GROUP OF GAS WELLS AT FORT SCOTT, KANSAS.

The town of Fort Scott, Kansas, appears to be in the enjoyment of special blessings, natural and artificial. The government sugar works are located here, and during the late sorghum cane harvest 16,500 pounds of merchantable sugar were daily manufactured, and the success of the sorghum sugar industry established.

One of the great natural resources of the place are the gas wells. We are indebted to the Fort Scott *Tribune* for our sketch and for the following particulars: There are now some twelve wells, from which uncounted millions of cubic feet are daily flowing. At night they glow like gigantic torches, with flames twenty feet or more in height, which illuminate the surrounding country. Pipes have been laid through the town, supplying light and fuel to everybody at a cost of almost nothing. Various manufacturing industries are now beginning to locate at Fort Scott, and others are coming in. The future prosperity of the place seems to be well settled.

Electrical Notes.

Electro-Metallurgy by Dry Way.—Mr. R. K. Boyte has devised a process for investing objects with a layer of metal by dry way, through the electric spark.

The object to be galvanized is covered with a sheet of the metal that is to furnish the deposit, and an intermittent discharge is sent through the junction.

Reduction of Light in Incandescent Lamps.—It sometimes happens, especially in libraries, that the light afforded by incandescent lamps is a little too intense, and that it becomes necessary to reduce it. For this purpose, opal glass has been proposed as a material for the globes. But experiment has shown that this absorbs from 40 to 60 per cent of the light that traverses it, and that ground glass absorbs from 25 to 35 per cent. This is too great a loss. A simple method, recently proposed, consists in dipping the globe in either common or photographic collodion and allowing it to dry. If the deposit obtained is not thick enough, the operation may be repeated. The diminution of light effected by this means is scarcely 10 per cent.

In addition to cheapness, the method has the advantage that the collodion can be easily removed from the glass at any time.

Soldering Electrical Conductors.—To prevent the loss of time that accompanies the cleaning of the rusty or dirty extremities of telegraph wires previous to soldering them together, Mr. Prisiajniky proposes the following process:

The necessary quantity of solder is put into an iron pot, which is placed over a brazier. When the solder is melted, fragments of sal-ammoniac are thrown on it, in the proportion of one ounce to the pound of lead. Vapors of chlorine then appear, and the liquefied sal-ammoniac covers the surface of the lead in a blackish stratum. The soldering is effected by simply dipping the uncleaned wire into the black liquid and afterward allowing it to enter the lead. If the solder does not adhere on the first trial, the operation is to be repeated.

New Carbons for Arc Lamps.—Mr. Gime has devised a new process of preparing carbons for arc lamps, which it is said give good results. These carbons are made as follows: Equal parts of close-burning coal and very pure coke are triturated together, and to them is added a sufficient quantity of water saturated with boric acid to make a plastic paste, which latter is passed through moulds under a pressure of from 75 to 100 atmospheres. The rods obtained are cut to the proper length, put into a furnace, and raised to a bright red heat. A single baking produces very dense and hard carbons.

The Convection of Electricity by Steam.—While Mr. Edison has been pursuing his researches on the pyro-magnetic production of electricity, Prof. Van Lang and Dr. Lecher have been studying the convection of electricity by steam, and the results of their experiments have been recently read by one of these physicists before the Vienna Academy of Sciences.

As well known, the disengagement of steam is accompanied with a production of electricity. The well known Armstrong laboratory machine affords an excellent practical demonstration of this. Dr. Lecher shows through thermometric experiments that, under identical circumstances, an electrified liquid vaporizes much more rapidly than one that is not electrified. It seems that this phenomenon is not due to the electrification of the steam, but that the increase in vaporization is due almost exclusively to the quite intense electric wind which is produced on the surface, and which renders it difficult to measure the quantity of heat necessary for the vaporization of an electrified liquid.

By a simple experiment, Dr. Lecher has demonstrated that when the surface of a liquid is strongly electrified a cloud of steam or of water in a vesicular state is produced. This cloud is electrified, remains in suspension in space, and produces effects of characteristic influence. Although these experiments have not as yet furnished conclusive data, they afford so many stepping stones on the way to the direct conversion of heat into electricity, and *vice versa.*

