

BRILLIANT ATMOSPHERIC PHENOMENA.

On Sunday evening, the 26th ult., the heavens were adorned for several hours with the most gorgeous drapery. Soon after sun-set, "the merry dancers" of the Scottish peasantry ventured from their homes in the North, and swept, with lightsoone feet, far over into the southern hemisphere. As the twilight deepened, their brilliant and many-colored lights radiated from a focus, like a star in the center of a glittering canopy, and extended over the entire dome above. The play of colors, and the rapid motions of the streamers, were beautiful beyond the power of pen to describe. Now they would be of a deep yellow color; then instantly change into blue; and again into purple, crimson, green and lilac; and, at other times, the whole of the prismatic colors, like flaming arrows, were launched from the celestial bow.

Mr. Merriam, of Brooklyn, in giving an account of these appearances, says:—

"The auroral light sometimes is composed of threads like the silken warp of a web; these sometimes become broken and fall to the earth, and possess exquisite softness and a silver lustre, and I denominate these as the products of the silky of the skies. I once obtained a small piece, which I preserved."

This is an entirely new idea to us, and we think that some other substance must have been picked up in a mistake for the product of the auroral loom. It is very seldom that such phenomena are witnessed here; and especially at this season of the year. They are common in the Arctic regions, and are, no doubt, due to the flashing of electricity through air more or less rarified at variable heights above the surface of the earth. The telegraph wires on all our lines were greatly affected with the atmospheric movements, and this corroborates the views which men of science entertain regarding their cause. The aurora can be imitated, on a limited scale, by discharging electricity from a pointed conductor into an exhausted glass receiver. Two rarified currents of air—one from the north-west, the other from the south-east—according to our observations, met on the evening referred to, and caused the phenomena by the discharge of their electricity. Another very brilliant aurora was witnessed on the morning of the 2d inst.

REMARKABLE PATENT CASE.

A trial recently took place in the Scottish Court of Sessions, the like of which, as connected with a patented invention, was never known before. The plaintiff was Mr. A. O'Regan, of Liverpool, the defendants were Messrs. Tod & Higginbotham, extensive calico printers in Glasgow. They had accepted the plaintiff's proposal to supply them with a number of his smoke prevention furnaces, and the apparatus was duly supplied and fitted up. In course of time, the defendants, as they now aver, discovered that the plaintiff's patent was invalid, and they then refused to pay for the furnaces. To enforce payment, the plaintiff brought an action in the Sheriff's Court at Glasgow, to recover the sum of £450 as agreed upon. The defendants on the other hand, brought an action in the Court of Session, for the purpose of having the patent declared invalid and annulling their contract.

In giving judgment, the Lord President stated that the case was peculiar. He had never before heard of a patent being assailed by the purchaser of a patented article, and it would be a strange thing to hold a patentee liable to be assailed by every one who purchases his articles and chooses to pick holes in his patent. There was no allegation of fraud in this case, no allegation even that O'Regan knew that his patent was invalid. All that is said is, that he knew that it had been "publicly challenged." It might have been challenged. It might have been challenged on the weakest and silliest grounds possible. The case looked like one of inexcusable negligence on the part of the contractors. They ought to have satisfied themselves of the character of the articles they were contracting for. Even now they do not seek to reject the articles. They did not do so as soon as they knew that his patent was invalid, as they allege, from prior use, defective specification, &c., but they retain them, and desire the Court to fix a reasonable price for the furnaces on the footing that the patent is invalid—to reduce the price from £450 to about £70. As to the account, the case being reported on issues, it must go back to the Lord Ordinary; but he was of

opinion that there was no issuable matter on record. The others concurred, Lord Deas remarking that he did not think that by every patented article a man sold he made himself a new enemy, and that he considered this contract a contract of sale and not of work. The Court refused to allow the issues, with expenses.

In regard to this case, the *Practical Mechanic's Journal* says:—

"We have known many very curious grounds for actions on patents, but we certainly never heard of any so extraordinary as in this case. Here is a patentee who makes a bargain to erect certain furnaces at a cost of £450. That was his price, and patent or no patent, he had plainly the right to recover the amount, if he really fulfilled his contract, and it is not denied that he did so. The defendants assuming that there was virtually no patent, sought in the face of their bargain to get the contract sum reduced, as we suppose, to what they considered the furnaces could be erected for. In this procedure, the defendants must evidently have been most erroneously advised, for a bargain had been entered into for the execution of certain work, such bargain being really independent of any patent. It is therefore no answer to turn around and tell the patentee that the payment formally contracted for could not be made, for the reason that the patent was alleged to be invalid. We give no opinions upon the merits of the invention, or upon the novelty or otherwise of the patent, for neither of these points is in question. It is, however, satisfactory to find, that the Lord President decided as he did, for were it otherwise, and were such a decision to become law, no patentee would be safe."

HOW TO TELL THE CHARACTER OF PAST SEASONS.

