

and though the compound obtained, by using 27.5 of sulphate of potash, or 1 atom and 7.5 of lamp-black, or 4 atoms agglutinated, and did not inflame; yet, on using double the quantity of lamp-black, the pyrophorus obtained was extremely pulverulent, and was astonishingly inflammable, so much so as to be almost dangerous.

This pyrophorus yields no sulphurous acid during combustion; when put into water, it gives no hydrogen, showing that there is no uncombined potassium; and when the solution is treated with an acid, sulphuretted hydrogen is evolved, and sulphur precipitated. Unlike common pyrophorus, it does not require moist air for its combustion: the charcoal does not appear to be in a state of combination, for the aqueous solution of the pyrophorus is not distinguishable from that of sulphuret of potassium, made without charcoal; and this latter substance is so readily deposited in the vessel, as not to indicate that state of minute division which is characteristic of previous combination.

The new pyrophorus, compared with the common, appears to owe its greater inflammability to several causes: to its more minutely divided state, the absence of inactive earthy matter, and also to the smaller proportion of sulphur. Sulphate of soda, used in equivalent proportion, produces nearly the same effect as sulphate of potash; but sulphate of barytes did not at all answer. M. Gay-Lussac is of opinion, that the action of potassium depends essentially upon the great combustibility of sulphuret of potassium, and its action upon water and air: alumina and magnesia appear only to divide the combustible matter; but charcoal, being itself combustible, is not passive in the phenomena; the combustion having once commenced, it supports it. A very high temperature did not appear to alter the inflammability of the pyrophorus, provided that, during the cooling, the air was carefully excluded. [Ann. de Chim.

Account of a cheap and easily constructed Barometer for measuring Altitudes, &c. By MR. J. OTLEY.

GENTLEMEN,—Observing in a late number of the Philosophical Magazine,* a proposal by Mr. Nixon, for determining the heights and dip of strata by barometric observations, I take the liberty of offering a description of an instrument I have lately constructed, which, I think, particularly applicable to that purpose, as well as to the measurement of any elevation where a barometer can be employed.

I procured a straight barometer tube, thirty-three inches in length, and also a bottle one inch in diameter, and the same in depth. In one side of this bottle, near the top, I bored a small hole; and having filled the tube with mercury, and the bottle rather more than half full, I inserted and cemented the tube into the neck of the bottle,

* See Phil. Mag. and Annals, N. S. vol. iii. p. 11.

with its open end a little below the middle, so that in every position the opening was covered with mercury.

I then fitted the whole into a casing of wood, the tube, for twenty-five inches of its length, being imbedded level with the surface; the upper end opposite the scale, for the length of eight inches, being fully exposed. The divisions of the scale denoting inches and tenths, are reduced a little, to compensate for the variation of the surface of the mercury in the cistern. For a vernier, I took a very thin piece of silver, the length of eleven divisions of the scale, and breadth something more than half the circumference of the tube; this divided into ten parts by lines quite across, except a small space for the figures, and bent so as to embrace the tube with a gentle elastic pressure, is made to slide as freely as required: the lines of the scale being reflected from the surface of the silver, afford great assistance in observing the coincidence, dividing the inch very accurately into a hundred parts; and a figure in the third place of decimals, may be estimated by the eye. The lower part of the case being secured by a piece of thin brass plate, with a bottom projecting in front beyond the diameter of the bottle, I fit a wooden cover, the whole length of the instrument, with two pins to pass into corresponding holes in the bottom plate: a bit of soft leather is placed so as to press on the mouth of the hole in the bottle, and the case, being made a little taper, is easily kept close by a slight hoop of leather.

This barometer, with a moderate degree of precaution, is sufficiently portable, and very ready in use; it requires no other preparation for an observation, than merely to hang it perpendicularly, and take off the cover: the air having immediate access to the surface of the mercury in the cistern, renders it more satisfactory than those in which it has to pass through the pores of the wood, and where the surface of the mercury cannot be seen; and less troublesome in use, with less risk of error, than others, in which it has to be adjusted by a screw for every observation.

If a due proportion is attained in the divisions of the scale, and proper attention paid in taking a mean observation at each station, to obviate the effects of the friction unavoidable in small tubes, I am convinced that it will be found as accurate as any barometer of the same dimensions, although of a far more elaborate and expensive construction.

I am, &c.

J. ORLEY.

[*Phil. Mag.*

Keswick, August 7th, 1828.

Efficacy of Ammonia in counteracting Poison: extract of a letter from Dr. Austin Church, to Professor Silliman, dated Cooperstown, New York, Feb. 6, 1829.

A young man in this place, had accidentally upset a hive of bees, and before he could escape, they had settled, in great numbers,