

do is to increase our efforts along the line of educating the people in regard to these preventable causes of blindness, especially trachoma and glaucoma. Simple glaucoma is a disease of insidious onset and has frequently developed to a very disastrous point before the patient comes for consultation in regard to his sight. That is not so liable to be true of trachoma, except when the person is in a remote part of the county, because his trouble is painful and it causes symptoms which would lead him to seek advice. In glaucoma, however, people are not disposed to seek advice at a time when anything can be done. I have been much impressed with the number of people who have lost one eye from glaucoma and yet who let the other one go before they ever think of trying to find out whether anything can be done. It seems to me that education would bear excellent results.

DR. HAROLD BAILEY, Springfield, Mo.: I want to emphasize the point Dr. Ellett made about glaucoma. There is another side to which I would call attention. Many of our pension applicants who were blind from simple glaucoma have had a diagnosis of cataract made by the optician or family physician. They had been told that they must wait until totally blind before their sight could be restored by operation. Some of them have come to us prepared to have the operation done. Another thing that has impressed me strongly in our pension work has been the apparent ignorance of some of these applicants. So many persons with mature uncomplicated cataract who could be operated on with every prospect of success refuse operation absolutely. I have observed the same thing in many cases of corneal opacity in which useful vision could be obtained by an optical iridectomy. With one exception these patients have all refused operation, notwithstanding the fact that they have been told that no expense attached to the operation other than a moderate hospital bill and in some instances we have offered to pay that. It is a question of educating many of these people before we can do very much for them. One or two points regarding the law. I do not know how much jurisdiction the examiner has. A person came to me the other day with a retinitis pigmentosa—vision of 20/70 in each eye. He had vision in his central fields only and was practically blind. Under the strict interpretation of the law this man was unable to get a pension. I would like to ask Dr. Lamb whether in such a case the applicant might not secure a pension, for he is certainly deserving of it.

DR. NELSON MILES BLACK, Milwaukee: In making the statistical tables, was any attempt made to determine the number of blind people who support themselves, and if so, what occupations did they follow?

DR. H. D. LAMB, St. Louis: The present blind-pension law was drawn up very hastily and a great many points were left unmentioned. In fact, what has been made into a law is but an outline. The questions of Dr. Bailey and of Dr. Black are being discussed by the Missouri Commission for the Blind and its consulting staff. The law simply stated that the income must not exceed \$780 yearly for an applicant to receive a pension. There was nothing said in regard to the financial ability of other members of the family to take care of the applicant. I think the husband might have an income of a considerable sum and yet the wife with little or no income might receive a pension. That will be remedied by legislation; and also the question in regard to persons with good central sight with narrow fields. These cases have been passed when the field was 15 degrees or less, whatever the vision might have been. Effective work on the prevention of blindness depends on at least fairly accurate statistics. We have practically no statistics on blindness of any value in this country. The government census is determined by the enumerator asking as he or she goes from house to house "Are there any blind in this home?" Figures based on such methods are worth nothing, and yet the figures of the government census are referred to frequently by writers and speakers on blindness. This, of course, is because they are virtually the only statistics on blindness we have in this country. Ophthalmologists desiring accurate statistics on blindness refer back to the tables of Magnus, published in 1883, for since that time we have nothing accurate.

HEALTH CENTERS OF THE MASSACHUSETTS-HALIFAX HEALTH COMMISSION

WITH SPECIAL REFERENCE TO PRESCHOOL-AGE
DENTAL CLINICS AND NUTRITION
CLASSES *

B. FRANKLIN ROYER, M.D.

Executive Officer, Massachusetts-Halifax Health Commission

HALIFAX, N. S.

Health center work in Halifax and Dartmouth came about as a direct result of the ship disaster occurring in Halifax harbor, Dec. 6, 1917, when the *Mont Blanc* and the *Imo* collided. The *Mont Blanc* was loaded with trinitrotoluene, and a great explosion resulted, destroying the lives of 1,635 citizens, and wrecking several thousand dwelling houses. Practically all buildings in the two communities were severely damaged, the property loss alone amounting to \$30,000,000. Immediately after the news reached Boston, citizens of Massachusetts hurried physicians and nurses to Halifax with relief and supplies. A very generous contribution of funds and supplies followed, the collection reaching almost \$750,000. In addition, several shiploads and several trainloads of supplies and the personal assistance of many citizens of Massachusetts were contributed. As soon as the governments of Canada and England could visualize the disaster, and make plans to give permanent relief, a commission was formed to handle relief in an official way and pay for all loss of life, limb and property.

