


THE
ANNALS
OF
PHILOSOPHY.



NEW SERIES.

JULY TO DECEMBER, 1824.

VOL. VIII.

AND TWENTY-FOURTH FROM THE COMMENCEMENT.



London:

Printed by C. Baldwin, New Bridge-street;

FOR BALDWIN, CRADOCK, AND JOY,
PATERNOSTER-ROW.



1824.

ARTICLE V.

Reply to X. By J. F. Daniell, Esq, FRS. &c.

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

GENTLEMEN,

Nov. 6, 1824.

THE illustration of your correspondent X. is so extremely apposite, that I at once agree with him in thinking it conclusive. I suppose, with him, "three barometer tubes standing in a reservoir, and filled alike with mercury, but that one of the tubes expands by heating, that another contracts, and that the third neither expands nor contracts." But then, I pretend to say, (in defiance of the *odium philosophorum*), that if this apparatus be exposed to various temperatures, the columns in all will not rise to precisely the same height as measured upon their respective tubes.

X. does me too much honour in supposing that I am the first who ever used the fraction of the apparent dilatation of mercury for correcting the observed height of the barometer: it has long been known to all those moderately acquainted with the subject, that the expansion of the scale must be taken into account for all nice purposes.

I trust that X. will not wait for my visit to the Grampian Hills to disclose his method of detecting "the most minute impurity existing in mercury by inspection of a single drop of that metal," but that he will be induced, for the good of science, to communicate so important a discovery to the *Annals of Philosophy*.*

I remain, Gentlemen, faithfully yours,

J. F. DANIELL.

ARTICLE VI.

Account of a new Mineral Substance. By M. Lévy, MA, of the University of Paris.

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

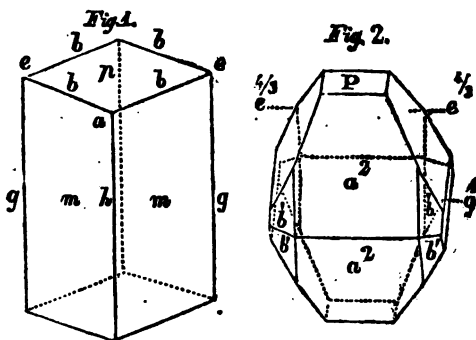
GENTLEMEN,

Nov. 10, 1824.

YOU will, perhaps, be able to spare room in the next number of the *Annals of Philosophy* for a short description of a new mineral substance, which I propose to name Rosélite, in honour of Mr. Gustavus Rose, of Berlin.

The only specimen where I have observed it belongs to Mr. Turner's collection. It occurs in small well-defined translucent crystals of a deep rose colour, on amorphous greyish quartz.

* We concur heartily in the wish expressed by our friend Mr. Daniell.—C. and P.



The form of the crystals is represented by fig. 2, but the plane marked g^1 is wanting in most of them. There is a distinct and brilliant cleavage parallel to p , but I could not find any other. The hardness of the substance is about the same as that of carbonate of lime. The faces a^2 are dull, and, as it were, hollowed towards the middle: their determination has been deduced from the parallelism of their intersections with the faces b^1 . All the other faces are sufficiently brilliant to obtain their incidences by means of the reflecting goniometer. From these incidences, as

well as from the different characters of the faces a^2 , $e^{\frac{4}{3}}$, and the occurrence of the face g^1 , without the edge of intersection of the faces a^2 being replaced, I was enabled to infer that the primitive form was not, as I had thought at first, an octohedron with a square base, but might be supposed to be an octohedron with a rectangular base, or more simply a right rhombic prism. This last hypothesis I have adopted, and determined the dimensions of the prism by assuming that the faces b^1 are the result of a decrement by one row on the edges of the base of the primitive.

In this supposition the primitive form, fig. 1, is a right rhombic prism of $125^\circ 7'$, in which one side of the base is to the height nearly in the ratio of 13 to 29. The face a^2 is on account of the parallelism already mentioned, the result of a decrement

by two rows on the angle a of the primitive, and the face $e^{\frac{4}{3}}$ on account of its incidence on p , the result of a decrement by four rows in breadth and three in height on the angle e .

