III. Papers on Practical Education.

1. EMULATION AS AN ELEMENT IN EDUCATION.

Besides placing his pupil in a condition to perform the necessary process, the instructor ought to do what in him lies, to determine the pupil's will to the performance. But how is this to be effected? Only by rendering the effort more pleasurable than its omission. But every effort is at first difficult—consequently irksome. The ultimate benefit it promises is dim and remote, while the pupil is often of an age at which present pleasure is more persuasive than future good. The pain of the exertion must, therefore, be overcome by associating with it a still higher pleasure. This can only be effected by enlisting some passion in the cause of improvement. We must awaken emulation, and allow its gratification only through a course of vigorous exertion. Some rigorists, I am aware, would proscribe on moral and religious grounds the employment of the passions in education; but such a view is at once false and dangerous. The affections are the work of God; they are not radically evil; they are given us for useful purposes, and are, therefore, not superfluous. It is their abuse that is alone reprehensible. In truth, however, there is no alternative. In youth, passion is preponderant. There is then a redundant amount of energy which must be expended; and this, if it find not an outlet through one affection, is sure to find it through another. The aim of education is thus to employ for good those impulses which would otherwise be turned to evil. The passions are never neutral; they are either the best allies, or the worst opponents, of improvement. "Man's nature," says Bacon, "runs either to herbs or weeds; therefore let him seasonably water the one, and destroy the other." Without the stimulus of emulation, what can education accomplish? The love of abstract knowledge, and the habit of application are still unformed; and if emulation intervene not, the course by which these are acquired is, from a strenuous and cheerful energy, reduced to an inanimate and dreary effort; and this, too, at an age when pleasure is all-powerful, and impulse predominant over reason. The result is manifest.—*Sir William Hamilton's Lectures.*

2. CHEMISTRY IN COMMON SCHOOLS.

It will be admitted, perhaps, that at least all *elementary* branches of knowledge should be included in the studies of the Public schools; and that all specialties, which pertain to the 'professions', and to particular arts and callings, should be confined to private schools and colleges, supported by the parties interested.

What studies, then, are elementary; and what are the foundations upon which all useful knowledge must depend? They appear to be nearly as follows:

(1.) The mother tongue; because it is the chief means of communicating and receiving all knowledge from one to another.

(2.) Reading and writing; which are hardly less important, and for the same reasons.

(3.) Arithmetic; because numbers and their relations constitute the means by which the intellect solves a large proportion of all the problems presented to it, and because the business relations of life are nearly all determined and recorded by numbers.

(4.) The training and enlightenment of the religious and moral sentiments; for all mankind alike require their just influence.

(5.) The development and training of the physical system, and a knowledge of the physiological laws which pertain to hygiene and physical education; for bodily health is essential to all labor—moral, intellectual, and physical.

(6.) Graphics, or the elements of drawing, sketching, platting, mapping, designing, illustrating, etc.; because this art is of almost universal usefulness.

(7.) Elements of natural Philosophy;

(8.) Elements of Chemistry;—which last two are of constant use in all departments of labor.

(9.) Vocal Music; which is not only a most pleasing and healthful recreation, but also a prime agent in the social regimen of the school.

There still remain Geography, and several other branches which all should know, but which are only more strictly essential in the more literary departments of industry.

Most of the foregoing branches are now taught in the public schools; but in how many is Natural Philosophy taught? Surely not in one of a thousand; and Chemistry is not taught in one school in ten thousand! And yet these branches are no less elementary than reading, writing, and arithmetic. All men and women are constantly using some form of lever, screw, wedge, inclined plane, pulley, wheel-and-axle; and all are living in the midst of 'applied' chemistry. No labor, or art, or trade, or occupation, can get out of their influence; and, like every thing else, they become subservient to our use in proportion as we understand and apply their laws.

But Natural Philosophy is already beginning to find its way into the free schools—thanks to the School Apparatus—and promises soon to be better appreciated as an *elementary* branch. But we all live amid as many changes in the chemical *composition* and *nature* of bodies as of the mechanical relations of bodies themselves; and Chemistry is therefore equally as elementary as Physics. Why not, then make this most practical science a prime element in our common schools?

