

readily by the teacher through the knowledge gained from the course of instruction given by the medical supervisor. Parents and the family physician would have greater confidence when the child's abnormality is pointed out, and co-operation with the school would be accepted more readily. The opinion of the medical supervisor would be based upon a knowledge of the child's growth and development from year to year, from grade to grade, and not upon the manifestations of a temporary excitement. Local school authorities would have an official in their department competent to decide the many questions of the order of studies and its relation to fatigue and exhaustion, the duration of work and the duration of recuperation, between the rate and the quality of work, between weariness and fatigue, the doing of pleasurable work and the forced task,—all factors which to-day are as needlessly enervating to the teacher as they are injurious to the child. By the association of the several medical supervisors the state would have a body of experts hardly possible under any other arrangement. Massachusetts has taken an advanced position by requiring compulsory medical examination of all children in her public schools. The responsibilities of this act call for more than yearly statistics of defective eyes, ears, noses, or spines among school children; it imposes the duty of detecting the *cause* and minimizing its effect in every factor of the home life and the school life of the child tending toward retrogression, in order that future generations may regain a mental and physical high standard. To that end the physician in the public school will give his best efforts.

THE PHYSICAL WELFARE OF THE PUBLIC SCHOOL CHILDREN.*

BY GEORGE S. C. BADGER, M.D., BOSTON.

A COMMISSION of five physicians, appointed by the Boston School Committee last June, to report their "opinion as to desirable length of session, periods of recess, curriculum, and on all other matters, relating to the health of children attending the first three grades," made the following recommendations:

I. Regarding school buildings:

- (1) That efficient artificial lighting be installed in all school rooms and toilets.
- (2) That until such efficient artificial lighting be installed, the masters be empowered to dismiss on dark afternoons those rooms where the light is so dim as to strain the eyes of the pupils.
- (3) That the windows be cleaned more frequently, especially during the winter months.
- (4) That smooth pavements be laid on the streets adjoining the school buildings to lessen the noise.

II. Regarding the sessions and recesses:

- (1) That the present rule of two sessions be continued.

(2) That the afternoon recess be lengthened and devoted to play.

III. Regarding the curriculum:

- (1) That games and manual training, so far as possible chosen by the pupils, be introduced in place of the present schedule during the last hour of the afternoon.

IV. That the classes of the first grade be limited to twenty-five; of the second grade to thirty-five; and of the third grade to forty-five members.

V. That special provision be made for the care and study of the backward children, especially in these grades.

VI. That competent trained nurses be appointed to supplement the work of the medical inspectors.

The full report of the commission is being printed as a school document, and contains a discussion of the subjects leading up to our recommendations.

I wish to speak to-night of the introduction of manual training and of directed play into the first three grades, and of the medical inspection of schools.

The commission recommended that manual training and directed play, so far as possible chosen by the pupils, be introduced in the last hour of the afternoon session, in place of the present curriculum. It is during this last hour that the children become fatigued. This is manifested by great restlessness, inability to fix the attention, and sitting with heads on the desks. Their distress is evident and no good work is accomplished. The teachers are almost unanimous in their desire for a change in the work of this hour. Manual work or directed play seems to offer the most desirable change. An important thing is that the children shall have some choice of play and of the work to be done. In this way only can their interest be aroused.

In the fall and spring months the schools with good yard accommodations could conduct these exercises out of doors. The introduction of gardens, already in use in some schools of higher grades, would offer most attractive work for the older ones of these primary grades. Some simple gymnastic apparatus, as swings, balancing boards, together with the introduction of games requiring the co-operation of several children would be valuable. Those more familiar with manual training could suggest work suitable for children of this age. In the winter months this work could be carried on in the school buildings. If properly devised and directed it seems to offer valuable training with the minimum of fatigue.

Many of the schools have good play yards, and at present they are used only during the morning recess of twenty minutes. The plan just suggested would make better use of these valuable school assets, and better health of the pupils would follow. But why limit the use of the yards to the school hours? If the children are enjoying the work or the play at the close of the school hour why not let them play on and stop when they want to? It seems far wiser to allow the children

* Read at the Boston Medical Library meeting, Feb. 13, 1907.

to play together in a protected place under competent supervision than on the streets. Let the yards be open all day and on holidays. The educative value of work and directed play is great, and when conducted out of doors is of decided benefit to the physical welfare of the children.

