

happy emotions at the loved familiar tones ; or they shall convey to the Throne of Grace the praise and thanksgiving of humble, worshipping souls.

Pestalozzi has symbolized the undeveloped human mind by a " seed planted near fertilizing waters." Shall we image the fully-developed human mind by a perfect tree, watered by the River of Life, growing by the Throne of God—the Immortal Amaranth hung with the blossoms and fruitage of a noble character ?

## PHYSICAL EDUCATION AND ITS PRACTICAL INTRODUCTION INTO SCHOOLS.

A PAPER READ BEFORE THE TEACHERS' ASSOCIATION OF ENGLAND, BY DR. ROTH, JAN. 15, 1880.

As the subject on which I have to address you is a very large one, and the time allotted to me very short, I can only give you a bird's-eye view of this important and much-neglected branch of education.

People having but a superficial knowledge of a thorough education still believe that they can separate mind from body, and that they can develop our physical faculties without our intellectual ones ; they forget that the mind and soul have a physical basis, and that there is but one education.

No man can have his mind well trained without a good physique ; no intellectual education can take place without a previous physical education of the senses, and moral training can only follow the intellectual, based on the physical.

Education is the harmonious development of all bodily, mental, and moral faculties, for the purpose of contributing to our own and our fellow-creatures' happiness, and of enabling the next generation still more to improve their successors. Education should be progressive ; the future generation should be more improved, and brought nearer to the possible perfection of our natures. The development of our bodily faculties on scientific principles through the intellect is called scientific physical education, and this is the science which considers man an inseparable unity, and does not admit partial development of the body or of its single parts, without a simultaneous harmonious development of the mind.

In order to develop our physical faculties to the highest standard, the body is to be placed in the most favorable circumstances affecting its growth and development ; all the influences which in any way retard or interfere with its natural development must be removed—the science which teaches us what is useful and injurious to the body is called hygiene, or science of health. We call school hygiene that part of this science which relates to the growing human body during the time of school, college, or university education ; in this case all arrangements connected with the school-building—the school-room, its ventilation, lighting, and warming, the construction of windows, doors, benches, forms, seats, and all the necessary accessories—must be in accordance with sanitary rules. Another part of school hygiene concerns the teacher, who, before his admission as public teacher, should be carefully examined whether his intellect and physique have a predisposition to any disease, or to break down under the burden of his future heavy duties. One of the most important qualities of a teacher is to be healthy, strong, and to know how to preserve his own health—otherwise, he is unable to preserve the health of his pupils. Every teacher should, therefore, learn in the training college the elements of personal and school hygiene ; he should know the injurious effects of bad air, light, food and drink, tight clothing, bad boots, the neglect of cleanliness, bad positions during the various occupations of the pupils, and of the danger of infectious diseases being brought to and communicated in schools—in fact, the teacher must

know how to avoid whatever interferes with his own and his pupils' health.

School hygiene refers also to the pupils, who should be daily examined as to the cleanliness and tidiness of the head, face, hands, body, dress, and shoes, and further as to any symptom of ringworm, inflammation of the eyes, sore throat, cough, fever, &c. The ignorance of hygiene prevails not only among the poor and working classes, but also in the middle and higher classes. A short time ago I had a letter from an intelligent governess knowing the value of health, in which she mentions how all her endeavors for teaching her pupils the bad effects of tight lacing, and intemperance in eating and drinking, &c., are all neutralized by the parents' ignorance of hygiene, which depends upon careful attention to apparently small things, and which should be taught in schools. As long as medical inspectors are not appointed, as in Paris, Boston, and other places, it is still more important for the teacher to take the place of the inspector.

While preparing my notes for this address I had a letter from Dr. Janssen, the Chief Inspector of the Sanitary Service in the city of Brussels, in which he gives an account of the medical inspection of all infant, primary, secondary and higher schools, which are visited once a week. He speaks of the popular courses on health given to the boys' and girls' schools by the medical inspectors, and of the preventive treatment of very weak children, and of such as are predisposed to constitutional diseases, so frequent in large towns. The doctor also mentions that the hygiene and care of the pupils' teeth is not neglected ; a special dentist is employed for this purpose. At the beginning of the school year every pupil is medically examined, and if weak, or constitutionally ill, placed under treatment. At the end of the year the result of the treatment is registered in the presence of the teacher and a second medical man. I am sorry not to have time to enter into the details of the Brussels sanitary school-work due to Dr. Janssen's energy.

In London, the richest city in the world, nobody thinks of the necessity of a medical inspector of schools ; but instead of preventing children from being ill, we are constantly begging and collecting money for children's hospitals and orthopædic institutions. Hygiene is an essential and indispensable part of scientific physical education. The school must be made use of, for imparting the knowledge of popular and practical hygiene. By choosing the human body and its single parts, as well as the functions of the body, as object-lessons, illustrated by suitable diagrams, an intelligent teacher will make the subject of health very interesting, even to children. With few exceptions, the practical hygienic part of physical education has made very little progress, and everywhere, even on the continent, much is still to be desired in this respect.

To prove how much the hygienic ignorance of the public costs, just look at the columns of advertisements of patent medicines, pills, ointments, lentil meal (under the name of "Revalenta Arabica"), etc., which cure and prevent all diseases ; the ignorant public pays hundreds of thousands for the advertisements, and still more for the advertised drugs. There is no doubt that the daily and periodical press, with the influential power it possesses, contributes through these advertisements to the preservation of prejudice and ignorance among all classes, and especially among those unacquainted with the practical knowledge of preserving health. As long as the leading journals consent to admit the advertisements of quack and patent medicines, magnetic and other contrivances, and of liver or stomach pads, the wonderful curative powers of which are certified so many thousand times in the daily and weekly papers, there is only one remedy for counteracting the injurious and expensive effects of such advertisements—namely, to teach children in school what is good and what is bad for their body and health. I have no time to enter