

Scientific American.

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The Commissioner of Patents.—Who will he be?

Messrs. Editors.—It has long been a question with me whether Judge Mason would really resign the Commissionership of Patents, because of certain facts known only to myself and a few of Judge Mason's intimate friends. But since he has resigned, another question has arisen, and that is, "who will be his successor?" The position of Commissioner of Patents, as you are doubtless aware, is one which must needs be filled by the ablest and soundest minds. There are but few men who possess the necessary requisites for the office, and from their midst President Buchanan will doubtless make the selection. Having spent most of my time in Washington for the past ten years, and having been a great observer, I have thus been so situated as to "learn and see" for myself. I enjoyed not long since a conversation with a cabinet member, on the subject of the Commissionership, and was informed that but three candidates possessed the qualifications (in the eye of the President.) These were the Hon. Charles T. James, of Rhode Island; Dr. Thomas T. Everett, Chief Examiner of the Patent Office, and the Hon. Edmund Burke, who presided over the affairs of the Patent Office with such marked ability during the reign of the Polk dynasty. Either of these gentlemen would make an excellent officer. Gen. James is a man of no ordinary talent. He has seen much and read much, and being a decided mechanical genius, he would make a splendid officer. Dr. Thomas T. Everett is a New Yorker, of old Knickerbocker stock. He is the youngest brother of Hon. Richard J. Everett, of New Jersey, and has been an inmate of the Patent Office for nearly fourteen years. He is a gentleman of sound mind and clear understanding, perfectly conversant with the Patent Laws, and should he be appointed, he would reflect credit and honor upon the department. Of Edmund Burke I can add nothing to that which has already been said in his favor. Everybody knows his superior qualifications and all will rejoice at his appointment, if made. More anon. J. G. B. G.

St. Nicholas Hotel, New York, Aug. 17.

The above letter, written by an officer connected with one of the government departments at Washington, has a sort of semi-official character about it, and if reliable in its more essential particulars, it shows that the President is not unlikely to impose upon himself, and sacrifice in a measure the highest interests of an office which he is called upon to guard. We have not a word to say against the appointment of Dr. Everett or Edmund Burke. If the President sees fit to select either of these gentlemen to fill the office of Commissioner of Patents, the public will not object. Not so, however, in the case of Gen. James, and the mere mention of his name in connection with the office, and the somewhat extravagant praise which is heaped upon him by our correspondent, serves only to convince us that the latter has yet to "learn and see." We have nothing to do with Gen. James as a private citizen. In his proper place he is all well enough, for aught we know, and he might, as our correspondent suggests, make a "splendid officer," but it would be in the character of a General, rather than in the chair so lately vacated by one of the most gifted mechanical and judicial minds in our country.

If the President has any desire to examine into the special qualifications of General James for this office, we invite him to read over, only once, (for Mr. Buchanan is an eminent lawyer) the "New Patent Bill" published on page 292, Vol. 11, of the SCIENTIFIC AMERICAN, and once reported to the United States Senate; General James, Chairman, and putative father. We think after this perusal, which will not take long, the President will not be incumbered with more than two candidates in the above list.

This new "patent rat trap" bill—so denominated by some of our cotemporaries—never attained to the dignity of a hearing in the

Senate, and so far as the views of inventors and the public generally were expressed, it found no favor anywhere. The bill was a "monstrosity" in legislation, and was so treated.

With all due deference to our correspondents' opinions, we are satisfied that General James has not the peculiar qualifications, judicial and scientific, which would fit him to succeed Judge Mason. Besides, if we mistake not, he has some interest in the extension of certain important patents, which have been the subjects of considerable litigation. Should this prove to be true, (which we do not affirm) it alone ought to shut the Office against him. It is our opinion that General James is quite as likely to be struck by lightning as he is to become Commissioner of Patents; and that the President ever thought of conferring that office upon him, we do not for a moment believe. We should almost as soon look for the appointment of C. C. Chaffee, or either of the other members of the late Committee on Patents in the House of Representatives. Indeed, we think the President should not overlook these parties; they should be rewarded for the service they rendered to the mechanical interests of the country in withholding their report against the extension of the Woodworth Patent until it had expired—until every spark of hope for getting the bill through had fled.

In addition to the names above suggested, rumor mentions S. T. Shugert, Esq., now Acting Commissioner, Colonel Hughes, of Baltimore, a well known engineer, Judge Ingersoll, of New Haven, a United States Circuit Judge, and Judge Sherman, of Michigan.

