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The Smithsonian Institute.

We know it is very easy to rail against any Institution, and to gain a kind of clap-trap popular applause, even when facts will not warrant it, by being sharp and severe in censuring; but we hope we shall never be guilty of seeking such ovations. What we have to say therefore, respecting the above named Institution springs only from a desire to do good in presenting our views respecting its management.

It is our opinion that if Smithson were to rise from the dead, his first object would be to try and get the funds he bequeathed to our nation "for the increase and diffusion of knowledge among men" removed from the guardianship of our government at Washington. Let us briefly recur to his bequest. James Smithson, an eminent chemist, and natural son of the Duke of Northumberland, died in 1826, and in his will made the following bequest in the event of the death of his nephew and heir, "I then bequeath the whole of my property to the United States of America, to found at Washington under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge." In 1835 his nephew died, and in 1836 President Jackson selected Richard Rush, of Philadelphia, as the special agent of the United States to proceed to England and prosecute the bequest to its final recovery. This commission he faithfully and successfully executed, and on the first of September 1838, he deposited in gold at the Philadelphia mint, the sum of \$508,318.46, being the proceeds then recovered of the bequest. More than thirteen years have since passed away, and what has been done to carry out the will of this lover of our country. Considering the donor, and the nature of the bequeathment, our government should have executed the bequest of Smithson with sacred and religious scrupulosity. But this has not been done, nor has a decent approach yet been made to do so. Our Congress wrongfully invested the money in the bonds of a few States, which for a number of years did not pay a single cent of capital or interest. For eight years after the money was obtained, not a stone was laid to found the Institution for which it was donated, and now since the structure has been erected and the institute organized by law, with guardians and officers appointed for its government, what has it done "for the increase and diffusion of knowledge among men?" Nothing to what it should have done. It is true that it has an able Secretary, Prof. Henry, and if we had been called upon to name the most suitable man in our country for this office, he would have been the one we should have selected; but the Institution is faulty, we think, in management. The object of Smithson was the increase and spread of the most useful knowledge among men—democratic knowledge—that which is elevating and beneficial, not that which involves mere learned curiosity,—the only kind for which the Institution has been most distinguished. As Smithson was a chemist, he no doubt desired to see a knowledge of that science spread abroad among men. What has the Smithsonian Institution done to promote the advancement of chemical knowledge among our people? Nothing. It was not until two weeks ago that we knew it had published any work on chemical science; this is a collection, a very useful one no doubt, but is composed mostly of extracts from foreign magazines. It has also published a number of abstract works on very unimportant subjects—which are of no general interest whatever. Everything connected with it seems to have been mismanaged,—the building is a grim distasteful pile, not creditable to the taste of the architect; and twice as much money was spent to erect it, as honor, common sense, and the objects for which it was originally designed, required.

We believe that the will of Smithson could be carried out in the best manner to pay nine or ten eminent professors—men of scientific reputation—liberal salaries, for the purposes pure-

ly of making experiments, searching after knowledge, giving a certain number of free lectures each season, then publishing the results of their experiments every year, in a cheap form for diffusion among the people. The American Academy of Arts and Sciences at Cambridge, Mass., a voluntary unendowed Association, does ten times more for science every year than the Smithsonian Institute. This should not be, and as the latter Institute is national, we speak in the name of the people, and request Congress to do its duty with respect to the will of Smithson, and endeavor hereafter to carry out his bequest in a liberal and honorable manner. The Smithsonian Institute has done a great deal of good since it was organized; this we cannot deny; we are glad to be able to say this, but it certainly should have done more, so far as it relates to popular useful science for the millions; that was the object of Smithson in making the bequest—he was a scientific democrat—or he, an English nobleman's son, never would have left his fortune to found such an Institution in republican America.

Composition of the Rings of Saturn.