For schools with no yard accommodations use could be made of the public playgrounds. The work or play must be more or less directed by competent teachers, whether in the school yards or in public playgrounds, and to accomplish this the playgrounds would have to be under the charge of the school committee.

THE MEDICAL INSPECTION OF SCHOOLS.

The physical welfare of the children is looked after by a corps of physicians, whose duty it is to visit the schools daily and examine any pupils considered by the teachers to need the physician's services. No special room is provided for this examination. The inspector visits the rooms only on special request. The children selected for examination are sent to him when he calls. The examination is made and the advice given to the teacher or master, who notifies the parents, if requested to do so, of the diagnosis, and what had best be done. The inspector does not treat the patients.

This is not an inspection by physicians, but by teachers. Yet the medical profession is held responsible. There is a great difference in the attitude of the teachers towards it. In some schools the inspection is good, the teachers being watchful of their children, and anxious to carry out their part of the work. In other schools there is apparent indifference. In one school of three hundred children, there had been no call for the physician's services in three months, and it seems incredible that there were none needing help.

It is impracticable to require a complete physical examination of all the school children. Its value does not seem commensurate with the amount of time and work it would take. The trained observer can find much of value on which to base an opinion of bodily health by close observation of the child. It seems safe and fair to believe that children who look well nourished, have good color and good facial expression, who are alert in body and mind, sitting at their desks, or standing or at play, erect and with every appearance of normal development, must be in satisfactory physical health. Why, then, is a complete physical examination of all the children necessary? I do not believe it is necessary. And the condition of the children as noted by the commission does not seem to call for such an examination.

One of the principal duties of the medical inspection is the detection of the contagious diseases of childhood, especially diphtheria, scarlet fever and measles. Many people believed when the work was begun in 1894, and still believe, that the schools are the great sources of infection for these diseases. A study of the reports of the "Medical Inspection of Schools," published by the Boston Board of Health, is in-

teresting and instructive. Eleven reports are available, the first being issued in 1895, the last one in 1906 for the year 1905. In all the public schools of Boston are approximately 100,000 pupils.

The cases of diphtheria, scarlet fever and measles reported as found in the Public Schools are as follows:

Year.	Diphtheria.	Scarlet Fever.	Measles.
1895	77	28	116
1896	26	8	59
1897	30	31	100
1898	8	16	26
1899	13	5	85
1900	23	23	121
1901	9	9	25
1902	7	2	69
1903	32	29	121
1904	11	10	264
1905	1	9	16

There undoubtedly were other cases not detected, but they were probably few in number, as there has been no epidemic of these diseases during these years. The cases escaping detection might have been found by a more thorough system of inspection. Surely the Boston public schools, at least judging from the reports of the school inspectors during the past eleven years, have not been such marked centers for the spread of these three most serious contagious diseases of childhood as has been supposed. The health reports show that the same conditions prevail with regard to the less severe diseases, as mumps, chicken pox and whooping cough.

The introduction of trained nurses into our schools will greatly increase the efficiency of the inspection, and will obviate the disturbance of an examination of all the pupils. The carrying out of proper treatment will be made possible and the absences from school will be greatly shortened.

A nurse might have three or four schools under her supervision. Her frequent visits to the rooms, conferences with the teachers and inspection of the children would tend to find those showing symptoms of sickness, and these could be referred to the inspector for examination. She could take cultures of all complaining of sore throats and from suspicious nasal discharges. That is, the nurse with her special training and experience in sickness, and the teacher with her intimate acquaintance with the pupils would together find the children showing symptoms of sickness.

The vision and hearing of the children are now being systematically tested by the teachers, under the provisions of a law passed by the legislature in 1906. That a large percentage of children with defective vision will be found, I feel certain. In three schools with an attendance of 1,275 pupils, where a nurse has been in attendance during the past year, over 10% of the children have already been fitted to glasses. These children complained of their eyes, and when the vision of all is tested a much larger percentage will be found with defective vision.

