Ninety per cent. of men and women here have some focal infection; you can depend upon that. You naturally ask, why is it they are not affected? Answer, vital resistance. Any lowering of body resistance may at any time make the patient susceptible.

With reference to Mrs. West's remarks, I was delighted to hear what she had to say. The first experiments on defectives were done in the Marion School in Cleveland, and after cleaning up oral foci, some of the children improved 400 % in their studies, and the vicious children became just as tractable as the others. Every oral focal infection helps to make a vicious child.

I thank you very much for your courtesy and for the opportunity to present this matter to you, and in closing I want to say that what the dental profession ask of you is your co-operation—your co-operation in this work. Do not condemn us. We all make mistakes; we are all human, but I believe if the medical profession will give our branch of the profession the co-operation we want and we will give you the co-operation you want, that we can do something for the patients who have suffered from secondary trouble from focal infection and be of untold benefit to the human race.

RURAL TUBERCULOSIS AS A HEALTH PROBLEM*

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I am presenting this very unscientific paper not with the thought of bringing anything new to this Association, but with the idea of inducing a discussion that will perhaps make clearer to my mind a missing link existing between laboratory findings, which they say prove that tuberculosis is a childhood infection, and the field work which points to its infectiousness at all ages.

Since the beginning of the fight against tuberculosis, we have been inclined to think of the disease as one of urban districts, and a great part of the work against its eradication, in fact practically all, has been directed accordingly. Along with this, we have been taught that rural districts offer almost the ideal in the way of its prevention, and many workers have been sorely disappointed in visiting the rural districts to find tuberculosis a very common disease.

I hope that I may not be termed "cranky" in bringing to your attention in this most unscientific manner what is to my mind one of the most serious problems in public health in our State.

I would like to call your attention to a more or less recent definition of tuberculosis, which has been handed down to the school children of the entire country, a definition which to my mind carries more information than any other single sentence relative to it, namely, "Tuberculosis, a house disease." In further consideration of this scarcely more can be said, but we might add that whoever originated this wisely left out entirely the location of the house.

In the literature of tuberculosis, I find a statement by some one as follows: "A house once infected, always so," which seems to me, practically speaking, is quite as true as the school child's definition of the disease. I do not mean, as I am sure that he didn't, that a house can not be freed from the infection, but in every-day life I am sure they are not.

A few years ago, it was my good fortune to begin the intensive community work for the State Board of Health of Mississippi under the auspices of the Hookworm Commission, in which we made a house-to-house survey, collecting data relative to the spread of certain diseases, one of which was tuberculosis, and later following this with two years of careful work as a local all-time health officer. Before working very long, but after having made several hundred of these surveys, I took stock of the incidence of this disease among the families visited and was surprised to find it far more prevalent than I had dared think before. From this I became interested in tracing families, the histories of various homes, and in so doing was greatly astonished at some of the findings. Homes located in some instances almost ideally, so far as natural surroundings were concerned, would be found with a history of tuberculosis extending back in some instances many years, and in two that I recall, thirty and forty years, respectively. Not a family had lived in those houses that did not furnish one or more victims of the infection regardless of their age or history of previous exposure, either in family or by as-

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sociation. Other houses that I could mention have histories equally as appalling, yet not covering quite the same length of time. I might add here that these houses were tenanted by people of both white and Negro races who were brought up to believe in heredity only, and in a religious way to believe that all diseases are divine visitations of a wrathful God.

I am sure that in this particular county, and I believe that it is a little better than the average county of our State, there stand a number of houses whose lurking dangers of hidden enemies are working a far greater menace to the citizenship of our State and Nation than the slinking submarines which glide in the darkness along with the unsuspecting travelers and with a single pull of the lever send them into eternity.

During the last few years the scientists have given us the information that probably most, and some say all, of the cases of tuberculosis are contracted in childhood. This information has been handed to a public not capable of a proper interpretation of their meaning, and has worked, or is working, a harmful influence in the fight against the death angel's most powerful weapon, because as many have said to me, "If we have all contracted it in childhood, and it is not contracted in adult life, except under prolonged exposure to patients, why is it necessary for us to observe the precautions relative to cleaning a house which has not been occupied for many months by a victim?"

It has only been a few months since this was said to me as a quotation from one of the specialists of this country, speaking in public in this very city. Such a statement would have been understood by a crowd of specialists and proper interpretations placed thereon, but by the average lay mind, never.

