external oblique. In children it does not seem necessary to transplant the spermatic cord. In certain cases in adults I have not transplanted the cord and the results have been satisfactory.

There are very few cases indeed in which a resection of the *spermatic veins* is a necessary step in the operation for hernia. I should state the necessity for operation in this way: If there exists in any case of hernia a good-sized varicocele, it would be wise to remove these veins not only for the cure of the varicocele, but to obtain greater security in the wound.

If there is present upon the side of the hernia an *undescended testicle*, I believe that, unless there is some contra-indication, the removal of the testicle with ligation of the cord upon a level with the parietal peritoneum is indicated.

I believe that there are few cases in which the general anesthesia secured by ether will not be satisfactory. Local cocaine and spinal anesthesia should be reserved for cases too ill to be etherized, and for the aged and those with a tendency to chronic bronchitis. In certain strangulated cases where the patient is very ill a local or spinal anesthesia may be indicated.

It seems to me that it is unwise to operate upon infants under three years of age for hernia, and in the very aged operation is often contra-indicated. These two extremes of life offer the chief exceptions to the operation for inguinal hernia. The operation for hernia is a safe operation.

It seems to me very important to emphasize the fact that an immediate operation should be done when a strangulated hernia is recognized. No taxis, not even the slightest, should be used in the presence of a strangulated hernia. The danger of damage to the gut and even of rupture of the gut and the danger of reducing the hernia *en bloc* is considerable. Delay in operating upon a strangulated hernia is unwise. Taxis of a strangulated hernia may be attended by such dire consequences that I believe it should almost never be employed.

EDUCATIONAL METHODS IN THE ANTI-TUBERCULOSIS CAMPAIGN.*

BY JOHN B. HAWES, 2D, M.D., BOSTON.

THE two most important factors in the campaign against tuberculosis are:

(1) The isolation of the advanced consumptive, thus preventing the spread of the disease, and

(2) The education of the public and of the medical profession in regard to the nature of the disease, thus bringing about its early detection and treatment. This at least is the attitude of Massachusetts toward the tuberculosis problem.

The new sanatoria recently opened at North Reading, Lakeville and Westfield are primarily for the segregation and isolation of the advanced consumptive.

The medical profession of the state, as repre-

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sented by these Associated Committees, in conjunction with the Massachusetts Commission on Hospitals for Consumptives, the Health Inspectors of the State Board of Health and the numerous local anti-tuberculosis associations, are carrying on a campaign of education. The various methods employed, and the relative advantages and disadvantages of each, it is the purpose of this paper to discuss.

For many years we have been trying to educate the public in regard to tuberculosis. Ten or fifteen years ago, however, it was only the consumptive public whom we tried to educate, and that only in a desultory way. At that time, at any out-patient department, as, for example, at the out-patient department of the Massachusetts General Hospital, a consumptive coming for advice was told to take the examination for the Rutland State Sanatorium. If for any reason he was unable to do this, or if he was not accepted at this institution, he was handed a tract elaborately printed in whatever language he spoke, in which directions were given as to how he should live. "Take this tract," said the doctor, "put it on your bureau or wall at home, read it and learn it, and by following its directions you will get well." I am very doubtful if this method did much or any good. Indeed, I think it did harm in that it filled patients with a false sense of security in regard to themselves and the disease. Education to really educate must be more effective than this. One can easily prescribe an appropriate drug for a given ailment, but unless one sees that it is given in the proper doses, at the proper time, and that the directions in regard to its administration are carefully followed out, it will do more harm than good. It is the same with educational methods—unless we see that the facts we present are made effective, that they are really understood and that directions are followed, we could plaster the walls of our tenements with tracts and accomplish nothing. I shall describe certain methods which have been found effective for adults and for children.

I. EDUCATIONAL METHODS SUITABLE FOR ADULTS.

(a) THE TUBERCULOSIS EXHIBIT.

This was perhaps the most effective method of education at our disposal. In this state I believe that it has done its best work and that the time of its greatest usefulness is past. In certain localities, however, it is still very valuable.

The large traveling exhibit of the Boston Tuberculosis Association was invaluable in arousing interest. This has now been fairly well aroused throughout Massachusetts, and our present energies may well be directed toward guiding the efforts of all who are interested and anxious to do some work for the campaign. These efforts must be largely spent in educating the ignorant, who require individual teaching rather than what can be shown by means of large exhibits.

The exhibit used in this state, managed by the Boston Tuberculosis Association, is now in storage, where it will probably be kept for a year

or more, after which it will doubtless be sent on another tour. In the meantime I strongly urge the formation of small, compact exhibits, such as that which has been prepared for school purposes, to be described later. Such small exhibits can be made at little cost, require no attendant to travel with them, and will be of the greatest assistance as a means to illustrate talks on health and hygiene, as well as on tuberculosis, given in shops, factories or before labor unions, women's clubs or other small groups of people who can be talked to in an informal way. Such an exhibit, put up in a prominent place in a store or factory, would, I believe, do a great deal of good if the attention of the employees was called to it and a few demonstrations given as to what it meant.

The school exhibits, which I shall describe later in detail, are not designed to fill the need for such an exhibit mentioned above, but merely to serve as examples, which tuberculosis associations and school committees can obtain at a low price.

(b) PRESS ARTICLES.