With the formation of the government organization, and its establishment on the ground, outside philanthropy was no longer needed. A quarter of a million dollars of the Massachusetts money remained unexpended at this time, and at the suggestion of the committee in Massachusetts, Dr. Victor G. Heiser studied local needs to determine how this large balance might be expended within the spirit of the donations, and for a need having some direct relation to the disaster. Dr. Heiser recommended that the money be employed in a campaign of public health education and preventive medicine, on condition that the government relief commission supplement it at the rate of \$15,000 a year for a period of five years, and that the city of Halifax and the province of Nova Scotia each make contributions in facilities or money to the sum of \$5,000 a year, the Massachusetts money to be apportioned as needed over approximately a five-year period. This was agreed to by all organizations, and a new commission, known as the Massachusetts-Halifax Health Commission, was created under a special act of the Nova Scotia legislature in May, 1919.

Dr. Heiser recommended the establishment of health centers as a part of the constructive educational health campaign. It has been my privilege to work out on the grounds the details of this supplemental health program in cooperation with the chief nurse of the commission, subject, of course, to the approval of the commission itself.

The child welfare clinics, the prenatal clinics, the ear, nose and throat services, the posture clinics, the

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of two illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

venereal clinics and the tuberculosis services are organized very much along the lines now obtaining in the best health centers in other parts of the United States. Some medical advice is given and much public health counsel is offered both by physicians and by dentists, as well as by specially trained public health nurses and nutrition workers.

Some new features, however, have been introduced in the preschool-age dental clinics, and in the nutrition clinics, that are worthy of special discussion at this time.

In making preliminary plans for a preschool-age dental clinic, we first submitted our views to the Halifax Dental Society. The Dental Committee on Public Health of this society agreed to the suggestion that the proper place for, and the place most likely to give results in, preventive dentistry was in the preschool-age group, that is, up to 6 years. This committee agreed also with my suggestion that tooth nourishment should be featured out of all proportion to what has been done in health work in other places, and that prophylactic dentistry should be practiced in cooperation with such an instructional service. While the matter was under discussion, a subcommittee secured approval of the Canadian Dental Society, and a delegate secured approval of the American Dental Association.

It is the teaching plan of these health center preschool-age dental clinics to begin featuring tooth nourishment in the prenatal period. We try to make the expectant mother appreciate that unless she takes food from which sound bone and good teeth may be built, her baby will not grow a sound, strong, well-enameled set of temporary teeth, likely to remain sound and free from decay during the period of their natural use. We teach the mother to appreciate that the first set of teeth, even to the enamel, is pretty well finished when the child is born, although the teeth are under the gums in the jaw. We preach the use of liberal quantities of whole milk, the use of all leafy vegetables, even to raw cabbage, especially during the last six months of pregnancy. We aim to have the dentist in charge of this service advise with expectant mothers and the public health nurses, as well as the physician in this prenatal service and nursing period.

We begin dentistry with the baby at 6 months, whether bottle-fed or breast-fed, and try to control the health of the baby from then until he is 6 years of age, by taking him to the preschool-age dental clinic for guidance, and to impress on the mother essential food lessons. The dentist in the clinic, and the public health nurse subsequently in the home, constantly keep before the mother the thought that, in this important period, the second teeth are being built and enameled. We urge that, unless the child is given through these years also the kind of food from which sound teeth may be built, the permanent teeth may decay at any time after complete eruption or in the early teens. We teach continuously and constantly that unless the right kind of food is taken—chiefly mother's milk the first year, and modified milk or good whole milk later and, as soon as possible, leafy vegetables, oatmeal porridge and whole wheat bread—one cannot lay the foundation for strong teeth or good lasting enamel. We emphasize in the clinic and through the health nurse and visiting housekeeper that tooth-feeding is of greater value than tooth-cleansing, but, at the same time, we teach oral hygiene.

The dentist teaches the use of the tooth brush in prophylactic work, and mechanically cleanses when necessary. With children coming to the clinic who have been improperly fed and whose mouths have been neglected, much repair work naturally is done, the sort dentists refer to as patchwork. Silver may be deposited by precipitation, both in shallow cavities that have been previously cleaned, and as a coating to teeth losing their enamel, with the hope of preserving them and keeping their value in the development of the jaw. Fillings may otherwise be put in. Sinuses and diseased gums are treated.