Another thing which has contributed very largely to the menace of infected houses has been the almost absolute confidence of the laymen and of many physicians in fumigation, which through the rural districts means the burning of a pound of sulphur to a room that could not possibly be made air-tight, and if it could, the sulphur would have no effect on bacteria present; and yet when so done the people seem to come and go with a

feeling of absolute safety, which is of course a false security. Occasionally we find used a more or less recent preparation of formaldehyde, which we will admit for argument sake if used in an airtight building would perhaps be of some service, but in the average rural home it is useless. I might say that it has only been a few months since I was called upon to examine two small children. Both had active tuberculosis with a negative family history, but a history of having moved into a house a year before where a young lady had died just previously from the disease, and, as the mother of the children explained to me, the house had been thoroughly fumigated by the local health officer with, as she said, a strong preparation of formaldehyde. I am convinced that these children contracted the disease from this building.

The suggestion offered here relative to homes holds true of the school building where very often students, and even teachers, are found with active disease, and nothing is done to safeguard the health of others except the use of individual drinking cups. So far as the building is concerned, it is left alone.

After giving this subject more or less serious thought in my own State, I have in mind a few remedial suggestions:

First, that it will take the services of an organized local department of health under the direction of a trained health officer.

Second, that we must have a revision of our thought and likewise of our laws and regulations, so that tuberculosis will be regarded as a contagious disease; for the average people recognize the meaning of "contagious," whereas "communicable" conveys little if any suggestion of danger.

In offering this suggestion, I realize that I am offering it in direct opposition to the ideal, which has for its purpose the doing away of the fear of this disease among our people and having them consider it in a cool and calculating manner. This is, as I say, the idealist dream, but in practical health work we find it impossible to control any disease without the wholesome fear of it among the people. With this fear and a knowledge of the transmission of the disease it is easily stamped

out, as has been shown in yellow fever control. Without fear, it is a slow and unsuccessful fight.

In my limited observation I am thoroughly convinced that it is a lack of fear that is responsible for the alarming number of victims of tuberculosis.

In further reference to the revision of laws and regulations, it is my dream that some time in our State we will, through the local health department, take active charge of these centers of infection and clean them out, and even where deemed necessary, remodel the building or destroy it and pay the cost.

The concluding solution of the problem is a well-directed fight from a state bureau of tuberculosis operated in connection with a sanatorium for the treatment of the disease; because when the average victim, coming from one of these centers to the institution, returns to his community educated in the correct prevention, he wields a greater influence among his people than is possible from an outside source; and often an entire community will be rid of these foci of infection by the influence of one cured patient.

DISCUSSION

Dr. J. A. Neill, Forest, Miss.—I want to endorse every word of this paper. This good gentleman from Mississippi has been where I have been. He knows whereof he speaks. It would take volumes to discuss his paper. This tuberculosis question has been staring me in the face since childhood. I want to endorse all he said and all that is written between the lines.

Dr. C. A. Robertson, Ridgetop, Tenn.—In the main I endorse everything the essayist has said. There are a few points with which I can not agree, but I will not take the time of the Section in discussing these at the present time.

I rise to report a very interesting experience which I had on Monday of this week in connection with housing conditions. A patient was brought to me on Monday from Cannon County in this State, the son of a fairly well-to-do farmer. The patient was accompanied by an uncle, who was personally familiar with the conditions of the home for sixty or seventy-five years, and from him I got this history. The grandfather of this patient was married three times; of these three marriages there were eleven children. The grandfather died of tuberculosis, as did the first two wives; the third wife died of cancer; of the eleven children nine are dead of tuberculosis and the other two now have the disease. This house has a history in sixty years of fourteen fatal cases, with now four open cases in the same home. This is the most remarkable home history that has come to my observation in an experience of nearly thirty

years. There is no question that tuberculosis is a house-born disease. I am one of those who believe that tuberculosis is a question of childhood infection and that perhaps not over 4 to 6% of adults are liable to primary infection from tuberculosis. There are many arguments on both sides of the question, and doubtless the question is not yet settled. But certain it is that a new chapter will have to be written in the near future on the infection of tuberculosis.

I rise chiefly to report this case, which I think is very strongly in favor of housing conditions as a factor in the spread of tuberculosis.