At the offices of the State Tuberculosis Commission, 3 Joy Street, Boston, every two weeks a short article in regard to tuberculosis is sent out to about two hundred newspapers in Massachusetts. These articles are prepared either by the National Tuberculosis Association or by the Commission. They are given a wide circulation. Such a method as this has the advantage of reaching a very great number of people at a very slight cost. The exact amount of good which it does it is hard to estimate. By itself I do not believe that this method of education will accomplish much, but where any anti-tuberculosis campaign is active, and as a part of such a campaign,—by pointing out to every one what is being done, and how and where information may be obtained, etc.,—I believe that press articles will do much good. Salem has carried on this method of education in a most effective way, combining articles of general educational value with those of general interest. Gardner is following suit with a series of articles on tuberculosis which appear in the local paper. In scattered agricultural communities, where it is very hard to get people together in large numbers for lectures, exhibits, etc., the public press should be used far more than it now is for educational purposes. In such districts as Barnstable, etc., the daily or weekly paper is read with the greatest of care, advertisements and all, and each item is discussed at length in the home. Short, breezy articles on health, hygiene, fresh air, etc., will receive careful attention and do a great deal of good. All such articles should be written in what is called "newspaper" or "journalistic" style; if not, either the editors will not publish them, or, if published, they will not be largely read.

(c) LECTURES, TALKS, ETC.

The amount of good to be accomplished by lectures, talks, etc., depends largely on the

speaker's ability to size up his audience and to talk in a language suited to its needs. In Boston many young physicians are called upon to address various labor unions, groups of factory employees, etc., on the subject of tuberculosis. Many such talks, given by young hospital graduates, while they deeply impress the listeners with the learning of the doctor, convey very little information to them. It is hard in a lecture of this kind to put things in simple enough terms. Such talks should be absolutely informal and should be short—not over fifteen or twenty minutes. The speaker should impress a few facts upon his hearers and see that these facts are clearly understood, rather than attempt to give a general sketchy outline of the whole subject. He should drive home his facts by local allusions. If he is talking to the Cigar Makers' Union, the dangers of this occupation should be emphasized; if he is addressing a Bakers' Benevolent Society, the need of cleanliness, etc., should be dwelt upon.

Lectures to women's clubs offer great opportunity to arouse enthusiasm and awaken active interest. Such audiences are usually of a rather intelligent order, and in addressing them one need not "talk down" to any very great degree. The majority of women's clubs need waking up. A purely scientific paper will not do this. Women are at heart sentimentalists, and the recital of a few striking examples of harm done by neglect or ignorance of this disease will do more good than many facts. A description of active work carried on by other women's clubs will stir up local interest and help to get things done. If I am speaking in Lawrence, for instance, I am very apt to describe in glowing terms how the Quincy Women's Club raised the money to hold the tuberculosis exhibit, formed an anti-tuberculosis association and helped to establish a day camp. Most important of all, no speaker should conclude his address before a woman's club without mentioning one or two lines of practical work which such an organization could carry on and which he has found out beforehand are much needed. Lectures in churches and before tuberculosis associations should be of a similar nature. I believe no talk should be over thirty minutes in length. Lantern slides, given after the talk, with a brief description of each, pointing out what it teaches and how it applies, are of the greatest help. A sense of humor judiciously used will help to maintain interest in what at best is a most serious subject. At the end of many talks which I have given, the presiding officer usually states that the doctor will be glad to answer all questions, etc. An embarrassing period of silence almost always follows, unless some anxious parent arises to ask what should be done in the case of Nellie or Johnnie. I well remember one such instance, when a most charming old lady asked me whether or not I advised young ladies to use silk underwear. Unless certain people are prepared beforehand to ask intelligent questions it is usually far better to omit this so-called "discussion."

(d) CARDS, PLACARDS, ETC.

Prominent anti-spitting signs of course accomplish some good. I do not believe they accomplish very much, however, unless once in a while the board of health of the community in which these signs are posted enforces the law, causes a few arrests to be made and publishes articles in the local press explaining why this is wise, proper and necessary. Posters, circulars, etc., giving facts in regard to tuberculosis, without any local information, I do not believe accomplish much. Large posters, such as are used in New Bedford, telling people where and when they can be examined and secure treatment, are really valuable. Attractive calendars, with pictures of Rome, Venice, Syria or the home country of the people for whom they are intended, with information in regard to tuberculosis and the local dispensary, etc., will be hung up in every home and will be noticed. Such calendars as gotten out by the New York Charity Organization Society and the Boston Tuberculosis Association are not expensive, costing approximately \$30.00 to \$35.00 per 1,000. Elaborate pamphlets, such as that printed by the Illinois State Board of Health, which is perhaps the best of its type, and others as printed by our board of health and the tuberculosis association, etc., will do good only among the more intelligent classes, and will hardly reach those where the need of such information is most urgent. They are also more expensive.

At the Commission offices we have recently prepared a small folder of stiff pasteboard to be placed in the pay envelopes of employees in large factories and other concerns. Ten thousand of these were prepared for the General Electric Company of Lynn. Brockton, Pittsfield, Clinton, Salem, Fitchburg and other places have adopted this idea. In addition to certain information in regard to tuberculosis, the address of the local dispensary is given and the days and hours when patients can be examined and secure treatment are stated. Such cards cost \$24.00 per 5,000; \$43.00 per 10,000. Information in regard to these can be secured at the Commission office. In Fall River they have placed short notices in regard to tuberculosis inside the covers of the school books. This is a cheap and efficient method of calling the attention of the children to the subject.

(e) THE TRAINED NURSE AND SOCIAL WORKER.