The old saying, "doctors differ," is just as applicable to astronomers as to the sons of Esculapius. Any mysterious phenomenon, doubtful of ever being properly explained, always engages the attention of a host of speculative philosophers. And it is good that it is so; such subjects are loop holes for the imagination to gaze out from the circumscribed limits of plain demonstrable fact. The subject set forth in the caption of this article, has been and is a fruitful source of speculation in philosophy. In a communication to the "Franklin Journal," James Nasmyth, inventor of the steam hammer, and a good astronomer, presents reasons for supposing the planet Saturn to be yet in a molten state—the same state as our earth is supposed to have been in at one period of its history—and he considers that owing to its great mass, it has not yet become cool. He believes the rings of Saturn to be caused by the watery matter of that planet being converted into steam, from its great heat, and that the brilliant appearance of the edge of the ring is due to the reflection of light from fine particles of snow, formed from the steam being carried up to a great height and then reduced to a low temperature.

The Cambridge astronomers, Prof. Bond, and Prof. Pierce, have published papers expressing their belief that Saturn's ring is composed of fluid matter. Prof. Daniel Kirkwood has also asserted his belief in Saturn's rings being matter in a state of fluidity, and that it is slowly solidifying. In a communication to Silliman's Journal on the subject, he says, "future astronomers may witness a scene no less amazing than the formation of a new world within the limits of the solar system."

D. Vaughan, of Cincinnati has just published a pamphlet, in which he undertakes to prove that the rings of Saturn are the remains of two ancient satellites, which from "a resisting medium in space were consigned to destruction by bringing them too close to the primary body." "That the ring is not in a state of entire fluidity, is evident," he says, "from the fact that elevations and irregularities have been observed on its surface. These evidently arise from the concurrence of materials of so great a density that they could accumulate in defiance of the attraction of the central body."

It puzzles us even to imagine how two satellites could be reduced to minute fragments, and then remain in dust revolving round a primary. He offers no sensible proof whatever to us in favor of his theory. The rings of Saturn in our opinion are composed of vapor, and are not different from the cloud ring of our own planet described by Lieut. Maury. "This cloud ring," he says, "encircles our earth," and "were the clouds which overhang the belt of calms and rains luminous, (and by the theory of Nasmyth they would have such an appearance) and could they be seen by an observer from one of the planets, they would present an appearance to him not unlike the rings of Saturn do to us." This cloud ring is not due to the molten state of the earth, and Nasmyth may be right in his conclusions but not with regard to the cause,

or certainly if Saturn's ring were caused by its great heat, Jupiter should also have a ring, it being the larger planet.

National Secret Documents.

There is certainly a great amount of immorality practised by our national officials, (or those connected with them) in respect to national documents which are held to be secret, and which should only come forth to the public direct from government itself. It oftentimes happens that a national document considered perfectly secret, appears flaming in some of our daily papers, to the no small mortification of some persons at Washington, and the no small glorification of the paper which receives the information, either by favor or for pay. We have seen the proof sheets of Commissioner Mason's Patent Office Report, for 1853, in the hands of persons who had no personal interest whatever in the matter; how they came to be possessed of them we cannot tell, but the fact is significant enough. If these papers are received of persons connected with the printing offices in Washington, they are not properly conducted, or such things would not occur. If a paper receives a national document legally in advance of all its contemporaries it is but natural and right that it should publish it as early as it chooses, but a paper that pays persons at Washington for obtaining secret documents surreptitiously, is guilty of gross immorality. It may exhibit what some people call *smartness* and *enterprise*, but it is the smartness of the rogue and the enterprise of the gambler. And if this is so with respect to newspapers, it is doubly worse with regard to those who trade in such practices, to the dishonor of our nation and the disgrace of its national officers. The man who betrays trust is unfit to be employed in any public or private capacity. It would be well for the high officers of our government, if they looked more to character and less to party, in the selection of persons to fill subordinate offices.

Unalterable Bank Bills.

Since we published the advertisement offering a reward of \$500 for an invention to render bank bills unalterable, we have received a great number of communications on the subject, one suggesting this, and another that plan, to prevent a bill of a lower from being altered to one of a higher denomination.

One gentleman, N. Young, of Lancaster, Ohio, recommends that all the banks in our country should issue *gauged bills*, that is to have every bill of a certain value measure so many inches long and so many broad, so as to have two exponents of the value of bills—one, the figures, the other, their size. This is a good idea, for if a two dollar bill was made of a size of 5 x 3 inches, and a twenty dollar bill of a size of 5½ x 3½ inches, the former could not be altered to the size of the latter—from the lower to the higher denomination.

