IN THE FIELD OF ELECTRICITY

THE picturesque and inspiring charms of Niagara Falls are gradually giving way to the utilitarian spirit of the age. There are countless millions of dollars in that immense water power, and capital is eagerly seeking the privilege of harnessing some of it. Industries of vast importance have been developed by the construction of the first electrical works on the American side. In the brief space of ten years the city at the falls has been transformed in character and doubled in population by electrical power drawn from the rushing waters, and the industries of Buffalo, twenty miles away, glow and throb with the new life current. On the Canada side, equally extensive works, designed to draw power from the river, are being built. The succeeding attending the original electrical works attracts others, and numerous companies are seeking the privilege of tapping the river. A bill granting a company extensive and invaluable rights on the American side of the river was rushed through the lower house of the New York legislature last week by "a mysterious power" which New York papers brand as boodle. The grant is to the Niagara, Lockport and Ontario Power company. The company was incorporated ten years ago with permission to take water from the upper Niagara river for the purpose of supplying pure and wholesome water and electricity to the City of Lockport and to the inhabitants of Niagara, Orleans and Erie counties. It had the right of eminent domain to divert the flow of water from riparian lands in unrestricted amount, and it was not to pay one red cent to the state for the privilege. The privileges conferred would expire on May 21 of the present year.

The commissioners of the state reservation at Niagara Falls, in a protest against renewing the grant, say that one-third of the volume of the river has already been given away to power companies on the American or Canadian side, and it is time to call a halt. The preservation of the falls in their beauty and grandeur is vastly more important than the enrichment of water power speculators. Power can be found elsewhere, but Niagara is unique. Its destruction would be a national disgrace.

"We do not think," says the New York Tribune, "that this diversion of water should be allowed on any terms. But even if it can be permitted without injury to the falls, certainly the franchise should not be given away. Niagara belongs to the people of the state. If it is to be exploited for money the people should reap some benefit. They are paying taxes to maintain the government. They are facing the necessity of new taxes to build the barge canal. Why should their property be recklessly given away at this time? The companies which have developed power on the Canadian side of the river are compelled to pay large sums for the privilege into the public treasury. It is simply criminal wastefulness for New York to throw away its valuable property."

Tree Full of Electricity.

People living in Washington avenue, in The Bronx, had an extraordinary show last evening when a big maple in front of the house at 1973 was filled with an electric blaze from the ground to its very top.

Through the branches of the tree, which is eighty feet high, run two arc light wires. The insulation was worn off both wires by constant rubbing against the limbs and a short circuit was suddenly formed in the wet tree. Little tongues of blue flame shot from branches all over the tree and many of the smaller limbs were set afire. The fire was visible for a mile in either direction.

Hundreds of people flocked to the show, and soon found that the ground for several feet around the tree was briskly charged with electricity. Seven policemen came to keep the crowd out of danger. Two of the cops, Brown and Rothman, were slightly shocked, and two dogs got their feet full of electric needles.

The electric light people got around in about an hour and cut the bad wires, replacing them with well-insulated pieces.—New York Sun.

Storms and the Health.

Physicians have for many years recognized the fact that atmospheric electricity disseminated by thunder storms keenly affects human beings and investigators have shown that positive electricity produces vigor and a feeling of general good health, while, on the contrary, negative electricity has a depressing effect. We are submitted to these contrary effects according to the state of the atmosphere, sometimes negative electricity dominating, at others the positive element, it being possible to determine the electrical condition by means of delicate instruments.

A German meteorologist, Dr. Schliep, claims that it is possible to determine approximately the condition of the atmosphere by comparing the curves of the registering barometer on one hand with those of the thermometer and the hygrometer on the other. Dr. Schliep states that when the barometer descends while the thermometer and hygrometer ascend the atmosphere is charged with electricity, while the electricity of the air is positive when the barometer ascends and the thermometer lowers.

A naval physician, Dr. Jolly, has applied the Schliep rule in Madagascar and by comparing the instruments he has been able to fix the changes of the electrical condition, changes which vary during the day and night. During the dry season there was an excess of positive electricity. Dr. Jolly observing that both in his own case and that of other subjects the best condition of health corresponded to the positive discharges, while during the periods of negative dominance there was weakness and lassitude. These changes also have their echo in the state of general health, notably in fevers.

Canada Telegraph to Expand.

The Canadian Pacific Telegraph company has decided on big extensions, to be made during the present year, that will give the company the largest telegraph system in Canada. When these projected extensions are completed the company will have 60,000 miles of wire under its control.

In Manitoba and the Northwest territories about 400 miles of new line will be erected along the new extensions of the railway system. Another copper wire will be placed between Montreal and Winnipeg, which will be used as a third duplex between these points, and an additional copper wire will be put up between Montreal and Quebec.

The copper wire between Winnipeg and Regina will bring about a new condition of affairs in the Canadian west, for it is intended that this wire will be a duplex, thus providing for additional circuits between the metropolis of the west and the rapidly developing district around Regina.

Probably the most important and far-reaching government measure to come before the Dominion Parliament, which meets on Thursday next, will be that relating to the initial steps proposed to be taken to create a navy for Canada and the establishment of a Canadian naval reserve. This scheme has been before the government in various phases for several years, but, until recently, no practical action appears to have been taken to perfect it for presentation to Parliament.

Matter as a Reservoir of Electricty.

