

cent, rarefy, rueful, supersede, vicissitude, mortise, contemptible, niche, turbulent, superficies, heinous, coerce, billiards, bilious, parole, control, unroll, patrol, toll, foal, mole, sole, stroll, soul, bowl, knoll, cajole, bole (fine clay), hole, coal, condole, boll (a pod), goal, poll, roll, scroll, shoal, stole, tole (to allure), sieve, siege, bald, eels, oust, quoin, soot, giat, jeer, ignitable, irresistible, discernible, susceptible, incorrigible, indispensable, allegeable, remediable, caterpillar, innuendoes, triphthong, leisurely, distillery, reciprocity, militia, fagot, inseparable, assafoetida, erysipelas, cupfuls, nucleus, manœuvre, rescinded, hymeneal, ecstasy, cornucopia, nauseous, serenade, scandalous, pinnacle, penurious, pleurisy, pluriology, varioloid, vaccinate, victuals, porridge, extol, carol, loll.

IV. Papers on Natural and Physical Science.

1. THE NATURAL SCIENCES IN COMMON SCHOOLS.

In the fast age in which we live, when new plans in every department of life find ready advocates, we often fail to discriminate between novelty and improvement. Not many years ago the most essential qualifications of the school-room were to read, write, cipher and *make pens*. But many now, as we believe, quite in advance of the age, insist that in addition to these branches, music, painting, and the whole circle of natural science should find a place in our common schools. But this opinion is advocated chiefly by those who have had little or no practical experience, and no argument could better convince them of its utter impracticability than an attempt to reduce their system to practice. No new theory should be adopted because it is new, and yet we should, of course, accept whatever is known to be an improvement.

The great object in teaching is not to crowd the mind with as many facts as possible, but to educate, to lead forth and strengthen the mental powers, by presenting objects that will awaken thought.

It must be confessed that many of our text-books are prepared with little reference to this prime object of study, and teachers, too, are apt to feel that their work is completed when the last lesson is recited. The teacher's mind should be well stored with knowledge derived from every department of science. There are opportunities constantly recurring when an explanation or anecdote, suggested by some topic under consideration, will awaken an interest which could with difficulty be secured in any other way.

Geology, mineralogy and astronomy afford an inexhaustible source from which a skilful teacher can draw at pleasure. The unreflecting school-boy looks upon the stones as fit only for wall or pavement, but in the light of science he reads in them the history of the earth indelibly written in solid rock. The twinkling stars, made, as he thinks, only to give light when there is no moon, become worlds like our own, perchance, but infinite in number and distance; and as he extends his imagination to grasp what lies beyond our vision, he is enabled to form some conception of the infinite and eternal.

Geography may be made doubly interesting, if among its dry questions some brief description be given of the customs, manners, language, or general characteristics of the people who inhabit the countries and cities whose crooked names are so formidable to the beginner.

The young and tender mind can be disabused of the superstitious notions so prevalent even in our own age without worrying through the intricate problems of astronomy or committing the dry facts of physical geography.

It may be said that these suggestions savor of superficialness. By no means. We consider the great object of our common schools to be to secure to every scholar a knowledge of the elements or first principles of an education,—the foundation *only* upon which the superstructure is afterwards to be reared. Would we have the foundation perfect in every part, we must give it our chief care, yet we should shape every stone with reference to the edifice which is to rest upon it. So in educating the mind, first principles must be established upon a secure basis, while superstitious prejudices may be removed, and by simple means direction given to the thoughts which will have an important bearing upon the future development of mind.—H. M. in *Rhode Island Schoolmaster*.