A number of other suggestions have been presented to us, but we have nothing to do with the business part of the question as presented through the advertisement referred to. We would merely state at present that the small sum of \$500 as the offered reward, does not strike us very favorably respecting the liberality of the advertisers, considering the value of such a discovery to bankers. If the discovery is only worth \$500, then its importance to our banking institutions is of no great consequence.

Purifying Black Lead for Pencils.

Runge proposes to purify poor black lead for pencils by digesting it in a state of fine powder for 36 hours, in about twice its weight of strong sulphuric acid, after which about four parts of water to one of the acid should be added and the whole then left to soak for half an hour.—The acid should then be poured off and the lead washed, when a pure black lead will be found at the bottom of the vessel—which should be of glass or stone ware. The decanted sulphuric acid contains iron and sulphate of alumina. Runge also proposes to add a little lamp black to the lead so obtained, in order to deepen the tints of the lines drawn by a pencil made from it. What are our chemists doing about a jet black pencil, as a substitute for pen and ink.

Close of our Half Volume.

The present number completes the first half of the Ninth Volume of the SCIENTIFIC AMERICAN, and with it will expire the subscription of 7000 of our patrons. We have labored during the last half year to make our paper more emphatically than ever the first of its class in our own and indeed in any country, and we are confident that we can challenge the world to produce its equal for the price. It has been embellished with beautiful and costly engravings, and in this line we invite a comparison with our cotemporaries; our pages have presented a greater proportion of original matter than perhaps any other weekly in existence; indeed, our articles have been copied both in this country and Europe to an extent which no other paper can boast. In short, the "Scientific American" has become a necessity of the times,—a paper with which no mechanic or manufacturer can dispense, unless he chooses to be behind the times.

Our next half volume will be conducted with the same ability with the past. Indeed, "onward" will be our motto; and we shall not be content unless we find that at its close we have surpassed all that has preceded. No pains will be omitted, no money spared, to accomplish so desirable an end. We shall begin anew with our serial articles, so that each half volume will be complete in itself, and the present, therefore, will be a favorable opportunity for our friends while they are renewing their old subscriptions, to invite their neighbors to join them.

To show what our subscribers think of us, we publish this week two more of the letters received from individuals to whom our prizes were awarded. We think few periodicals could present such an array of complimentary letters as we might, were it necessary. But enough for the present. Send on the money, with the satisfactory assurance that our increased income will be expended in improving your favorite paper until it shall be one as near perfection as we can attain.

MESSRS. MUNN & Co.—I had no intention of entering the lists as one of the competitors for the prizes, esteeming the pleasure of adding to the circulation of your useful and truly valuable paper sufficient reward. I have no doubt the list I sent you could easily have been doubled if I had had the time to attend to it.

As I am however one of the fortunate ones, I have concluded to divide the amount in three parcels, and would be obliged if you would procure the following magazines and have them directed and mailed, as below:

One copy each of the Edinburgh, North British Review, and Blackwood, to the address of the "Mechanics' Institute," Nashville, Tenn. One copy each of Blackwood and Chambers' Edinburgh Journal, to address of Saml. R. Morgan, Nashville Manufacturing Co., Nashville, Tenn.

The New York Observer for two years with the Missionary Atlas to my own address.

J. THOMPSON, Agt.

Nashville, Tenn.

MESSRS. MUNN & Co.—After waiting some time before writing you, in order to collect from some who subscribed before the decision of the prizes, I had 160 names. I thought your paper would be better than the money, so I have waited to collect, as it was not for the prize that I obtained subscribers, but for the worth of your paper, the prize money I divide equally with each subscriber. You will please send me a draft on New York for the balance of the money. You will please see to it that all the names I send you are correctly entered on your books, as one of the men told me that he would rather have the paper than \$10. I shall continue to use my influence in favor of your valuable paper.

A. HAMMOND

Jacksonville, Ill.

Rejection of an Extension of a patent.

We understand that the Commissioner of Patents, has refused an extension of the patent of Henry Burden, of Troy, for making hook-headed spikes, on the grounds of an imperfect description, and want of novelty.

St. Peter's Church in Rome can hold 54,000 persons.