this office, which I have realized a good while—I have known the advancements which are surely coming—that if the physicians in this State do not go forward the people are coming right on over us. I have had that occur to me on two or three occasions in the last two or three months. I think the most important thing for this association and for the physicians of North Carolina to work upon is child life. About fifteen years ago, with all due respect to Dr. I. W. Faison, I had the distinguished honor of being a school teacher of Sampson County. I remember the first books of hygiene they put in the schools of North Carolina. I remember ten years later they held an election for prohibition and the result was a majority for prohibition. I think the thing to work upon is child life.

I have prepared no speech of acceptance, but I wish to tender my sincere and deep appreciation for this honor. I can do nothing by myself, but I shall hope to have the coöperation of every health officer in North Carolina.