fession of California to-day that the inebriate is locked in already overcrowded asylums for the insane. The first offender should not come before the court at all, but should go before a referee and never have a court appearance. If he will be bound by his parole, very well; if he does not, then the time for court appearance is in order. It has been proved repeatedly that 25 per cent. of these individuals can be restored to normal life if they are only held long enough. Now if 25 per cent. can be rehabilitated, why tie the hands of your hospital services with delirium tremens patients and alcoholic ruins when, as a matter of fact, they can be maintained at a great deal less cost in the open air of the country than under the present plan. If the tax-paying and tax-voting public could have placed before them in plain, straightforward fashion the results of care for cure as elucidated by Dr. Pettey, and the cure and control as shown by the reports of the successfully operated state inebriate hospitals, we would not see much longer delayed this very necessary inebriate legislation.

DR. GEORGE E. PETTEY, Memphis: Some more efficient method of handling inebriates than is now provided for is certainly badly needed. Under our present system a man may waste his income, spend his fortune and pauperize his dependents by alcoholic excess and make himself a nuisance to his family and everyone about him, but so long as he commits no overt criminal act the law does not interfere and neither his family nor the community have any way of reaching or controlling him. We have gone to such extremes in our efforts to safeguard "personal liberty" that the state has lost its right to interfere with the inebriate in time to protect itself and the innocent dependents of such inebriate from the gravest wrongs. This right should be reasserted and freely used. No man should be allowed to destroy his usefulness, his productive powers, and foist himself and his dependents as a charge on the community under the guise of personal liberty. A state farm, to which the inebriate could be committed for treatment and detention and where he would be compelled to expend his energies in a productive enterprise, would, in my judgment, be the ideal way, not only to reform our present generation of inebriates but to prevent inebriety in the future. If men who abuse their personal liberty by going to excess in the use of intoxicants knew that they could be taken in charge and committed to a state farm and required to work for the public instead of themselves, they would be brought to "think upon their ways" before they had lost self-control. The existence of such a provision would furnish the most effective means of preventing the development of inebriety as well as the most practical method of dealing with it where it does exist. Our present method of haling the inebriate before a criminal court and inflicting punishment, which often falls more heavily on his innocent dependents than on himself, is as unreasonable and inefficient as it is unjust.

Energy of Radium.—Attention has repeatedly been drawn to the enormous quantity of energy stored up in radium and its descendants. That in its emanation niton is such that if what it parts with as heat during its disintegration were available, it would be equal to three and a half million times the energy available by the explosion of an equal volume of detonating gas—a mixture of one volume of oxygen with two volumes of hydrogen. The major part of this energy comes, apparently, from the expulsion of particles (that is of atoms of helium) with enormous velocity. It is easy to convey an idea of this magnitude in a form more realizable, by giving a somewhat mechanical turn. Suppose that the energy in a ton of radium could be utilized in thirty years, instead of being evolved at its invariable slow rate of 1,760 years for half-disintegration, it would suffice to propel a ship of 15,000 tons, with engines of 15,000 horsepower, at the rate of 15 knots an hour, for thirty years—practically the lifetime of the ship. To do this actually requires a million and a half tons of coal. It is easily seen that the virtue of the energy of the radium consists in the small weight in which it is contained; in other words, the radium-energy is in an enormously concentrated form.—Sir William Ramsay, President's Address before British Association for the Advancement of Science, 1911.

PREVENTIVE MEDICINE SECTION COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON ADMINISTRATION METHODS OF PHYSICAL EXAMINATION OF SCHOOL CHILDREN*

The committee has confined its report to the discussion of the following:

- I. Object of physical examinations.
- II. Present methods and their results.
- III. Fundamental problems to be considered.
- IV. Specific recommendations.

I. OBJECT OF PHYSICAL EXAMINATIONS

Physical examinations are conducted for the purpose of detecting variations from the normal that interfere with the health, growth and development of the child. The normal educative process is possible only when the physical and mental conditions of the child do not vary too widely from the established standards recognized as the normal. Evidence at hand shows that large numbers of defectives are present in every school.

II. A STUDY OF THE PRESENT METHODS AND RESULTS ACCOMPLISHED

A survey of the available statistics shows that there are relatively few cities of the United States giving complete physical examination of school children, or even sufficiently complete to be of assistance to the teachers to enable them to direct activities of the pupil.

The examinations are at present carried on for the most part by the city boards of education. When the boards of health conduct the examinations little effort is made to detect defects aside from those of sight and hearing. These examinations have also been made by the teachers, nurses, medical inspectors or physical instructors, according to local conditions.

A careful comparison of the result obtained by the various methods of conducting the examinations shows that the greatest benefits are obtained in instances in which a preliminary examination is made in the grammar schools by the teacher and defective or suspicious cases reexamined by trained medical men who devote enough of the school day to this work to be free from interruptions of private practice during these hours, and in the high school, where the examinations are conducted by the physical director, and especially in instances in which the director is medically trained.

The examinations made exclusively by nurses and untrained or uninterested medical inspectors are often incomplete, inaccurate and of slight value, and little information is secured that is of use to the teacher in her education of the child.

III. FUNDAMENTAL PROBLEMS

The committee feels that there are a number of factors with their closely related interests which demand consideration before presenting specific recommendations on methods; these are the city boards of health, the boards of education, the parents, the family physician, the teacher, the pupil and the school physician, and their relation to one another.

The board of health is the organ of the state and has the authority of the law in carrying out its provisions. It deals with diseased conditions and enforces the sanitary standards prescribed by the state. Beyond this it ordinarily has little interest. With the board of education the condition is different. Its function is educative, and to it merely carrying out the provisions of the law is not sufficient. It must provide conditions, physical and mental, that make for the greatest efficiency of the individual. It must remove from the environment of the child factors that interfere with these conditions. This necessitates competent and constant supervision.

