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Stress Pertinent Facts in Health Teaching

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STRESS PERTINENT FACTS IN HEALTH TEACHING

Hygiene

In the past, much of the health information which high school pupils acquired was handed down to them traditionally. They listened to what their elders had to say and seldom questioned the validity of it. Assertions to the effect that a buckeye carried in one's pocket would prevent rheumatism; that a piece of salt fat pork bound about the neck would counteract diphtheria; or that some malodorous substances would, if breathed, ward off certain communicable diseases were considered as truths and were passed on to the next generation. Since health is now taught in our high schools by teachers adequately prepared, such traditional material is fast giving way to facts.

The teacher of health topics must know what subject matter to stress and how to present it. She must choose topics for discussion which are pertinent to the health of the pupils if she wishes to arouse and hold their interest.

The relation of health to gas poisoning will serve as an example. Instead of teaching the supposedly terrible effects of carbon dioxide in the air we breathe, the up-to-date teacher should help the pupils to collect information concerning the danger of breathing air contaminated with carbon monoxide. Such a topic would be significant because carbon monoxide is impairing health and even taking a large number of lives each year. The Chicago Tribune (Nov. 4, 1928) stated that deaths from carbon monoxide had averaged one a week in Chicago during the year. Feeling that a warning should be given, the Iowa Health Commissioner devoted the issue of Nov. 21, 1928, of the Weekly Health Message of the Iowa State Department of Health to the consideration of "Carbon Monoxide Poisoning in the Home". A discussion of this topic with the class would now be timely since cold weather means closed doors and windows and poor circulation of air. Such conditions for the next three or four months are certain to increase the mortality and morbidity rates from carbon monoxide poisoning.

Science has found that carbon monoxide is a deadly gas, colorless, odorless, and tasteless, and hence one may be overcome by it before he is aware of its presence. It is the product of the incomplete burning of most fuels, due to insufficient oxygen. Among its common sources are the exhaust from automobiles; heaters, such as certain types used in autos and bathrooms; leaky stoves and furnaces; and gas stoves without flue connections. Danger from this gas can usually be prevented by being sure that burning fuel has enough oxygen for complete combustion and that there is sufficient circulation of air for diluting the gas in closed places where it might be present, as in inclosed cars, garages, and work rooms.

If one inhales air containing several per cent of carbon monoxide the result is acute poisoning and even death. It poisons by combining with the hemoglobin of the red blood cells in the lungs so that they cannot carry oxygen. The individual then suffers from oxygen starvation. Although acute prostration or unconsciousness sometimes appears without warning there are usually certain symptoms of poisoning such as an indefinite feeling of illness accompanied by throbbing of the blood vessels, a burning sensation in the face, a sudden severe headache with dizziness and nervousness, or a feeling of drowsiness. If such symptoms should develop under conditions where carbon monoxide could be a possible cause, the victim should seek fresh air at once. Sometimes the gas is inhaled in very small amounts but over a long period. The person then suffers from chronic poisoning and may have well-defined symptoms of ill health, such as nausea, headaches, palpitation of the heart, dizziness, lack of appetite, anemia, or general fatigue. Changes in the mental state may also occur, as loss of will power, lack of decision, restlessness, irritability, and insomnia. Any person having such disturbances as these should consult his physician. If some one is found apparently suffering from gas poisoning, he should be taken immediately into the open air and artificial

respiration administered as for a case of suffocation, until medical help arrives. Do not delay in calling a physician.

The ingenious teacher should not merely lecture to her pupils on this subject. They will benefit more if they help to collect the information. She must not neglect the use of such devices as the following as an aid to interest: Assign the class recent magazine articles on carbon monoxide. Start a clipping file of articles pertaining to it from the local papers. Have oral or written reports on various phases of the subject. Debate the question: Resolved that all exhaust pipes on automobiles should extend to the top and rear of the car. Require the pupils to compile a list of safety-first rules for the prevention of accidents from this gas. Have a demonstration on the administration of first aid for carbon monoxide poisoning.

If high school pupils become really interested in such worth-while health topics as the one given here, they will realize their lack of authentic information on how to maintain or improve their health and should become ardent seekers of knowledge concerning such matters.

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SOMETHING FROM NOTHING

Physics

Matter made while you wait—hydrogen, helium, oxygen, iron or what will you have? No, it has not quite come to this! But the time-honored law of conservation which states that matter is neither destructible nor creatable is no longer accepted as unquestionably and universally true.

The first doubt was cast upon this law about thirty years ago, when it was found that the electrons which constitute the current in a Geissler or Plucker tube do not have a definite and invariable mass. Their mass was found to increase with increasing velocity, and since the velocity of these electrons depends upon the degree of evacuation of the tube and the voltage impressed upon it, this added mass is, within limits, under the control of the experimenter. He can create matter at will.

But it must not be supposed that by speeding up electrons one can create any kind of matter whatsoever or in any amount. Neither real estate nor pocket money can be obtained in this way. It is only the electronic mass that is increased and this to only a small degree. The speeds attainable in the tube are far too small to enable one to augment this mass by more than a few per cent. Electrons emitted spontaneously by radium and other radioactive materials are much swifter, in some cases attaining a speed almost as great as that of light. The swiftest of these electrons have their masses increased by several hundred per cent.

In the swift movement of electrons, then, there is an apparent creation of mass, due merely to the expenditure of energy in producing the motion. But it is not a mass that persists. According to the relativity theory, the increase in the mass of a moving electron is not a creation, but is due to the transformation of an equivalent amount of energy into inert matter, which in turn is reconverted into energy when the electron is stopped. It is now believed that this conversion of matter into energy is possible in other realms, that in fact it is going on continuously and at a stupendous rate in the sun and other stars. The various other hypotheses that have been advanced to account for the energy radiated by these bodies have been abandoned for the reason that the amounts available from the assigned causes are far too small.

If the sun is actually converting some of its own mass into radiant energy, the amount available per second or per day depends only on the rate at which the transformation takes place. According to the theory of relativity, in order to supply from this source alone the amount of energy the sun is known to emit, it would be necessary to convert 4,500,000 tons of its own mass each second into radiant energy. This energy is broadcast to the universe without possibility of the return of more than an infinitesimal fraction. Will not the sun soon be completely dispersed, like a drop of water on a hot stove? No doubt in future ages its mass will be far smaller than now and its temperature much lower. But even at this stupendous rate of loss,