As was stated in the beginning of this paper, it is the trained nurse or social worker who is to make these educational methods effective. Despite some pessimistic reports which reach us from Baltimore, where apparently they have come to the conclusion that the trained nurse cannot accomplish very much in the homes, I firmly believe, and I think we all believe, that it is the trained nurse or trained social worker, seeing patients in their homes and in the workshop, who is the great factor in any educational campaign. A splendid example of such an educational work is that now being carried on at

the immense factory of the Dennison Manufacturing Company in South Framingham. During the past year this concern has employed a nurse who devotes all her time to seeing that the working and home conditions of the employees are satisfactory. She takes the sick to the doctor or to the hospital for treatment; those who are run down or in poor health she studies, helps and advises, and, most important of all, she goes into the homes and teaches these people how to live. The good that women can do in this way as nurses, or social workers, or trained volunteer visitors, is enormous. It is limited solely by their number or by the means to pay for their services.

II. EDUCATIONAL METHODS BEST SUITED TO CHILDREN.

(a) THE SCHOOL NURSE.

Here again the nurse is the important factor. Physicians can examine the children, legislatures can pass laws directing that there shall be instruction in tuberculosis, its prevention, etc., teachers can be provided with information on the subject, but unless there is a woman medically trained as regards the disease, socially trained to cope with social problems, and, most important of all, trained or endowed by nature with tact and good sense, little will be accomplished among the children. The importance of this cannot be overestimated. Every one agrees that it is hard or impossible to get adults, particularly among the lower classes, to change their set ideas and methods of living. It is by dealing with the children that we are really going to control tuberculosis, not in this generation, nor in the next, perhaps, but some time in the future. Pittsburg, under the leadership of Dr. Charles William White, is doing this educational work among children in a most effective way. After a great deal of difficulty, permission was secured from the Board of Education and from the boards of control of the different public schools to teach the children in regard to tuberculosis. A trained nurse and social worker was secured and well paid to devote her entire time to going around among the different schools and giving short talks. In taking up this work in any individual school a preliminary meeting was held with the superintendent, teachers and janitors, at which the nurse explained her plans. Next the nurse gave fifteen-minute talks to the children, taking them in small groups, going from classroom to classroom. After school hours the mothers were invited to attend a meeting at the school, where the same subject was gone over from a somewhat different point of view. Later on the children were given an examination or asked to write an essay on what they had learned. The school nurse co-operated with the school physicians and with the parents and children in their homes.

No system quite so elaborate as this has been carried out in this state. On a small scale, however, it has been done. In Canton, for instance,

there is a school nurse who not only gives talks to the children and to the teachers at the school, but follows the children into their homes, becomes well acquainted with the mothers and gives instruction in proper methods of living. The Boston school nurses are doing magnificent work. Without such a school nurse I do not believe that the teachers alone can do very much effective teaching in hygiene and allied subjects. According to Chapter 181 of the Acts of 1908, a law was passed that "in each of the subjects of physiology and hygiene special instruction as to tuberculosis and its prevention shall be taught as a regular branch of study, . . ." etc. In accordance with this act, and at the request of the State Board of Education, a committee of Boston physicians prepared a pamphlet on the subject of tuberculosis, a copy of which was placed in the hands of each teacher in the state. In comparatively few places was there a school nurse to give this instruction or to make this law effective, and, as a result, I do not believe that this law, beneficial and wise as it was, has as yet accomplished very much. The majority of teachers are already overworked and can hardly be expected, either on account of lack of time or lack of training, to give this instruction; it is the school nurse who can do this, and it is the appointing of such nurses which will prevent this law from becoming a dead letter, as in many instances it now is.

(b) SCHOOL TUBERCULOSIS EXHIBITS.

A bill has recently been passed by the legislature, introduced by our Associated Committees, giving an appropriation of \$1,000 to prepare small "school tuberculosis exhibits." Such an exhibit will show graphically what tuberculosis is, what it does, how it is spread, how cured, and, most important of all, how prevented. This exhibit, now that the original plates, frames, etc., have been made, can be duplicated for \$30.00 to \$35.00. Upon request certain frames will be left vacant in order to insert pictures or charts of local interest. It is planned to place such an exhibit as this, as far as can be provided out of our small appropriation, in public schools in the state, and to have it go from classroom to classroom, perhaps remaining some months in one school. It is to be used as a means of illustrating talks given by school teachers, nurses or physicians on health, hygiene, tuberculosis, etc. Our appropriation can only provide us with a small number of such exhibits. It is hoped that school committees and local tuberculosis associations will take up this work and duplicate these exhibits throughout the state. Such an exhibit as this will do a great deal toward making instruction in regard to tuberculosis and its prevention effective.

(c) OUTDOOR SCHOOLS, ETC.

The value of the outdoor school or of the "outdoor room," one of which is being arranged for in each public school in Boston, as an educational factor is immense. Parents are bound to be deeply impressed by the rapid improvement

in the condition of their children, and the lessons learned at such a school concerning fresh air, good food, cleanliness, etc., are sure to be discussed in the home.

In Cambridge, Salem and elsewhere school children have been given examinations and have written essays on health and hygiene in addition to their regular studies. Such examinations as these, if of a practical nature and supplemented by other means of education, are sure to do good. I recently looked over examination papers written by a child of eleven and a child of fourteen in a Salem school, and I can merely say if the average child knows as much about tuberculosis, or if the answers to the questions represent what the children really know, that in the next generation Salem will have consumption well under control.

III. INDIRECT EDUCATIONAL FACTORS.

Among such indirect educational factors may be mentioned the sanatorium and camp, and the tuberculosis class or dispensary. The sanatorium acts in two ways: First, as a striking example to those people in the immediate neighborhood in regard to outdoor life, and, next, by the influence and example of those patients discharged as arrested or cured. This latter factor, however, may work for evil as well as for good. Unless the discharged patient is placed in touch with the local tuberculosis association, dispensary or nurse, there is grave danger of a rapid relapse, which will place this example of the value of the sanatorium treatment in a most unfortunate light. There is no need of emphasizing the good done in an educational way by children or adults attending a properly conducted tuberculosis class or dispensary.

