lightning, the course of which through the air, could be distinctly traced.

The thunder storm of the 27th June, came from the south-east, and seems to have had a very wide range. Fortunately its force was nearly spent before it reached the highest point of Scotland; otherwise, instead of witnessing it in an evanescent state, perhaps we might have afforded a melancholy decision of the question, whether lightning ascending into the clouds, is equally fatal to the objects it leaves, as the descending fluid is to those which it strikes.

In the afternoon the weather cleared up. Most of the clouds evaporated, leaving the fine sky. The sun shone very bright, and the evening became very warm. Three hours ago, on the top of the mountain, we had been chilled by cold and covered with snow; and now, in the valley below, we could look up with admiration to its cloudless summit, in a climate where we were severely bit by the Tabanus cæcutiens. The following day was very fine, and during the greater part there was not a cloud to be observed in the atmosphere.

I am, Dear Sir, yours sincerely and respectfully,

JOHN MACVICAR.

DUNDEE, *September* 10, 1825.

ART. XXI.—*Description of Edingtonite, a New Mineral Species.* By WILLIAM HAIDINGER, Esq. F. R. S. E. With an Analysis by EDWARD TURNER, M. D. F. R. S. E. &c. Lecturer on Chemistry, and Fellow of the Royal College of Physicians, Edinburgh. Communicated by the Author.

FORM pyramidal. Fundamental form, an isosceles four-sided pyramid of 121° 40′, and 87° 19′ = P. Plate VII, Fig 9.

$$a = \sqrt{0.905}.$$

Simple forms. P—2 (n) = 144° 38′; P (P); P+∞ (m).

Character of combinations. Hemi-pyramidal, with parallel faces. $\frac{P-2}{2}$ = 129° 8′, 35° 22′. Fig. 10. $\frac{P}{2}$ = 92° 41′, 58″ 20′. Fig. 11.

Combinations observed similar to Fig. 12, consisting of all the foregoing simple forms, and to Fig 13, which, moreover, contains the alternating faces of a very flat four-sided pyramid, *p*, *p*, which allows of no measurement.

Cleavage. Pretty distinct, parallel to the rectangular four-sided prism, *m*. In other directions, there is small and imperfect conchoidal fracture; sometimes it is uneven. Surface of $\frac{P}{2}$ and $P+\infty$ generally smooth, the other faces curved and without lustre.

Lustre vitreous. Colour greyish-white. Semi-transparent, generally only translucent. Streak white.

Brittle. Hardness = 4.0 ... 4.5, nearer the latter. Sp. gr. = 2.710, of a number of small crystals, forming together, 243 milligrammes.

Observations.

1. Among a great number of interesting minerals from the neighbourhood of Glasgow and Dumbarton, in the possession of Mr Edington of Glasgow, with the inspection of which I have been lately gratified, I observed some crystals disposed in the cavities of Thomsonite, which at first I expected would belong to that species; but I soon found that their faces could not be identified with those mentioned in the descriptions of it, as given by Messrs Brooke* and Phillips.† Mr Edington had the kindness of entrusting me with the only specimen of the substance which I could discover in his collection, and to which the preceding description refers. It is in compliment to that gentleman that the name of Edingtonite is here proposed for designating the species.

2. The regular forms of Edingtonite, even if we do not attend to the interest attached to every novelty, are highly deserving of notice on account of their forming the only second instance, among natural crystals, of hemi-pyramidal forms with inclined faces; the first example observed being the species of pyramidal copper-pyrites. Hemi-pyramidal forms are in general very rare; the pyramidal scheelium-baryte of Mohs, (tungstate of lime,) is the only well authenticated instance

* *Ann. of Phil.* vol. xvi. p. 193.

† *Mineralogy*, p. 39.

of such as have parallel faces. Perhaps pyramidal felspar also belongs to this class. There is a variety of it in the possession of Mr Nordenskiöld, from Pargas in Finland, which shows the form represented, in Fig. 14, having only one of the apices disengaged.* This kind of distribution of faces is, however, quite different from that in the Edingtonite, from which it likewise considerably differs in its angles, though the specific gravity of the two substances, and their cleavage, are nearly the same.

