

THE ELECTRIC AGE.

The Newest Things in Electricity. ITS USE AS A MOTOR, FOR HEATING, LIGHTING, &c.

Some Interesting Facts About the Great Force.

Many funny stories have at different times found their way into print about electric bell pushes and the queer mistakes made by people who have seen them for the first time. One of the best of these is told by an English electrical engineer. A friend of his, to the front door of whose house is fitted an electric push button, engaged a country girl as servant, and a few days afterward the following fact came out in course of conversation: "I did have a trouble, ma'am, with the front door bell the day I came. I tried to take hold of it with my nails to pull it out, but could not, and so I took my bonnet off and tried to pull it with my teeth, but it would not come out, and so I had to knock at the door." The difficulty of this performance was increased by the fact that the servant had on an old-fashioned poke bonnet, which had to be removed before she could seize the push button with her teeth.

An Oriental poet might find a congenial theme in the illumination for the first time by the electric light of the famous Taj Mahal, which as all who know anything of Indian history are aware, is the splendid sepulchre of white marble, adorned with the choicest of mosaics, which was erected at a cost of nearly \$5,000,000 by the Emperor Shah Jehan, for his beloved wife Noor Jehan, also called "Light of the Empire." It stands on a vast quadrangular enclosure, and forms a square building of great beauty. One light of immense power placed in the great bulbous centre dome, and four lesser lights on the surrounding minarets, gave a brilliant appearance to the whole structure and cast a soft radiance far and wide over the crescent-shaped city.

In speaking of lightning conductors, a prominent English electrician says that in the majority of cases they are of great service, though they cannot always be relied upon as affording immunity from risk. As to the danger to life from lightning, he showed from the Registrar-General's returns that in twenty-nine years in England and Wales the deaths from lightning have occurred at the rate of only one in a million of the population per annum. This was so small a percentage as to be scarcely worthy of note; in fact, the lecturer said, amid laughter, one was almost as likely to be hanged for murder as to be killed by lightning.

A characteristic letter from Edison is printed in one of the Paris electric journals. It is addressed to M. Verne, and runs as follows: "I thank you for your letter of the 10th inst. The fire at the Pearl street station took place on Thursday, and completely destroyed it. On Saturday our men set to work, and by the following Saturday current was again being supplied from Pearl street to the 20,000 lamps fed by the old station. This *tour de force* was accomplished in six days of twenty-four hours. Would you be capable of such a feat?"

There are not wanting signs that the English, though slowly, are steadily forging their way to the front in electrical work. A London electrical paper says: "We hope soon to hear of electric motors being introduced into Fleet street and the surrounding busy printing neighborhood. The amount of cleanliness, comfort, and saving to printers as compared to the enterprising motor companies is enormous." A recent instance G. A. L. D. S. also mentioned.

heat usually associated with electrical resistance. It is claimed that wall paper can be made in such a way that the passage of currents of low tension will heat it moderately warm to the touch and diffuse throughout the room an agreeable temperature.

A druggist of St. Louis, while recently weighing powdered opium from a can, discovered that the drug and the paper lining of the can were highly charged with electricity. This explained the difficulty he had experienced on several previous occasions in removing the powder from spatulas, &c., and, the phenomenon being unusual to him, he mentions it for the benefit of others who may have never observed it.

An electric motor has been put into a seed establishment to work a cleaning machine hitherto turned by hand, the operator having to lift and discharge the seeds. Now the motor does all, and works the elevator and cleans the grain as fast as it can be fed.

Mr. Frank J. Sprague, who is one of the pioneers of electric railway work in America, has publicly expressed his conviction that an express service operated by electricity, between New York and Philadelphia, starting at ten minutes' headway, and covering the distance at the rate of 60 miles an hour, is not only possible, but will actually be established in the near future.

An interesting study has been lately made by Herr Tarchenoff of electric currents in the skin from mental excitation. Light tickling with a brush causes an appreciable deflection of the galvanometer needle. Hot water has a like effect; cold or the pain from a needle prick a less. Sound, light, taste, and smell act similarly. If the eyes have been closed for some time, mere opening of them caused a considerable deflection from the skin of the hand. It is remarkable that these skin currents also arise when the sensations are merely imagined. Mental effort produces currents varying with its amount.

