isolation and control of each individual case removes one more focus of infection from the community. Many cities have free dispensaries, especially those in which medical schools are situated, but they should be in every city, supported by municipal funds, and placed under competent medical direction. At such dispensaries it should be possible for poor consumptives to obtain free milk and eggs, as well as medical advice and treatment.

The Parker Hill Experiment.—During the summer of 1905 the Boston Association for the Relief and Control of Tuberculosis conducted an experiment worthy of more than passing notice, in establishing the Parker Hill Day Sanatorium. This was under the supervision of, and its success was largely due to, Dr. David Townsend. I quote from the report of the committee appointed by the Suffolk District Medical Society to investigate the crusade against tuberculosis in Boston:

In an orchard on Parker Hill rude structures and tents were erected, and here consumptives from the tenement districts of the city were provided for during the day. They were given lunches and dinner, medical supervision and nurses' care, and at the close of the day returned to their homes to repeat the same thing the next day. This new departure has met with the approval both of the public and the profession, and has accomplished two objects, the improvement of the patient's condition, and his education, and, through him, that of his family, in the open air cure and hygienic modes of living.

I am not familiar with the further reports concerning this movement, but it is one worthy of emulation by organizations in other cities, and should receive support financially and otherwise from city authorities.

Prophylaxis for Government Employees.—Washington, D. C., being under the Federal government, presents conditions which are unique. President Roosevelt has shown himself thoroughly alive to the essentials of the problems with which we are dealing. He has urged before two sessions of congress that Washington be made a model city in all respects, a model to the municipalities of this country. He has given special attention to the problem of tuberculosis.

After receiving a report from the committee appointed by an executive order of December, 1905, to prepare a plan for the prevention of tuberculosis in government workshops, he issued an order directing that the head of each department in Washington should see that the rules prepared by this committee should be posted in every public building under his control; that names of persons in his department who are afflicted with tuberculosis should be ascertained and a copy of the rules be presented to each; that non-observance of the rules may at the discretion of the department head be considered just cause for separation from the service. The order further provides that, when there is doubt as to a person in the government service being afflicted with pulmonary tuberculosis, an order must be issued for an examination at one of the government laboratories, and that a certificate showing the result of that examination must be presented to the department. When a government laboratory is not accessible, examination shall be made at the government expense. This order applies also to the employees in government buildings and workshops belonging to the Army and Navy and to the Marine Hospital Service.

Through the efforts of the President, much will undoubtedly be done in Washington toward suppressing tuberculosis. For his initiative he deserves the thanks of all those who have this problem at heart.

We recognize that the greatest problem before the profession to-day is that of the suppression of tuberculosis. Its solution does not lie in the cure of the individual case; if we had in our hands to-day a specific, the problem would still remain unsolved. The disease is primarily a disease of communities; it obtains a foothold and exists in the country only through ignorance of the means of its transmission and the modes of its infection. The most direct and effective blows against its strongholds must be dealt by municipal organizations. It is not a problem for the student and recluse alone, but to his talents must be added those of the man of action and executive ability. We are already in possession of sufficient scientific knowledge to deal with the problem; there remains the necessity of public education and the working out of business details.

While the profession may not agree on all minor points as to treatment, suitable climatic conditions, and general management, on certain broad principles we may stand as one man. Some of the best work that is being done in the country to-day is being done by enthusiastic, unselfish men, who are working along the lines which have been already successfully followed in the hardly won victories of the last half century over other specific infectious diseases.

Speaking from the standpoint of a specialist in tuberculosis in charge of an institution, I recognize that the eradication of the disease does not lie in the successful treatment of the individual case, but rather in the control of the disease, and the elimination of those vicious conditions which give it rise, by state and municipal organizations; along these lines, the best energy of a united and public-spirited profession should be concentrated.

DUTY OF RAILROADS IN TRANSPORTATION OF TUBERCULOUS PASSENGERS.*

JOHN R. HAYNES, M.D.

LOS ANGELES.

The contagiousness of tuberculosis is not now denied by scientific men of medicine.

A leper menaces the health and lives of those with whom he comes in contact very much less than does one suffering from pulmonary cavities and expectorating sputum laden with tubercle bacilli. How absolutely illogical and untenable is our position when we lift up our hands in holy horror while listening to accounts of the ignorant Kanakas who sleep, eat, and smoke with their leprous relatives and hide them from the minions of the law who have come to separate the sick from the well, while we associate in the same way with our tuberculous, only we are not obliged to hide them because we have not advanced so far as the Kanaka authorities in the protection of society at large by isolation. If these premises are correct, then the public should be protected while traveling, as least as much from the tuberculous as from the leprous passenger.

Undoubtedly many people contract tuberculosis while traveling on railroads and, more especially, while traveling in sleeping cars.

I have crossed this continent at least twenty times and do not remember an occasion when there has not been some one with tuberculosis in the car in which I lived, and, generally, a number on the same train, and on sev-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.
eral occasions death from tuberculosis has occurred. You will pardon me for mentioning an instance or two which will forcibly bring to your minds the danger of permitting tuberculous passengers to travel freely with others.