2. THE EFFECTS OF CONGELATION UPON WATER.

Dr. Robinet, a member of the Academy of Medicine, Paris, has published an account of experiments conducted by him to test the effects of congelation upon drinking-water. It is well known that the ice which is formed in the sea yields nothing but fresh water, all the salt having been eliminated by congelation. In the northern parts of Europe this property is turned to account for the extraction of salt from sea water; for a large sheet of the latter having been left to freeze, the ice is afterwards cut away, and the unfrozen water left below is so rich in salt as to require very little evaporation

to yield it in a solid state. This property will also serve to analyze wine. Suppose it was required to determine the quantity of water fraudulently added to a certain wine; by exposing it to the action of artificial refrigeration, all the water would be alone and the wine left in its purity. By a similar process, ships at sea, being short of water, might be supplied with this necessary article. We will suppose the temperature of sea water under the tropics to be 30 deg. centigrade. If a quantity be exposed in a vessel to the action of a mixture of sulphate of soda and hydrochloric acid, two very cheap commodities, the temperature of the water will fall to 10 deg. below freezing point. Let it then be exposed to a second mixture of the same kind, generally eight parts of sulphate to five of the acid, and the temperature may be lowered to 17 deg. below freezing point. Congealed water is then obtained free from salt, and may be used with impunity. Dr. Robinet has added a new fact to this theory by showing that the water of springs and rivers loses all its salts by congelation. These salts are chiefly those of lime and magnesia. The water subjected to experiment was that of the lakes of the Bois de Boulogne, the ice of which was found to be entirely free from the above mentioned salts. Such, indeed, is the chemical purity of the water thus obtained, that it may in most instances be substituted for distilled water.

3. THE USE OF ICE.

To drink ice cold liquid at meals retards digestion, chills the body, and has been known to induce the most dangerous internal congestions. On the other hand, ice itself may be taken as freely as possible, not only without injury, but with the most striking advantage in dangerous forms of disease. If broken in sizes of a pea or bean, and swallowed as practicable, without much chewing or crushing between, it will be often efficient in checking various kinds of diarrhoea, and has cured violent cases of Asiatic cholera. A kind of cushion of powdered ice kept to the entire scalp, has allayed inflammation of the brain, and arrested fearful convulsions, induced by too much blood there. Water as cold as ice can make it applied freely to the throat, neck and chest, with a sponge or cloth, very often affords miraculous relief, and if this be followed by drinking copiously of the same ice-cold element, the wetted parts wiped dry, and the child be wrapped up well in the bed-clothes it falls into a delightful and life-giving slumber. All inflammations, external, are promptly subdued by the application of ice or water, because it is converted into steam and rapidly conveys away the extra heat and also diminishes the quantity of blood in the vessels of the part. A piece of ice laid on the wrist, will often arrest violent bleeding at the nose.—*Hall's Journal of Health*.

4. STORMS SUBJECT TO FIXED LAWS.

It is stated that the science of meteorology has been so perfected that every general violent storm can be predicted with almost absolute certainty twenty-four hours in advance, and the information be telegraphed to all parts of the country. In England, the British government have established a department for investigating the subject, by means of which hundreds of lives are annually saved. No great general storm visited the country the past year that was not heralded several hours in advance, and by signals along the coast, sea-men were warned to keep off the shore, or not to venture out of port.

V. Biographical Sketches.

No. 1.—THE MOST REV. ARCHBISHOP HUGHES.

The Most Rev. John Hughes, Archbishop of New York, died in this city on the 3rd inst. Archbishop Hughes was born in Clogher, Tyrone County, Ireland, in 1798, and emigrated to this country at the age of 18. He received his education at the College of Mount St. Mary, Emmetsburg, Md., and was ordained priest, and given charge of a church in Philadelphia in 1825. In 1838 he was consecrated coadjutor of Bishop Dubois of the New York Diocese, and the Bishop being soon after attacked by paralysis, Dr. Hughes was appointed by the Pope Administrator of the Diocese, of which he became Bishop in 1842. In 1850 he was elevated to the dignity of Archbishop. In 1854 the Archbishop visited Rome and took part in the promulgation of the doctrine of the Immaculate Conception, about which he had been previously consulted as the leading Catholic Prelate of this country. In 1861 he again visited Europe, as is generally understood, by request of the Secretary of State, with whom he had for many years been on friendly terms. He was well received in France, where he spent most of the time during his absence, and his labors while abroad are thought to have largely contributed to a better understanding of the merits of the question between the North and South, especially among that large and