

THE EQUITABLE RIGHTS OF INVENTORS BEFORE CONGRESS.

The Patent Office has an accumulated fund to its credit in the U. S. Treasury of more than two and a half millions of dollars. This sum has been derived from inventors, and is the accrued profit after paying the expenses of conducting the Patent Office, which amount annually to something like seven hundred thousand dollars.

Now, it would seem as if our legislators could not be so oblivious as not to see that the inventors of our country have some claim upon the large surplus to their credit in the Treasury; at least a right to justify their demand of Congress to appropriate sufficient money to pay for an ample force of examiners to enable the work of the Patent Office to be kept up, so that an applicant for a patent need not wait more than a few days for a decision. But it does not seem that the interests of inventors and a proper appreciation of their work is considered by our legislators, and the result is a lack of sufficient appropriation by Congress to enable the Commissioner to employ sufficient help to carry on the business of his office. The examiners are overpressed with work, and in some classes the inventor has to wait from three to six months after his application is filed before his turn is reached and a decision is rendered. Now, this is all wrong, and the inventor, who should be recognized as an important factor in the community, is made a sufferer by the delay. Congress passes laws requiring the inventor to pay his money into the Treasury when his papers for an application for a patent are filed, and he naturally has a right to expect that his case will be promptly acted upon, and it is an injustice to him when it is not. A correspondent in one of our contemporaries says:

"What an outcry there would be if the Post Office was managed after the fashion of our Patent Office. A letter posted to-day might then be delivered 4, 6, or 9 months hence, and on inquiry as to the cause of such outrageous delay, the reply *want of sorters and carriers*, would be just as consistent as the present paltry excuses of the Patent Office."

Now, in behalf of the rights of inventors and of all others having business with the Patent Office, we beseech Congress before it adjourns its session to make ample enough appropriation to the Commissioner of Patents, to enable him to employ sufficient force to bring up all the back work of his office to date, and to keep it up, so that no applicant for a patent shall have to wait for a decision more than ten days at the longest after he has paid the requisite fee and complied with all the other requirements of the Patent Office. The appropriation asked for by Commissioner Butterworth for the coming year, from July 1, 1884, to June 30, 1885, is seven hundred and eighty-five thousand dollars, and it is believed by those in position to know that both Houses of Congress will not hesitate to grant the sum asked for. The appropriation bills for all the departments of the Government will probably be acted upon before the 4th of July, and if the amount which seems to be agreed upon by both Houses is allowed the Commissioner of Patents, he will be able to increase his clerical force, and thus be in position to dispatch the work of his office to the better satisfaction of its patrons.

The Banyan Tree.—(*Ficus Indica*.)

One of the most remarkable trees belonging to the genus *Ficus*—the 600 species of which comprise climbing shrubs and trees of great diversity of character—is the famous banyan, whose extraordinary habit of growth and enormous proportions so much astonish those whose idea of a large tree has been formed from what we in Europe consider giant forest trees. The banyan, whose spreading, bowery roof, beneath which whole villages of huts find shade and shelter, is supported by gigantic pillar-like props, formed by descending aerial roots, which, on reaching the ground, assume the appearance and perform the functions of separate trunks. The following extract from Tennant's "Ceylon" gives an interesting account of the peculiar habits of this tree, which in many parts of India is held sacred by the natives:

"As we ascend the hills, the banyans and a variety of figs make their appearance. They are the Thugs of the vegetable world; for although not necessarily epiphytic, it may be said that, in point of fact, no single tree comes to perfection, or acquires even partial development, without the destruction of some other on which to fix itself as its supporter. The family generally make their appearance as slender roots, hanging from the crown or trunk of some other tree, generally a palm, among the moist bases of whose leaves the seed, carried thither by some bird which had fed upon the fig, begins to germinate. This root, branching as it descends, envelops the trunk of the supporting tree with a network of wood, and at length, penetrating the ground, attains the dimensions of a stem; but, unlike a stem, it throws out no buds, leaves, or flowers. The true stem, with its branches, its foliage, and fruit springing upward from the crown of the tree, whence the root is seen descending, and from it issue the pendulous rootlets, which on reaching the earth fix themselves firmly and form the marvelous growth for which the banyan is so celebrated. In the depth of this grove the original tree is incarcerated till, literally strangled by the folds and weight of its resistless companion, it dies, and leaves the fig in undisturbed possession of its place. It is not unusual to find a fig tree in the forest which had been thus upborne till it became a standard, now forming a hollow cylinder, the center of which was once filled by the sustaining tree, but the empty walls form a circular network

of interlaced roots and branches firmly agglutinating under pressure, and admitting the light through interstices that look like loopholes in a turret."

