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The Uses of Scientific Literature.

The applications of science to the arts of life are such as but a few years ago would have been contemplated with amazement, and even incredulity. How has this been accomplished? By the steady pursuit of such knowledge, by study and experiment, and by literature, which hands down the discoveries and improvements made by the sons of toil and genius.

Literature fosters science, by treasuring up and transmitting all the knowledge which has been acquired in times past, so that it can be rendered subservient, by its application to the arts in every succeeding age.

This may truly be said to be the extent of the usefulness of scientific history as published in books. Periodical scientific literature is more useful; it may justly claim to be very nearly related to progressive science itself, and of near kindred to discoverers and inventors. Science consists in the clearly explained and well arranged discoveries of men of genius and research. Every new invention extends the boundaries of science; is a contribution to the treasury of knowledge, and a step onward in the progress of civilization. How are discoveries and inventions made? Many persons suppose they are the offspring of lucky rambling thoughts, which, like the music of the wandering winds, come and go unbidden, and these they call "strokes of genius." If such views were correct, inventors would have little to be proud of; if such opinions are true, the esteem in which the memory of men of genius is held, is entirely misplaced. But such views are not correct, nor are such opinions true. Many valuable discoveries and inventions have been made suddenly, such as the law of gravitation, and the steam engine, but they were not the results of rambling thoughts; their authors had their minds ardently fixed upon the subjects of their inventions when they made them. Had this not been the case, their names would never have been handed down to us covered with well-earned honors. Inventions, discoveries, and improvements are made by the attention of men of genius—those who can plan—being directed to particular subjects. Were their minds not so directed, science would be stunted in its growth, and genius would bring forth but few fruits for the benefit of man. What is the great agent for directing the thoughts of the sons of genius to useful subjects? Periodical scientific literature. It fixes the minds of reflective and observing persons on particular questions; it sharpens their intellect, and the results are the evolution of numerous inventions and discoveries, and an extension of the boundaries of science.

There are thousands of men in our country who have original powers of mind—inventive faculties of a high order—that are lying unproductive for want of being prompted by periodical scientific literature. Were they brought within its influence they would soon develop many new inventions to benefit themselves and others.

The extract from the Report of the Secretary of the Interior on another column shows that the spirit of improvement is active in our country. Useful inventions have wonderfully increased in number within the past few years. We have carefully watched the rapid progress of improvement, and have noticed that it has been running in parallel lines with our increased circulation, thus affording pleasing testimony to the great usefulness of scientific periodical literature.

Prospects of Cheaper Ocean Postage.

A proposition has been received by our government from that of Great Britain, to reduce the postage between our country from 24 to 12 cents for single letters. Our Government has indicated a willingness to agree to this proposal, provided England reduces the transit charge on mails passing through that country to 12 1-2 cents per ounce—the price paid for the conveyance of the Canada mails

through the United States. The British Government, if it is wise, will accede to this proposition, which is a fair one in every respect. There are some prospects, we think, of obtaining cheaper ocean postage, which will be of great advantage to the people of both sides of the Atlantic, in promoting their social and business intercourse.

The Patent Office.—Secretary of the Interior's Report.

The Secretary of the Interior, in whose Department the Patent Office is classed, has given some useful information in his Report, respecting its affairs, and as this part of it is not very long, we publish it entire, accompanied with a few remarks.

"Since the 1st day of January last the Patent Office has issued 2,255 patents, and within the year the number will probably be increased to some 2,500.

All applications are promptly attended to; and it is hoped the interests of that meritorious class of our people, the inventors, are properly secured and protected. None are more worthy the fostering care of the General Government.

From small beginnings the Patent Office has grown into proportions comparatively gigantic. Half a century ago, the whole revenue of the Office did not exceed \$1,500 per annum, which was appropriated to the payment of one clerk, who transacted the entire business of the Office. The income for the present year will be about \$200,000, which will still be scarcely sufficient to defray the current expenses of the Office, with its one hundred examiners, clerks, and other employees.