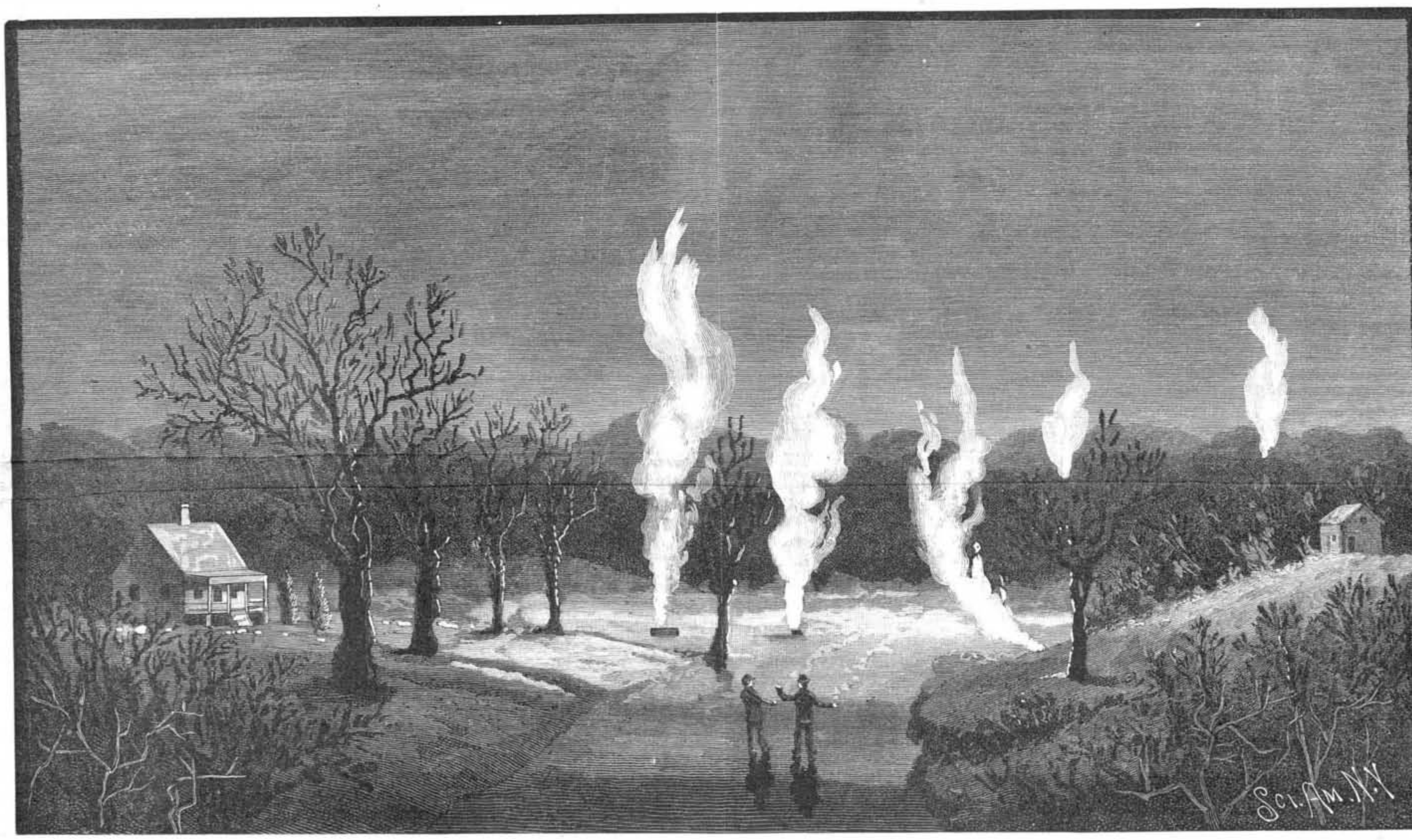
Action of Magnets on Liquids.

Professor S. T. Morehead, of the Washington and Lee University, at Lexington, Va., writes as follows to the *American Journal of Science*: Some weeks ago one of my students, Mr. J. C. Child, and myself were working with a diamagnetic instrument, simply repeating well known experiments. Plucker's method of observing the diamagnetism of liquids having failed in our hands to give satisfactory results, we hit upon a method which was new to us, and which was very satisfactory. Into a glass tube of about four or five mm. internal diameter, a small quantity of liquid was introduced, forming a short cylinder. This tube was placed horizontally at right angles to the line joining the poles of the magnet, with the liquid nearly between the poles. When the current was turned on, the liquid was very evidently repelled. Water was repelled through a distance of about a centimeter; wood spirit through a greater distance. By moving the tube in the direction of its length, the wood spirit could be pushed any distance through the tube. The amount of motion is, of course, a function of the resistances due to adhesion and friction, as well as of the repulsive force. The attraction of liquids is easily shown by the same methods. A single modification of the above plan of proceeding is to incline the tube slightly, so as to make the liquid flow toward the poles. If the required velocity be not too great, the magnet acts as a brake to stop the motion. It is well to bend the tube up a little at each end to prevent the liquids from flowing out. This method is well adapted for projection so as to be seen by large audiences.

An African Poison.

In a report just published by the Foreign Office, on the trade of the Nyassa territories, Mr. Hawes, the newly appointed consul, describes the strophanthus, a climbing plant from which the natives extract a strong poison, and which is beginning to find its way into the London market. It is called by the natives *kombe*, and is found at a low level, and not apparently on high land. The supplies hitherto obtained have been drawn from the right bank of the Shire River below the Murchison Rapids.

There is apparently more than one species, or at least variety, the distinguishing feature being a much smaller pod and fewer seeds. At present, information relative to the varieties is scant. It is a strong climbing plant, and is always found in the vicinity of high trees, on which it supports itself. The stem varies in diameter, but has an average of a few inches. It lies on the ground in folds, the branches supporting themselves on the nearest trees. The young branches are in appearance not unlike the elder. The fruit grows in pairs, and has a peculiar appearance, very like a pair of immense horns hanging to a slender twig. It begins to ripen in July, and lasts till the end of September. The native method of preparing the poison is very simple. They first clean the seeds of their hairy appendages, and then pound them up in a mortar until they have reduced them to a pulp. A little water is then added. This is done by using the bark of a tree containing a gummy substance, which helps to keep the poison on the arrow, in the event of its striking against a bone. The poison thus prepared is spread upon the arrow, and allowed to dry; game wounded by arrows poisoned with strophanthus dies quickly. The flesh is eaten without evil effect. The only precaution taken is to squeeze the juice of the baobab bark on the wound made by the arrow, and this counteracts the evil effects of the poison. Buffalo and all smaller game are killed by this poison. The drug is rapidly coming into medical use, especially in cardiac affections, Bright's disease, renal colic, etc.



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