

air is a hard prejudice to overcome. It will yet be some generations before it is generally recognized that close shut houses and consequent lack of pure air is the cause of much needless suffering and of nearly all the consumption in our midst. In England, notwithstanding climatic difficulties the open air treatment is being carried out in many institutions and with such marked success that it has become the only recognized method of dealing with the disease. Here in Canada, with less crowded population, more sunshine, and drier air, we are realizing the urgent need of a hospital for consumptives to check the spread of the disease, which, as far as nature is concerned, need never have been known in the Dominion. It is an undoubted fact, that if the disease is not actually contracted at school, the delicacy of constitution which render it susceptible to infection is begun in many cases in stuffy classrooms. This circumstance is more the fault of the parents than the teachers. It is possible, however, to keep the school ventilated without incurring much trouble with ignorant parents, and every principal and teacher who realizes that health is of far more consequence to the nation than mental accomplishments will see to it that the children under his or her care do not suffer from vitiated air while under the school roof. I propose to deal with this subject in two parts: 1. The Physiology or Theory of Respiration. 2. The Practice of Ventilation as Applied to Schools.

THE PHYSIOLOGY OF RESPIRATION.

It has been proved possible for the human body to exist without food for a few weeks, and for a few days without drink, but no notoriety hunter has yet attempted to win fame by abstaining from air. Five minutes' experiment of that sort would suffice to carry him beyond the possibility of benefiting by his exhibition. Asphyxia and death would be his only reward.

The function of respiration is the most vital and important of all, and the organs which carry it on are wonderfully constituted and protected for their work. The lungs and heart are situated in the thorax, a bony and muscular enclosure with the spine at the back, the sternum or breast bone in front, and the ribs with their double coats of muscle uniting the two. The function of the heart is to distribute the blood, sending it to the lungs for purification and then pumping it into the main channels or arteries for distribution through the system. The lungs consist of the closed, dilated ends (air cells) of myriads of bronchial tubes. In each lung these tubes converge into one large bronchus. These bronchi join, forming the trachea or wind-pipe. This communicates with the exterior through the larynx pharynx and nose. The air cells always contain air and dilate more or less with each respiration. Their walls are extremely thin, and on the other side is a close net-work of capillaries. The blood which comes to the lungs after having circulated through the body, is dark in color (venous) and laden with much carbonic acid gas. If