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Many families through ignorance or pride object to having their children examined by the school authorities, and feel that their rights are being infringed in this respect. This will not be so if sympathetic cooperation is secured.

Family physicians have protested against the "unnecessary examinations" sometimes not without cause, especially in instances in which unscrupulous examiners are employed.

The family physicians are not all of the regular school. We find in addition eclectics, homeopaths, osteopaths, naturopaths and science healers, with their diversity of interests and training. Their points of view must be respected and their cooperation secured. To the child the examination should be interesting and instructive.

Objection to the teachers conducting the preliminary examinations has been raised on the ground that they have neither training nor time. The teacher's first duty is to the health of the child and her training should be sufficient to enable her to do this work.

The expense necessary in establishing and maintaining a thorough system has been a serious objection. A careful study, however, shows that it is even more expensive to neglect this important work.

IV. SPECIFIC RECOMMENDATIONS

In view of the facts revealed by a study of present conditions, the committee feels that a simple, efficient and uniform standard of methods is desirable.

The committee recommends: That city and county boards of education should secure the services of trained medical inspectors; that these inspectors be sufficient in number to instruct all elementary school teachers in making preliminary physical examinations or health surveys, and thus enable the inspectors to make more thorough supplementary physical examinations when indicated; that city boards of education maintain departments of medical inspection, the heads of such departments to be medically trained men; that the cities be divided into districts with a medical inspector in charge of each district.

That each child be given a physical examination each year, preferably at the beginning.

That this examination be sufficiently thorough to detect defects that interfere, or are liable to interfere, with the health, growth and development of the child, such examinations to include the examination of the eye, ear, mouth, nose, throat, posture, nutrition, mentality and nervous functions; that in all cases showing defects or in which defects are suspected but undetermined, reexaminations be made by trained medical examiners, such reexaminations to include the eye, ear, nose, throat, teeth, heart, lungs, thorax, shoulders, spine, hips, inguinal region, feet, nutrition, mentality and nervous system.

That the preliminary examination or health survey in the elementary schools be made by the teacher or nurse who should be instructed in making these examinations by a trained medical inspector, and in the high schools by the director of physical education, or one of his assistants.

That the supplementary physical examination be made in the elementary schools by the trained medical inspector, and in the high schools by the director of physical education, if he be medically trained; otherwise by the medical inspector; that in cases in which a defect is found the teacher be informed as to its nature and effect on the physical, mental and social development of the child and be instructed in the best methods of overcoming these defects, that a careful record be kept of the results of the preliminary and supplementary examinations, such record to include the dates of the examinations and condition of pupil at that time, and only such other data as would be of future use to the teacher or director.

That these records be kept by the teacher and passed on with the promotion slip as the child advances, a duplicate being retained in the office of the health inspector.

That whenever feasible the physical examination be conducted preferably by examiners who are employed by and are under the direction of the board of education. When this is not feasible the appointee of the board of health should be approved by the board of education.

The committee recommends further:

That a greater effort be made to establish hearty cooperation between the school physician, the teacher, the family physician, the home and the free dispensaries in following up and in securing the correction of physical defects.

Respectfully submitted,

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REPORT OF COMMITTEE ON MEDICAL INSPECTION OF SCHOOLS *

EDUCATIONAL HYGIENE: HEALTH AND DEVELOPMENT SUPERVISION

To the Section on Preventive Medicine, American Medical Association: In response to the invitation of your chairman your committee herewith presents a report for your consideration as to what is or should be the essential and vital work of a department of medical inspection in the public schools, or the equivalent department of educational hygiene, or as the work is termed in California, the department of health and development. This report is submitted as a general plan which of necessity must be modified in different ways so as to form alternative systems which shall meet the needs of local conditions.

Two divisions of this field of work are advisable.

A. *Under the control and direction of boards of education*—that part of the work essential for the intelligent handling of pupils and students throughout their period of educational training; and for the maintenance of hygienic environment and hygienic activity—the field of *educational hygiene*.

B. *Under the control and direction of boards of health*—that part of the field of work concerned with the care and control of contagious and infectious diseases as a part of the field of *public health*.

EDUCATIONAL HYGIENE—UNDER THE CONTROL AND DIRECTION OF BOARDS OF EDUCATION

PURPOSES OF THE WORK

1. The establishment of biennial, annual, and, when necessary, more frequent skilled physical and developmental examinations of pupils and students by a staff of experts. The establishment of initial examination of pupils by the teaching force of the schools, as far as the teaching force is qualified, prior to the skilled examinations by experts.

2. By effective action, based on the data of these examinations, to secure (a) the correction of physical anomalies and thus remove the growth-barriers of children and youths, and (b) whenever possible and practicable, to adjust educational activities to meet the requirements of physical and mental health, growth and development, and thus establish a special field of education for the maintenance of continuous health and development supervision of pupils and students.

3. To maintain a scientific and systematic study of mental retardation and mental deviation of pupils and students by skilled examination, and whenever possible and practicable, by skilled training in special schools.

4. To establish skilled physical and health examinations of candidates for teachers' positions prior to their election to determine vital fitness for their work, and thereafter to maintain continuous supervision of health and efficiency to teachers as related to the work of the schools.

5. (a) To organize and supervise courses of technical instruction in hygiene for pupils, students and teachers, in the means of conservation of physical and mental health, growth and development; in the means of correction and pre-

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at its Sixty-Second Annual Session, held at Los Angeles, June, 1911.