to be thought," etc., etc. (cf. Marlatt, l.c., p. 837).

T. D. A. Cockerell.

N. M. Agricultural College.

POT-HOLE VS. REMOLINO.

To the Editor of Science: In your issue of July 14th you publish a communication from Mr. Oscar H. Hershey, in which he advocates the substitution of the Spanish word 'remolino' for the term 'pot-hole,' as applied to rounded cavities formed by rivers in their rock-beds.

The term pot-hole may not be elegant, but it certainly expresses the object to which it is applied more correctly than would the Spanish word he seeks to adopt in its place. The definition of 'remolino' is a whirlpool, or whirlwind; it is also applied to a turbulent or disorderly mob of people.

While a whirlpool may be the cause of a 'pot-hole,' it would be improper to substitute the cause for the effect.

The fact that the word *remolino* is not properly applied in the Republic of Colombia, perhaps only coloquially, is no justification for the introduction of an incorrect term into American scientific nomenclature.

F. F. Hilder.

Washington, D. C., July 15, 1899.

NOTES ON INORGANIC CHEMISTRY.

The pupils and former colleagues of Professor Joly, of the École Normale of Paris, are continuing with good results the researches of Joly on platinum groups of metals. Brizard, of the École Normale, has continued the study of the osmiamates begun by Joly. These compounds were discovered by Fritzsche and Struve half a century ago, being formed by the action of ammonia and caustic potash on osmium tetroxid. The formula assigned was $K_2Os_2N_2O_5$. Joly was led to suspect that the compound contained the NO group, analogous to his nitroso compounds of ruthenium, and partial analyses and its decomposition products pointed in the same direction. Brizard has now confirmed this by complete analyses of the potassium, ammonium and silver salts, and the formula proposed by Joly $KOsNO_3$ is proven correct. The osmiamates are thus salts of the anhydrid of a nitroso acid $OsNO(OH)_3$, which corresponds to a hydroxid of ruthenium $RuNO(OH)_3$ discovered by Joly.

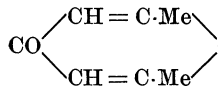
In the same number of the *Bulletin Soc. Chim.* is a paper by Professor Vèzes, of Bordeaux, continuing his work on the oxalates of the platinum metals. This paper takes up the oxalates of palladium. These may be formed directly by the action of potassium oxalate on potassium chlorpalladite in neutral solution, or by the action of oxalic acid on potassium palladonitrite. Unlike the case with platinum, the same salt is obtained in both cases, a potassium palladooxalate of formula $Pd(\overline{Ox})_2K_23H_2O$. This salt is easily converted back into the chlorpalladite by hydrochloric acid, and into the palladonitrite by potassium nitrite in neutral solution. Professor Loiseleur, of Libourne, has succeeded in preparing the free pallado-oxalic acid. It thus appears, as with platinum, a very close relation subsists between K_2PdCl_4, $K_2Pd(NO_2)_4$ and $K_2Pd\overline{Ox}_2$, and also that the pallado-oxalates are not double salts merely, but 'complex' salts and derivatives of a 'complex' pallado-oxalic acid.

Professor Vèzes has also contributed to the *Zeitschrift für anorganische Chemie* a short note on the volatilization of osmium in a stream of oxygen. The paper was occasioned by an article by Sulč on the same subject, showing that osmium is volatile at ordinary temperatures. Vèzes calls attention to the fact that Deville and Debray had long ago noticed this fact, which was further studied by Joly and himself. The volatility of osmium depends not only on the fineness of its division, but also upon the method of its preparation, some forms being volatilized appreciably at quite low temperatures.

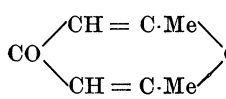
The so-called 'metallic' variety of phosphorus is shown by D. L. Chapman, in the *Proceedings of the Chemical Society* (London) to be identical with red phosphorus, their appearance under the microscope being similar. The alleged higher vapor tension of some varieties of red phosphorus is merely due to impurity. The vapors from red and from ordinary phosphorus are identical, and at the temperatures of boiling mercury and of boiling sulfur show a

density which corresponds to a molecule containing four atoms at the fusing point of potassium iodid; red phosphorus under pressure is converted into ordinary phosphorus.

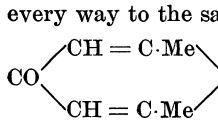
THE *Proceedings* for June 1st contain the abstract of a paper by J. N. Collie and T. Tickle, which, while dealing with an organic substance, has a direct bearing on the valence of oxygen. Dimethyl pyrone acts as a base in forming a large series of salts by the direct addition of acids without elimination of water. The chloroplatinite is also formed. From this the inference is drawn that the oxygen is the base-forming element and that its valence in the salts must be four. The formula of the base is



and of the salts



, corresponding in every way to the salts of dimethyl pyridone, as



. As there seems to be in the compound no other element which can be base-forming, it would seem that oxygen must be added to the list of base-forming elements, nitrogen, phosphorus, sulfur and iodin, and that we now have oxonium bases.

FLUORIN has been given as present in analyses of some mineral waters, as those of Mont Dore and of St. Honoré les-Bains. F. Parmentier has made a careful examination of these waters, and his results, published in the *Comptes Rendus*, show that no fluorin is present. The etched appearance of glass vessels in which these waters have stood is shown to be due to the deposition of silica, of which a considerable quantity is present in the waters, and not to any real etching or the deposition of any fluorin compound.

J. L. H.

CURRENT NOTES ON METEOROLOGY.

FOEHM WINDS.

IN the *Meteorologische Zeitschrift* for May, Billwiller gives a clear and concise account of the various kinds of winds which he believes should be classed together as *foehm winds* (*Ueber verschiedene Entstehungsarten und Erscheinungsformen des Föhms*). There are five varieties in all. The first is the best known of all, viz., the *foehm* on the northern slopes and in the northern valleys of the Alps, which occurs during the passage of an area of low pressure across central and northern Germany. It is this warm, dry wind which is so important a factor in the climate of some of the Swiss villages, Meiringen, for instance. Its rapid evaporation of the deep winter snows has gained for it the name of *shneefresser*. The north *foehm* on the southern side of the Alps is the second class, which occurs when barometric minima move across the northern Mediterranean region and thus draw down the air from the mountains, or when a barometric maximum is forming or approaching on the northern side of the Alps, thus producing a considerable gradient to the south. A simultaneous appearance of *foehm* winds may take place in both northern and southern Alpine valleys when there is a well-marked descent of the air over the mountains. This gives rise to the third class of these winds. Under the influence of the Alpine topography the slow down-settling of the air within an anticyclone may become locally hastened, and thus there results a development of air currents dynamically warmed, which constitute the fourth class of *foehm* winds. Lastly come the dry, *foehm*-like winds which have occasionally been noted as blowing out of winter anticyclones in cases where there is no effect of topography. Although the immediate cause of the occurrence of these warm and dry winds may be different in different cases, this does not affect the nature of the *foehm* itself. A distinct division cannot well be made between the various classes and the term *foehm* should, therefore, be used to describe the characteristics of the winds, rather than their immediate cause.

LIGHTNING AND THE ELECTRICITY OF THE AIR.

UNDER the title, *Lightning and the Electricity of the Air*, A. G. McAdie and A. J. Henry, of the U. S. Weather Bureau, have prepared a report which has been issued as Bulletin No. 26, of the Weather Bureau. This Bulletin consists of two