Last I wish to speak in regard to a very much-neglected educational factor—the influence of the physician himself upon his patients and upon his friends. In spite of the active work being done in Massachusetts, a state which stands foremost in this country in the anti-tuberculosis movement, there are far too many physicians who take no active part in this campaign. In many instances this is due to the burden imposed by an active practice; in many others, however, it is due to the belief that this work is already in the hands of a few physicians who can do it all and who do not need any help. In Boston, for example, it has been only with the greatest difficulty that young physicians have been secured who are willing to give talks to the various labor unions and other organizations which are constantly asking for speakers. Wherever the tuberculosis exhibit is held the work is usually done by one or two active men—the bulk of the profession sits back and waits to see if it is going to be a success before taking part. The fact that not even 50% of the patients being treated at the Rutland State Sanatorium, an institution which was primarily for incipient cases, are of the incipient class demonstrates only too clearly the need of education in the medical profession as to what constitutes an early

diagnosis. The truth of the statement that "successful treatment ends where physical signs begin" is far too little recognized. Physicians are waiting month after month for tubercle bacilli to appear in the sputum before they tell their patients that they have consumption. In many communities it seems as if the average private citizen were more familiar with the general subject of tuberculosis and its prevention than the medical profession; it is undoubtedly true that the active workers in many tuberculosis associations are not physicians, but lay men and women. The physician as an educational factor in this campaign in Massachusetts is not what he should be; we must realize that education is needed among ourselves as well as by the general public.

The final point which I should like to bring out is this: that whichever of these educational methods any community takes up, whether it be by giving a series of lectures, or pay envelope cards, or school tuberculosis exhibits, or what not, the work cannot be well done and cannot accomplish what it should unless it is backed up and made effective by the efforts of a tuberculosis nurse or social worker. This is the real key to successful education in this anti-tuberculosis campaign.

DISCUSSION.

DR. EUGENE A. DARLING: I have not much to add to what Dr. Hawes has already said. I think in Cambridge our experiences bear out to a very large extent what he has outlined. We have tried all the methods he has mentioned, and we find that his concluding remark is true, — that there is a very distinct difference between the kind of work which can be done by the true social worker and the nurse. The nurse gives her chief attention to the sick patient, dealing with her comfort. On the other hand, the social worker takes a much broader view of the case. A variety of problems are presented to her that she is competent to handle because of her experience. We find that the nurse, as a rule, is not able to handle the larger problems, and yet she can do the actual individual work even better than the social worker. In Cambridge the work goes on much better if the social worker does not have to think of the nursing, and, on the other hand, the nurse does her work better if she does not have to think of the social part of the work.

In Cambridge, whatever work has been accomplished by the society is very largely due to the fact that we have a very competent social worker who has given a great deal of her time to the work. Our association has worked in co-operation with the Visiting Nurses' Association.

The other point I wish to mention is the work in the public schools. Cambridge has made an effort to have the law of 1908 put into operation there. We felt the law was worth trying and a committee from the association held several conferences with the superintendent of schools and, as a result, the following method was adopted of putting the law into operation. It was found that it was better to have the teaching done by the teachers, and yet most of the teachers were unable to give any competent instruction upon this subject of tuberculosis, and, therefore, it was thought best to have several conferences between a physician and the teachers. It was thought that the same instruction would not be desirable for scholars in all the grades.

The teachers were divided into three groups. The first group comprised the kindergarten and the primary schools, the second group the grammar schools, and the third group the high schools, and when it became my task to think up what to say to these three groups of teachers, I was very hard put. It was a task of great difficulty indeed, and I do not feel quite satisfied with the result of my effort, but at any rate we did carry out that plan. I advised the teachers of the kindergarten and primary schools to say very little about tuberculosis itself, but to lay great stress upon the hygiene, cleanliness, ventilation, exercise and general topics of that kind, keeping the subject of tuberculosis largely in the background, because the children of that age were not able to understand very much about tuberculosis. I advised the teachers of the grammar schools to give their chief attention to the general topics of hygiene, sanitation, and then to give some general instruction about tuberculosis, talking about the great extent of the disease and in a general way the measures which are employed to combat it. I advised the teachers of the high schools to speak upon the subject of personal hygiene to a greater extent and to apply such methods as were necessary to the subject of tuberculosis. I used the pamphlets established by the State Board of Education, and we used Dr. Clark's book, a very useful book for purposes like that.

I had a chance to test whether the scholars grasped the subject or not by the fact that a friend of mine had a boy in one of the lower grades. My friend said that her boy had come home shortly after one of these meetings full of the subject of tuberculosis. She questioned him a little, and I asked her what he said, and she repeated what was really a very good description of the subject that the boy had grasped. If the children get as good an idea as that, we think the work is well worth trying. We all know that what the teacher says carries the greatest weight. Teachers are ahead of parents. What they say goes, and the children will remember it. It remains to be seen whether the plan will be successful to repeat in future years.

One teacher said he was trying to do as little of this, and keep within the law, as possible. He said, "I do not believe in talking about these things to children because it is a disagreeable subject." I was a little hot in my reply to him. I said, "It is disagreeable because you make it so. It is not more so than a great many other things we have to approach if done in the right way. We must go about it in the right way." He admitted that perhaps that was so. He said he would try to do more in the future.