The whole of this dental clinic service, however, is educational rather than reparative. We teach that tooth-feeding must begin with the expectant mother and must be continued during the prenatal period. One of our slogans is: "A sanitary mouth with good oral habits at 6 is likely to remain a clean, healthy mouth at 60." We are fortunate in having a woman dentist, Dr. Arabelle Mackenzie, who has had a year of postgraduate training in the Forsythe Clinic at Boston. She is tactful in handling children, and fits in well in coordinating her work with that of the medical staff. We have given her the title of pedodontist. She now has more than 300 babies and children less than 6 years of age coming to this clinic four times a year for dental advice. The nurse during the latter half of the first year visits the baby fortnightly, and once a month, or oftener if required, during the entire preschool period.

The school dentists of Halifax have already voluntarily made special report to the school authorities of the notable changes observed by them in children entering school during the last session, who have had from one year to eighteen months in the preschool dental clinic.

The nutrition services of the health center are organized much along the lines of Emerson's clinic in Boston, with some features of other clinics added. We have the additional advantage that the nurses', physicians' and consulting clinics, including the ear, nose, throat, posture and tuberculosis services, are operated from the same building. During summer months, adenoid and tonsil clinics are also conducted. In this way, we are able to do much as Dr. Wile does at the Mount Sinai clinic, viz., ask that handicaps be removed so that, as Dr. Emerson says, the child may be free to gain. Tonsils and adenoids must often be removed before a child may make great headway in a nutrition class.

We are fortunate in the nutrition service in having Dr. F. W. Tidmarsh in charge, a man with an excellent overseas record and a period of study in Emerson's clinic. The physician is supported by the public health nurses and visiting housekeepers (nutrition workers), who aim to correct any home environment that may be detrimental to health. When nutrition problems are paramount, the visiting housekeeper does the bulk of the home teaching, the nurse going occasionally. The visiting housekeeper is trained to go into the home and teach the housewife the kind of food the child needs in order that it may gain. Not only does she explain the kind of food that is needed, but she goes with the mother into the shop or market and teaches her how to buy economically the kind of food the family needs, and the kind the particularly undernourished child needs.

The aim in the health center is to develop only one class of the undernourished of school age, recruiting

this class chiefly from homes with open tuberculosis. This class is used for feature purposes and educational publicity. We recognize that the largest and the most desirable places for nutrition classes must be, for some years at least, in the public schools. At present there are three such classes in the Halifax public schools.

Our larger aim is to give nutrition advice to undernourished children of the preschool age. In that period, children are not so commonly 7, 10 or 15 per cent. underweight, but there is quite as much need of nutrition advice alone, or combined with the advice of a pedodontist, as in the older groups. With these classes we aim to prevent gross malnutrition.

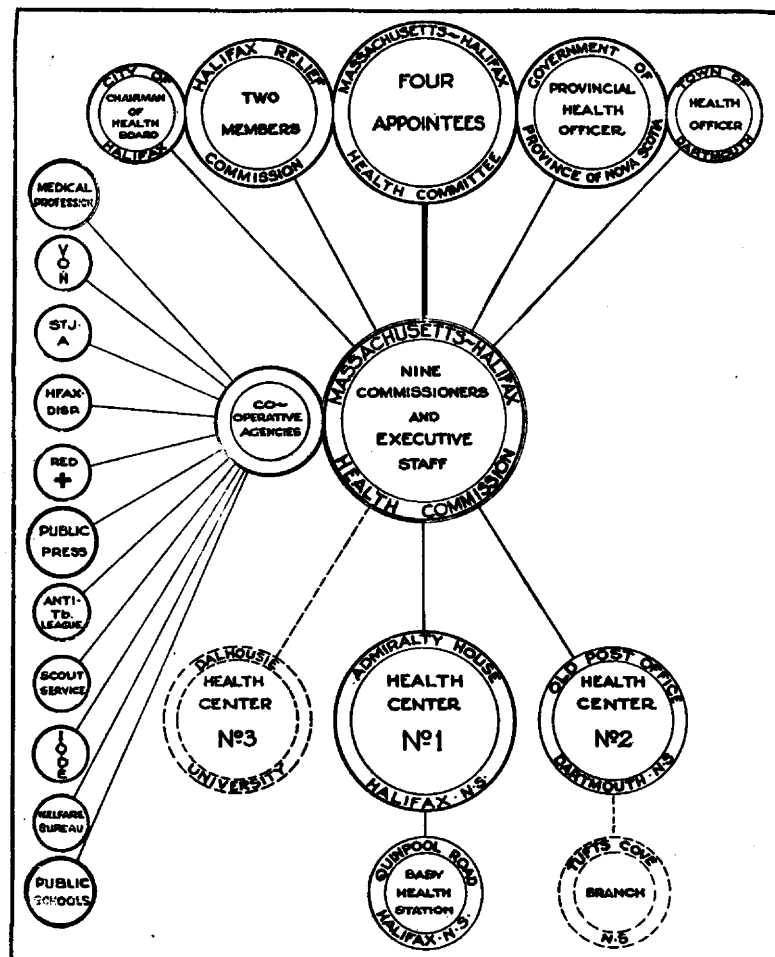
of the Rockefeller Foundation, influenced them to "earmark" \$200,000 for building a Dalhousie health center for the south end of Halifax. This new health center is being planned for the university as an integral teaching unit of the medical school, and will serve as an outpatient department to the group of hospitals now growing up in the immediate vicinity of the medical school. With health center service for the southern half of Halifax conducted by the medical faculty from a university building, with public health nurses on the staff, students of medicine will be given great clinical opportunities and will here for the first time be given ample opportunity to study domiciliary causes of diseases, and a chance to acquire a better fundamental groundwork for preventive medicine.

