

THE FATHERS OF PHILOSOPHY.—IX.

THEOPHRASTUS.

The impetus which had been given by Aristotle to the classification and orderly study of nature and natural productions, was continued by his friend Theophrastus, or the divine speaker, a name conferred upon him because of his melodious voice and elegant pronunciation. His great work was on the history of plants, and one genus of our own tropical shrubs is named after him (by Linnaeus) the *Theophrasta Americana*. This history of plants was the first work on botany, written with scientific precision, and in it the plants are classified, first, according to their modes of generation; secondly, their localities; thirdly, their size, as trees, shrubs and herbs; and lastly, according to their uses. He mentions the sexes of plants, and, as he had a botanic garden of his own, all his information concerning Grecian plants is still correct, but there are many faults in the descriptions of the foreign ones, and as he probably derived his information upon them from illiterate soldiers in Alexander's army, this is not to be wondered at. In another work he informed the world of the times of sowing the various productions of the vegetable kingdom, the method of preparing the soil for them, the manuring of the ground, and the best manures for the different varieties. Both of these works, although written more than 2,000 years ago, are still valuable to the botanist, and an edition was published as late as 1813, at Oxford, England. A German edition was published more recently at Altona.

He was born about 371 B. C., at Eresus, in the island of Lesbos, and went to Athens while young, to acquire knowledge, and there, while studying under Plato, formed the friendship of Aristotle, and succeeded the latter in the Lyceum, where he had an audience of 2,000 scholars, from all parts of Greece, who were drawn together by his marvelous oratory.

He died B. C. 285, and it is said that the whole population of that learned city followed his remains to the grave, and sincerely mourned the loss of so great a man.

We now pass to the last of our present list, namely to
EPICURUS.

This philosopher wisely taught that the end of all knowledge was to increase the happiness of man, and that knowledge which had not this effect was not worth either the time or trouble of acquiring. He contended that man ought to increase his pleasures and diminish his pains, as much as possible, and to speak vulgarly, he "went the whole animal" for being happy. In physical science he taught that all atoms had an innate and natural tendency to move downwards vertically and obliquely, and these atoms, which were once diffused through space, obeying this law, had come together and formed the world and all the varied phenomena which it presents; it is called "the doctrine of the fortuitous concurrence of atoms." This, of course, is manifestly wrong as we know that the same forces which brought the atoms together would have separated them again, because the forces according to him were always acting in such a way as to produce motion and not, as is true, converging to a center, which produces cohesion.

He was born in 341 B. C., on the island of Samos, but, as his father was an Athenian, he was a citizen of the Grecian city. In his 32d year he established a school at Mitylene, but he remained there only a short time and then went to Lampsacus, where he taught for four years and then returned to Athens (which he had visited in his youth) and established the sect that bears his name. He lived with his pupils in a pleasant garden; their mode of life was frugal and simple, and when he died he left the garden and house to his successor, in order that it might be for the use of his followers so long as the sect existed. His death occurred in his 72d year, 270 B. C.

We have now finished this series of articles on the Fathers of Philosophy, and will conclude with a brief summary of the moral which we should like to be drawn from the study of these great men's lives, namely that physical investigation is one of the highest and most enjoyable pursuits in which the human mind can be engaged, provided that it tends to the well-being and information of the community. This was the stand-point of the ancient philosophers; some modern ones in their folly think the idea very wrong, and that knowledge should really edify nobody except those who need no

edification. These great men, through whose lives we have been strolling, made all nature and the pursuit of its secrets subservient to morals; they were what we call heathens, and had not the light that we possess, but were all sincere, and endeavoring by the light they had to get the precious jewel of truth; we have seen how successful they were in many instances, and how they treasured each truth as they acquired it. They all lived pure and good lives and so made a lasting moral impression upon a corrupt and somewhat licentious age. Indirectly we owe all our knowledge to them, as they first started systematic inquiry, and Thales may be said to be the founder of our commerce, since all navigation is based on the problem he discovered. They were Grand old fellows, and stand like lighthouses of truth in the ocean of historic darkness and error.

WESTERN RAILROADS.

In speaking of the prospects of western railroads, the *Chicago Democrat* remarks that the water routes will take the grain as the cheapest means of transportation; and the agricultural community of debtors must go through the disagreeable process of paying two bushels of wheat for a debt one bushel was to cancel when it was incurred. The railroad system of the West, built upon grain at two dollars per bushel, has now reached a point where its most severe trials commence. The business created by building roads has subsided, and affairs along their lines have been restored to their wonted quiet. Most of the roads have suspended dividends, while a large class have repudiated stocks and bonds alike. By economy pushed so far as to suspend necessary repairs, many roads have paid interest upon their mortgage bonds. Whether the majority can do this for the next year is still a matter of doubt. The whole country is richer in crops than ever was known, but there underlies the whole a mass of debts contracted upon the inflated scale of 1856 and 1857, which requires all the skill of the debtors to manage.

NEW INVENTIONS

IMPROVEMENT IN SCALES.—F. M. Strong and Thos. Ross, of Brandon, Vt., have invented an improvement in weighing-scales of the kind known as the "Union scales," or a combination of platform and counter-scales, the object of which is to obviate the inaccuracy hitherto attending the combination of the two forms of scales by having a certain independent relation between them, and also by having the larger platform so connected with the levers beneath it as to obviate the undue friction hitherto attending the casual movement or displacement of the larger platform. The invention is assigned to John and F. E. Howe, of same place.