Of course, it is not necessary to make every pupil a thorough analytical chemist, or teach him all of the practical applications of the science to various arts, any more than it is to make navigators, surveyors, or engineers, of all students of Arithmetic or Physics. Elementary Chemistry, like all elements, is exceedingly simple; and, having been once mastered, it furnishes the key to a thousand arts and avocations. And even the technical and symbolic language of the science may be acquired *in a few hours.*

One of the objections which are often urged against the study of Chemistry in common schools is the expense of apparatus, and the tact which is necessary to make successful demonstrations and exhibitions; but though these are important, because that which we *see* is best remembered, they are far from being essential. Blackboard demonstrations answer equally as well as they do in other studies where a diagram or picture is exhibited instead of the things pictured; and no science—not even numbers—is more easily demonstrated on the blackboard than Chemistry. But let Chemistry find its way into any considerable number of our free schools, and some 'apparatus company' will soon supply all that is necessary for more complete demonstration.

But the teachers—where are the teachers to come from? The Normal School will ere long furnish some of these, and, as in other departments of labor, the *supply will be commensurate with the demand.—Illinois Teacher.*

3. INTERCOURSE WITH CHILDREN.

The most essential point in our intercourse with children is to be perfectly true ourselves. Every other interest ought to be sacrificed to that of truth. When we in any way deceive a child, we not only show him a pernicious example—we also lose our own influence over him for ever.

IV. Papers on Physical Geography and Commerce.

1. STATISTICS OF THE UNITED KINGDOM.

The following statistical abstract, compiled from a paper just presented to Parliament refers to the year 1857. The net revenue was £66,056,055, and the expenditure £66,019,958. The total interest and cost of managing the debt, funded and not funded, was £28,683,384; the civil list and civil charges of all kinds amounted to £2,839,325, and the army and navy cost £25,497,249. Taxes to the amount of £10,753,585 were remitted, of which £9,125,000 was due to the reduction of the income tax, and £1,054,637 to the reduction of the tea duties. The gross amount of the capital of the national debt was £805,282,699, of which £770,655,399 is funded, and £25,627,300 unfunded. In 1843 the debt was only £790,576,392, and in 1853 it was as low as £771,335,801. The total value of the imports was £187,646,335. 3,437,357 quarters of wheat, and 5,107,225 quarters of other grain, were imported, against 4,072,833 quarters of wheat in 1856, 2,667,702 in 1855, 3,431,227 in 1854, 4,915,430 in 1853, 3,060,268 in 1851, 3,812,008 in 1852, 3,738,995 in 1850, 3,345,378 in 1840, 2,580,959 in 1848, 2,656,455 in 1847, and 1,432,591 quarters in 1846, the last being the year when Sir Robert Peel finally repealed the Corn Laws. Prussia is the largest exporter of wheat to England, and next Russia and the United States. 969,318,806 lb. of raw cotton were imported (654,758,048 lb. from America), and 129,749,898 lb. of sheep, lamb and alpaca wool. The value of the exports of British and Irish produce and manufactures was £122,155,237, and that of the principal and other articles of foreign and colonial goods exported, £23,353,765. £15,061,500 of gold and bullion and specie were exported (£10,863,818 to France alone), and £18,505,468 of silver bullion and specie. 13,694,107 tons of British and 9,484,685 tons of foreign shipping entered and cleared at ports in the United Kingdom, making together 23,178,792 tons; and 19,071,379 tons of shipping entered and cleared with cargoes only. 1,050 sailing ships of 197,554 tons, and 228 steamers of 52,918 tons were built and registered in the United Kingdom. 18,421 sailing vessels of 3,830,119 tons, and employing 151,434 men, were employed in the home and foreign trades of the kingdom, besides 899 steamers of 331,363 tons, employing 24,953 men, making a grand total of 19,328 vessels, of 4,211,482 tons, employing 176,387 men.