The commission found the children a fairly well nourished lot. Inquiry among the teachers satisfied us that but very few cases of real neglect

existed. Some of the children whom the teachers thought underfed or coming to school without breakfast, on investigation were found to have been provided with food which they did not eat.

The adoption by the school committee of the recommendations made by the commission will add to the already great efficiency of our schools, and will better protect and add to the physical welfare of the children.

SCHOOL HYGIENE.*

BY S. H. DURGIN, M.D.,
Chairman of the Boston Board of Health.

School hygiene as it is and as it ought to be is the part of this evening's discussion assigned to me. Briefly stated, school hygiene in Boston has been promoted in the last few years by several important changes made in the interest of the health and comfort of the school children. This has been accomplished in part by better construction and care of the school buildings and their appurtenances, and in part by the closer observation and care for the physical condition of the school children by the teacher and physician. First in the alterations came the abolishment of the old privy vault, which, by several successive gradations, gave way to the modern open work, individual closet and washbowl. Cesspools have been replaced by direct sewer connections. Light and well ventilated basements, useful as recess playrooms in stormy weather, have taken the place of dark and unventilated basements. The fresh air supply for the schoolrooms, instead of being wholly dependent upon the caprices of weather conditions and unaided shafts in the walls (frequently terminating in the attic), is now secured with well constructed air shafts provided with the necessary artificial power to make them effective. The proper seating of children has been agitated and advanced largely by the medical profession and members of the school committee. Excessive overcrowding has been largely relieved. But while the schoolhouse conditions have been greatly improved, the present situation nevertheless calls for the abandonment of some, extensive alterations in others, the construction of many additional houses, and a more liberal allotment of ground for many already in use. Encouragement may be felt in the fact that we have at the present time a Board of Schoolhouse Commissioners with ample scientific qualifications, valuable experience and needful activity. I believe that under these conditions the best work is likely to be advanced as fast as the means may be provided.

The particular attention now given to the physical condition of the school children was begun in 1894. This has consisted in daily visits made by the medical agents of the Board of Health who examined such children as are selected by the teachers as needing the observation and advice of a physician. Diagnoses are made, cases of infectious disease sent home and the

teacher advised as to what should be done with the other children who are ill. Examinations for evidence of vaccination, and other special inspections for pediculosis, etc., are made from time to time. The medical agents receive from the health office daily bulletins of all infectious diseases reported and have to do with the isolation of the cases in their several districts and the return of all children to school after an absence or a known exposure to infection.

This primary work is not all that was contemplated and provided for in the start, but has served to stimulate and warrant other cities in this country to adopt it and to extend its usefulness far beyond that reached in our own city. Its highest compliment was given a year ago by our state, whose legislature then made the work compulsory throughout the Commonwealth. This work is now to be considerably extended and will embrace much which has not hitherto been included in our requirements.

The medical service to be most effective should be given daily, and if the teachers and the coming school nurse do their best, many times the present number of ill and defective children who are referred to the physician will be found and so referred to him in the future.

The sight and hearing of every child in school is to be tested once in each school year by the teachers, and also examined by the school physician for any other defect which may interfere with his school work.

The inspector will see all cases referred to him by the teacher or nurse, all children who have been absent from school for more than two days, all children returning after a known exposure to infection, all children previously ordered under treatment and showing no evidence of treatment. Cultures will be taken in all cases of sore throats. All cases of acute infectious disease are to be immediately excluded and reported to the Board of Health. All children in whose families an infectious disease exists will be excluded until certified by the medical inspector.

The best results from the medical inspector's work in the schools will be obtained only when nurses are employed to aid the teacher in finding sick and defective children and in securing their treatment in the home or in the dispensary. The services of nurses are fairly assured. The nurses (if secured) will be appointed by the school board, and work in conjunction with the school physician.

Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON.
APHASIA.

IN a recent editorial in this JOURNAL¹ the revolutionary views upon the subject of aphasia recently advanced by Marie were discussed. Since that time, as might naturally be expected,

* Read at the Boston Medical Library meeting, Feb. 13, 1907.

¹ BOST. MED. AND SURG. JOUR., clv, 387, Oct. 4, 1906.