Deep twilight always prevails under the shade of the spreading foliage, through which not a ray of bright light can pierce, and the awe and dread with which the Buddhist villagers regard this sacred tree is very intelligible. In the Wood Museum at Kew there is a fine specimen of a palm trunk, upon which the strangling growth of a banyan's roots is well shown. The remarkable way in which the roots become united to each other at every point where they touch is observable in the specimen just named. B.

Meetings of the British and American Associations.

As the British Association for the Advancement of Science meets this year at Montreal, from August 27 to September 2, the American Association meeting will be held at Philadelphia, September 4 to 10, to enable members of the two associations to attend both meetings, and allow of the interchange of courtesies between the members. Fellows of the American Association are invited to join in the meeting at Montreal as honorary members, and those in attendance there, as well as other members of leading scientific societies abroad, are invited to take part in the Philadelphia meeting. It is now probable that the Montreal meeting will be attended by a larger body of foreign savants than were ever before in this country at one time, and as an international electrical exhibition will then be in progress in Philadelphia, with probably an electrical congress, besides the meeting of the American Association, the season promises to be one of material scientific advancement. The officers elected for the Philadelphia meeting include the following: President, J. P. Lesley, of Philadelphia. Vice-Presidents: A. Mathematics and Astronomy—H. T. Eddy, of Cincinnati; B. Physics—John Trowbridge, of Cambridge; C. Chemistry—John W. Langley, of Ann Arbor; D. Mechanical Science—R. H. Thurston, of Hoboken; E. Geology and Geography—N. H. Winchell, of Minneapolis; F. Biology—E. D. Cope, of Philadelphia; G. Histology and Microscopy—T. G. Wormley, of Philadelphia; H. Anthropology—E. S. Morse, of Salem; I. Economic Science and Statistics—John Eaton, of Washington.

A Catastrophe Averted by Electric Wires.

We learn by a letter from Rev. H. C. Hovey, that the new drill hall of the State University, at Minneapolis, was struck by lightning, on the 12th of June, with attendant phenomena of interest. This building, locally known as the University Colosseum, stands on a bluff overlooking the Falls of St. Anthony, occupying the highest ground in the city. A musical festival was in progress at the time; choruses from Minneapolis and St. Paul being assisted by Nilsson, Materna, and other celebrities, under the general direction of Dr. Theodore Thomas. At 2 P.M. there were 1,000 children assembled on the stage, and about 3,000 persons in the audience. A thunder storm arose, and while the children's choruses were going on, it was noticed that the series of electric lamps, fifteen in number, hanging from the dome, were lighted at each flash of lightning, going out again at once, and there was a sense of uneasiness pervading the people.

Herr Scaria had just opened the rear door of the stage, a solo from him being next in order, when suddenly there was a loud report, as if of heavy ordnance, balls of fire were distinctly seen through the large skylight, and following the electric wires away from the building. Subsequent examination showed that the lightning first struck the flag staff surmounting the door, thence pierced an oak beam to which the staff was fastened, the splinters, or the concussion, breaking the glass in the skylight. An iron rod conducted the fluid to the network of electric wires below, where the charge was divided, a portion being harmlessly distributed over the general circuit, and the remainder shattering several electric masts near the building.

A workman on the roof had his shoe torn off, and his leg badly burned; and another person in proximity to one of the masts was temporarily paralyzed; two or three ladies fainted away; but that was all the damage sustained! There was a panic imminent at first, as every one instinctively sprang to his feet and confused cries and shouts were uttered. Had those 4,000 people made a rush for the doors, many lives must have been sacrificed. But they were mostly persons of education, trained to obey orders, and accordingly, when told to sit down, they immediately did so. Dr. Thomas, with great presence of mind, had his orchestra play, and Herr Scaria came forward and sang. Thus reassured, people either remained to hear the music, or quietly left the hall. It should be added that, at night, the Colosseum was crowded to its utmost capacity to hear the oratorio of the Creation, and quietly sat through another thunder storm, seemingly satisfied that the electric wires were good lightning rods. The lamps, however, worked fitfully, now blazing with startling brilliancy, and then going completely out, leaving the audience in total darkness, and then flashing up again. Meanwhile the music went on as if nothing unusual had occurred, both soloists and chorus being perfectly familiar with the score!