If we compare the present condition of the Office with what it was a few years ago, we shall find that during the four years previous to 1853, the average annual number of applications for patents was 2,522: while for the four subsequent years such average will be about 4,000. The number of patents annually issued during the former period, average 990, during the latter about 1,850. For the current year, the whole number of applications made, the whole number of patents granted, and the amount of revenue received, will, respectively, be at least double what they were in any previous year. The number of applications for patents in this Office, the last year, was greater than that in any other country, having been 4,435, against 2,958 in Great Britain, and 4,056 in France. For the present year the number of applications will probably reach 5000.

The business of the Office seems to have outgrown the system upon which it has thus far been conducted, which was adapted to a previous stage of its existence. The wisdom of Congress may be profitably exercised in making such modifications as present circumstances require."

We like the spirit in which this Report appears to be dictated, and the sympathy which appears to be manifested in it for inventors, but we wish the Secretary of the Interior had been more explicit in regard to the action which he wishes Congress to take upon the present condition and management of the Patent Office. The idea conveyed to our mind by the immediate preceding sentence of the Report, is, that the present system upon which the Patent Office is conducted, is bad—that it is not adapted to its present wants, and that it should be entirely changed. He suggests that "the wisdom of Congress may be profitably exercised in making such modifications as its present circumstances require." This is a proper recommendation and it will require great wisdom to deal with it. We hope the Secretary does not mean to recommend the passage of the absurd Bill for the Reforming of the Patent Laws, which was before the Senate last winter. It exhibited but a very small amount of wisdom on the part of those who framed it. If it were to become a law, the business of the Patent Office would soon become almost extinct; a deep injury would be inflicted upon our inventors, and the progress of our country's improvements in the useful arts would be greatly retarded. It would be unwise to attempt a radical reform of the Patent Laws; the present system does not require to be revolutionized, it merely requires an exten-

sion of the present means for effectually carrying it out, so that the business may be performed promptly, and in that liberal spirit embraced in the law now provided for its management.

The recent rapid growth of the business of the Patent Office, is positive testimony in favor of the views we take of this question. We hope the Secretary only means in the changes recommended, that the Commissioner of Patents be relieved of considerable extra labor, which he has now to perform, relating to matters not immediately connected with patent business, and that ample means be provided without an increase of patent fees, for the prompt, generous, just, and efficient transaction of business between the Patent Office and inventors.

We claim this as an act of justice to inventors, and one of statesman-like policy, for the benefit of our country. There can be no doubt but inventors have done more to develop the resources and increase the material greatness of our country than any other class of men. What would be the condition of our agriculture, commerce, and manufactures, without the cotton gin, improved plow, power looms, spinning jennies, planing machines, locomotives, railroads, steamboats, telegraphs, &c. Why, no one will question the statement that "without these inventions, our country would never have arisen to its present greatness." Every means for encouraging inventors, therefore, tends to advance the interests of our country, and some of those means are cheap patent fees, and a simple and efficient system of securing patents. According to the Report there were 4,435 applications for patents, in 1855, in the United States; 4,056 in France, and 2,958 in England. These figures show that the number of patents applied for in any country, is according to the patent fees charged—the greatest number where the fees are lowest—America; and the least where they are highest—England. The greatest number of useful inventions are therefore annually brought into public use, in that country which has the lowest patent fees, namely the United States.

We are happy to be able to pay a tribute of praise to one part of this Report in reference to the Patent Office Building. When completed it says, it will "temporarily accommodate all the bureaus of his department; but this should not deter Congress from making the necessary appropriations for a *Departmental Building*, which will be much needed before, under ordinary circumstances, it can be constructed and prepared for occupancy. No valid reason can be assigned for further delay." We have censured the Secretary for attempting to alienate the Patent Office Building from the legitimate purposes for which it was intended—namely, entire consecration to patent business. He now recommends that appropriations should at once be made for a new building exclusively devoted to the business of his Department, thus leaving the Patent Office building to be devoted to it appropriate objects exclusively.

This recommendation in his Report will afford our inventors sincere pleasure,

Preserving Sail Cloth and Awnings.