DR. J. F. A. ADAMS, of Pittsfield: The Berkshire committee has spent its chief efforts in organizing local antituberculosis associations. We have one in Pittsfield, one in Great Barrington and one in Adams. They are all doing good work. Each has a visiting nurse. There is also a visiting nurse in Williamstown.

The school children are being instructed. A little girl who is a member of my daughter's Sunday-school class came to supper at my house last week just after the traveling exhibit of the Boston Association had been in Pittsfield. She began to talk about the exhibit which she had been to see, and I found she was very well informed about tuberculosis. I asked her where she had learned this. She said from one of her school books, which she would bring around and show me. She did so, and I found it a delightful little book called "Town and City," with twenty pages on tuberculosis and its prevention. She was in the sixth grade.

Education of adults is less satisfactory. I was told recently of a man who had been at Rutland for some months, and had been discharged with the disease not arrested. When somebody spoke to him about his

careless spitting, he remarked, "I know all about it, and I am going to spit where I've a mind to."

There is one thing which has not been spoken of very much, and I would like to say a word as to the education of the medical profession. There is not sufficient enthusiasm in the medical profession in this work against tuberculosis. A few of the doctors are very much interested, and others are not. I do not know exactly why. What is it? You can all form your own conclusions. It requires a great deal of care and attention, with little or no return, and a busy doctor finds it hard to investigate every case that comes to his office, and a great many cases of slight cough are called "bronchitis" and treated casually. The patient goes away and comes back perhaps in two or three weeks. It is not easy for the doctor to investigate carefully and thoroughly every slight case of cough. His waiting room is full of patients, and he has perhaps fifteen minutes for each. These patients ought to have half to three quarters of an hour. I cannot emphasize too much the importance of this extra care.

There is one way of getting at the doctors. I am one of the committee for preparing questions for the examinations of candidates for membership in The Massachusetts Medical Society, and two of the questions at the last examination were these:

"1. Diagnosis and treatment in a case of incipient pulmonary tuberculosis.

"2. Care necessary in the same stage (a) for the patient; (b) for the public."

It would be well if some similar question were always included.

DR. THOMAS F. HARRINGTON, of Boston: In addition to the educational methods suggested by Dr. Hawes, the Boston School Department has inaugurated a plan of instruction which promises much.

The pupils in the normal school are given definite instruction relative to tuberculosis, its cause and prevention, and an outline of instruction has been presented to those pupils which has for its basis the presentation of the fundamentals underlying the whole anti-tuberculosis work.

One of the most effective means of impressing upon the teachers and pupils the importance of caring for health has been the establishment of "Health Day." On this day all the grades present programs dealing with tuberculosis and other diseases. The children present essays on the importance of fresh air, cleanliness, exercise and rest, food and drink, etc. The exercises in the schools on this day are arranged so that in each grade lessons are given "why" the windows are opened, exercise taken, positions in standing and in sitting corrected, etc.

In December, 1909, over 90,000 children were examined by the school nurses, teachers and medical inspectors, and over 5,000 were judged by the medical inspectors to be anemic, glandular, undersized or choreic. Special open-air rooms have been provided for this class of children, and opportunity is given for procuring, at a cost not exceeding two cents, a suitable lunch each day.

The School Committee has placed scales and measuring rods in each district, and the school nurses have been instructed to keep weekly records of the weight of each child. These children are not tuberculous children, but rather the predisposed.

For the purely tuberculous children, a special school has been maintained at Franklin Park. Since the opening of the school in 1908, 196 children, ranging in ages from five to sixteen years, have been admitted. Forty-three of these children have been returned to their regular grades cured, and many have been promoted into higher grades while attending this open-air school. Each

"cured case" is followed up by the school nurse, and each is examined in the Burroughs Place clinic once a month.

In addition to these special classes, the School Committee has changed its rules and regulations so that each schoolroom, dressing-room and corridor is flushed twice during each session with air from outside the building. All the windows are thrown widely open. A fixed standard temperature of 67° F. has been established for the schoolrooms.

The investigation in Boston would seem to indicate that demonstrable tuberculosis is comparatively rare among school children. From 3 to 5%, however, of all school children can be classified as pre-tubercular. The open-air rooms established by the School Committee are for this latter class, many of which would gravitate into the tuberculous class unless saved. It seems far wiser in presenting preventive measures to teachers and pupils to avoid, as far as possible, emphasizing any particular disease, such as tuberculosis, and to make the lessons general so as to apply to general health.

DR. W. W. MARVEL, of Fall River: I would say that we in Fall River have used practically all the methods outlined in Dr. Hawes' paper. We have had exhibits and given lectures. The large exhibit was valuable in bringing the crusade before the whole people, and now we do more detail work with small groups. Our experiences with lectures have been rather disappointing, as we have found difficulty in getting audiences. We reached a number of people by addressing the various trades unions, and, to reach the largest number of the poor, we arranged several popular illustrated lectures, the audiences ranging from four to four hundred on Tuberculosis Sunday.

However, our most effective work has been with the traveling school exhibit. We realized that the subject should be presented in an interesting, instructive and simple way, so we covered practically the whole scheme of general hygiene in as nice and cheerful a manner as possible. The hearty co-operation of the superintendent of schools, Mr. Durfee, was secured, and he saw to it that the exhibit was placed in every school building. The corridors were used, and the exhibit remained a week in each place. The way the teachers took up the proposition to help their teaching of hygiene was surprising. There were assemblies of scholars addressed by physicians and prominent citizens, and special instruction by the teachers themselves. The children returned and told what they had learned, and in the higher grades essays and papers were prepared. I have brought along a few samples of this work and you will agree with me that the results certainly justify the work. What a child has taken the trouble to look up and write about is very apt to remain with him throughout life. This is from a child in the fifth grade:

"A careful person will never spit carelessly. Spitting causes consumption. A careful boy will never sneeze at the table; when he feels it coming on he should have his handkerchief ready. No one should exchange chewing gum, because he not only gets the gum, but he gets some of the saliva, too, and he also gets the germs, if there are any. He should never take a bite of anybody else's apples or other food."