The Zodiacal Light.

With all the progress of modern science there are many matters, even in the fields most explored, which are, as yet, extremely obscure. It has been proved that our earth is enclosed in an atmospheric coating, which diminishes rapidly in density as we ascend through it, so that one half of its weight lies in a stratum within a thickness of three miles of the level of the sea. How much above this the fluid may extend before it becomes so thin as to be considered absolutely nothing, is only a subject for conjecture; but there are reasons for supposing that the extreme limit of the atmosphere is not more than from forty to sixty miles above the earth, and its tenuity is such that no balloons, birds or insects can fly higher than four or five miles. Beyond the limits of our atmosphere exists either empty space, or space believed to be uniformly filled with an extremely light and almost imperceptible ether, which is of sufficient consistency to convey the pulsations which we term light and heat, from the sun, and probably to retard, in some as yet imperceptible degree, the motions of the various planets, comets, etc., which compose our solar system; but with this exception, the traveler who should, like Shelley's *Queen Mab*, travel through those regions is supposed to pursue a way more uninteresting than even that of the overland mail to Utah; in short, the space is supposed to be "filled with emptiness" except in the immediate vicinity of those planets which are enveloped in atmospheres.

But there are three classes of appearances which can only with great difficulty be made to tally with this theory, or, indeed, with any other. These are meteors or shooting stars, the aurora borealis or polar light, (the term northern light is evidently local, as it is equally observed about the southern pole,) and a mysterious hazy and changeable appearance, the zodiacal light. The latter alone was the subject of two papers read at the late meeting of the Scientific Association at Montreal, and will be amply sufficient for our present brief notice, leaving the others for a more leisure hour.

Capt. Chas. Wilkes, of the United States Exploring Expedition, who had enjoyed opportunities of seeing it from almost every portion of the earth's surface, thinks the zodiacal light consists of a perpendicular column of the atmosphere, directly over the point at which the sun is at the moment vertical, while the Rev. George Jones, who has observed it with care for a considerable period through the clear atmosphere of Quito, in Ecuador, South America, a city situated a mile

above the level of the sea, finds the zodiacal light visible entirely across the sky from west to east, and thinks that his observations completely establishes the fact that this light is a circle surrounding the earth. In short, he thinks our earth is encircled by a ring like the rings of the planet Saturn, but somewhat fainter. He has worked out all the elements of this ring, and shows that it forms an angle of 32° 20' with the ecliptic, the ascending node being at longitude 62°. The width of the ring is about 28°, as seen from Quito, and its distance from the earth something like 100,000 miles, or about twelve times the diameter of our planet, and nearly half the distance of the moon. If this be established, the diagrams to be used in future lectures and books on astronomy must be very materially altered, and a ring of considerable thickness, but of unknown breadth must be supplied. That this is no idle whim is shown by the fact that it was developed at some length in a convention of the highest scientific authorities on the Western Continent, and received with considerable favor. Professor Peirce (B. Peirce, of Cambridge, we presume) is reported as speaking at some length of the novelty, value and interest of this view of zodiacal light. He said we might be proud of its origin in our country, but we should also be careful that all necessary criticism should come from our countrymen. The zodiacal light, he thinks, cannot be composed of small pieces, because it can readily be shown that they would pass in conflicting currents. But, he asks, "if gaseous, why does it not show the great tides which our large and heavy moon would produce? That it is really a ring is manifest, but there is a difficulty in reconciling the existence of a ring with the non-appearance of tides in it."

The subject is one of the class of speculations on which we presented our opinion at sufficient length last week, but also one the magnificence and the unexplainable character of which is peculiarly interesting. It is said that the beauty of this light in the tropics cannot be imagined by those who have only seen it in our northern twilight.

The Adriatic.

It is now confidently expected that the steamship *Adriatic* will make her trial trips during the month of September, and it is even hoped that she may be ready to take her place in the line by Sept. 12th. The extensive alterations are now approaching completion.