The general scheme of organization and the general plan of operation can perhaps be set forth best diagrammatically. It would be described about as follows: The commission consists of nine men, three of them being members by virtue of their offices: the provincial health officer, the chairman of the Halifax City Health Board and the health officer of the town of Dartmouth. Two are appointed by the Halifax Relief Commission and four by the Massachusetts-Halifax Relief Committee of Boston. The commission acts under a special provincial law, and meets semimonthly. Policies are determined by the commission, and work is directed through the executive officer and staff. The provincial and local health authorities are members of the commission for the purpose of coordinating the established work of each with the new work undertaken by the commission. It is the aim and object of the commission to do such lines of health work as should properly come under the local health officials in each community, and to work in the closest cooperation with all privately endowed philanthropic and charitable agencies, so that a minimum amount of overlapping will occur and waste will be avoided.

The public health nursing program is wholly constructive in character, and is a very large feature of the work. Each nurse is responsible for the entire public health program in the district assigned to her, and for the health of every member of each family with whom she comes in contact. She seeks to remove as far as possible domiciliary causes of diseases, and to train and reeducate the family in right methods of living. Bedside nursing is done in emergency only, or for family demonstrations. The Victorian Order of Nurses does the routine bedside work in homes of both communities, and gives general family instruction during such intervals.

ABSTRACT OF DISCUSSION

DR. ISAAC D. RAWLINGS, Springfield, Ill.: The establishment of the Massachusetts-Halifax Health Commission is somewhat unique in that it did not just happen but was the result of the mature deliberation of experts, and with all the facts furnished by a thorough survey of the needs and problems requiring solution to guide them. This commission is somewhat different from most health centers in that a



Massachusetts-Halifax Health Commission scheme of cooperation.

I have more fully described the larger health program in other articles.¹ It will suffice here to have elaborated somewhat on the special services of preschool-age dentistry, a service hardly started in health circles, and on nutrition classes running parallel with them, an innovation in health work until recently largely limited to the school-age period.

One fully organized health center is now operating in the northern part of Halifax with a summer substation for weighing and measuring babies. A second health center, suited to the needs of a population of 8,000, is operating in Dartmouth.

The work of the first health center, when reviewed by representatives of the International Health Board