Here are some more:

"Last week we had the tuberculosis exhibit at our school and it was very interesting. I think we should learn many lessons from it. From the charts I learned 'how to make your home, your school and your city the cleanest, most healthful and best in the United States.'

"We have a fresh-air room in my school, and I am in that room. In other rooms I have been sickly and had headaches, and made a large number of absent marks.

"But this year it is quite a change, the fresh air is

fine. I have not been absent this year for myself. Our teacher, Miss Leat, knows what is good for us. She has made a healthy girl out of me.

"The only consumptive to be afraid of is the careless consumptive. He coughs and spits anywhere and everywhere."

"Take the doctor's advice and 'Don't sleep where there is no *Fresh Air*. Don't work where there is no *Fresh Air*. Sunlight and *Fresh Air* kill the germs."

"It is dangerous to drink out of public fountains; if you ever want a drink, carry your own drinking cup or drinking glass with you. If you see any rubbish around your home, school or anywhere, do not wait for somebody else to pick it up; do it yourself. 'Never spit on the floors in the home, workshop, store or mill; the dust from dried sputum spreads disease.'"

"I think it was very nice for the Fall River Tuberculosis Society to send around to the schools the tuberculosis exhibit. I learned a great many things from it that I never knew before. I hope others have learned something, too."

Those are all from the fifth grade. They are all learning the same thing. Other children have brought out their artistic instinct and cut pictures from papers and post cards. Here is a picture of a young baby [holding up a paper] who is going to combat the disease with dumb bells. Here is one from Grade Four [holding up paper]. This child is probably seven or eight years of age.

One pupil says:

"Mr. McCreery is telling all the rooms in our school about consumption. Every room from No. 1 to No. 18 is going into the hall to see the exhibit. It was sent by the Anti-Tuberculosis Society. This society is doing everything it can to prevent consumption. We learned about this society when we came into school last September. One day Miss Flanagan told us a story about a pretty little girl with golden hair who died of consumption. At Christmas time, when we brought money for our party, every boy and girl in the room gave a cent to help the consumptives. Now we are going to help this society and help ourselves. We must try to prevent the spread of consumption. First we are going to be clean all the time. Take a bath every night, wash and brush our teeth, and brush our hair. Then we are going to keep our yards clean, and sleep with our windows open. We will try to keep the flies off food, and never bite from anything, candy or apple, that belongs to another."

Here is another one, probably the child of a doctor:

"If you have consumption, do not pay any attention to the advertisements in the paper, but go to a doctor and you will be cured. Do not go too late. Go just as soon as you are not feeling well. If you cannot be cured at home, you can go to the tuberculosis home. Out there there are tents a few feet from the ground so that the person who is in bed will not find it too damp for him. Sleep from eight to ten hours. When you get up, do not be afraid to go out in the open air, because that will cure you, and then rest. Eat proper food; no pie or cake. Drink all the milk you desire to, and a piece of beef steak is good nourishing food."

Now another school has presented this [holding up a number of letters] in book form, and the children went at this scientifically. Those children have written directly from what they saw at the exhibit, but these other children, seven, eight and nine years of age, have gone down to the library and this is the result. They were investigators. They have drawn pictures of the tubercle bacillus. Our exhibit is almost absurd because it is so simple. I have brought along a few photographs of our exhibit. It did not cost over fifty dollars. It has

a box that holds the slides and a strong standard and some steel rods on which are hung these placards.

DR. WALTER G. PHIPPEN, of Salem: We have used all of the various educational methods that have been described by Dr. Hawes with varying results. Of course the exhibit was the first one we used, and it served its purpose well. The press we have used very largely, and, in one way not spoken of here, a method used by the board of health, the so-called Health Question Box. Each edition of the paper had a column devoted to questions about tuberculosis or about health in general, and in the next edition of the paper these questions were answered by the physician. I think that helped considerably.

We have not used lectures very much because the greater part of our population we want to reach are Poles, Armenians and French Canadians who do not understand English.

I wish to reiterate what has already been said, that a trained social worker and a trained nurse are very essential. We have only recently been able to have both. We have now a trained hospital nurse. A great deal of attention is being given to keeping in touch with the children in families where tuberculosis has been known to have been previously, and in seeing that they are properly educated. We have a conference with the local board of health which has brought about very good results already, and we are trying to bring about many more.

There is one branch of educational methods which has not been spoken of this morning, and that is educating the people not to have an excessive fear of tuberculosis patients. That fact has recently been brought to my attention because a landlord has requested a tuberculosis patient whom we have had under our control for three years to move because the other tenants in the house have complained. I think there is a field for a great deal of work. It seems that a large number of patients who do not have tuberculosis definitely, but would be classed as susceptible, and whom the physician thinks needs to take regular treatment, the open-air, fresh-air treatment, do not like to do it. They say, "I have not tuberculosis. If I sleep at night in a tent, people will say I have tuberculosis." It is the fear of such a patient as that that we want to combat.

