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Mr. T. C. Martin, a New York engineer, suggests that the Paris Exposition shall have all its power generated at coal-mines now supplying Paris and that this power shall be transmitted electrically.

A Frenchman, M. Bersier, has devised a plan by which the compass performs the part of the helmsman. When the vessel gets off the course for which the instrument is set, an electric current starts a motor and moves the rudder until the vessel returns to her proper course. A two months trial of the apparatus is reported to have resulted very successfully. Among the advantages are greater accuracy and no loss of distance in a run of twenty-four hours, as is usually allowed.

In a series of experiments on modern high explosives by Macnab and Ristori (London Royal Society, May 10), the authors found that the largest total volume of gas per gram (901 cubic centimeters) was given by a mixture of 80 per cent. nitro-cellulose and 20 per cent. nitro-glycerin, and the smallest (741 cc.) by pure nitro-glycerin. The experimenters are now endeavouring to measure the actual temperature of explosion, and have already attained some degree of success.

Messrs. Lœwy and Puiseux exhibited at the Paris Academy of Sciences, on July 9, some remarkable lunar photographs made with the aid of the equatorial coude, or elbowed equatorial. One of the photographs showed the lunar disk with a diameter of 1.8 meters (about 5½ feet). The enlargement on glass is said to be even superior, as regards the clearness of the details. Such photographs are extremely valuable in the study of changes that have recently been asserted to take place on the moon's surface.

It is a well-known fact that on account of the superficial position of the blood-vessels at ankles and wrists, the blood in cold weather is easily chilled at those points. For the same reason in warm weather one ought to keep these localities as lightly covered as possible. This is the case with regard to the wrists, but ninety-nine men out of a hundred have thick leather coverings high over the ankles, and the shopkeepers say so few low shoes are called for that it is often difficult to fit satisfactorily a customer who does demand them.

A train was recently stopped in France, on the line between Bellegarde and Geneva, under the following curious circumstances: A freight-train had in one of its cars some cod-liver oil, which began to leak away from the containing vessel. By chance, the escaping stream struck exactly in the middle of the rail. The train that bore the oil was not affected, but the track was thus well greased for the passenger train that followed, which came to a standstill when it reached the oily rails. Nearly three-quarters of hour were consumed in running the 2½ miles to the next station, and this rate was only attained by diligent sanding of the track.

One of the greatest living authorities on earthquakes, Prof. John Milne of the Japanese Imperial University, in a recent article in *The Seismological Magazine*, July, says that the results of experiments and investigation on a possible connection between earthquakes and magnetic and electric phenomena do not allow us to admit any such connection. It is not likely that earthquakes ever result from electric disturbances, and

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it has not yet been proved that they ever give rise to any such, though when large masses of rock are displaced, as in Japan in 1891, slight local changes in magnetic curves have resulted.

It is well known that certain crystals transmit light at different speeds in different directions, and that other physical qualities, such as their power of conducting heat, vary in the same way. It occurred to Mr. A. S. Mackenzie of Johns Hopkins University to experiment on the gravitational attraction of such a crystal for a particle, to see whether it would depend on the position of the particle with reference to the optic axes of the crystal, the latter acting as if its mass were greater in one direction than in another. The results, noticed in *Nature*, July 12, show no such difference. The distances between the attracting bodies in the experiment were from an inch to an inch and a half.

It is well known, says *The Age of Steel*, July 21, that the tar extracted at gas-works contains a large amount of water, in many cases as much as 15 per cent. The separation of this water from the tar is essential for most purposes to which the latter is put, and on that account it is frequently the custom to allow the material to remain in wells for some time, so that the water has an opportunity of rising to the surface. Recently a more rapid process has been introduced to bring about the separation, a process identical with that of skimming milk in a centrifugal separator. The fresh tar is heated to about ninety-two degrees to reduce its viscosity, and then placed in a centrifugal machine revolving at an enormous velocity. The tar being heavier than the water presses against the inside of the vessel, leaving the water nearer the centre where it is skimmed off by projecting tubes