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the South Chamber and Vander-West-huisen's Chamber, is so narrow as scarcely to admit a large person, and is called Botha's Poort or door, likewise Nel's Poort, is equally narrow between Vander-West-huisen's and Thom's Chamber. These apartments constitute the whole of this very extensive series of subterraneous caverns; and should there be any other apartments, they must communicate by a very small passage, as I narrowly examined every part. The beauty of some of the chambers cannot be described. The production of the stalactites is very surprising; a single drop of water from the roof, in time will raise a column 50 feet high. A great many drops have produced cauliflowers, pulpits, and other beautiful and romantic festoons, shewing the remarkable action of water, and carbonic acid upon calcareous rock. The Bath-house contains several basins of clear water. Innumerable quantities of bats have taken up their residence here, (apparently from the excrement,) from time immemorial—they are the only inhabitants of these lonely regions. The heat is great, and even oppressive at the farthest extremity. Had this beautiful grotto been situated where it was more accessible to mankind, and not so far in the wilds of a desert country, we should ere this time have seen a proper account of it, by which means it would have been plucked from the obscurity which shrouds it at present, and have gratified the eyes of the curious, and the lovers of the sublime.

ART. XI. *On some undescribed Minerals.* By H. J. A. Brooke, Esq., F.R.S.

Childrenite.

ABOUT four years since I purchased at Tavistock, in Devonshire, three specimens of a mineral, said to have been taken from some part of the ground which had been perforated for the canal lately completed there. They were supposed to be carbonate of iron, but it was obvious on looking at the crystals that they must belong to some other substance.

Intervening occupations prevented me for a long time from ex-

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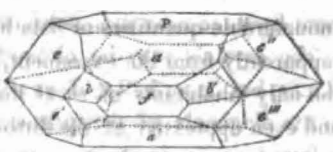
mining them, but it is now several months since I ascertained from the measurement of their angles that they differed from the crystals of every other known mineral. They are so very minute, that the whole quantity I possess would weigh only a few grains. A part of one of the specimens, however, enabled Dr. Wollaston to ascertain that the mineral was a *Phosphate of Alumina and Iron*.

The attention which Mr. Children has shewn to mineralogical chemistry, is one, among many other inducements to name this mineral *Childrenite*.

The form of the crystals is represented by the accompanying figure, except in this particular, that the planes marked *b*, in the figure, generally consist of a number of very narrow planes with parallel edges, but whose inclinations upon *e*, I have not been able to measure.

P on *e* or *e''*	114°	50′
P on *a*	152	10
P on *f*	90	
e on *e'*	130	20



I have not succeeded in cleaving the crystals, but we may assume *a right rhombic prism* as their *primary form*; and if we suppose the planes *e* to be produced by decrements upon its terminal edges, the lines between *e e'*, and *e'' e'''*, would obviously lie on the lateral primary planes, and the inclination of these planes would then be 92° 48′.

If the planes *e* result from a decrement, by one row of molecules, the terminal edge would be to a lateral edge, nearly as 13 to 28, and the planes *a* might then be represented by the symbol $\frac{6}{A}$.

The crystals slightly scratch glass. Their colour is wine yellow. And in the only specimens I have seen they occur on the surface of crystallized quartz, and might be mistaken by a casual observer for sulphate of barytes.

Somervillite.

The next mineral I shall have to describe came to me with some

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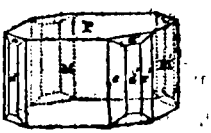
other Vesuvian substances, from Dr. Somerville, from which circumstance I have named it *Somervillite*.

Its *primary form* is *a right square prism*, but the crystals are modified on the solid angles and lateral edges, as in the annexed figure.

P on *a* . .	147°	5′
P on M . .	90	
M on *e* . .	161	33
M on *d* . .	135	
M on M′ . .	90	



Assuming the planes *a* to result from a decrement by one row of molecules, the terminal edge of the *primary form* would be to the lateral edge, as 16 to 25 nearly. The planes *e* result from a decrement by three rows in breadth on the lateral edges.

The crystals may be cleaved easily parallel to the terminal planes, but imperfectly, if at all, parallel to the lateral planes or to the diagonals of the prism. Their colour is a very pale dull yellow.

The substance for which this might at first view be mistaken is the *idocrase*, although no plane corresponding in its inclination on P with the plane *a* of the preceding figure, has yet been observed on any crystal of that substance. But these crystals are much softer than *idocrase*, the cleavage parallel to the terminal planes much more distinct, and the cross fracture more glassy.

They occur in cavities, with crystallized black mica, and with another substance which I have not yet examined; and the mass to which they adhere appears to be nearly all *Somervillite*, intermingled with black mica.

Mr. Children has taken the trouble to compare the characters of this mineral under the blow-pipe, with those of *idocrase*.

When exposed alone in the forceps it slightly decrepitates, which *idocrase* does not, and fuses, with greater difficulty than idocrase, into a greyish glass, the globule from *idocrase* being greenish. With borax, in the reducing flame, *idocrase* produces a light green, and this a colourless glass.

Kupferschaum.

I do not find any analysis published of the mineral termed *Kupferschaum* by the Germans, which is the same as the fibrous or flaky bright green substance found at Matlock.

It dissolves entirely and with effervescence in muriatic acid. From this solution a bulky precipitate is thrown down by caustic potash, a considerable part of which is redissolved by an excess of the alkali, leaving a residuum of *hydrate of copper*. If the solution be filtered to separate the copper, and acetous acid be added, a white flocculent precipitate appears, which may be redissolved by an excess of acid or of alkali. As this is a marked character of oxide of zinc, I conclude that the mineral is a *carbonate of copper and zinc*.

ART. XII. *On a Mountain Barometer constructed with an Iron Cistern. By* J. Newman, *Philosophical Instrument-Maker to the Royal Institution of Great Britain.*

[To the Editor of the Quarterly Journal.]

SIR,

I TAKE the liberty of sending you an account of an alteration I have made in the construction of Mountain Barometers, and which has been declared highly satisfactory and important, by those who have made trial of instruments so constructed. The object has been to correct those defects and errors which arise from the use of a wooden cistern and leather bag, in the common instrument. It has been found that when the cistern is made of a wood sufficiently sound and close-grained to permit of the pressure required from the screw to make the instrument portable, that it is so impervious to air, as not to allow it to pass with sufficient freedom, and consequently, that when the instrument is used at any great altitude, the mercury cannot fall into the cistern except with considerable difficulty, and a long time is required before an accurate observation of the air's pressure can be made; most generally, however, the cistern is sufficiently pervious to air, but it is then found that on