DR. L. M. PALMER, of South Framingham: The only help that I think I can bring to this discussion is to speak of the work that we are doing in Framingham. I think that the plan we have in our town, a town of some thirteen or fourteen thousand, will illustrate what can be done. We have one organization with a big name to it which includes a District Nurses' Association and a department for antituberculosis work. We have three departments of that society with a board of seven directors for each department, making twenty-one in all, and those twenty-one meet monthly and compare notes, and in this way the work of one department overlaps another and so we keep in touch with all. One person does practically the work of the three departments. She takes the place of a social worker and a nurse, which has been objected to here by one of the speakers as one and the same thing. She makes a daily visit to these cases of tuberculosis in the acute form, or has the nurse under her care do it, or in case the patient is not sick enough to see so often, at longer intervals. She also provides for daily care for the sick through the district nurse, a plan that works very well indeed.

Reference was made to the Dennison factory. I want to add my commendation of that work. It is a work that is bound to increase. The amount of good that one social worker who is also a nurse can do to a great manufacturing plant like that is excellent, especially if she is tactful. The operators like her and go to her for things

that they would not go to any one else for. She does a great deal of good. I think the growth of the industrial nurse is going to be very rapid in the next few years.

I want to emphasize what has also been spoken of before this morning, — the fear of the people of the tuberculosis cases. I think there is a danger about overeducating the public along this line. We make them afraid. I think this is a point that we must look out for. However, this is not, to my mind, the greatest trouble. My greatest trouble is to convince them that they have got tuberculosis. Up to the present time I do not know what to do with cases that say they have not got it, will not be looked after, will not give up the positions which they are holding. In the case of a table girl, have we the authority to subject this class of people to treatment, and can we put the law to them and restrain them? I am uncertain about it. I shall be glad of instructions.

DR. A. T. CABOT: I will say in answer to Dr. Palmer's question that the State Board of Health has authority if they have a desire to exercise it.

DR. PALMER: How will they do it?

DR. A. T. CABOT: By the laws that they have.

DR. E. ST. J. JOHNSON, of New Bedford: Having listened with much interest to the various speakers, I would say, for my own part in the discussion, that the work accomplished by our own state and its various cities would count a great deal more, and be much less expensive, if certain problems entirely beyond local control could be thoroughly understood and taken up by the federal government. These problems and the education against tuberculosis naturally vary, as Dr. Hawes has said, in different places, and I mention those which are more prominent in a city like New Bedford, which, as most of you know, is largely made up of cotton mills run by foreign labor. In New Bedford a number of people are making a determined fight against this disease, which was exceedingly prevalent among the poorer classes when this crusade began in the state. This crusade has been and is at present being waged by the following organizations: First, the anti-tuberculosis society. Second, a local sanitarium, the Rockdale Hospital, which is soon to be moved to more commodious quarters. It takes all cases which cannot be treated at home. Third, the so-called chest clinic. This organization keeps track of ambulatory cases and improved cases returned to work. Fourth, the district nurses' staff, which reports any cases and brings cases to the clinic. There are eleven registered cases so far as we can trace them. By this means education is being placed, and we are striving to seek the best available methods of cure. Good results have been obtained, but we intend to have better ones in the future. The state is helping us a great deal, and methods of increasing such results may perhaps be considered under the following headings: First, instruction of immigrants before they start out. They should be made familiar with the conditions here, and what they must do to favor the conditions of health when they come into the country. The federal government has looked after Cubans in Cuba and Filipinos in the Philippines. Why cannot its representatives tell these people the truth about conditions here. Second, the registration of cases by doctors is very important. There should be a fine placed upon those who fail to report investigated cases. A fine for a non-registration of a case of tuberculosis is an important question. These cases cost the state, unless seen early, perhaps four dollars a week for life. Is this economy? Third, the local board of health. I hope some day the membership of this body may be made by state appointment and that it will have at least one well-educated, independent physician among its members. Fourth, extravagance. In our city all classes are given over to a most reckless, senseless and

spendthrift use of money on things which are not essential to the best methods of health. Fifth, social service work in connection with our clinics, paid if possible, composed of enthusiastic workers, medical and social, to follow up the cases and to see that they are examined, and to constantly repeat doctrines of common-sense living, with assistance where necessary from the churches and charities to carry this out. Each patient should have at least one volunteer worker especially interested in his or her case, who holds the patient to the required standards by constantly repeating the principles of hygiene day after day, week after week, and year after year. I must say the available people in our city are painfully few, and that such work is handicapped by personal rivalry, politics, individual misunderstanding and race prejudices so common to human nature in all ages.

We have not made use in New Bedford of the maps, the school-nurses, the outdoor schools or the small exhibits. I hope we shall later. We are going to try.

DR. E. O. ORRIS, of Boston: It seems evident from all that has been said here, and from the present stage of the tuberculosis campaign, that from this time on the educational propaganda must be largely carried on through the schools. In this state especially does this seem to be true, for we in the Boston Tuberculosis Association have found that there is no longer a demand for the traveling tuberculosis exhibition, and it has been retired. Coming as a delegate from the Boston Tuberculosis Association, I wish to refer to an interesting and unexpectedly disappointing experiment the Association has been making the past year, namely, that of a night camp. In an open space of thirty-five acres in the suburbs of the city, at Mattapan, a very comfortable night camp was erected with twelve bedrooms or separate sleeping apartments, open in front, somewhat after the plan of the "lean-to." This camp was within a five-cent fare from the city, and was intended for cured and arrested cases who had returned to their work in the city. Breakfast and dinner or an evening meal were furnished besides lodging, and for this a charge of \$6.00 per week was made. We of the Association, as well as Dr. Hills, the superintendent of Rutland, thought there would be no difficulty in filling our twelve rooms with returned Rutland cases or other arrested cases who desired to continue the hygienic and open-air treatment which had been so effective in the cure. To our disappointment, however, we never have been able to fill our rooms, although we have advertised the camp extensively, particularly with all Boston patients discharged from Rutland. Whether they have grown tired of institution life or any suggestion of it, or for some other reason, the fact remains that up to the present time the experiment has been rather disappointing.