3. Edingtonite occurs in crystals, the largest about two lines in diameter, implanted upon crystallized Thomsonite, in the Kilpatrick hills, near Glasgow. It is accompanied by calcareous spar, and a curious variety of harmotome, (the paratomous Kouphone spar of Mohs,) in twin crystals, of the form Fig. 15. In these, the faces of the four-sided pyramids, visible in most other crystals, have entirely disappeared, and the re-entering angles at the summit are produced solely by the faces of a horizontal prism. It may be considered in this respect as the last term of a series of varieties, some of whose members were first described by Professor Weiss.† The crystals of the Edingtonite itself are far from possessing such a degree of perfection, that the angles given above could be regarded as anything more than approximations, although their general form is well defined. They resemble greatly certain varieties of prehnite and felspar, but we must wait for the discovery of other varieties of it, which may afford a more extensive knowledge of the species, to enable us to determine the genus in the Order Spar of the system of Mohs, to which it might be referred.

Analysis of Edingtonite.

It yields water when exposed to heat, and becomes at the same time opaque and white. Before the blow-pipe it fuses into a colourless glass, though a pretty strong heat is necessary for that purpose.

Muriatic acid acts upon it, separating silica in a gelatinous

* Mohs' *Treatise on Mineralogy, Transl.* vol. ii. p. 265.

† *Magazin der Gesellschaft naturforschender Freunde zu Berlin.* viii. 33.

state; but the action did not appear sufficiently perfect for the purpose of analysis.

2.365 grains of the mineral (the whole quantity in my possession) were heated to redness, and lost 0.315 of a grain, or 13.319 per cent. of water of crystallization.

The residual 2.05 grains, which crumbled easily into powder, were mixed with six grains of carbonate of soda, and kept at a red heat during half an hour. The ignited mass was quite white, and had not fused. Dilute muriatic acid dissolved the whole of it, except a few flocculi of silica. The solution was brought to dryness, and the silica, after being collected on a filtre and heated to redness, weighed 0.89 of a grain, which is 35.09 per cent.

The solution, thus freed from silica, was treated with a slight excess of carbonate of soda at a boiling temperature, when a white precipitate subsided. It was digested in pure potash, to dissolve any alumina that might be present, and the alkaline solution, when boiled with an excess of muriate of ammonia, yielded a portion of alumina, which, after exposure to a white heat, weighed 0.655 of a grain, being 27.69 per cent.

The matter which did not dissolve in potash proved to be an earthy carbonate; for it dissolved with effervescence in muriatic acid. On neutralizing the solution exactly, and adding oxalate of ammonia, a white precipitate subsided, which yielded 0.3 of a grain, 12.68 per cent. of pure lime.

To the solution, after the separation of lime, carbonate of ammonia and phosphate of soda were added. No precipitate formed, and hence no magnesia was present. Iron and manganese were likewise absent.

The Edingtonite hence contains,

Silica, -	35.09
Alumina, -	27.69
Lime, - -	12.68
Water, -	13.32
	88.78

As the various substances found to exist in this mineral do not account for the quantity submitted to analysis, it doubtless contains about 10 or 11 per cent. of some alkali, the nature of which I have not been able to ascertain.

Art. XXII.—*Description of a New Hygrometer, depending on the Affinity of Acids for Water.* * By Professor Aug. de la Rive.

In the course of some researches on the different degrees of heat, occasioned by the affinity of acids for water, I was led to recognize in that phenomenon a very exact indication of the degree of humidity of the atmosphere.

If we plunge the ball of a thermometer into a concentrated acid, such as the nitric acid, but particularly the sulphuric acid, it will be seen that, as soon as the ball is withdrawn from the acid and exposed to the open air, the thermometer will rise considerably. This phenomenon is owing to the condensation of the aqueous vapours produced by the affinity exerted on these by the thin stratum of acid which adheres to the ball. The heat produced is very considerable with sulphuric acid, because in this case there are two sources of caloric, 1st, That which proceeds from the condensation of the vapour; and, 2d, That which is owing to the mixture of the water and the acid.

Having noticed that the quantity of heat, indicated by the thermometer when taken out of the acid, varies with the humidity of the air, other circumstances remaining the same, I sought to determine whether or not these variations of heat might serve to measure different degrees of humidity.

Every hygrometer, or apparatus for measuring variations in the humidity of the air, ought to possess the following qualities.

1. To agree with itself, or, on the return of the same state of the humidity of the air, to indicate the same degree of its scale.

2. That its variations be proportional to those of humidity,

* This paper is a translation and abstract of a Memoir read to the Natural History Society of Geneva, on the 21st April 1825, and appeared in the *Bibl. Univ.* Avril 1825.