

SCHOOL SANITATION

A Paper Read by D. R. Moore, M. D., Before the Northumberland County Teachers' Institute, at Newcastle, Sept. 29th, 1916

The numbers and the standing of the audience that I have the honor of addressing upon this occasion, naturally tends to admonish me with a sense of my inability to discuss this subject with the thoroughness which its importance demands. I observe in this audience a representation of the good and the wise, and the noble, and the fair, of the county of Northumberland, indeed the cultured element into whose hands have been entrusted the educational interests of the county.

As an aristocracy of learning—and this country may ever know—you teachers are indeed the heirs of all ages. Your curriculum is only an incident in the sum total of human experience. Your geography is an epitome of the struggle, triumphs and disasters of the world's navigators, explorers and travellers covering a period of thousands of years. Your history, "philosophy teaching by example," is an abridged narrative of the acts and conduct of mankind—individuals and nations—since the vanguard of civilization first camped on the plains of Mesopotamia. Your science is a checked record of vigorous intellects occupied in the conception and discovery of grand truths, often evolved in an environment which proscribed the liberty and freedom of the originator as his reward. Your literature, early in the morning of life, tells of struggling mental utterances, seeking expression in hieroglyphics and image inscriptions upon stone, Egyptian papyrus, and what not; Mahomet writing the Koran upon shoulder blades of mutton, as Carlyle tells us, accomplishing the preservation and survival of the exquisite production of the Greek and Roman minds, and everywhere recording the happiest and best thoughts of the happiest and best minds. We indeed know the beginning of little or nothing in this world. The operation of the human mind is a record of perpetual ascension. The interval between the dawn of intelligence in the primitive savage, and the imaginative power of Milton or Shakespeare is measured by successive convulsions in the great family of mankind—indeed, by the whole field of human culture.

Doubtless man's energies were originally, solely of a physical character; when and how the intellectual faculty first became quickened and alive must ever remain a mystery. When the struggle for life first became associated with the struggle for the life of others; when the struggle for life begot selfishness, aggressiveness, and war, and the struggle for the life of others begot unselfishness, sympathy and love, we shall never know. The struggle for life developed courage and strength, characteristics of individualism, and the struggle for the life of others developed sympathy and love, characteristics of altruism. When the first savage mother became roused to her first tender and sympathetic concern for her babe, and for a moment in its helplessness and suffering, forgot herself, and became conscious

of the unutterable impulses of motherhood, when some rising feeling first lessened the cruelty of some brutal act, and a kindly gesture first softened some fierce glare, and a sympathetic gleam first kindled in a savage eye, however long heredity might require to nurse into vigorous life these precious germs of intellectual might, these changes certainly marked the most stupendous transition in the history of our race.

Mankind have not always been tented in comfortable homes of modern architecture. There was a period in his early history, probably 200,000 or 400,000 years ago, when he was little more susceptible to bodily ills, than were the other types of his fellow brutes with whom he roamed. Life experienced in the open air; with perhaps resort to the branches of a tree for the safety of a night's sleep, with strenuous efforts to provide necessary food for himself developed a physical vigor and an endurance, which distinguishes this era of primitive man. The occupation of natural caves, induced him later to excavate similar apartments for himself, and cave and cliff dwelling marks an advanced stage in human progress. Next followed the construction of rude wooden huts, later these evolved the tent originally formed of the skins of wild animals, which for the thousands of years, with millions of mankind, has remained a popular and healthful type of habitation. The class of food available required and developed formidable jaws and strong teeth; the hurried rush to evade some savage attack developed vigorous lung and muscular sinewy limbs, requiring an active function of every organ in his physical system.

For ages mankind was denominated by the supreme law of necessity, until reason dawned, and his intellectual faculty quickened, when we find him making terms and compromising with this supreme necessity. At the confluence of the animal and the rational in man he forever surrenders instinct. This feeble intellectual spark illumines the dark trail of his existence, free will now delivers him from the thraldom of tyrannical necessity, whispers to him of indulgences and habits hitherto unknown, establishing within himself baneful and harmful needs unforeshadowed in his constitution.

The epigram that we begin to die as soon as we are born, is profoundly true. It is the knowledge of this truth that has caused the development and the organization of the sanitary and hygienic institutions throughout the civilized world. The status of the sanitary legislation of a nation is, today, regarded as an index of its intelligence. Of the greatest possible importance is the conservation of the public health and the restriction of the rate of mortality.

In Europe a merciless war is destroying millions of the world's best and bravest men; never has the science of war furnished such a schedule of infernal devices for maiming and destroying mankind, as are known to the present war. Never was there known such a triumph over hu-

man mutilation and destruction, as is known to war medicine and surgery of today.