The incidences I have taken as data are,

$$p, b^1 = 109^\circ 40' \quad p, e^{\frac{4}{3}} = 112^\circ 30' \quad b^1, e^{\frac{4}{3}} = 129^\circ$$

and I calculated the following, which very nearly agreed with my observations.

$$b^1, b^1 = 114^\circ 24' \quad b^1, b^1 = 79^\circ 15' \quad p, a^2 = 113^\circ 36'.$$

$$m, m = 125^\circ 7'.$$

The specimen comes from Schneeberg, in Saxony, but must be of extreme scarcity, being the only one ever seen by Mr.

Henland. Its great resemblance with the arseniate cobalt from the same locality had hitherto caused its being placed with it.

Chemical Examination of Roselite. By J. G. Children, FRS.

In glass matrass, decrepitates and gives off water; the fine deep rose colour changes to black.

With borax, on the platina wire, and in the oxidating flame, the assay dissolves readily, and gives an intensely deep blue glass. In the reducing flame, the colour becomes lighter; no appearance of reduced copper.

With salt of phosphorus on the platina wire, the assay dissolves readily and completely, and gives results similar in both flames to those with borax.

The assay dissolves with facility in muriatic acid, and, after evaporation to dryness, the residuum is wholly soluble in water.

A minute fragment digested in a solution of caustic potash, on a slip of glass, evaporated to dryness, redissolved, and the alkali neutralized with nitric acid, gave with nitrate of silver and ammonia, a brown red precipitate of arseniate of silver.

Another minute fragment gave with a drop of muriatic acid a fine blue solution; by dilution with water, the colour disappeared. A drop of the diluted solution gave an abundant precipitate with oxalate of ammonia.

Another drop, evaporated to dryness on a polished steel blade, left no trace of copper.

Another drop gave with prussiate of potash a yellowish green tint, without any indication of copper.

Another drop, treated with bicarbonate of ammonia and phosphate of soda, gave decided evidence of the presence of magnesia.

These experiments are sufficient to show, that the composition of Roselite consists of arsenic acid, united to oxide of cobalt, lime and magnesia, elements which, according to Phillips (*Mineralogy*, p. 178), constitute the *Picropharmacolite* of Stro-meyer, who found their proportions to be :

Lime	24.64
Magnesia	3.21
Arsenic acid	46.97
Oxide of cobalt.	0.99
Water.	23.97
	<hr/>
	99.78

The whole quantity of Roselite that M. Lévy could afford me for my experiments, consisted of three or four minute crystals, about the size of a small pin's head, so that any attempt to ascertain the relative quantities of the ingredients would have been

absurd. Judging, however, from the results obtained by the blowpipe, and the appearance of the precipitates, the respective quantities of magnesia in Rosélite and Picropharmacolite, in proportion to those of the lime, must be nearly alike, but that of the oxide of cobalt much greater in the former than in the latter mineral. As the results obtained by M. Stromeyer do not well accord with any probable atomic proportions, some error may, perhaps, have crept in, in the course of his analysis, which even his acknowledged ability may have failed to detect.

ARTICLE VII.

On the rapid Descent of the Barometer in Oct. 1824.

By M. P. Moyle, Esq.

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

GENTLEMEN,

Helston, Oct. 30, 1824.

BEING struck with the rapid descent of the barometer in the early part of this month, and its accompaniment by a thunder storm, I take the liberty in sending you an extract from my meteorological journal on that occasion, and am,

Gentlemen, your obedient servant,

M. P. MOYLE.

1824.	Barometer, corrected to 32° Fahr.	Ther.	Hyg.	Wind.		
Oct. 9.						
9 a. m.	29.6820	55	93	NW	Gentle	Very fine
3 p. m.	29.7127	59	82	W	Brisk	Showery
10 p. m.	29.6664	58	96	W	Gentle	Cloudy
Oct. 10.						
8 a. m.	29.2640	56	98	SE	Very brisk	Rain
2 p. m.	29.1160	59	83	NW	Ditto	Fine
5 p. m.	29.9905	56	86	S	Ditto	Cloudy
8 p. m.	29.9007	55	91	S	Ditto	Clear
10 p. m.	29.8150	55	90	S	Stormy	Cloudy
midnight	29.7647	55		SW	Stormy	Heavy rain, lightning, &c.
Oct. 11.						
4 a. m.	29.4089	57	92	SW	Boisterous	Thunder and lightning
8 a. m.	29.4976	57	91	SW	Ditto	Showery
11 a. m.	29.6620	57	65	S	Fresh	Slight showers
3 p. m.	29.7921	48	86	E	Ditto	Showery
10 p. m.	29.1166	49	93	E	Very fresh	Showery