SHORT MEMOIRS OF EMINENT MEN.

With the first number of the Sixth Volume of the *Journal of Education*, we commence a third series of "Short Memoirs of Eminent Men." Those which have already appeared are as follows:—

In the Fourth Volume, under the title of "Systems of Education and their Founders:—

I. John Frederick Oberlin.	IV. Emanuel, Count de Fellenberg.
II. Henry Pestalozzi.	V. Rev. Andrew Bell, D.D.
III. Gustavus Frederick Dinter.	VI. Joseph Lancaster.

In the Fifth Volume:—

I. Homer.	III. Joseph Addison.
II. William Harvey, M.D.	IV. Herodotus.

Our third series commences with the following sketch of WOLLASTON, the distinguished English Chemist and Philosopher, to whom we are indebted for several most interesting discoveries and improvements in science;—among others, for the discovery of the important process by which *Platina* is rendered malleable, for which Wollaston received thirty thousand pounds sterling.

I. WILLIAM HYDE WOLLASTON, M.D.

WILLIAM HYDE WOLLASTON, one of the ablest and most renowned of English chemists and natural philosophers, was born August 6, 1766, and died in December, 1828.

He was the second son of the astronomer, and of Althea Hyde, of Charter-house Square, London. He was one of seventeen children, and was born at East Dereham, a village some sixteen miles from Norwich, on the 6th of August, 1766. After the usual preparatory education, he went to Cambridge, and entered at Caius College, where he made great progress. In several of the sketches published of him, he is said to have been senior wrangler of his year; but this is a mistake, arising out of the fact that a person of the same surname, Mr. Francis Wollaston, of Sidney Sussex College, gained the first place in 1783. Dr. Wollaston did not graduate in arts, but took the degree of M.B. in 1787, and that of M.D. in 1793. He became a fellow of Caius College soon after taking his degree, and continued one till his death. At Cambridge he resided till 1789, and astronomy appears to have been his favorite study there, although there is evidence to show that at this time, as at a later period, he was very catholic in his scientific tastes. He probably inherited a predilection for the study of the heavenly bodies from his father, and it was increased by his intimacy with the late astronomer-royal of Dublin, Dr. Brinkley, now Bishop of Cloyne, and with Mr. Pond, formerly astronomer-royal of Greenwich, with whom he formed a friendship at Cambridge which lasted through life.

In 1789, he settled at Bury St. Edmunds, in Suffolk, and commenced to practise as a physician, but with so little success, probably on account of the peculiar gravity and reserve of his manner, that he soon left the place and removed to London. He succeeded, however, no better in the metropolis. He continued to practice in London till the end of the year 1800, when an accession of fortune determined him to relinquish a profession he never liked, and devote himself wholly to science.

He had no occasion to regret the change even in a pecuniary point of view, the only one in which his abandonment of medicine was likely to have injured him. His process for rendering crude platina malleable, which conferred so great a service on analytical chemistry, is said to have brought him more than thirty thousand pounds, and he is alleged to have made money by several of his minor discoveries and inventions.

His communications to the Royal Society are thirty-nine in number, and, along with his contributions to other scientific journals, refer to a greater variety of topics than those of any other English chemist, not excepting Cavendish. In addition to essays on strictly chemical subjects, they include papers on important questions in astronomy, optics, mechanics, acoustics, mineralogy, crystallography, physiology, pathology, and botany, besides one on a question connected with the fine arts, and several describing mechanical inventions.

Five are on questions of physiology and pathology, and do not admit of popular discussion. The most curious of these is a paper on "Semi-decussation of the optic nerves," and single vision with two eyes. Besides its interest as a scientific essay, it is important as having been occasioned by speculations concerning the cause of a remarkable form of blindness from which Wollaston suffered, during which he saw "only half of every object, the loss of sight being in both eyes towards the left, and of short duration only." This peculiar state of vision proved in the end to have been symptomatic of a disease of the brain, of which he died.

Eight or nine papers are on optics, but our limits will not allow us to discuss them.

