

SNOW CREEK MILL ORDERED

Plant to Be Installed as Soon
As Possible. Says Man-
ager Smith.

An order has been placed in Chicago for the ten stamp mill to be installed on the Snow Creek property, mentioned in last week's issue. The machinery is to be delivered at the earliest possible date and Manager Fred Smith states that he expects to have the plant in operation before cold weather. The contract for its construction has been awarded to Millwright McLain. There will be three Wilfley concentrators, together with all accessory machinery.

Manager Smith moved his office yesterday from the Hotel Sumpter to the mine to keep in better touch with the work. Mrs. Smith will join him there in a few days. Mrs. J. M. Dwyer, who has been connected with the firm as private secretary for some time will also leave for the mine in a day or so to take charge of the books.

The Snow Creek has made a remarkable showing during the short superintendence of Mr. Smith. The property has been judiciously and systematically developed and its advancement to the class of producers in such a short period speaks well for the management.

The engineering firm of Browne & Smith has been dissolved, Mr. Smith withdrawing in order to devote his time exclusively to the mine. The engineering business will be continued by Mr. Browne.

RADIUM.

Rare Metal Described By
Professor Curie.

The Engineer, of London, in a short account of the recent discourse by Professor Curie on the new element, radium, discovered by him in collaboration with his wife, calls attention to the certainty with which the latest revelations of science may be depended to be heard of in the proceedings of the Royal Institution, and the account of the wonders of radium is certainly a worthy addition to its record. Professor Curie first explained that radium was capable of giving out heat rays sufficient in quantity to permit of measurement of rise in temperature by means of a thermometer. Moreover, it was apparently capable of doing this without suffering diminution itself in either bulk or weight. The emanations affect photographic plates through opaque substances much in the same way as do the Roentgen rays, though it is noticeable that the effects produced by the former are not nearly as sharp as are those produced by the latter. Radium, too, will render some bodies—such as sulphide of zinc and platino-cyanide of barium—into proximity with which it it brought, phosphorescent. Moreover, it did not lose this extraordinary property when its temperature was lowered to that of liquid air, and it, as far as has yet been discovered, is capable of causing these phenomena for indefinite periods, without any loss to itself or any diminution of activity.

Another attribute possessed by this element, or its compounds—for it was with the chloride and bromide of radium that Professor Curie was experimenting—is its ability to render air a conductor of electricity. When brought near either of the terminals of an induction coil, between which sparks were passing, the

sparking ceased. Apparently the infinitesimally small particles thrown off in the radiations actually render the air a conductor. Then, too, when brought near a charged electroscope it has the power of discharging it.

Professor Curie described the different radiations given off by the radium compounds and classified them in accordance with their behavior under the influence of a magnetic field, their power of penetration, etc., and went on to explain that in addition to these radiations, emanations possessing the same properties as the substance itself were given off. These emanations possess many of the properties of gases. They could, for example, be sucked through a tube. They could also be condensed by the action of intense cold and would diffuse again when the temperature was raised. As an example of one of the effects produced two vessels, one containing sulphide of zinc and the other radium chloride, were connected by a tube in which had been fixed a stop-cock. As long as this latter remained closed no effect was produced on the zinc sulphide, but this substance at once became luminous as soon as the stop-cock was opened. The emanations, like the substance from which they come, can also discharge electrified bodies.

That radium actually did give off heat rays was demonstrated by a striking experiment with what the professor termed a liquid air calorimeter. A vacuum flask was so arranged that the quantity of air boiling off in a given time from some liquid air contained in it could be accurately measured. Into this flask were successively lowered a small piece of glass and a small vessel of like size, containing a small quantity of radium substance. It was shown that the quantity of air coming off in the second case was very much greater than it had been in the first case—the times in both instances being the same.

Before concluding Professor Curie alluded to some of the other characteristics of radium. He explained that it was obtained from pitchblende, in which mineral it was present in very minute quantities. We believe that Sir William Crookes has succeeded in extracting a gramme from a ton of pitchblende. The rays will discolor paper, give glass an abiding violet tint, turn oxygen into ozone, yellow phosphorus into the red variety and mercury chloride into calomel. Some of these powers were exhibited. Finally the lecturer gave some account of the experiments which he and his wife had carried out and which had led up to the discovery of radium and other similar bodies. He also made mention of a few of the speculations as to the possible gradual transformation of the elements, suggested by the already known properties possessed by this wonderful substance.

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