

verification. Instead of her true motto, "Prove all things," Science thus adopts its very opposite, "Only believe."

Now, the whole history of Science has been more or less blotted by this baleful influence of authority, which, even in our own days, is far from having been wholly expunged. But in no part of her history has this influence been exerted in any degree at all comparable with that which was thrown over her, like a shadow, by Aristotle. Partly owing to the magnitude of his genius, but still more, I think, to the predominance of the spirit in the dark ages which regarded submission to authority as an intellectual virtue, through all these ages stood to science the name of Aristotle in very much the same relation as stood to religion the name of God. His writings on purely scientific subjects were regarded as well-nigh equivalent to a revelation, and therefore the study of Nature became a mere study of Aristotle. There was almost a total absence of any independent inquiry in any one department of science; and even in cases where the utterances of Aristotle were obscure, the men of intellect who disputed over his meanings never thought of appealing to Nature herself for a solution. They could only view Nature through the glasses which had been given them by Aristotle, and therefore the only questions with which they troubled themselves were those as to the exact meaning of their oracle.

It is, of course, only fair to add that Aristotle himself was in no way responsible for this evil effect of his work. The spirit in which his work was thus received was quite alien to that in which it had been accomplished, and alike by precept and example he was himself the most noble opponent of the former that the world has ever produced; and therefore I doubt not, that, if Aristotle could have been brought back to life during the middle ages, he would have made short work of the Aristotelians by himself becoming their bitterest foe: for listen to his voice, which upon this, as upon so many other matters, speaks with the spirit of truest philosophy—speaks, moreover, with the honesty of a great and beautiful nature—let us listen to what this master mind has told us of its own labors, and with a veneration more worthy than that of the Aristotelians let us bow before the man who said these words:—

"I found no basis prepared, no models to copy. . . . Mine is the first step, and therefore a small one, though worked out with much thought and hard labor. It must be looked at as a first step, and judged with indulgence. You, my readers or hearers of my lectures, if you think I have done as much as can fairly be required for an initiatory start, as compared with more advanced departments of theory, will acknowledge what I have achieved, and pardon what I have left for others to accomplish."

GEORGE J. ROMANES.

#### NOTES AND NEWS.

"It is my belief," said a representative of the Scott Stamp and Coin Company of New York to *The Illustrated American*, recently, "that there never was any 1804 dollar. That dies were cut in that year, similar in all respects, save the date, to the dies of 1803, is certain. It is also certain that these dies were destroyed in 1869. But no dollars or half-dollars were issued in that year, nor were they issued at any time by governmental authority."

—The Bureau of the International Congress of Geologists has decided that its fifth session shall be held at Washington, and the date of the session has been fixed for the last Wednesday (26th) of August, 1891. The annual meeting of the American Association for the Advancement of Science and the summer meeting of the Geological Society of America will be held in the same city during the preceding week. The committee of organization will endeavor to obtain from the ocean steamship lines the most favorable terms for the transportation of foreign members to and from the United States, and to arrange with the respective railroad companies for reduced rates for the geological excursions. To accomplish this satisfactorily, it is important that they should know beforehand the approximate number of members who propose to attend the meeting, and that they should have an expression of opinion from these members in order to arrange in advance a series of excursions to places that will be of interest to the greatest number. Owing to the great number of points of geo-

logical interest, and to the great distances to be traversed, it would be impossible for the committee to arrange these excursions so that their expense should fall within reasonable limits, without some such previous information. Any geologist who may be desirous of taking part in the congress, or of receiving its publications, which will probably include many valuable geological papers, who will send his name to the secretary, S. F. Emmons, 1330 F Street, Washington, D.C., will be put upon the list and receive the invitation to become a member of the congress. The small fee for membership (\$2.50) is for this congress only, and intended to defray the cost of printing and other necessary expenses. It is customary for geologists of the country where the congress is held to subscribe, even if they cannot be present at the congress.

—The Audubon Monument Committee of the New York Academy of Sciences acknowledge the following subscriptions to the Audubon Monument fund: previously acknowledged, \$1,298.-50; Morris K. Jesup, A. R. Eno, Andrew G. Carnegie, Thomas A. Edison, James Constable, William E. Dodge, William Schermerhorn, Charles Stewart Smith, C. G. Gunther's Sons, W. W. Astor, J. Pierpont Morgan, C. P. Huntington, Robert Hoe, and Charles Lanier, each \$100; Parke Godwin, \$25; Coleman Drayton, \$5; R. H. Derby, 5,—total \$2,733.50. It thus appears that the result of four years of hard labor on the part of the committee has not been quite \$3,000. There is certainly a lack of interest in raising money for this object which calls for an explanation.

—At a meeting of the Royal Meteorological Society, London, on Feb. 18, Mr. C. Harding read a paper entitled "The Great Frost of 1890-91." This paper dealt with the whole period of the frost from Nov. 25 to Jan. 23; and it was shown that over nearly the whole of the south-east of England the mean temperature for the fifty-nine days was more than 2° below the freezing-point, while at seaside stations on the coast of Kent, Sussex, and Hampshire, the mean was only 32°. In the extreme north of Scotland, as well as in the west of Ireland, the mean was 10° warmer than in the south-east of England. In the southern midlands and in parts of the south of England the mean temperature for the fifty-nine days was more than 10° below the average; but in the north of England the deficiency did not amount to 5°, and in the extreme north of Scotland it was less than 1°. The lowest authentic reading in the screen was 0.6° at Stokesay, in Shropshire, but almost equally low temperatures occurred at other periods of the frost. At many places in the south and south-west of England, as well as in parts of Scotland and Ireland, the greatest cold throughout the period occurred at the end of November; and at Waddon, in Surrey, the thermometer in the screen fell to 1°,—a reading quite unprecedented at the close of the autumn. At Addington Hills, near Croydon, the shade thermometer was below the freezing-point each night, with one exception, and there were only two exceptions at Cambridge and Reading; while in the Shetlands there were only nine nights with frost, although at Biarritz frost occurred on thirty-one nights, and at Rome on six nights. At many places in England the frost was continuous night and day for twenty-five days, but at coast stations in the north of Scotland it in no case lasted throughout the twenty-four hours. On the coast of Sussex the temperature of the sea was 14° warmer than the air throughout December, but on the Yorkshire coast it was only 6° warmer, and in the Shetlands and on parts of the Irish coast it was only 3° warmer. The Thames water off Deptford, at two feet below the surface, was continuously below 34° from Dec. 23 to Jan. 23,—a period of thirty-two days,—while the river was blocked with ice during the greater part of this time. In Regent's Park, where skating continued uninterruptedly for forty-three days, the ice attained the thickness of over nine inches. The frost did not penetrate to the depth of two feet below the surface of the ground in any part of England; but in many places, especially in the south and east, the ground was frozen for several days at the depth of one foot, and at six inches it was frozen for upwards of a month. In the neighborhood of London the cold was more prolonged than in any previous frost during the last hundred years, the next longest spell being fifty-two days in the winter of 1794-95, while in 1838 frost lasted for fifty days, and in 1788-89 for forty-nine days.