Wollaston published two papers on astronomy, one "On a Method of Comparing the Light of the Sun with that of the Fixed Stars," of which we can only give the title; the other is "On the Finite Extent of the Atmosphere," and is one of the most interesting physical essays on record. It was published in January, 1822, in the May preceding which, a transit of Venus over the sun's disc took place. Wollaston was induced in consequence to make observations on this rare and interesting phenomenon. None of the larger observatories were provided with suitable instruments for watching it; but our philosopher, with that singular ingenuity both in devising and in constructing apparatus, which we shall afterwards find to have been one of his great characteristics, succeeded by a few happy contrivances in making a small telescope completely serve his purposes. His special object in watching the passage of Venus, was to ascertain whether or not the sun has an atmosphere like that of the earth. He satisfied himself that it has not, and embodied his results in the paper, the title of which we have given.

It is a very curious attempt to decide a most difficult chemical problem by reference to an astronomical fact. The chemical question is, do the elements of compounds consist of indivisible particles or atoms, or do they not? It is a branch of the great problem which has occupied physics and metaphysics since the dawn of speculation, in vain attempts to decide either way, viz., is matter finitely or infinitely divisible? Our author undertakes to show, not only that this difficulty may be solved, but that in fact it was solved, though no one was aware of it, as early as the discovery of the telescope, and Galileo's first observation of the eclipses of Jupiter's moons.

The paper we are discussing excited great attention among men of science; and for a long period, though few implicitly assented to the validity of the argument, no one appeared able to detect any fallacy in its reasoning.

Beautiful and certain as are the astronomical facts brought to light by Wollaston, they supply no decision of the question of the divisibility of matter. That problem still presents the same two-fold aspect of difficulty which it has ever exhibited. If we affirm that matter is infinitely divisible, we assert the apparent contradiction, that a finite whole contains an infinite number of parts. If, pressed by this difficulty, we seek to prove that the parts are as finite as the whole they make up, we fail in our attempt. We can never exhibit the finite factors of our infinite whole; and the so-called atom always proves as divisible as the mass out of which it was extracted. Finity and infinity must both be believed in; but here, as in other departments of knowledge, we cannot reconcile them.

The greater number of Wollaston's strictly chemical papers, with the exception of those referring to physiology and pathology, are devoted to the exposition of points connected with the chemistry of the metals. He was the discoverer of palladium and rhodium, once interesting only as chemical curiosities, but now finding important uses in the arts. He discovered, also, the identity of columbium and tantalum. He was the first to recognise the existence of metallic titanium in the slags of iron furnaces; and he is the deviser of the important process by which platina is rendered malleable. He published, also, analyses of meteoric iron, and showed that potash exists in sea water.

Among other bodies which the alchemists of the middle ages thought it possible to discover, and accordingly sought after, was a Universal Solvent, or *Alkahest* as they named it. This imaginary fluid was to possess the power of dissolving every substance, whatever its nature, and to reduce all kinds of matter to the liquid form. It does not seem to have occurred to these ingenious dreamers to consider, that what dissolved everything, could be preserved in nothing. Of what shall we construct the vessel in which a fluid is to be kept, which hungers after all things, and can eat its way through adamant as swiftly as water steals through walls of ice? A universal solvent must require an equally universal *non solubile* in which it may be retained for use.

The modern chemist's desire has lain in the opposite direction from that of his alchemical forefather. It is the *non solubile*, not the solvent, that he has sought after, and Wollaston supplied him with that in malleable platina. Long before the close of last century, the chemical analyst found the re-agents he had occasion to make use of, alkahests or universal solvents enough, for the vessels in which he could contain them. For the greater number of purposes, glass and porcelain resist sufficiently the action of even the strongest acids, alkalies, and other powerful solvents. In some cases, however, they are attacked by these, and cannot be employed in accurate analysis. Whenever, moreover, it is necessary to subject bodies to a high temperature along with active re-agents, as, for example, in the fusion of minerals with alkalies, porcelain can seldom be employed, and is often worse than useless.

It was in vain that chemists had recourse to silver and gold, as substitutes for the insufficient clay in the construction of their crucibles. These metals melt at comparatively low temperatures, and before a sufficient heat can be obtained to fuse the more refractory substances enclosed in them, they run into liquids, and the crucible and its contents are lost in a useless slag.

It was at this crisis that Wollaston came forward to put a new weapon