Fusion of Platinum.

M. H. Sainte-Claire Deville continues to announce his fusion of platinum as though there were something new in it. In this city it has been worked in this way in large masses for years, by Mr. Bishop, formerly assistant to Dr. Hare. And, by the way, as Prof. Deville continues to find the density of iridium 18, it is evident that his fusion of that metal must be very imperfect, for Drs. Hare and Boyè found 21.8, and the latter was not free from air-bubbles. Iridium is, therefore, the heaviest metal yet known.

Clarifying Coal Oils.

From the Lond. Chemical News, No. 16.

Messrs. Dumoulin and Cotelte have been making a series of experiments with a view of rendering heavy oils suitable for ordinary lighting purposes, and have succeeded in producing a magnificent light, free from smoke and smell, and adapted in all respects for burning in a room. The following is their process:—In a close vessel are placed 100 lbs. of crude coal oil, 25 quarts of water, 1 lb. of chloride of lime, 1 lb. of soda, and half a pound of oxide of manganese. The mixture is violently agitated and allowed to rest for 24 hours, when the clear oil is decanted and distilled. The 100 lbs. of coal oil are to be mixed with 25 lbs. of resin oil; this is one of the principal points in the manipulation: it removes the gummy parts from the oil and renders them inodorous. The distillation spoken of may terminate the process, or the oils may be distilled before they are defecated and precipitated.—*Le Génie Industriel.*

On the Composition of Water obtained from the Coal-strata, Bradford Moor, Yorkshire. By F. A. ABEL, Esq.

From the Lond. Ed. and Dub. Phil. Mag., May, 1860.

The analysis of a sample of water from the above source was undertaken a short time since with the view to ascertain whether it was adapted to general domestic purposes. The results furnished by the examination appeared of sufficient interest to warrant their publication.

Two samples of the water collected at the mouth of a coal-pit, at an interval of about one month (the separate analyses of which furnished thoroughly concordant results), were submitted to me officially for examination by Lieutenant-Colonel Hamley, Commanding Royal Engineer at York, who informed me that the water, which is highly esteemed in the neighborhood for drinking and culinary purposes, is raised from coal-pits, at a depth of about 200 feet beneath Bradford Moor—an abundant and regular supply being obtained.

The specific gravity of the water was 1000.78 at 60° F. Its reaction was powerfully alkaline, and its flavor was brisk and agreeable.

The proportion of solid matter obtained on evaporation amounted to 44.1 grains in an imperial gallon, of which by far the largest proportion consisted of carbonate of soda.

The alkalinity of the boiled water was determined by means of standard sulphuric acid, and found to be equivalent to a proportion of 30.76 grains of carbonate of soda in an imperial gallon.

The result obtained by the direct determination of the carbonic acid, corresponded accurately to the proportion required by theory to hold in solution the whole of the lime and magnesia in the water, and to form bicarbonate with the amount of soda represented by the number above quoted.

The following statement represents the proportions of the various constituents existing in solution in an imperial gallon of the water:—

Bicarbonate of soda,	.	.	.	.	43.53
Sulphate of soda,	.	.	.	.	7.50
Chloride of sodium,	.	.	.	.	1.34
Sulphate of potassa,	.	.	.	.	0.31
Phosphate of lime,	.	.	.	.	trace.
Carbonate of lime,	.	.	.	.	1.90
Carbonate of magnesia,	.	.	.	.	0.80
Organic matter,	.	.	.	.	1.20

Carbonic acid, holding the carbonates of lime and magnesia in solution, 1.25 grain = 2.642 cubic inches at 60° F.

The absence of nitric acid, ammonia, silicic acid, alkaline sulphides, and oxide of iron was established by special examinations.

*A Composition named Zeiodelite, a kind of Paste which becomes as hard as Stone, is unchangeable by the Air, and being proof against the action of Acids, may replace Lead and other substances for various uses.** JOSEPH SIMON, 1859.

Zeiodelite is made by mixing together 19 lbs. of sulphur and 42 lbs. of pulverized stoneware and glass. The mixture is exposed to a gentle heat, which melts the sulphur, and then the mass is stirred until it becomes thoroughly homogeneous, when it is run into suitable moulds and allowed to cool. This preparation is proof against acids in general, whatever their degree of concentration, and will last an indefinite time. It melts at about 120° Centigrade, and may be re-employed without loss of any of its qualities, whenever it is desirable to change the form of an apparatus, by melting at a gentle heat and operating as with asphalt. At 110° Centigrade it becomes as hard as stone, and therefore preserves its solidity in boiling water. Slabs of zeiodelite may be joined by introducing between them some of the paste heated to 200° Centigrade, which will melt the edges of the slabs, and when the whole becomes cold it will present one uniform piece. Chambers lined with zeiodelite in place of lead, the inventor says, will enable manufacturers to produce acids free from nitrate and sulphate of lead. The cost will be only one-fifth the price of lead. The compound is also said to be superior to hydraulic lime for uniting stone, and resisting the action of water.

* From the Lond. Chemical News, No. 14.