The use of small electric fairy lamps has been attended with a good deal of success, the only difficulty presenting itself being the disposition of the batteries, &c., which would not infrequently spill over and burn the clothes, not to say the fair skins of the dancers. By the method now adopted the battery is entirely done away with, the current is supplied on the alternating system. The primary is led to coils beneath the stage, and in the heels of the shoes a small secondary coil is fitted. On dancing, or standing over the primary the lights flash up with bewildering and fascinating effect.

Rather a curious indication that the economy which is becoming characteristic of so many industries is being practised in the electric lighting business, is afforded by the report of a New York platinum firm, that owing to the recent large advance in the price of platinum the local electric light companies are paying more attention to their broken lamps, and are shipping their old stems in to a greater extent than ever before, and that the metal derived from that source has an appreciable effect upon the market.

In the laying of cables the galvanometer "spot" plays an important part in denoting the progress of the "paying out" of the line. During the laying of the final section of one of the Central and South American cables, as the electrical staff had been very much reduced in numbers owing to the necessity of detaching some of them for extra shore work, the secretary of the expedition was pressed into service to do a little "spot" watching in the ship's testing room. Paying out was being carried on at a pretty high speed, and a slight accident happened in the tank containing the cable coils, a couple of turns coming up together and fouling a lantern at the side of the tank. The turns, however, freed before reaching the paying-out machinery, and it was hoped that no damage had been done to the cable. The newly recruited electrician, who felt the responsibility of his position very keenly, was particularly cautioned by the engineer in charge to keep a very careful watch, and to advise him without a moment's delay if the least untidiness in the spot manifested itself, as it was feared an accident might have resulted in a All went well for a short time.

Secretary came rushing out information that the spot on the ship was promptly put in, and all hands were there it was had gone

out. When it was refilled the spot reappeared in its proper place, and the Secretary never afterward failed to see that his lamp was properly trimmed.

An amusing incident comes from Hamilton. It appears that the location of the wires that were originally put into the basement walls of the City Hall, connecting with the switchboard in the upper hall, has been lost, through some carelessness during the building operations, and cannot now be found without ripping up the marble pavement and mutilating the walls, and even then the search might prove fruitless.

Some interesting data have been developed by Dr. Francis Dowling in a paper on "The Causes and Treatment of Deafness." He states that between the ages of 10 and 40 at least one person in three is subject to a partial deafness. The great majority of cases of impaired hearing date from childhood and its diseases. Another prolific cause was colds and carelessness in bathing. At least one-fifth of the cases coming under treatment are hereditary, and are largely owing to a too close consanguinity of the parents. Deafness is more prevalent among males than among females, owing to the fact that the male is more exposed to the vicissitudes of climate. There is much more deafness in America than in Europe, and this Dr. Dowling attributes to a more general use of scientific instruments, such as telephones, where one ear is used to the exclusion of the other. He cited a number of cases where he had examined telephone operators, and he generally found the right ear the weaker organ, as it was used almost entirely in telephonic communication. The remedy he advocates is to either have two audiphones or to use the ears alternately at the same phone.

FITTING OUT A POACHER.

A Fast Steamer Chartered at San Francisco to Take Seals in Behring Sea.

A fast steamer is being fitted out at San Francisco for seal poaching in Behring Sea by a company of local and Eastern capitalists, who believe there are big profits in illicit sealing when every pelt can be sold for \$12. The steamer has been chartered, but its name is withheld and a crew is now being selected.

The revenue cutter Rush, which the American Government sent to the Arctic last season, can make only eight knots an hour, and the Bear is equally slow. In fact there is not a suitable Government ship on the coast which can make over ten knots. Hence a steamer which averages over twelve knots could run away from the Government vessels and kill seals wherever she pleased. Even some schooners last season escaped from the Rush, aided by heavy fog. Either the Government will have to charter a swift steamer or there will be more seal poaching than ever in Behring sea.