1. Royer, B. F.; *Am. J. Pub. Health* 12:195-201 (March) 1922; *M. J. Australia* 1:451-456 (April 29) 1922.

definite plan is mapped out for a five-year period with experts in charge, no politics, adequate finances, a constructive program in all its features, with no duplication of efforts or conflict of authority, and with the entire personnel having but one goal, the lessening of the sick rate and the saving of lives. While the scope and standard of the Massachusetts-Halifax commission are, perhaps, the best yet established, there are many so-called "health centers" which are attempting some or all of the activities carried on by the Massachusetts-Halifax commission. In England such institutions have been quite common. The agency through which the health center operates may be public officials, it may be volunteer organizations, or it may be a combination of the two. The scope of the services performed varies with each health center. At the end of 1917, there were only about a dozen health centers in the United States. Three years later this number had increased to 385, and at present there are still more. Binghamton, N. Y., has established a health center which is producing excellent results. Altogether, eleven activities are brought into close contact, with the result that much lost motion and a great deal of overlapping of activities have been eliminated. In New Haven, Conn., a health center has been in operation for some time which deserves special mention. The center depends largely on private donations to carry on its work. The New York County chapter of the American Red Cross has affiliated all existing health agencies and opened health centers in various parts of New York City. A rather unique experiment in health center work has been established in New York City by the International Lady Garment Workers Union. This consists of a joint board of sanitary control, a medical division, a dental division and an educational division. Every worker joining the union is required to undergo a complete physical examination. When treatment is required, this is advised and administered. In 1909 the legislature of Illinois passed an "enabling act" permitting the people of any county by referendum to impose on themselves a tax for the care of the dependent tuberculous patients in the community. At present, more than forty counties of the 102 in the state have taken advantage of this act. The extension of this principle to include the prevention and treatment of all diseases, disabilities and injuries of a community has not been advanced in Illinois. In several other states, notably Iowa, each county has the right to establish a hospital for the care of residents of the county. The highest type of county organization has been reached in New York State, where the board of supervisors of the county was allowed to establish community or health centers. The board of supervisors provides the funds for these centers, and appoints a board of managers who supervise and control the health center. A hospital in such a health center may be constructed, the state paying half of its cost, with provision that the hospital shall not be greater than one bed to each 500 of population. In Illinois, a unique health center has been in existence for some time in La Salle, Peru and Oglesby. In 1914, at the township high school of these three cities, a social center was established for welfare and community work. Included was a hygienic institute to cooperate with the departments of health in the three cities. At the head of the hygienic institute was a health officer, under whom served, in each of the cities, an assistant health officer appointed by the mayor of the respective city. This gave the organization a legal standing. The scope of work consisted of enforcement of all local and state laws pertaining to the health of the people.

DR. ANNA RUDE, Washington, D. C.: The two outstanding points for emphasis in this are, first, the small number of children considered as "malnourished" in the preschool period according to our present standards. These findings corroborate a report on the physical status of the preschool child which the Children's Bureau will soon publish, in which we have not drawn conclusions but have indicated that neither a 7 nor a 10 per cent. weight deviation from the weight-height ratio is a standard applicable to the preschool age child. The second point is the importance of prophylactic dentistry during the preschool age. As one observes dental corrections in the schools throughout the country, one must be impressed with the futility of beginning dental repair

work during the school age. Of fundamental importance is research in nutritional problems beginning with the mother during pregnancy and followed throughout infancy, and with prophylactic work in the preschool age, if we are going to make any improvement in dental defects in the children of this country.

BRONCHOLITHIASIS

REPORT OF CASE *

ARTHUR R. ELLIOTT, M.D.

CHICAGO

Broncholithiasis is described in the literature under various designations. It has been called pulmonary lithiasis, and the concretions which are its characteristic product are referred to as lung calculi, pneumoliths, lung stones and bronchololiths. The clinical manifestations accompanying the expulsion of these concretions constitute what is known as stone asthma or bronchial colic.

The literature is surprisingly meager, in view of the fact that the condition has been recognized for centuries and is probably not so rare as might appear from the infrequent references. Casual testimony of its occurrence as a clinical incident is not uncommon in discussions on the subject.

Roentgenograms of the chest frequently reveal more or less circumscribed nodular shadows, usually located at the hilum of the lung, which are considered to be calcified peribronchial glands. Calcified nodules in the lungs and adjacent structures are also encountered at necropsy. In interpreting the presence of these nodules, it is considered that glands and circumscribed areas of lung tissue have at one time been involved in an inflammatory process, and on this becoming quiescent, they were subsequently infiltrated with calcium salts as a terminal event. Tuberculosis, abscesses, bronchopneumonia, infarcts, foreign bodies or pleuritic infections may have initiated the process leading to calcification. It often happens that no definite primary infective or inflammatory process can be traced in the clinical history. The presence of these calcific areas is a sign of chronic disease; but, strictly speaking, no other diagnostic value can be assigned to them. So long as they remain quiescent, they do not give rise to symptoms, and their discovery is usually an accidental finding.

In the more chronic ulcerative forms of tuberculosis, small particles of calcareous matter may become loosened in the process of cavitation, or form in the stagnant mucoid contents of bronchiectatic bulgings and be coughed up from time to time. These particles are ordinarily not sufficiently gross to be detected without careful inspection of the sputum.

Calcified tracheobronchial lymph nodes, because of their size and proximity to the air passages, most frequently give rise to clinical manifestations leading to a diagnosis, since they may perforate the bronchial wall by ulceration and gain access to the lumen of a bronchus and be coughed up. Besides these glandular concretions, ulcerative processes in the air passages may result in the sloughing off of cartilages of the bronchi or of the trachea which, becoming free, may act as foreign bodies and be expelled by coughing. In like manner, enchondromas may form in the lungs or pleura and become free. Hydatids, inspired foreign

* Read before the Society of Internal Medicine, May 29, 1922.