

theory of Huggins is now ascendant. It is the theory of undulation. Light is a subtle ether, pervading all space, and when thrown into a vibratory state occasions vision.

ELECTRICITY.

This branch of physical science is wholly based on experiment. It was known to the ancients only in some natural phenomena. The Greeks were acquainted with the attractive and repulsive powers of amber, the mineral from which electricity takes its name.

In 1720, Stephen Gray made some discoveries. They respected conductors, non-conductors, and insulated bodies. Du Fay, in 1773, added to these discoveries. He regarded electricity as consisting of two kinds, and distinguished these by the names *vitreous* and *resinous*.

The first successful attempt to explain the facts of electricity was made by Dr. Franklin. With him, it took the form of a science, and since his day, has risen to a proud rank through the labours of Coulomb, Volta and Faraday. The *telegraph* is the noblest instance of its application—the invention of Sydney Morse.

MAGNETISM.

Magnetism had its beginning in a knowledge of the loadstone. The Chinese were first acquainted with it. There is no room to doubt that the *compass* was brought from the East.

Gilbert, in the time of Elizabeth, is the first one who attempted to collect the phenomena of magnetism, and classify them. From that time observation has been adding valuable discoveries.

Columbus observed the declination of the needle in his great voyage of discovery. The dip was first noticed by Norma in 1576. Halley attempted to explain the declination. The earth was regarded by him as a magnet. The *diurnal variation* of the needle was discovered in 1772 by Graham. Oersted of Copenhagen discovered the effect of electric currents on the needle, and led the way to electro-magnetism. Faraday has done much for electricity. His discoveries are of the highest order. As a consequence of these inquiries, we now look upon *light*, *electricity*, and *magnetism* as different functions of the same principle. The magnetic poles of the earth and the sublime phenomena of the aurora borealis and australis are owing to electric currents.

CHEMISTRY.

Chemistry proper now claims our notice. Unlike most of the sciences, it sprung directly from delusion and superstition. Its parentage is found in magic.

Freed from this connection, it proffered its aid to medicine, and was accepted. Shortly after this alliance, it began to speculate on the nature of the medicines it assisted in compounding.—These speculations gave it new life. It came forth into public notice, and did good service for miners and artists. The Arabians studied it in the form of Alchemy.

Chemistry, as a science, was unknown to the ancients. It is based strictly on experiments, and has taken its true rank within the last century. Its progress has been a brilliant one, and

is owing to the labours of such men as Davy, Beecher, Black, Cavendish, Dalton, Faraday.

Already it has reached to a high degree of perfection and utility. The four elements of the ancients have been extended to sixty-one, the laws of chemical attraction explained, the nature of substances brought to view by analysis, and the results applied to manufactures, agriculture, and the arts.—*Condensed from Popular Educator.*

FARM ARCHITECTURE.

There can be no greater folly than that exhibited by the farmer in this country, who expends a large sum of money in the erection of a family mansion. In England, and in those countries on the Continent of Europe where the laws of entail, and the accumulation of immense tracts of land in the hands of individuals, ensure the transmission of estates to the remote descendants of the present owner, there may be some excuse for building "Seats," and "Halls," and "Castles" at an immense cost. But in the United States and Canada, there should be no castles, except "castles in the air." We know an instance in the neighbouring State, which proves in a striking manner the folly of attempting to ape, on this side of the Atlantic, where all classes are equal, the extravagance and splendour of the *privileged* classes in Europe. A hereditary landholder, whose estate in broad acres, was very large, took it into his head to build a Mansion. It cost \$100,000! The expense of this structure, and other extravagancies, involved him in difficulty; his rent roll fell off, and getting into law with his tenantry, he was obliged to sell the greater portion of his estate. The "Mansion" that cost \$100,000, did not bring \$50,000, and the purchaser even at that price, was in our opinion, *half* as big a fool as the original owner. The man who sinks an ordinary fortune in a house, throws it away. He may be rich enough to afford the luxury while he lives, but when he comes to divide his property among his children, he discovers the loss. It is not worth half its cost to any of them, and it cannot be sold in all probability for more than a third of its cost to a stranger. Therefore, we conclude that it is folly for the farmer, folly for the merchant, folly for the richest man amongst us to build a *costly* mansion, or miniature castle. The conditions of society, the institutions and