An impression seems to have gained ground that the lightning was attracted by "the nest of electric wires" clustered in the upper part of the University Colosseum. There is no such "nest," only a pair of insulated copper wires running through the building above the ceiling. What drew the lightning was the metallic ball surmounting the tall flag

staff, fifty feet from the wires. The staff and girder to which it was attached were wet, hence became conductors, carrying the fluid along to an iron bolt, beside which it passed through a heavy piece of timber, whence it leaped upon the electric wires, by means of which it escaped from the building. There is not the slightest doubt that the wires performed the duty of lightning rods in this instance, although not put up for that purpose. Nor is there any doubt of the grave error of permitting a vast assembly to be gathered into a lofty building on an eminence, the dome surmounted by a staff tipped with a metallic globe, whereby the lightning was actually invited, with no provision intentionally made for its escape. The intensity of the current fused the fine wire circuit feeding the lamps, which, according to Secretary King, of the Electric Light Company, accounted for the spasmodic working of the lamps at the concert on Thursday night—the wonder being that they should have worked at all after being subjected to such a strain.

Mr. Noyes, foreman of the Brush Company, tells an interesting experience. He was at work on the wires previous to the storm, and kept on after it burst, although aware of his danger. At the moment the building was struck, he was splicing the wires directly above the central lamp, meanwhile taking every precaution possible under the circumstances. For a few minutes he lay unconscious, and then regaining his senses descended to the ground. He says that he did not feel any pain until he reached *terra firma*, when he suffered intensely in his right foot. On examination he found that the bolt had struck his leg below the knee, tearing the clothing to shreds, bursting open his stout boot from heel to toe, and blistering the flesh as if with a hot iron.

The Simultaneous Firing of Shots.

According to Mr. George G. André, the system of exploding a number of shots simultaneously in rock blasting is making its way slowly into common use. It is surprising that a system offering so many advantages should need so much advocacy. Some portion of the prejudice against it is no doubt due to past failures. But the obvious certainty obtained by using powerful currents, and the ease with which such currents may be applied when the works are lighted by electricity, should be sufficient to induce the disappointed to try again. A good example of the application of the lighting current to the ignition of blasts, and, I believe, the first of its kind, has just come under my notice in Germany. The mine is a colliery, and the surface works are lighted by arc lamps. Underground, a stone drift is driven, and this drift is lighted by incandescent lamps. In the face, from twenty to twenty-four shots are placed, and an electric fuse in each is joined up in parallel circuit by means of bare iron wire and connected with lighting cables in such a way that the current can be shunted from the lamps into the fuses. The result is in the highest degree satisfactory. Misfires are unknown, and the effect is wonderfully good. It is estimated that from twenty-eight to thirty-two shots would be needed if fired in the usual manner in succession; so that the saving of labor is in this case considerable, exceeding 25 per cent, both for the labor of boring and the quantity of explosive required.

Koumiss.

Koumiss has become a very common article of diet with dyspeptics, and according to the *Chicago Review* it may be made at home at a cost of about 15 cents per quart. The following directions are given for its manufacture: Fill a quart champagne bottle up to the neck with pure milk; add two tablespoonfuls of white sugar, after dissolving the same in a little water over a hot fire; add also a quarter of a two cent cake of compressed yeast. Then tie the cork on the bottle securely, and shake the mixture well; place it in a room of the temperature of 50° to 95° Fahrenheit for six hours, and finally in the ice box over night. Drink in such quantities as the stomach may require.

It will be well to observe several important injunctions in preparing the koumiss, and they are: To be sure that the milk is pure; that the bottle is sound; that the yeast is fresh; to open the mixture in the morning with great care, on account of its effervescent properties; not to drink it at all if there is any curdle or thickening part resembling cheese, as this indicates that the fermentation has been prolonged beyond the proper time. Make it as you need to use it. The virtue of koumiss is that it refreshes and stimulates, with no after reaction from its effects. It is often almost impossible to obtain good fresh koumiss, especially away from large towns. The above makes it possible for any physician to prescribe it.

Association for the Advancement of Science.

The thirty-third meeting of the American Association for the Advancement of Science will be held at Philadelphia from September 4th to the 10th.

The British Association has invited the members of the American Association to join in the meeting at Montreal, and the American Association has invited the members of the British Association, with their near relatives who may be with them, to take part in the Philadelphia meeting.

A series of receptions will be offered the Association and its guests, including one at the Academy of Music after the president's address. The botanical section of the Academy of Natural Sciences will organize botanical excursions, and also hold a special meeting at the Academy for botanists.