Dr. G. E. Johnson, Hudsonville, Miss.—I just want to report one case. Some two years ago I was called to see a darkey, one of ten children—the oldest son being 22 years of age. When I got to the home I found this history: He had been in Mississippi working in a rock quarry and came home sick. He had a temperature of 105°—what we used to call galloping consumption. He lived in an old house that had been built years and years before, and in my section of the State I am sorry to say that a great many Negroes have bought farms from white people. This house was a shanty. I explained to them the necessity of doing something with this house immediately. The darkey had spit all over the floor and there were nine children breathing in the germ-laden dust. He had been at home six weeks. I explained to them the necessity of moving him out to a near-by barn, if they could do nothing more, but he soon went, and in about six weeks another boy took the same disease and went the same route. I said to myself there must be something in that house, but they would not believe it, and finally when the third son died and the fourth one took it they moved him to an adjoining hut. There were five boys and four girls in that family. The four boys, but not a single girl, contracted the disease. As Dr. Boswell said, you must scare a darkey. You may talk to him till doom's day, but unless he is scared he will not do much. In my practice I have never seen but one Negro that would follow sleeping and diet requirements in tuberculosis.

Well, this man lost his four oldest boys and then I took it up with the county health officer, who said: "You have done all that could be done." We finally agreed to have them burn the house. They said they could not do that, but that the health officers could fumigate it. So it was fumigated and whitewashed, but they soon moved back in and I think they all now have tuberculosis.

In my section of the State a great many houses are built of logs and plastered between. Some of these are old, and I advocate destroying them. I thank Dr. Boswell for this light on the subject and I think we ought, since we have laws on this subject, to preach these laws to the poor, suffering, ignorant people who do not know it.

Dr. W. J. Durol, New Orleans, La.—I have been going to meetings for fifteen years, and every year it is the same thing over again. The older men know this. Why is it? We are talking of what we can do, and what we should do; but it looks as if we were pledged among ourselves not to do it.

The medical profession is at fault for what

has not been done, and the boards of health are partially responsible for this deficiency.

We say, "Report your cases to the board of health," and we do, and after death the board of health will fumigate the house of the deceased. They do not always do it in my State, unless you request them to do so. Fumigation is good, but let us first preach cleanliness in the home. I do not believe that a house where there has been a death from tuberculosis should be destroyed. Use plenty of paint, whitewash, soap and water. Never depend entirely upon chemical fumigation. You can use formalin better than sulphur, or something of that sort, but this is not sufficient. We must stick to one principle, and that is, the medical profession must see that people of all classes have their houses thoroughly cleansed, and not only where there is tuberculosis.

As to the question of infection in infancy, I firmly believe that in a greater number of cases tuberculosis in the adult is simply a reactivity of a latent infection in the child. Still it is erroneous to say that the adult will not contract tuberculosis, an adult not having been previously infected. These are two of the factors that I hope we medical men will think more seriously about.

Dr. Boswell (closing).—I have nothing more to add, except just this: I appreciate Dr. Durel's statement that the houses of the State should be cleaned thoroughly by cleansing and fumigation. But if you were working in Mississippi you would find that there are many houses that nothing in the world will ever clean but fire.

As to the point of adult infection, or an adult's contracting tuberculosis, that is a thing which is worrying me. Many of our local physicians are afraid of tuberculosis. When our people read in the paper that Dr. So-and-So said that nobody but infants would contract tuberculosis you can not get them to clean up the house unless there are children there. If we ask the board of health to clean up the house, often they can not do it. But the thing is that grown folks think there is no danger.

Of course I believe that many, many infants are infected, but on the other hand I believe that hundreds and hundreds of people go to adult life without the infection and are today living without it. But if they were thrown with it they would contract it readily. This is worrying me and I wanted some of the specialists this morning to bring out something which would give me relief in fighting the many thousands of cases in Mississippi.

THE NORTH CAROLINA PLAN OF COUNTY HEALTH WORK*

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INTRODUCTION

The North Carolina plan of county health work is an outgrowth of the policy of the State Board of Health, which assumes that all health work is fundamentally of an educational nature, and that the best method of educating the people is by demonstration. The plan has been of gradual growth and is, in reality, a utilization in the county of the experience of the State Board of Health in dealing with the general health problems of the State, applying this experience in a very definite manner through well-organized and centrally-directed county health departments. The work of each county health department is to present the health problems of the county, together with the best means of solution, to the people in a definite and comprehensive manner, and by a plan designed to reach directly and educate each home. Before giving the details of the North Carolina plan of county work, it is necessary for clearness to point out the individual health problems of the State and to trace the development of the work already done toward the solution of these problems.

THE HEALTH SITUATION IN NORTH CAROLINA

The majority of the people in North Carolina live in the country, 85 % of the population being rural. About one-third of the people are Negroes, the greater part of whom live in the eastern section of the State. Agriculture is naturally the chief industry, the manufacture of cotton being second in importance. Less than a dozen of the towns of the State have more than 10,000 population, so the chief health problems are rural in nature; and the only successful plan of work is one designed to reach and educate rural people. Consideration must be given to the fact that

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