One of the most striking features of recent progress in theoretical science is the hold upon scientific thought that has been secured by the so-called electronic theory, which asserts that electricity is indissolubly connected with all matter in its ultimate particles. According to one form of the theory, these ultimate particles are wholly electrical, so that matter is nothing but a network of minute electrical disturbances in the ether. Inertia, a property of matter inexplicable on the old hypotheses, becomes at least partially understandable on the electronic theory, for the electric charges bound up in a billiard ball, for instance, resist change of motion by the property of self-induction. The total charge in a billiard ball, to account for all of its inertia, would have to be immense, but it is within the bounds of possibility that such a charge may be stowed away in its atoms. Dynamics may soon, therefore, be reduced to the rank of a mere department of electricity.—Success.

Great Scheme of an Electrician.

Prof. C. Albertson of New York, an electrical engineer whose invention of the so-called "magnet train" created a sensation in scientific circles a few months ago, has invented an instrument which he believes is the keynote of ultimate communication between the planets.

Light rays are the media for bringing communications with the stars into Prof. Albertson's hands. From the new invention the music and original melodies and harmonies of the stars may be extracted as well as other sounds no mortal ever heard before. Light rays from the sun, moon, or from the remotest visible star in space may be so utilized as to play the music of mortal composers in a few weeks. Prof. Albertson says he will have his experiments brought to such a degree of perfection that he will give a midnight concert at his home for scientists and the press.

"It is a scientific fact," said Prof. Albertson today, "that a light ray falling upon the surface of a small polished steel plate for example will produce a tone. Graham Bell long ago demonstrated that a light ray may be used as a conductor to carry the human voice. My invention merely follows out this line of thought. I believe 'messages from Mars' will soon be a reality.

"A tone produced from a light ray falling on a polished steel plate is inaudible, however, unless the plate is inserted into an electric circuit also containing a microphone or telephone earpiece—this is the principle underlying my invention. Instead of a plate or hollow steel shell, however, there are involved a number of small steel cylinders varying in length, perfectly polished inside and so arranged within a box as to vibrate freely. The entire box is made a part of the electric circuit and in this circuit is also a microphone or earpiece.

"In front of the cylinder is a revolving disk, which is so perforated that a light ray will be thrown in different directions when passing through small holes. There is a prism fixed behind a revolving disk and a tube containing a lens, which may be directed toward any star."

Prof. Albertson says in using the instrument he places it upon a soft foundation like pillow covers. It is of dark cloth that will exclude all kinds of light, the tube ear piece alone remaining exposed.

An interesting point in the invention is that the perforations of the disk may correspond to any musical composition or note.

Instead of an ordinary light ray the seven component colors of light are used. As the disk revolves on various notes cut from spectrum and lead the colors of light enter into the openings of the various cylinders, striking at an angle. The internal polished walls of the cylinders are coated with certain chemical substances, which make them sensitive to the touch of light. Any piece of music may be perforated on a disk and at the first experiment Prof. Albertson says he succeeded in making light rays from Arcturus play an air from "Faust."

Prof. Albertson believes his discovery in stellar communication is in embryo.

"Sounds and music transmitted from various planets tell different stories," he said. "For instance, when an instrument is aimed at Arcturus, sounds of contrast are heard at first. It sounded to me like an ear splitting hurricane, then like a roar of 1,000 Niagaras, then soothing like melodious, low whispering and exquisite, soft singing. One naturally would think the more powerful a light ray the better the musical result, but this is not so. A far away fixed star is the one that produces the sweetest tones. This I believe to be due to the non-interference of reflected light from the invisible planets revolving about the sun."

Patents in Germany.

Prof. Michael I. Pupin of Columbia university has been in Berlin attending the hearing of his suit for patent rights in Germany, which has been pending for more than a year. He said he had had no difficulty in securing patent rights from all other European countries. At the hearing on February 5 four professors of Berlin university acting as judges, his application was unanimously decided in his favor. The patents are to make submarine and long distance telephony comparatively easy by the distribution of induction coils, or what the professor has called "magnetic cell weights," along the cables or wires.

Tons of Bright Gems

It is estimated that the total world production of diamonds up to date approximates 85,000,000 carats. As we are not in the habit of weighing our diamonds by the ton, we are in some doubt concerning the proper system of computation, whether troy or avoirdupois, long ton or short ton. According to the system used by those who do weigh their diamonds in ton quantities, the result would be in the neighborhood of twenty or twenty-five tons of sparklers now appearing as factors in the joys and the miseries of a world which has substituted diamonds for the beads and the wampum of its ancestors.

The regions contributing to this supply and the percentage of their contribution appear as follows: South Africa, 81.5 per cent; Brazil, 18 per cent, and the remaining 0.5 per cent divided among Borneo, India, New South Wales and British Guiana, with North America and Russia supplying specimens. The last two of these countries have furnished just about enough to equip an opera box for a single evening. The deep obligation of society to South Africa is fully apparent. The price of diamonds has been heavily advanced during the last year or two, but it is simply appalling to think what the price would have been without the South African supply. Society, American, English and continental, should daily thank heaven for Kimberley and Jagersfontein.

We are unable to give the cubic measurement of the total collection, but so far as weight is concerned it would make a load for a medium sized freight car.—New York

Capitol Scares News

Stimulated by the burning of Wisconsin's capitol, at Madison, newspapers in Maine are reminding the citizens of the state that their state house, in Augusta, is partly fireproof, partly a firetrap, and wholly uninsured. The legislature of Virginia has appropriated $250,000 to enlarge, safeguard and repair the Old Domonion's state capitol, in Richmond. This building was erected after a design suggested by Thomas Jefferson and modified in some degree by the state authorities of that day. Work was begun on it in 1785, and it was first occupied, though not completed, by the legislature in 1788.