tained, founded on any circumstance arising out of the Dublin observations, that doubt must relate, not to the accuracy of former catalogues, but to the present position of the stars; since it is with respect to their *present* position that the two instruments are really at variance. This circumstance is very fortunate, as time may confirm the present, or suggest some more satisfactory method of investigation, if what I have now advanced be not thought sufficient for the purpose.

Article IV.

A Discovery of Chloride of Potassium in the Earth. By James Smithson, Esq. FRS.

(To the Editor of the *Annals of Philosophy*.)

SIR,

A RED ferruginous mass, containing veins of a white crystalline matter, part of a block which was said to have been thrown out of Vesuvius during a late eruption, was brought to me, with a request that I would tell what it was.

This red ferruginous rock was a spongy lava, in the substance of which was here and there lodged a crystal of augite or pyroxene of Haüy, or of hornblende.

The white matter filled most of the larger cavities, and was more or less disseminated through nearly the whole of the mass.

It had a saline appearance; a tabular fracture could be seen in it with a lens, and in some few places regular cubical crystals were discernible.

I supposed it to be chloride of sodium, or muriate of ammonia.

Heated in a matrass, it decrepitated slightly, and melted, but little or nothing sublimed.

This white matter dissolved entirely in water. Laid on silver with sulphate of copper, it produced an intense black stain.

Chloride of barium added to the solution caused only a very slight turbidness, due probably to some sulphate of lime which is present.

Tartaric acid occasioned an abundant formation of crystals of tartar. Chloride of platinum immediately threw down a precipitate, and distinct octahedral crystals of the same nature afterwards appeared.

On decomposition by nitric acid, only prismatic crystals of nitrate of potash could be perceived. On a second crystallization, a few rhombic crystals were discovered; but nitrate of potash sometimes presents this form.

It appears from these experiments, that this white saline matter is pure, or nearly pure, chloride of potassium.

I am inclined to attribute its introduction into the lava to sublimation.

As chloride of potassium is a new species in mineralogy, I shall send the specimen to the British Museum.

Article V.

Astronomical Observations, 1823.
By Col. Beaufoy, FRS.

Bushey Heath, near Stanmore.

Latitude 51° 37′ 44·3″ North. Longitude West in time 1′ 20·93″.

Sept. 2.	Immersion of Jupiter's first satellite	15h	24′	58·7″	Mean Time at Bushey.
		15	26	19·6	Mean Time at Greenwich.
Sept. 7.	Immersion of Jupiter's second satellite	15	05	21	Mean Time at Bushey.
		15	06	42	Mean Time at Greenwich.
Sept. 19.	Immersion of Jupiter's first satellite	15	40	01	Mean Time at Bushey.
		15	41	22	Mean Time at Greenwich.

Article VI.

An Abridged Translation of M. Ramond's Instructions for the Application of the Barometer to the Measurement of Heights, with a Selection from his Tables for facilitating those Operations, reduced (where necessary) to English Measures. By Baden Powell, MA. of Oriel College, Oxford.

(*Continued from* p. 177.)

The configuration of the place where the barometer is situated is far from being a matter of indifference to the accuracy of the measurements. We have just seen what influence it has on the temperature; it appears not to have less on the pressure of the atmosphere. A dry and strongly heated plain gives greater velocity to the ascending currents, which is not done by a verdant hill; upon all sides of which the sun does not shine at the same time. Here the barometer will be proportionally higher; in the other case lower. On an insulated peak all currents have an ascending motion given them from passing along its acclivities: they all acquire a compressing power in a narrow and deep valley where they engulph themselves: and the mercury sustains itself constantly above the point at which it would stand in an open plain at the same absolute elevation. I have measured several hundred times the height of Barèges above Tarbes. The town of Tarbes is situated on an extensive plain. The valley of Barèges is a very narrow gorge, surrounded on all