Something has been said here regarding the obligation laid upon the physician in the tuberculosis warfare and education of the public, and it has been intimated that he has not always fulfilled this obligation. Of course it goes without saying that it is incumbent upon the physician to do everything in his power towards the prevention of this great plague. I must confess, however, that I have much sympathy for the hard-worked and poorly paid general practitioner. It seems to me that either one of two things will have to take place in the future. Either have a free tuberculosis dispensary for the examination of suspected cases, whether able to pay or not, maintained by the state, municipality or town, and pay the attending physician a reasonable recompense; or else confine the attendance at such a dispensary strictly to those unable to pay for services, referring those able to pay something to the physician at his office. Tuberculosis work both in prevention and education is for the benefit of the whole community, and

the community should bear their share of the expense and not put an undue proportion of such work and expense upon the poor physician, who, as a rule, I believe is always ready to contribute his fair share of service for the public good. Even in tuberculosis dispensaries for the poor alone I believe the physician should receive some recompense — as is the case in the out-patient department of the Boston Consumptives' Hospital.

DR. J. J. MINOT, of Boston: I think the important thing in the future is the education of the child and the use of the nurse and the social worker, and I think that these schools are a great service in educating the public and in educating the children. I think that there are more tuberculous children in Boston than is generally thought. There has been no trouble in curing the ones at Franklin Park. If anybody wants to see the school, it is open all day from eight in the morning until four-thirty in the afternoon except Sundays, and visitors are welcome.

DR. HAWES: I have nothing further to say except that the summing up of the whole thing is the handling of the children in the future, and getting more and more nurses and social workers, and that when we get requests for information as to how best to spend a certain amount of money that has been given to the society, the question of paying a nurse and paying her well to handle the problem in conjunction with the physician should be carefully considered.

THE PERSONAL RELATION OF THE PHYSICIAN TO HIS PATIENTS.*

BY OLIVER H. HOWE, M.D., COHASSET, MASS.

IN these days of marvelous achievement in medicine and surgery, we can scarcely keep pace with the march of new knowledge. With myriads of new synthetic compounds, with the introduction of serotherapy, with the new applications of electricity and the daring advances of surgery, our heads are well-nigh bewildered with the great mass of new medical nomenclature. Attractive and valuable as are all these subjects, it is not to them that I would draw your attention to-day, but rather to another feature of our daily work, less novel, but perhaps more vital — the personal relation of the physician to the patient.

A venerable physician told me, many years ago, that the healing art consisted of medicine and the doctor. If we recollect some of our own illnesses, we shall realize the force of this remark. The tumbler of medicine had its place, and the spoonful was religiously taken, but we best remember the kindly presence of the doctor, the thoughtful inquiries, the reassuring manner and the cheering words, all coming like a gospel from the great realm of sunshine and vigor. Before he came, the atmosphere of our room had been as Hamlet described, "All sicklied o'er with the pale cast of thought." His presence had changed all this, for he had left with us a conviction of God's sound, sane world and that we belonged to it and would soon be resuming our part in it. He had left us something of himself, for he personated these sound, strong

elements. We felt that we were leaning upon him, and that he was a power. We treasured his words and eagerly awaited his coming, for it was the one interesting event of the day. Later, as we were propped up on pillows, and caught sight of his gray ulster as he approached the house, our symptoms immediately abated.

The personal relation is more important with the physician than with any other individual in the community. He brings the child into the world and perchance breathes the breath of life into it from his own lungs. He watches its tender years through the perilous events of infant feeding and the alarming diseases of childhood, and is urgently sent for in case of accident. The knife in his steady hand is trusted by all, and his counsel is asked for the manner of education and kind of employment for the young man. In turn he is present at his wedding and later attends to the needs of his growing family. In many cases he knows the whole life of the individual; watching him day by day through a lingering illness and easing his pillow in his last moments. Often he consoles the bereaved family more successfully than the clergyman. Perchance in time he may attend five or six generations of the same family. Such is the life we know, and exacting and laborious as it is, I doubt if any of us would exchange it for any other. Other workers are paid in coin of gold and silver. We receive, in addition, the tribute we most prize, in the coin of friendship and of respect and in the consciousness of doing good. Beyond this, it is in the province of most men of business to urge their wares or their services upon those who do not desire them; to sell to the reluctant customer; to obtain a hearing where such is not desired. The physician is relieved of these insinuating and distasteful methods. He goes only where his presence is welcome, and many times the front door is flung wide open to receive him, with the salutation, "O Doctor, I am so glad you have come!" These facts, and others which we well know, make it plain that our profession is unique in its opportunities, its privileges and its rewards.

The increasing concentration of population in cities and the strong tendency to specialism threaten to leave the general practitioner in the minority. No member of the profession, however, can reap so great a reward in personal satisfaction as the general practitioner. His bonds of friendship and sympathy are strongly developed and the family doctor has a vital and intimate part in the life of the community.

It should be our aim to fulfill the responsibilities of our work and the expectations of our patients as well as in us lies, and I propose to spend a few moments in discussing what seem to me to be the essential elements of the matter and how we may further increase our usefulness to our patients through the personal relation. In so doing, I find that I have drawn my material largely from a study of my own deficiencies and I therefore disclaim any intention to dictate to any one else, and I state that any

* President's Address, Norfolk South District Medical Society, May 5, 1910.