The condensers are surface condensers, with a vacuum both without and within the tubes. The tubes lie horizontally, and receive the steam to be condensed in their interiors. Allowance for the expansion and contraction of the tubes is made, by allowing the heads, in which the tubes are inserted, to go and come on guides or slides provided for the purpose. In each condenser there are two nests of tubes connected to separate heads or hollow shells, and presenting a sufficient amount of surface to condense the steam very rapidly. The salt water which surrounds and circulate, among the tubes is enclosed in a stout vessels and a vacuum is maintained on the whole, there being one air pump for the salt water outside the tubes and shells, and another for the fresh water, air, and uncondensed steam abstracted from within the tubes. The air pumps are worked from eccentrics on the main shaft, the friction of which, though necessarily great, can hardly produce any difficulty, as the eccentrics are made very wide, and great care is taken to prevent the possibility of heating. The actual width of the bearing surface of each eccentric is 18 inches, and the diameter is about four feet. The throw will be increased by stout levers intervening between them and the pumps. All these parts, and, in fact, the whole ship, with the exception of the valve motion, will be completed by the 1st of September.

The valves now to be employed are balance puppet, similar to those in general use on American steamers for the ocean and lakes. The valve motion is constructed on Sickles' patent of 1845, but with some peculiarities adapting it to the circumstances under which it will be compelled to work in this vessel. The *Adriatic* has inclined oscillating engines,

and the stems of the valves will, at some parts of the stroke, lie in a very much inclined, in fact, in nearly a horizontal position. The angle made with the horizon at one point is only about 22 1-2 degrees. As the valves are to descend principally by gravity, it has been deemed necessary to provide especial means to insure their prompt descent. The exhaust valves are pulled down by positive mechanism, and the steam valves, besides the anti-friction wheels or rollers to ensure an easy motion, will probably be urged downward by the tension of powerful springs, if such are found necessary. The construction of the valve motion is now being pushed with all the energy possible. Some of the parts are being finished at the Novelty Works, where the ship lies, other parts at the Allaire Works, Secor's, and several other shops in the city and vicinity. A part, we believe, is even being constructed at Providence.

A Handsome Present.

It is not expected that one person will receive a present of \$1,500 for obtaining the 15 largest lists of subscribers for the new volume of the SCIENTIFIC AMERICAN, but any young man may make \$300 or \$500 with ease and devote but little time in doing it if he will follow our advice. It is this:—Take a copy of our new prospectus, and in the evening, or any other spare time, call upon his shop-mates, his neighbors, his townspeople, or any persons he thinks would like the SCIENTIFIC AMERICAN, and ask them to subscribe. By a little effort, any one can get a prize of greater or less magnitude, and we hope our young mechanics will avail themselves of this opportunity of earning a few hundred dollars for themselves, and at the same time confer a favor upon us by increasing our circulation, and on the subscribers they obtain, by furnishing them information worth many times more than its cost.

One person may form any number of clubs and thus get several prizes. Subscriptions may be sent from different Post offices and at any time previous to January 1st, 1858. See prospectus giving full particulars, or last page of this paper. Send to the publication office, 128 Fulton street, for printed prospectuses and circulars.

Commissioner's Report for 1856.

We are indebted to S. T. Shugert, Esq., Acting Commissioner of Patents, for copies of volumes 1 and 2 of the Commissioner of Patents' Report for 1856. Our readers will do well to bear in mind that only two thousand copies of this report are placed at the disposal of the Commissioner of Patents for the purposes of official distribution; the balance is sent out by members of Congress. Therefore, those who may wish to procure a copy, and who cannot be supplied through the Patent Office, will do well to send an early request to the Representative in Congress from their district. Vol 3, which will contain engraved plates of the various patents, is not yet issued; thus realizing the trite old saying, that "large bodies move slow."

The introductory remarks of Judge Mason to this report will be found on page 198 of this volume of the SCIENTIFIC AMERICAN.

Death of Doctor Dick.

Our late foreign exchanges announce the demise of this venerable christian philosopher and man of science. He expired at Broughty Ferry, in Scotland, where he had lived for the long period of more than thirty years, prosecuting his astronomical studies, engaged in the labors of an unostentatious benevolence, and enjoying the warm respect of all around him. He had attained the ripe old age of eighty-three. The removal of one who had so far exceeded the ordinary limit of human life is scarcely a matter of surprise; but the example of his calm, genial, honorable, and useful history is one that should not be without its salutary influence. A year or two ago, his services in popularizing science were acknowledged by the gift of one of those scanty pensions which are allotted as the reward of such labors.

Mortification in a wounded or diseased part may sometimes be prevented by surrounding it with charcoal.