Two correspondents have directed our attention to a meteorological article recently published in the *Zeitung*, at Galveston, Texas, from which it appears that the people in some part of Texas have lately been visited with a series of five dry seasons, which have greatly discouraged the farmers, and an opinion seems to have gained some prominence, that the climate has changed, and that for want of rains the country would become unproductive and barren. In previous years an abundance of rains and moisture had been furnished to produce the most luxuriant crops; but the late dry years had led many persons to regard the former favorable seasons as the exceptions and the late barren ones as the rule. The article to which we have been referred settles this question in a most satisfactory manner by a very ingenious theory laid down and tested by its author, J. Kuechler, of Gillespie county. He states that the records of Texas are of two recent date in regard to past seasons, to form a correct opinion of their general character, whether they are more often very dry or wet; and going to nature as the most uncompromising and correct witness for testimony, he says:—

"A tree bears its own history written in itself, and this is most intimately connected with the yearly fall of rain. Water is a main element in the development of plants; without it, their growth is impossible. With a sufficiency of moisture they arrive at their maximum of growth; that wanting the growth is relatively retarded. We can accurately follow the growth of a tree from its earliest state to its present perfect condition. We trace its yearly growth by annual rings, whose size mainly depends upon—the supply of water, so that the broad rings indicate wet years, and the thin rings, which can scarcely be distinguished by the naked eye, denote dry ones. This theory should govern our researches into the past. Great care is necessary in the selection of trees for this experiment. We may be misled by trees upon which abnormal conditions have been developed. In my experiments I demanded two requisites: first, a high, isolated position, so that the drouth has an early effect upon the trees and secondly, sound, healthy trees. I felled three post-oaks—two somewhat over 130 years old. I took from each at the thick end, a vertical section, planed the surface very smooth and then varnished it over, which made the annual rings distinctly visible (fat has the same effect), and I prepared from each section a table of the relative order and position of those rings. Upon comparing these three tables, they were found to correspond exactly—a proof that moisture is the only cause of this difference in the size of these annual rings."

His tables of these rings go back to 1725, and from the size of each ring he judges whether the season in which it was formed was dry or moist; the small rings being set down for the dry and the larger ones for the moist seasons. By this test there have been 67 wet summers during the past 133 years, in western Texas, and the rest of the years are divided into dry, very dry, and average seasons.

ACTION OF WATER ON LEAD PIPES.

An essay has been published in the *Edinburgh New Philosophical Journal*, by Dr. Lauder Lindsay, in which he promulgates opinions totally opposed to those generally entertained by chemists regarding the action of water on lead pipes. It is generally taught and believed that pure soft water acts rapidly on lead, and converts it into an oxyd when exposed to the atmosphere. On the other hand, it is as generally taught and believed that hard water, which contains neutral salts in solution, does not become impregnated with lead in passing through pipes—the pure water is held to be dangerous to use with lead pipes, while the impure water is considered safe. It is believed that the neutral salts in the water prevent it acting upon the lead, while the oxygen of the pure water has such an affinity for the metal that it leaves its hydrogen and acts chemically upon it. Dr. Lindsay asserts that observation and experiment have led him to conclude that certain pure soft waters do not act upon lead; while certain hard waters, which are regarded as most protective, do act chemically upon it, and therefore it must be dangerous to use for conveying such water for domestic purposes. He has tried experiments on a large scale, and from these he has drawn his conclusions. He asserts that those before him who have made investigations on a small scale have been deceived as to the results, and that water containing a small portion of lead will affect some members of a family, or of a community, and not others, and that the *rationalis* of this is not well understood. From what he says, the only safe course to pursue in the matter is not to use such pipes at all. This is a question of vast importance, as miles upon miles in length of leadpipe are used in our cities and villages, for conveying water. We know that this has been a frequent topic of discussion among *savans*, but they have rather "sheathed their swords for lack of argument" than positively settled the mooted points.

FIRES.—SPONTANEOUS COMBUSTION.—A great number of fires have recently taken place in various parts of our country, and in most instances they seem to have had some connection with materials containing oil or grease. Thus there was a destructive conflagration last week among the oil stores in New Bedford, Mass., and on the night of the 30th ult., the very large rope-works of Messrs. Waterbury, in Brooklyn, N. Y., were nearly all consumed, involving a loss of about \$100,000, as reported. In this latter case, the fire originated in the jenny or spinning room, where no fire was kept, and among some idle machines, on which were piled some hemp and matting. There are some qualities of hemp which require to be treated with an "unformed soap," consisting of an alkaline liquid and oil, and both cotton and hemp, so treated, are very liable to spontaneous combustion. We have seen quite a number of instances of this kind in our life-time, and in all likelihood this was the immediate cause of this fire.

FACTORY SCHOOLS.—In many of the large manufacturing establishments in England and Scotland, schools are maintained at the expense of the manufacturers for the operatives in their employ; and their hours of study are so arranged that, while earning their own living wholly or in part, they can, at the same time, secure an education. In our cities, we secure the same results, in a measure, by night-schools; but as these are only supported during the winter months, of course they are not so efficient as the factory schools in England.

INVENTORS' MODELS.—Messrs. MUNN & Co. have for a long series of years been engaged in the procurement of Letters Patent for new inventions, and during their extended experience have had thousands of models forwarded to them by express and other modes of conveyance; and it is worthy of notice that they cannot call to mind a single case when a model has been lost beyond recovery. Inventors are thus insured beyond a reasonable doubt of the safe arrival of their business to our hands.