As every skin the new company takes costs it \$13.33, it will have difficulty in making a profit, especially if the Russian company makes up its deficit of 40,000 skins and if the poachers are successful.

Royal Musicians.

There are surprisingly many expert musicians in the royal houses of Europe. Queen Victoria and her daughter Louise play the piano and organ with great skill. The Prince of Wales knows all about playing the lango, and his wife is an excellent pianist. The Duke of Connaught can do wonders with the flute, and the Duke of Edinburgh is hardly less accomplished in handling the violin. The Czar performs famously with a silver trumpet. The Empress of Austria is one of the finest zither players on the Continent. The Queen of Italy does the most difficult pieces of Italian and German compositions on the piano. The Empress of Japan excels in playing the "koto" a Japanese instrument not unlike an overgrown zither. The gifted Queen of Rumania is celebrated among her subjects for her extraordinary performances on the harp and piano. King George of Greece tracts melody from castanets and wine glasses with the skill of a variety show artist. He plays equally well on the Hungarian "cymalum," concerning which his daughter, the Crown Princess Sophie, is also learning as much as two Hungarian professors of music can teach her. Prince Henry of Prussia is one of the best amateur musicians on the Continent. He plays the piano and violin and is a composer of considerable reputation.

THE COBRA STONE.

The Marvel Explained—Inherited Memory.

The cobras are perhaps the only serpents which will eat insects. They feed on ants, grasshoppers, a variety of beetles, etc., but seem to have a special preference for fire-flies, perhaps because the latter can be caught at night much more easily than any other kind of insect. I have often for hours watched cobras in the grass catching the fire-flies, darting about here and there, a process which requires considerable exertion on the part of the serpent. Now, every entomologist knows that the flying lampyris consist entirely of males. The females, which are not very numerous, are much larger and cannot fly, as they have only rudimentary wings. They sit quietly in the grass, emitting a greenish light, which is much stronger than that of the males, and fades and becomes brilliant at regular intervals. If a glow worm be watched for a time, a steady current of male insects will be observed flying toward it, and alighting in close proximity.

Now it so happens that the naja-kallu, this little pebble of chlorophane or fluor-spar, emits in the dark a greenish light which is so much like that of the female lampyris that it is an easy matter to deceive the male fire-fly with it, by setting it up as a decoy. The cobras have gradually come to take advantage of an experience made by them, accidentally, I dare say, thousands of years ago. It may frequently happen, for instance, that a cobra finds one of these shining stones in the gravel of the dry river-beds (where they are by no means uncommon), being attracted to it by its glow at night, and taking it for a glowworm. It would then, at any rate, notice that the fire-flies could be caught much more easily and quickly in the neighborhood of that shining object than anywhere else, and would habitually return to it. Several cobras might thus come together, and there would be competition, and from this moment to the finding out that success in capturing fire-flies depends on the possession of the phosphorescent pebble, and to the seizure of it in order to prevent another snake from monopolizing it, is, in my opinion, a great step, and involves no exceptional powers of reasoning. The cobra carries it about, and soon learns to treasure it, for it affords it an easy means of getting its living. Ah! it has to do so to deposit the stone in the grass at night, and the obliging insects literally fly down its throat.

There are even reasons for believing that no individual experience is now necessary to cause any cobra to act in this manner, but that even a young cobra, on finding such a stone, will instinctively take it up, and use it in the manner I have described. For it must be borne in mind that there is an inherited race memory among the lower animals which is often far stronger than the memory gathered during the short lifetime of the individual. What causes a blind kitten to spit and put up its back if a dog is brought near it? It never saw a dog, never saw anything, yet it knows there is some danger ahead. Thus the accumulated experience of the cobras' ancestors during countless generations now causes it to act in a manner we refer to as instinct.

Such are the remarkable facts connected with the naja-kallu, the cobra's shining stone. Who can tell whether the old traditions of snakes carrying precious stones, of which we still find traces in our fairy tales, may not have their source in some such fact as this?—[Harper's Magazine.]

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