I have been requested to talk with the teachers here assembled, on sanitary and hygienic conditions as applied to the school. What is sanitation for your homes is likewise also for the school. A broad application of these conditions to our environment, whatever it may be, would serve a wider purpose in the common interests of life. As officials in the public service, you would do well to acquaint yourselves with the provisions of the Public Health act of this Province. Its perusal will become an education in matters of daily concern to you especially respecting the Public protection in prevailing diseases of an infective character. You will also find useful hints respecting various foods, and also concerning matters of ventilation. Knowing that elementary chemistry and physiology enter into your curriculum of your professional study I am occasionally surprised to find teachers quite indifferent to the sanitary interests of home. It is imperative that a current of fresh outdoor air should freely circulate through every occupied room in the school or home, especially during the spring, summer and autumn seasons, and in winter ventilation must also supply fresh oxygen necessary to stimulate the languid mental state, probably induced by a vitiated atmosphere, and the inhalation of carbonic acid.

There is a belief with some people that in winter an apartment that is merely cold must necessarily be well aired, when its atmosphere is toxic with carbonic acid. I would advise you, upon some occasion when you observe a number of your pupils exhibiting a sporadic listlessness of drowsy mental languor and apathy, to open your doors and windows, and witness the interesting transformation that results from every tiny red blood cell, bearing its complement of oxygen in the circulation, kindling a lustre in the eye and an energy in the brain and whipping up the hesitating mind to do its best. Moreover sanitation has decreed that at all times, excepting in the winter and during rainy weather ventilation should be continuous. The chief factor in the sanitarium treatment of tuberculosis is that the patient lives in the outdoor air. If pure rich air is capable of reclaiming the pale and emaciated tubercular patient from impending death, and restoring a healthful expression to the face, and invigorating the tottering frame, what health and longevity may we not experience if only we dwell in an atmosphere of pure rich air, to be had reasonably without money and without price?

The popular dread of contracting a cold in a well ventilated apartment, with reasonable precautions, is groundless, and the sanitary relations between the close vitiated atmosphere of ill ventilation and a pure atmosphere, is the difference between the Black Hole in Calcutta and the Strand-Hall we now occupy.

Screen the doors and windows in your private homes, and public buildings allowing the air to circulate throughout and you can report progress in every healthful walk of life.

Next among nature's bountiful and gratuitous supplies is water. Neither animal or vegetable life can exist in the absence of water or moisture. For human requirements drinking water should be free from, or contain only a minimum of organic matter. It may contain a considerable percentage of inorganic substance, and not be necessarily injurious to health. The best spring water may become contaminated through faulty drainage or decaying vegetable matter. Natural spring or drilled wells, usually yield the purest water; the water from rivers and brooks, especially during the summer season, owing to various causes, is liable to be unfit for drinking purposes, unless previously boiled. The water supplied to towns and cities by reservoirs, or other methods should from time to time be carefully examined in order to ascertain the percentage of organic and inorganic matter. This information can be effectively obtained, and without cost by forwarding the specimen to the Federal analyst at Ottawa. Boiling suspected water destroys any infection it may contain. However, the process of boiling normal water destroys all microscopic life in the water, and it is known that certain infusoria contained in water are friendly and advantageous to the human economy. Especially may water become the vehicle for the diffusion of typhoid, scarlatinal and diphtheritic infec-

tion; in typhoid fever the infection is usually taken into the system either in food or drink. Water intended for drinking purposes in public localities should be contained in closely covered tanks of suitable material, supplied with automatic faucets at the bottom, and individual drinking cups. In large cities this provision is imperative, and possesses a great sanitary value. The covered tank with faucet and an ordinary enamel drinking cup certainly marks a great advantage over the old method of dipping each cupful out of an open pail. In the near future when prohibition seems likely to drive mankind to drinking only water, these details should be considered. "Old things shall then have passed away and all things become new." No treatise on sanitation can today be considered complete that omits mention of the ubiquitous fly. Only a few years ago, children were taught by the school text books that they "Must not kill a little fly 'Tis an act of cruelty." Medical science, ever ready to enhance the interests of mankind by research and discovery, has within the past two decades realized undreamed of triumphs through patient and diligent use of the microscope.

The marvellous revelations of this instrument, have, in the realm of medicine and surgery, heralded the proclamation of the gospel of man's redemption of man. "While reverence and gratitude are reckoned among the attributes of mankind, the memory of Louis Pasteur and Robert Koch shall be enshrined in the memory of posterity. Not only in the domain of medicine were the researches of this brilliant and resourceful Frenchman astonishing and vigorous, but also in the silkworm industry, and grape production, he won imperishable fame, and by which those industries have been conserved to the extent of hundreds of millions of francs.

About the time that Pasteur's fame was at its zenith, Robert Koch, a health officer in a small German town, commanded the attention of the medical world by demonstrating the causative relation of tubercle bacillus to the tubercular disease. He was also successful in the production of a tubercular serum, which will undoubtedly, be exploited in the effective treatment of tubercular consumption. Koch's service to mankind in the investigation and discovery of other diseases was no less distinguished, posterity becoming his acknowledged debtor the world over. Some one has appropriately summed up in the following lines certain revelations of the microscope: (Continued on page 7)

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