

# Scientific American.

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY.

At No. 37 Park-row (Park Building), New York.

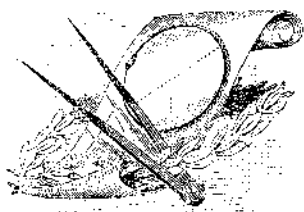
D. MUNN, S. H. WALLIS, A. E. BEACH.

TERMS—Two Dollars per annum.—One Dollar in advance, and the remainder in six months.  
Single copies of the paper are on sale at the office of publication, and at all the periodical stores in the United States and Canada.  
Sampson Low, Son & Co., the American Bookellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the SCIENTIFIC AMERICAN.  
See Prospectus on last page. No Traveling Agents employed.

VOL. I., No. 2.....[NEW SERIES.].....Fifteenth Year.

NEW YORK, SATURDAY, JULY 9, 1859.

## THE FATHERS OF PHILOSOPHY.—II.



NE lash of the whip, one plunge of the spur—or better, one kind word—is enough to start the willing steed to action, and to give free vent to that glorious motion which, to the accomplished rider, produces in him

that centaur-like feeling, and is the height of his joy. So was it with Greece. No sooner had Thales set the example, than physical investigation and subtle reasoning seemed to be the very thing that the Grecian mind had been wanting, and philosophy really became “the rage.” Followers quickly gathered around the old philosopher or embraced his doctrines, and many of these Ionic thinkers became truly famous, the immediate successors of Thales, in chronological order, being

### ANAXIMANDER AND ANAXIMENES.

They were both fellow-townsmen of Thales, being born in Miletus, the former in 610 B. C. and the latter in 556 B. C., or thereabouts, for we are not positive as to their exact birth-place or date. It has been inferred that Anaximander was at one time an instructor of youth, for there is an anecdote recorded of him which would lead us to make such a conjecture. Being laughed at for singing or reciting his verses ill, he said, “We must do better for the sake of the boys.” This idea is strengthened by the fact that he was the first who taught philosophy in a public school; Thales having been satisfied to enunciate his discoveries and doctrines to a select and appreciative few. He made a connected series of geometrical truths, and was the first who marked out the surface of the earth and divided the land and water on an artificial globe. But grander than all and greater than all, was his appreciation and application of Cadmus' invention, the art of writing, for he laid aside the defective method of oral tradition and committed the principles of natural science to writing. It has been asserted that he invented the sun-dial, but we think that Herodotus was right in assigning it to the Babylonians, although he may have used a gnomon to verify Thales' observations.

An old encyclopedia which we have consulted, says: “It is related of him that he predicted an earthquake; but we need not say that, as this is impossible, the relation must be fabulous.” Now we know that many earthquakes and volcanoes are periodic, and therefore if Anaximander knew, from observation or tradition, this fact, it would not be quite so impossible as our authority imagines. The principles that he taught were, that all things came from infinity, and terminate in it, and that the universe, though changeable in its parts, is immutable as a whole. He believed the stars to be gods, or inhabited and animated by portions of divinity. The sun he stated to be twenty-eight times larger than the earth, which was not quite true, as the sun is thirteen hundred thousand times greater in bulk than our little planet. This great man, who had done much to introduce method into the philosophy of his day, and who had originated many ideas, died at the age of sixty-four, leaving behind him a sect or body of followers who have been called Anaximandrians.

The Anaximenes who interests us, it must be recollected, is not the Greek rhetorician and historian who

was the instructor of Alexander the Great, and who wrote the life of that great conqueror and his father, Philip of Macedon; but ours is the one who expounded more fully than Thales had done his philosophical doctrines to the young and old of Greece. The astronomy which he taught sounds odd in our ears, but when we recollect that the telescope was unknown, and all their observations with the naked eye were colored and refracted by and through a superstitious medium, we shall be surprised at the boldness of his surmises. We can imagine him standing on the steps of some classic temple, or sitting in some quiet grove with an admiring class around him, his splendid eye and finely-chiseled features lighted with enthusiasm, as he, extending forth his right arm through the folds of his ample robe, exclaims, “See you yon crystal plane in which the fiery stars are ever and immovably fixed, in which the round sun and moon burn their perpetual fires, and the earth, like a plane tablet, rests on the buoyant air? The ether that supports us, makes us; for mind, which is the essence of all things, is ether, and all the phenomena of nature, fire, earth and water, proceed from it or are made by it, by rarefaction and condensation!” This was his teaching, and we have imagined it to be his speech, by which he did not give much impetus to discovery, but rather devoted his life to enforcing what was already known and believed. The date of his death is uncertain, but some think he lived to a good old age.

## PHOTOGRAPHY AND THE ARTS.

When Daguerre made the discovery of transferring the likenesses of living beings to tablets of metal by a pencil of sunlight, it was justly hailed as one of the most extraordinary inventions ever developed. At first, and for several years afterwards, this art was confined to obtaining pictures of persons, but it was at last delivered from this limited circle of application. The employment of prepared paper (the invention of Fox Talbot) for taking pictures by the solar beam, was found to be a great improvement. The paper being more flexible in its nature than the metal plate, the artist soon learned to range the woodland and the wild with his portable apparatus, and take pictures of rural scenery as well as those of persons. By this art he is now enabled to carry home with him the indelible print of the glassy lake which he saw sleeping beneath the noontide sun, a copy of the ivy-clad cottage on the bank of the river, and pictures of the green fields and forests through which he roamed.

