Burning Oil Wells.

An oil well on fire is thus described in the *Titusville* (Pennsylvania) *Gazette:*—"A dense black cloud of smoke was distinctly to be seen as the hill-tops were reached on leaving town. That cloud increased as the well was neared, until seen from the top of the hills adjoining the valley where the well was located, when the black column of smoke appeared, up which angry and lurid flames could be seen constantly leaping and flapping about, as though endeavoring to lash themselves into greater fury. The flames rose sixty to eighty feet into the air, and the noise of the flame, and the oil, and gas rushing from the pipe, was distinctly heard three-fourths of a mile. The stream of oil, the full size of the pipe, (four inches in diameter,) was thrown fifteen to thirty feet high, and all on fire the instant it left the pipe. Drops of oil thrown off a lurid blaze, and drops of water, converted into steam, were flying in every direction. Spiral columns of flame, formed by currents of air, rose on every side, and in great fury, presenting a most unique spectacle. The scene was grand, and one long to be remembered."

The Electric Light in Paris.

The experiments with the electric light, which have now been made for a long time past at the Palais-Royal, Paris, are still continued every evening with increasing success. Lately, instead of two burners fed by divided currents from the magneto-electric machine, one burner, fed by a single current has been used. It is raised sixteen metres, and illuminates, as with the light of the full moon, the whole square in front of the Palais-Royal and the two entrances of Rue Saint Honoré. Two hyperbolic reflectors—one above the light, the other below—increase and diffuse the light. By certain improvements in the prisms or cylinders of artificial carbon, which are used in the production of the light, M. Curmer, is now able to make electric lamps which will burn five or six hours without requiring any attention. The lamp of M. Serrin, placed before the house of Prince Eugene, also burns brilliantly. M. Serrin has succeeded lately in causing his lamp to burn under water almost as well as in the atmosphere. Thus, we may now light the bottoms of rivers, or of the sea, or the bottoms of floating vessels, sunken wrecks, the foundations of piers, and other submarine structures. It is expected that we shall soon be able to apply this method of illumination in our lighthouses, ships, and generally on land in our cities and houses. At the Invalides lately, in the presence of Despretz, Babinet, Foucault, and others, a magneto-electric machine was worked by one of Lenoir's lately-invented gas-engines, of 3 horse-power. By this means, a strong electric current was generated, and M. Serrin's lamp gave a very brilliant light equal to two hundred Carcel burners.—*London Mechanics' Magazine.*

Properties of Flint or Silica.

It is well known that silica can, by appropriate means, be obtained in the form of a pure aqueous solution, and it was to this liquid that we accordingly directed our attention. This solution can be made in several ways:—

1. By disolving sulphide of silicium in water, when sulphuretted hydrogen is given off, and the silica remains completely dissolved, and in such quantity that the liquid gelatinises when an attempt is made to evaporate it.

2. By precipitating silica in the gelatinous state from an alkaline silicate, by means of acetic or other weak acid, and, after well washing, heating it for some time under pressure, with a small quantity of water in a closed vessel. A liquid is thus obtained which gelatinises on addition of a saline solution.

3. By passing gaseous fluoride of silicium over crystallised boracic acid, and separating the hydrofluoric and boracic acids by digestion with a large excess of ammonia, a hydrate of silica remains, which, when well washed from the above acids, is very soluble in water. This solution gives no precipitate when boiled but leaves silica as an insoluble powder on evaporation.

4. By the beautiful method recently pointed out by Professor Graham, in which advantage is taken of the new means of separating bodies by *dialysis.* A solution of silicate of soda, supersaturated with hydrochloric acid, is placed on one side of a parchment paper septum, pure water being on the other side; in a few days the hydrochloric acid and chloride of sodium will be found to have completely passed through the diaphragm, leaving the silica in aqueous solution, and so pure that acid nitrate of silver fails to detect chlorine in the liquid. This solution remains fluid for some days, but it ultimately gelatinises. We have generally adopted this last plan of preparing the aqueous solution of silica, although a stronger solution is obtained by the method first given.

When a pure aqueous solution of silicic acid prepared as above is allowed to soak into the pores of chalk or dolomite, a process of hardening rapidly occurs, which goes on increasing for several days, whilst, owing to its considerable depth of penetration, and to there being no soluble or efflorescent compounds to be removed, there is every probability that this hard silicious impregnation will afford permanent protection to the stone. We are now actively engaged in investigating the nature of the action which takes place, and already several curious and important results have been made out, from which we are led to anticipate that our experiments will ultimately be rewarded with complete success.—*Chemical News.*

Solder for Brass Instruments.

An alloy of 78.26 parts of brass, 17.41 of zinc, and 4.33 of silver, with the addition of a little chloride of potassium to the borax, is recommended by Mr. Appelbaum, as the best solder for brass tubes which have to undergo much hammering or drawing after joining.

Photo-Electric Apparatus.

A Trappist named Delalot-Sevin, of the abbaye de la Grace-Dieu, has invented a new pile, much stronger, and at the same time much cheaper, than the pile of Bunsen. By means of his photo-electric apparatus he produces an electric light as cheap as gas, and with his thermo-electric pile he supplies caloric on economic terms hitherto unknown. Several of these apparatus have been constructed, and one is at full work in the abbaye of La Grâce-Dieu. Manufactories for the public are shortly to be established in Paris and at Lyons. The apparatus for producing gas will not be given to the public until after the Exhibition at London next year, but that for heating buildings will be made public on the 16th of December next. The inventor has been authorized to make public experiments with his system of lighting on the Place Saint Jacques in Paris, and on the Place Bellecourt at Lyons.

On the Natural Dissemination of Gold.

Mr. Eckfeldt, the principal assayist for the United States Mint at Philadelphia, has lately made several interesting examinations tending to show the very wide distribution of gold. Passing over the evidence respecting its presence in various galenas, in metallic lead, copper, silver, antimony, &c., we recite the following, perhaps the most curious result of all:—Underneath the paved city of Philadelphia there lies a deposit of clay, whose area, by a probable estimate, would measure over three miles square, enabling us to figure out the convenient sum of ten square miles. The average depth