A year ago when I was crossing the continent, a passenger who bore all the ear-marks of advanced pulmonary tuberculosis—hollow cough, expectoration, emaciation, shallow, rapid respiration and hectic flush—entered the Pullman sleeper. In the morning he was the last one to arise and when the curtains of his berth were removed I saw that the window at the head of his berth was so covered with sputum that the glass was translucent instead of transparent. What possessed the man to expectorate against the window I do not know. He left the car soon after arising and the porter cleaned the window in the perfunctory manner common to men filling his position. On returning to my seat after a couple of hours stay in the smoker I found that a woman and little girl had been assigned the berth just vacated by our tuberculous passenger, and the little girl was standing on the seat looking out of the window with her face pressed against the pane and, as is the common custom among children, touching it with her tongue and lips.

On another occasion I had the experience of crossing the continent, a man and wife and two children entered our car at Las Vegas and occupied the drawing-room from which had emerged a passenger so emaciated and feeble that he had to be supported on both sides and whose choking cough all through the long night had driven sleep from many of us. This man had lived in that drawing room during the trip from Chicago to Las Vegas. What a frightful uproar would ensue if a leper were brought into a car, and how very soon would he have the car to himself! Yet the danger from the tuberculous passenger is many times greater.

SUGGESTIONS FOR REMEDYING THESE CONDITIONS.

To me your chairman has assigned the duty of making some suggestions for remedying the vicious conditions which menace society in transit.

I would suggest that added to the questions now asked by the ticket agent of those about to make long distance journeys, should be the following: Do you cough? If the reply is in the affirmative, then the would-be passenger must bring a certificate from the health department—if there is no health department, then from the railroad physician, and, lacking the latter, then from any reputable physician—stating the cause of cough.

If the case is one in which, in the opinion of the health officer, death within a few months or a year is inevitable, then a ticket should be refused the applicant unless he is being sent to a sanitarium to end his days or is away from home and desires to return.

Let me here protest with the utmost earnestness against the practice very prevalent in the East of sending away from home patients who can live but a few months at the least, and who frequently die en route. Probably every day in the year a large number of unfortunate afflicted with tuberculosis leave comfortable homes and journey toward California. If they are so fortunate as to get there alive, they may live in our midst for a few miserable weeks or months, or, possibly, one or more years, and then, strangers in a strange land, die that saddest of all deaths. They receive no ultimate benefit themselves, but, scattering about them death-dealing sputum, they constitute a menace to all around, but more especially to those who have inherited constitutions that are incapable of resisting the onset of tubercle bacillus.

Special Cars.—Should, however, the health officer hold that recovery is possible in the climate in which the passenger proposes to seek relief, then he could be informed that he can go on a certain day, on a certain train and in a certain car.

This should be a compartment car with compartments opening on a corridor running along one side of the car and not in the center. Each compartment should have two berths placed lengthwise with the car, a water closet not enclosed and a folding wash-stand with running water. (This is the regular compartment car used on a number of our railroads). The floor should be covered with linoleum or, better, should be of cement and a small rug used. The upholstery should be of leather or, preferably, of movable cushions with washable covers. The hangings, if any, should be of washable material and the wood-work as plain as possible. All dejecta should be thoroughly disinfected before being allowed to escape from the closet. The sputum cups should be of pasteboard and should be burned in a stove designed especially for that purpose. There should be such a stove in each car.

Each hospital car should have a trained nurse in attendance whose business would be to care for all who needed her attention.

The hospital car should be attached only to trains having dining cars, and all meals should be served a la carte at reasonable rates to the passengers in their compartments and all dishes should be thoroughly disinfected and the paper napkins burned.

The cars should be run as often as necessary, once a week or once in two weeks and should be large or small as the railway companies should decide from experience.

Disinfection.—When a compartment is vacated by a tuberculous passenger, it should not be used again until thoroughly disinfected with formaldehyde, everything washable boiled, the wood-work and floor thoroughly cleansed and the movable cushions, mattresses and blankets disinfected in a hot room. These rooms should be at railway terminals, where supplies of disinfected cushions, blankets and mattresses could be obtained without causing any more delay than is made necessary by thorough cleaning of the compartments; but owing to the comparatively long intervals in the departure of hospital cars there would be sufficient time for thorough disinfection.

Short Journeys.—For those traveling a short distance covering only a few hours, a portion of a car could be set apart—a portion like the smoking compartments of the baggage car, for instance, without upholstery. It should be a chair car with one row of chairs only along each side of the car and near each chair a small, movable compartment into which a paste-board sputum cup could be placed and which could be lifted from its bracket and disinfected and the sputum burned at designated places.

These cars, like the hospital sleeping cars, could be run once a week, or a small portion of one car holding from four to six chairs could be run once daily.

OBJECTIONS.

The railroad company may object to carrying out the ideas suggested on account of the fact that they would be losing interest on the cost of cars not in constant use, and on account of the expense of an attendant or nurse and the extra expense of disinfecting by heat. But when we consider the enormous amount of money spent in palaces or wheels by the railroads, we believe that any
objections on the grounds of expense would not be well-founded, for they owe protection to society.