PERCUSSION PELLETS.—Jacob Rupertus, of Philadelphia, Pa., has invented an improvement in the construction of percussion pellets for fire-arms, which consists in employing, to enclose the detonating compound, a spherical metal capsule. This kind of capsule affords the same protection to the detonating compound as the cylindrical shell, and possesses the advantage of never failing to be presented to the vent in a proper manner, as is so often the case with the cylindrical pellet, owing to its liability to be turned sideways within the priming-magazine. One-half of this invention is assigned to John Krider & Co., of same place.

SAWING-MACHINE.—This invention relates to that class of sawing-machines which are designed for sawing square stuff direct from the log or timber, and which employ circular saws whose cutting planes are at right angles to each other. The invention consists in having the counter or saw-frame placed within the outer reciprocating frame in such a way as to admit of a vertical adjustment of the former, so that the saws may be adjusted and fed to their work with the greatest facility. There is also a peculiar arrangement of means for operating the saws and giving the log an oblique movement, so that the log may be adjusted to the saws in a manner to prevent all unnecessary friction during the operation of the machine. It is the invention of B. Fulghum, of Richmond, Ind.

IMPROVED METHOD OF SUPPLYING FURNACES WITH HOT AIR.—This inventor arranges a series of flat pipes with two chambers, one at each end of the pipes, so that the pipes radiate from the center like the spokes of a wheel. These chambers are filled with steam from any source, which circulates through the pipes, and so pre-

sents a large amount of heating surface in a small space. The air is drawn through the spaces between these pipes by a fan and pipes, and can be conveyed to any place or chamber it may be desired to heat. This excellent contrivance is the invention of Calvin Fletcher, of Cincinnati, Ohio, and he has assigned it to A. C. Fletcher, of the same place. An English patent has been obtained for this invention.

STEAM-GENERATOR.—The fire-box of this generator is surrounded by a water-space, and from the tops of the fire-box and bottom of the water-space tubes descend into the fire-box, their lower ends being closed and the upper ends being open into the water-space, so that they are continually filled with water. Inside these tubes smaller ones are placed, which are open at both ends, and run nearly to the bottom of the containing-tubes and into the steam-space, above the water in the space surrounding the fire-box. By these means steam is very rapidly generated and quickly passed up the inside tubes, without coming again in contact with the water, thus saving fuel and giving much drier steam. The inventor is Melien Battel, of Albany, N. Y.

MANUFACTURE OF WHITE LEAD.—D. R. Erdmann, of Philadelphia, Pa., has invented an improved apparatus for cleaning and washing white lead, in which it is introduced into a cylinder that rotates in a vat containing water, and both ends of which cylinder are closed by means of a double layer of wire netting with a piece of flannel between them, so that nothing but the very finest particles of pure white lead can escape from the cylinder. The vat is so arranged, by means of a tube which is carried nearly all the way round on the inside of the vat, and near to its top, and from which a number of branches extend down near to the bottom of the same, that the water contained therein is always saturated with a fresh supply of atmospheric air, and that the carbonic acid introduced with the air into the atmosphere greatly facilitates the purifying process.

STONE-DRESSING MACHINE.—In this invention a reciprocating carriage is used, with trip-hammers or picks, arranged and operated so that stones may be very expeditiously dressed and faced by very simple means and by any convenient power. The inventor is H. Chauncy, of Perry, Ga.

PAPER-BAG MACHINE.—This invention consists, firstly, in a novel mode of combining and arranging a system of creasing and lapping mechanism for forming the bottom lap or seam of the bag, whereby the loss of the strips of paper usually cut off to make the bottom seam or lap of the bag is prevented; secondly, it consists in the forming of a lap in the manufacture of a paper bag or bag of other material, by the combination of a creasing-blade with two rolling surfaces without the aid of any stationary edges or other contrivances; and, thirdly, it consists in a certain mode of applying the revolving upper shaft, in combination with the creaser and the apparatus for feeding the bags, to the action of the creaser and lapper shaft. The inventor is F. Wolle, of Philadelphia, Pa., and the patent is re-issued this week.

AGRICULTURAL FAIRS FOR 1859.

UNITED STATES FAIR.	
Exhibition.....	Chicago.....September 12—17.
STATE FAIRS.	
Alabama.....	Montgomery.....November 15—18.
Canada West.....	Kingston.....September 27—30.
California.....	Sacramento.....September 27. Oct. 6.
Georgia.....	Atlanta.....October 24—28.
Illinois.....	Freeport.....September 5—9.
Indiana.....	New Albany.....September 26—30.
Iowa.....	Oskaloosa.....September 27—30.
Kentucky.....	Lexington.....September 13—17.
Maine.....	Augusta.....September 13—17.
Maryland.....	Frederick City.....October 25—28.
Michigan.....	Detroit.....October 4—7.
Missouri.....	St. Louis.....September 26. Oct. 1.
New Hampshire.....	Dover.....October 5—7.
New Jersey.....	Elizabeth.....September 13—16.
New York.....	Albany.....October 4—7.
Ohio.....	Zanesville.....September 20—23.
Pennsylvania.....	Philadelphia.....September 27—30.
Tennessee.....	Nashville.....October 5—7.
Vermont.....	Burlington.....September 13—16.
Wisconsin.....	Milwaukie.....September 26—30.

A DARING FEAT.—Blondin, the celebrated rope-walker, who has passed over the Niagara river so many times of late on a rope stretched from shore to shore, achieved, on the 17th, the wonderful feat of crossing with a man on his back. We did not suppose that two such fools existed on this hemisphere. The idea of such a thing is enough to congeal one's blood.