In the patent of Sir William Burnet, which we described two weeks ago, in giving an account of the method of preserving timber at Lowell, Mass., the application of the chloride of zinc is set forth as being as effectual in preserving textile fabrics as in preserving timber. As a knowledge of this fact is of importance to those who manufacture and use sail cloth and awnings, or any textile fabric exposed to the weather, we will describe the method of applying it.

A tank or tub is filled nearly full of the solution, formed of one pound of the chloride of zinc to every five gallons of cold water. In this the cloth is immersed, and kept under the liquor, somewhat loose, for about ten days. It is then lifted, dripped, and hung up in a shed or sheltered place until it is quite dry, when it is fit for use. Care must be exercised that there be no free acid in the solution; the chloride must be in the form of a dry salt. The cloth, before it is immersed in the solution, must be carefully wet in every part, by steeping it for a short time previously in hot water.

This method of treating canvas, it is stated, prevents it from mildewing and rapid decay. Rope and cordage treated in the same manner also endure much longer; but they require to be steeped in the solution longer than cloth, because they are so much thicker.

Children's Aid Society.

This Society is doing a noble work in this city. Its object is to take children—boys and girls—who have lost their parents or have none to care for them, and find good homes for them in the country, principally in the West, among the farmers. It has now been in existence for about four years, and has sent out yearly from 800 to 1000 children, in the manner described, many of them being picked up from the streets and rescued from the haunts of vice.

By thus providing homes for these outcast children, there is every prospect of their growing up to be useful to those who take charge of them, to themselves, and to the community. The society has no complex organization, and no large institution to maintain at a great expense, but it does a great deal of good with little means. The citizens of New York ought to encourage it liberally, because while it does good to these children, it prevents them from becoming vagabonds and pests to society. The rooms of the society are in Clinton Hall, Astor Place. C. C. Tracy, Agent. Money and clothing is solicited, to carry on the good work undertaken by this Society.

Our Prizes for the New Year.

We beg to remind the active portions of our friends, that New Year's Day is close at hand, when our much talked-of Cash Prizes are to be awarded. Who will send us in the largest list of subscribers, and so take the first prize? Who the second? And who the remaining twelve? We answer, those who exercise the greatest activity during the few days now remaining until January 1, 1857. We hope that none of the competitors in this worthy strife will forget the story of the race between the turtle and the hare.

Grenades for Home Defence.

Capt. Norton, formerly of Cork, Ireland, but now residing in England, whose railroad explosive signals were illustrated in Vol. 10, SCIENTIFIC AMERICAN, has invented a simple contrivance for causing an alarm in case of an attempted burglary. It consists of a small tube about three inches long, charged with an explosive substance; at each end is affixed a string with a loop, one loop being fastened to a nail in the door post, and the other to the door itself; consequently when the door or shutter is forced, an explosion takes place, and the inmates are alarmed. Or it may be thrown from an upper story into the street, causing a report sufficiently loud to rouse the neighbors. Specimens have been placed at the London Polytechnic Institution, the Crystal Palace, and at the United Service Museum, to prove that the invention can be effectually used.

The Atlantic Ocean Telegraph.

The latest news from England, brings the gratifying intelligence that arrangements have been made to construct the Ocean Telegraph Line from Newfoundland to Ireland.

The British Government has, at the request of Cyrus W. Field, Esq., of this city, ordered a steamer to be fitted out under efficient officers, to examine thoroughly the coasts of Ireland and Newfoundland, and to sound across the Atlantic between these parts to ascertain the best place for laying and landing the Submarine Telegraph Cable. The Government has further agreed to guarantee four per cent. interest on the whole capital required to manufacture and lay down the cable between Newfoundland and Ireland. Contracts for the whole extent of the Atlantic cable were signed in London on Tuesday, the 19th November—one half to be manufactured by Messrs. W. Kuper Glass & Co., of London, and the other by R. S. Nowell & Co., of Liverpool. It is all to be completed and placed on board of two steamers, ready for sea, on or before the 31st of May next, and by the 4th of July next, it is confidently expected that Great Britain and the United States will be in telegraphic communication.