On some new forms prominently developed on crystals of Proustite.

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WHILST determining some crystals of proustite in the Mineralogical Museum at Cambridge, and which came from Bolivia or some other part of South America, my attention was attracted by faces of trigonal pyramids, which, as shown in figs. 1 and 2, are the most conspicuous on the crystals. On measurement, these faces were found to correspond very nearly to those of the rhombohedra $\{7\bar{3}\bar{3}\} = 10\,R$ (fig. 1) and $\{9\bar{4}\bar{4}\} = 13\,R$ (fig. 2). The figures represent with fair accuracy the

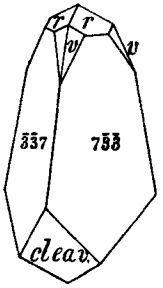

Fig. 1.

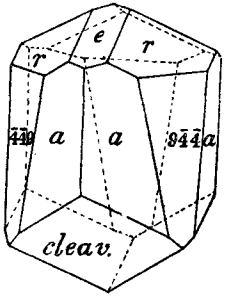

Fig. 2.

Proustite.

relatively large development of the faces of these new forms. Another form, $\{11.\bar{7}.7\} = -6\,R$, represented by a single face on the lower end of one crystal, is also new for proustite. Ten crystals were measured, and, among these, seven showed the following forms:—

(1) r $\{100\}$, a $\{10\bar{1}\}$, v $\{20\bar{1}\}$, $\{7\bar{3}\bar{3}\}$. (2) r, a, e $\{110\}$, v, $\{7\bar{3}\bar{3}\}$. (3) a, e, $\{9\bar{4}\bar{4}\}$. (5) a, e, $\{9\bar{4}\bar{4}\}$. (7) r, a, e, $\{9\bar{4}\bar{4}\}$. (9) r, e, $\{9\bar{4}\bar{4}\}$. (10) r, e, a, $\{9\bar{4}\bar{4}\}$, $\{11.\bar{7}.7\}$.

The appended table gives the measurements obtained for the several

crystals, together with the computed angles[1]. The theoretical value of the angle v : (733) was calculated by the formula given by Professor Lewis in his memoir on Grassmann's method[2].

	Crystal 1.	Crystal 2.	Crystal 3.	Crystal 5.	Crystal 7.	Crystal 9.	Crystal 10.	Observed Means.	No. of Observations.	Computed Angle.
	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′		° ′
(9$\bar{4}\bar{4}$) : r	...	...	...	...	...	42 30	42 18 42 55	42 34	3	42 24
(7$\bar{3}\bar{3}$) : r	40 49½ 40 24½ 40 43	40 27 40 35	...	...	...	...	...	40 36	5	40 59
(11.7.7) : r	...	...	...	...	...	...	57 21	57 21	1	57 18·5
re	...	67 44 67 59	...	...	...	67 29	67 36 67 29	67 39½	5	67 46
(9$\bar{4}\bar{4}$) : e	...	...	109 51	110 18	110 2	109 59	109 54 110 24	110 5	6	110 10
ar	...	...	...	...	53 52	...	54 11	54 1	2	53 54
av	24 53	...	...	...	...	...	...	24 53	1	24 34
ae''	...	...	...	...	90 17	...	...	90 17	1	90 0
vr	29 6½ 29 25	...	...	...	...	...	...	29 16	2	29 20
rr'	72 11	...	...	...	...	...	71 55	72 3	2	72 12
re''	...	...	...	...	35 59	...	35 59 35 56	35 58	3	36 6
ae	...	...	69 20 or 67 59	68 20	...	...	...	68 30	2	68 37
ee'	...	...	68 41 43 5 42 43	43 0	...	...	...	42 56	3	42 46
(7$\bar{3}\bar{3}$) : v	24 18 24 20	...	...	...	...	...	...	24 19	2	24 25·5
(7$\bar{3}\bar{3}$) : a	...	30 22	...	...	...	...	...	30 22	1	30 34
(7$\bar{3}\bar{3}$) : (3$\bar{3}$7)	118 34	...	...	...	...	...	...	118 34	1	118 52
(9$\bar{4}\bar{4}$) : (101)	...	...	73 28	73 8	73 25	...	...	73 21½	1	73 28

[1] From the element of Prof. Miers, this Magazine, 1888, vol. viii, p. 44.

[2] This Magazine, 1900, vol. xii, p. 339.