One of the most recent and useful applications of this art is that of obtaining copies for lithographic printing. Owing to the vast number of banks in our country, and the great variety of their notes in circulation, an extraordinary amount of temptation is presented to the forger; counterfeit bills, therefore, of all denominations, are continually appearing; and although their authors are detected in one place, they seem, like the dragons' teeth of ancient story, to be continually bringing forth a fresh crop in some other form. Photography has been applied to furnish a key for detecting these fraudulent bills. A new weekly periodical, published by Wm. Cousland & Co., Nassau-street, this city, contains several plates of such bills, and it is therefore a mirror whereby they may be examined. The counterfeit bills are copied by photography on prepared stones, and from these lithographic prints of the bills are obtained at a comparatively low cost. Of the utility of such a weekly periodical there can be no question, as its first number has *fac-similes* of the bills of no fewer than one hundred and forty-four banks in Massachusetts alone. When this is the case, how great must be the number of counterfeit notes on all the banks in the country, now in circulation!

Another recent and useful application of this art is that of taking copies of machines, in whole or in parts. Some of our tool and machine manufacturers take photographic views of every machine which they make; these not only serve as records of their products, but the pictures are sent to persons who wish to order similar machines, so as to give them a clear idea of the article which they may wish to purchase. Several machine-shops, like that of Messrs. Hoe & Co., in this city, have a photographic gallery connected with their drafting department; and we recently examined some pictures taken at Mr. Sellers' celebrated tool manufactory in Philadelphia, which were really photographic gems. They resembled shaded drawings of a high order, and

conveyed an excellent idea of the form and construction of the tools represented.

We have lately examined another new and useful application of photography, namely, that of copying works of art, such as silver-ware and other like manufactures. Thus, Messrs. J. A. & F. Dunworth, No. 395 Broadway, manufacturers of silver-plated ware, have a photographic gallery connected with their rooms, for copying their designs, which can be sent to any part of the country, so that a true idea may be obtained of the form of any article which they manufacture; the copy can be transmitted a thousand miles in a letter, and a purchase made from the picture almost as safely and satisfactorily as from seeing the article itself.

As we have, in former numbers, described the application of photography to engraving, we need not further allude to this at present. We have recently heard that it is now applied by the designers of new patterns for calico-printers to multiply copies at a small expense. The new design is copied by photography, which gives all the lights and shadows of the pattern, and it only requires to be colored afterwards. Formerly copies were only obtained by drawing the whole pattern by hand, which was a tedious method in comparison with sunlight drafting.

The field for new applications of this useful and beautiful art is still extensive. The facts which we have set forth will no doubt suggest to others new adaptations of it, each of equal importance to any which have yet been successfully prosecuted.

## “VERY ILL.”

We are sorry for you and you have our sympathy, no matter when or where any of you may have occasion to use the above expression, and to prove that we do pity all who may be laid on a bed of sickness we will give a few common-sense hints how to hasten recovery. The first grand requisite is patience, a quiet and calm endurance of suffering, and a resignation to the temporary loss of health. Then comes cheerfulness, not of the sick alone, but of all around; a cheerful countenance smiling over the sick bed can do more good than gallons of physic. The mind of the invalid should be kept diverted from the ailment, and funny, interesting matter should be read aloud for some time every day. The sick room should be kept a pattern of cleanliness. It should be well ventilated, cool and light, and lastly, the doctor should be chosen for his jollity and good humor as much as for his scientific attainments; and, we had nearly forgotten to mention it, never put a sick person in a curtained bed; let them, no matter what the ailment be, have plenty of the free life-giving air, and if the light be too strong a white shade can be hung before the window, but put none around the bed. A person who is sick should always, if possible, sleep alone, and as light a covering as is consistent with warmth is the best. By following these rules and taking your potions at the proper times, as ordered by the doctor, should any of you still continue ill, but able to be about, we recommend that you set out on a canvassing tour in your neighborhood to procure subscribers for the SCIENTIFIC AMERICAN. The exercise, with the satisfaction that you are doing good, will restore you to perfect health. Try it.

REPOSITORY OF THE ARTS AND SCIENCES.—The Editors and Publishers of the SCIENTIFIC AMERICAN desire to make their journal in every sense a complete repository of useful information, and to this end they earnestly solicit information from the Workshop, the Manufactory, the Laboratory, the Farm, and from all other sources likely to afford interest to an inquiring, thinking, intelligent class of readers. The SCIENTIFIC AMERICAN is, *par excellence*, the journal of the Inventor, Mechanic, Manufacturer, and Man-of-science; they have, therefore, a right to be heard through its columns, and are cordially invited to send in their contributions. We hope they will send us, from time to time, accounts of their discoveries; and such other items of interest as are occurring in their respective locations and in keeping with the character of this journal.

STEAM-PLOWING.—The steam plow of Mr. J. Fawkes, of Lancaster, Pa., which lately met with an accident at Philadelphia, as recorded in a former number, will be repaired in due season, as we have been informed, and exhibited at the Illinois State Fair, to be held in the month of September next.