EDUCATION AND CARE OF UNDER-NOURISHED PRE-TUBERCULOUS CHILDREN*

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The present condition of improved health and longevity of the human race has been brought about through education. The great facts on sanitation, prevention and cure, which have been advanced for centuries throughout the world and proven in its scientific laboratories by those engaged in the medical profession, have in late years through public health activities been carried to the people for their protection. Through the medium of the press, the magazines, the lecture platform and the public health officer and nurse knowledge of inestimable value for the prevention of disease and the prolongation of life has been transmitted.

From observations during 17 years in municipal health service and school health administration, I am thoroughly convinced that while the education of the adult public has unquestionably borne fruit, it is through the channel of the impressionable age of childhood that we must look for greater achievement and results.

As we recognize the fact that systematic training of our mental faculties is almost absolutely necessary to fit us for life, so we must understand fully that intensive health education is equally necessary. The present limited information received by the average student through lack of time and space in the curricula of the educational systems should be greatly enlarged upon. No boy nor girl, no young man nor young woman should be turned out into the world to assume responsibilities without having received a health education, being graduated from the simplest lessons in cleanliness during the kindergarten age, to the sound knowledge of civic and state sanitary laws, housing, nutrition, and social hygiene acquired during high school or college life. This knowledge should be imparted to them through lectures by trained hygienists—hygienists with not only a theoretical but a practical education as well.

Preschool clinics invaluable

There should be a more general use of school buildings for holding clinics. The preschool clinic conducted by the school physicians and nurses is invaluable both to the public and to the school system, and should be entirely a part of the school’s responsibilities. At these clinics the mistakes of improper nutrition, defective heart conditions brought about by lack of rest and proper care following infectious and contagious diseases, the dangers from results of improper housing, environment and contact with tuberculous subjects, may be detected and referred to a physician or clinic. Too often these defects do not come under the observation of school officials for correction until a child has become a burden to the taxpayer by entering school unfit.

As education is the foundation on which must be built the prevention of tuberculosis, no city of 50,000 population or over should be without its all-year residential school or preventorium, supported wholly by the school district, or, if the financial conditions of the school district do not

*Read before the Public Health Administration Section of the American Public Health Association at the Fifty-fourth Annual Meeting at St. Louis, Mo., October 21, 1925.
permit, then the burden of expense should be shared by philanthropic agencies. One only has to observe the percentage of underweights in our public schools, as shown by the reports of teachers and nurses, to substantiate this assertion and to emphasize the fact until this coming generation, at least, has been educated to respect the value of fresh air, sunshine, and nutrition, it will be our duty to establish throughout the school systems higher class and more thorough health education among the teaching staff, increased provision for more supervised cafeterias and lunch rooms, more open air school rooms and summer camps (especially is the latter necessary in congested cities) and more residential all-year schools. All-year studies are in no way detrimental, but they are advantageous and advisable if we are to bring contentment through occupation, to give the child full value during its school life, and to prevent an economic loss to the taxpayer.

RESIDENTIAL SCHOOL AN ECONOMIC INSTITUTION

While housing conditions, homes lacking sunshine and fresh air have been responsible for many tuberculous cases, too many victims have been neglected by local authorities for fear of stamping the unfortunate ones as tuberculous. Quarantine rules and instructions in sanitation laid down by the visiting physician and nurse have been disregarded by patient and family. Added to this is the problem of large families in many of these homes, making it doubly difficult to supply proper nutrition, and consequently these little ones are forced into school totally unfit to take up the task of education. Finally, in adult life after a losing fight, they fill our sanatoria at a large expense to the taxpayer. It is for the removal of children from contact in these homes that the residential school is invaluable.

It is true, as emphasized by a number of physicians, that it is frequently im-
possible to detect the early symptoms of tuberculosis in the child. Here is a child otherwise apparently healthy, presenting a precarious appetite, with a record of decided underweight and fatigue and possibly a history of recovery from influenza, grippe, or some contagious disease, and unable to keep up mentally or physically with his playmates, but despite all these facts he is not regarded as pre-tubercul-
ous. I am strongly of the belief that these children, while not presenting clinical evidences of tuberculosis (having first removed all physical defects), should be treated as such. Especially would I be on my guard to observe carefully over a period of months any rise of temperature.

I have in mind a picture familiar to you who are engaged in school hygiene work—a group of pupils entered in the open air room of one of our schools, who have an afternoon rise of temperature and pulse and whose decrease in weight ranges from 10 to 20 per cent. Clinical findings at present are negative, although they all give evidence of being fatigued in the afternoon following the recess period.

Many school systems have made provision for this type of child in their open air rooms, but very few have provided further means for more permanent results. In most instances such children, having the advantage of the open air rooms and nourishing food provided during the few school hours, are thrown back into homes of insanitary surroundings and lack of proper nutrition where, through ignorance and economic conditions, a great deal of that which was gained is lost during the larger percentage of remaining hours of the day and night. School systems in general have felt that their responsibility ceases when the child leaves the school building and grounds and that the provision for safeguarding the health of such children rests upon other agencies. I cannot agree with school authorities in this respect, citing as my reasons that vocational schools and
schools for mental defectives are now a part of many school systems, but because of the character of his defect this particular type of subnormal for which these schools should be conducted requires day and night housing and all-year studies to accomplish the education to which he is entitled.

I am sure that if the taxpayer could be shown the advantage of having these pre-tuberculous children cared for in their early years in this comparatively economical manner, he would readily cooperate in establishing residential schools.

**TYPES OF PREVENTORIA**

The preventoria erected by the Rotarians of Canandaigua, New York, at a cost of $7000 and accommodating 30 children demonstrates my point in economical structure. In Ramsey County, Minnesota, there is also a similar institution ideally located and conducted in a very efficient and economic manner. The Day and Night Camp situated in the progressive city of which we are the guests to-day, providing for the care and education of undernourished children and for the day and night residence of young women of an undernourished pre-tuberculous type, is supported, I understand, jointly by the anti-tubercular society and the educational system. I am sure the advantages and gratifying reports obtained from the support of this camp remain unquestionable and show conclusively what can be done in an economical way commensurate with results.

In presenting the “Mother Goose Village” suggested for the school district of St. Joseph, Missouri, I have attempted to house those children who are undernourished, underweight and pre-tuberculous in cottages thereby eliminating all possible institutional atmosphere, so prevalent to-day in many of our institutions under the mantle of economy, but tending to unfit them for a return to simple home conditions. I feel that the economy, if there be any, in favor of the “institution” is far outweighed by the results achieved in the cottage plan.

It is on the great importance of early training that I base my claims for the superiority of the cottage plan of preventoria. This plan embodies all the good points of the usual institution, and offers in addition an opportunity to teach
Light and Health

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Light is defined briefly as a series of waves in the cosmic ether which travel at the tremendous rate of some 300,000 kilometers per second, those of certain (relatively short) lengths exciting the retina to appreciation. However, visible rays constitute an insignificant part of the whole. Beginning with the long waves at the "left" of the spectrum, measuring from hundreds of meters in length down to 60,000 millimicrons (μμ), and including the Hertzian waves utilized in radio-telegraphy, we come to the infra-red or "dark heat rays" which merge into visible rays at lengths of about 760.

The infra-red waves (detected by a thermometric arrangement) have a warming effect upon the skin and to some extent upon the subcutaneous tissues. Such warming effect simulates that of heat as used in general therapeutics but is without specific chemical or "biological" effects.