With reference to passengers of limited means traveling a long distance the health authorities should bear a part of their expenses, as they would if transporting those sick from other contagious diseases, such as leprosy or smallpox.

The objection is also raised that people would decline to travel in the manner suggested, being branded, as it were, as diseased creatures to be avoided. Sentiment must be brushed away and tuberculous passengers must travel in such a manner as society may prescribe, in order that the many shall be protected. It should be thoroughly understood, by being published in the papers and in railway literature and, if necessary, by being printed on the tickets, that any tuberculous passenger evading by false representations the provisions for public protection, if discovered en route shall be put in the hospital car, if one be attached to the train, or be put off the train at a station where he could be cared for and compelled to wait until the first hospital car going his way arrives; and a heavy fine should be imposed on any physician who would connive at any evasion of these protective regulations.

These suggestions have been submitted to the passenger agents of two large transcontinental lines and they declared them practicable and feasible provided the various state health authorities or boards place tuberculosis on the list of contagious diseases. This would give the railroads the legal power to refuse tickets to any one suspected of having tuberculosis or any other contagious disease unless authorized by the health officer of the community where the ticket is sold. I think those who control the railroads will soon awaken to the necessity of thorough disinfection and isolation and thus add materially to the safety and comfort of their travelers.

THE VALUE OF THE SANATORIUM IN THE CRUSADE AGAINST TUBERCULOSIS.*

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CHICAGO.

The progress of scientific medicine during the past decade has indeed been phenomenal. The original investigator has made contributions of seemingly untold value to us in the diagnosis and treatment of many formidable types of disease, yet new problems in the care and treatment of the tuberculous are constantly arising, to which the many contributions to scientific medicine seem less applicable than in the case of other prevalent diseases of a less complex nature.

It is my purpose in presenting this paper to consider briefly one of the most important factors in the successful treatment of tuberculosis and solution of this great problem, not losing sight of the fact that there exists a social and economic aspect to the disease. Are we not demonstrating throughout the civilized world the cure of a disease at one time considered incurable? And the results achieved in this field of medical science are of far-reaching importance, of interest to the profession from a medical and humanitarian aspect, and to the public and laity from a social and economic standpoint.

It is a melancholy reflection that a disease from which nearly one-sixth of our race falls victims, which is prevalent in every country and climate, and from which neither age, sex nor condition of life enjoys an immunity, a disease which presents more complex economic problems than any known, should until recently have been less understood and worse treated than any other to which humanity is subject.

Without regard to the circumstances of the patient or the stage of his disease, change of climate has been freely prescribed, and the hopeful sufferer finds himself in a strange land, surrounded by persons to whom his fate is a matter of indifference. He too often recognizes in those who administer to his wants individuals who perform ungraciously for hire services which in the home he has left would have been cheerfully rendered for affection.

The human wrecks only recently observed scattered over the desert waste of the great southwest bear witness to this statement, as well as many wanderers seeking health in the mountain wilderness of some distant state, struggling for the mere necessities of life, with death an inexcusable companion, and all the future dimmed by the shadow of waiting Charon. To these people, "climate," with its exhilarating dry air, blue sky and bright sunshine, is but a will-o’-the-wisp.

Our knowledge and the accumulation of facts relative to the modern treatment of tuberculosis is due in great measure to the influence of the earlier teachings of such men as Alonzo Clark, who fifty years ago, advocated the sanatorium for the care of the tuberculous. Rush, in his treatment of consumption, directed men into paths that are followed to-day. Bowditch demonstrated the pernicious influence of insanitary surroundings, particularly of soil and moisture, on the production of tuberculosis. He was one of the first to revive the doctrine of the infectiousness of consumption, and suggested a mode of treatment which precluded the possibility of the direct transmission of the disease. Trudeau has experimentally demonstrated the value of pure air in resisting tuberculosis and has assisted in demonstrating the worthlessness of so-called specific medication.

The pendulum has gradually swung from the old teachings to the new, directed through the influence of the pioneers in medicine, and to-day it has been clearly demonstrated that tuberculosis can be successfully treated and cured in any state of the union. The sanatorium, the ideal institution for the treatment of tuberculosis, and the sanatorium idea is prevalent everywhere. After one hundred and twenty years of filth and disease the hospital method freed Havana; and the application of the laws of hygiene and sanitary science to the infected canal zone at Panama will reveal to the world the possibilities of modern medical science. And so with the tuberculosis problem; it must be solved in the sanatorium. As accessory to this central institution may be mentioned model free dispensaries in all cities, especially in crowded districts, open air day camps, information bureaus, lecture bureaus, experimental stations and various departments co-operating with the sanatorium under supervision of the state. This institution, properly managed, will control, discipline and educate the individual, especially in matters pertaining to personal hygiene, enabling him to go forth a missionary, as it were, in the art of proper living. Here the destitute from the great centers of population will find a home where they will receive proper treatment, where by means of segregation and careful supervision the dangers of infection to others may be eliminated, and where attention to detail may restore those patients not hopelessly diseased to lives of activity and usefulness.

The sanatorium bears a most important relation to the tuberculosis problem in the study of the economic course of consumption, especially in wage earners. This phase

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.