Some new crystal-forms on Krennerite.

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SOME interest attaches to crystals of krennerite, since this mineral has apparently the same composition as calaverite, the crystalline development of which presents such peculiar features. After completing the study of crystals of the latter substance, the author naturally turned his attention to krennerite to ascertain whether any similar peculiarities were noticeable, but nothing abnormal could be detected.

Good crystals of krennerite are rare. The Mineral Collection of the British Museum has however a specimen from Nagyág, on which are dotted numerous small crystals possessing a large number of brilliant faces. This specimen was examined by Prof. H. A. Miers rather more than twelve years ago, and the measurements of one good crystal are recorded in this Magazine [1]. The author measured the same crystal and four other smaller crystals on the three-circle goniometer designed by him, and encountered a large number of minute faces representing forms hitherto unrecorded. The habit of the crystals is prismatic, the prism-zone being striated, and the colour is a bronze-yellow. The cross-section of the measured crystals varies from $0{\cdot}2 \times 0{\cdot}2$ to $0{\cdot}7 \times 0{\cdot}5$ mm.

The author has observed on these crystals all the forms previously recorded and in addition the following, which are new:—K (310), L (520), M (650), N (340), j (140), J (160), β (141), γ (582), f (231), a (562), r (142), x (342), y (221), R (542), δ (043), ϕ (343), ϵ (032), θ (054), χ (144), ψ (344), ξ (411), η (012), κ (013), λ (901), π (401), Π (502), and μ (104).

[1] 1890, vol. ix, pp. 184–6.

Fig. 1 is reproduced from Prof. Miers's paper [1]. Fig. 2 illustrates the occurrence of some new faces on one of the smallest crystals measured.

In the table (p. 266) are given the calculated and the mean observed values of the distances and azimuths of the forms, when measured from a (100).

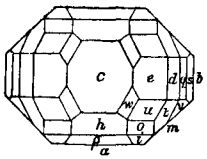

FIG. 1.

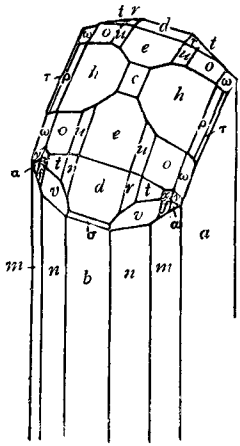

FIG. 2.

Krennerite.

The axial ratios are :—$a : b : c = 0{\cdot}9369 : 1 : 0{\cdot}5068$.

For comparison the ratios determined by previous observers are added :—

Vom Rath [2]	$a : b : c = 0{\cdot}9407 : 1 : 0{\cdot}5045$,
Schrauf [3]	$a : b : c = 0{\cdot}9396 : 1 : 0{\cdot}5073$,
Miers [4]	$a : b : c = 0{\cdot}9389 : 1 : 0{\cdot}5057$.

[1] The form (041), denoted by s in the figure, is called σ in the present paper, because the former letter has been assigned to (130) in accordance with the notation adopted in Dana's 'System of Mineralogy,' 6th edition.

[2] Zeits. Kryst. Min., 1877, vol. i, pp. 614–17.

[3] Zeits. Kryst. Min., 1878, vol. ii, pp. 235–9.

[4] Loc. cit.

TABLE.

Measurements from *a* (100).

Form.		Calculated Values.		Observed Means.		Edges.	Limits of Observation.			Remarks. Characters of faces and images.
		Azimuth.	Distance.	Azimuth.	Distance.		Azimuth.		Distance.	
		° ′	° ′	° ′	° ′		° ′	° ′	° ′ ° ′	
a	100	*	*	0 0	0 0	9	...	...	... ...	Large; images good.
K	310	,,	17 20½	,, ,,	18 3	2	...	...	17 55, 18 11	Minute.
L	520	,,	20 32½	,, ,,	20 31	2	...	...	20 30, 20 32	,,
k	210	,,	25 6	,, ,,	26 4	1	...	...	... ...	,,
l	320	,,	31 59	,, ,,	32 7	7	...	...	31 18–32 48	Small.
M	650	,,	37 59	,, ,,	38 22	1	...	...	... ...	Minute.
m	110	,,	*	,, ,,	43 8	12	...	...	42 49–43 28	Large; images good.
N	340	,,	51 19	,, ,,	51 25	1	...	...	... ...	Minute.
n	120	,,	61 55	,, ,,	61 55	12	...	...	61 24–62 39	Small; images fair.
s	130	,,	70 25	,, ,,	71 0	1	...	...	... ...	Striated.
j	140	,,	75 4	,, ,,	75 57	2	...	...	75 54, 76 0	,,
J	160	,,	79 55	,, ,,	80 20	1	...	...	... ...	,,
b	010	,,	90 0	,, ,,	90 0	9	...	...	... 90 6	Small; images fair.
γ	582	26 15½	59 6½	26 8	58 10	1	...	...	... ...	Minute.
β	141	,, ,,	76 32½	26 15	76 15	1	...	...	... ...	,,
σ	041	,, ,,	90 0	,, ,,	90 0	2	...	...	... 90 4	Small.
a	562	33 20	53 23	33 18	53 29	4	33 2–33 24		53 19–53 38	Minute.
f	231	,, ,,	59 16	,, ,,	59 29	1	,,	,,	... ...	,,
v	362	,, ,,	65 58	,, ,,	66 1	5	,,	,,	65 48–66 20	Small.
q	031	,, ,,	90 0	,, ,,	90 0	4	,,	,,	... 90 2	,,

R	542	44 37	46 28½	44 35½	46 35	1	44 20–44 47	... ...		Minute.
y	221	,, ,,	52 46	,, ,,	52 43	2	,, ,,	52 29, 52 57		Small.
x	342	,, ,,	60 19	,, ,,	60 23	4	,, ,,	60 14–60 31		,,
t	121	,, ,,	69 12	,, ,,	69 11½	5	,, ,,	69 0–69 18		,,
r	142	,, ,,	79 15	,, ,,	79 13	4	,, ,,	79 0–79 23		,,
d	021	,, ,,	90 0	,, ,,	90 0	5	,, ,,	... 90 4		,,
ϵ	032	52 45½	90 0	52 26	90 3	1	... ...	... ...		Minute.
ϕ	343	55 57	65 51½	55 0	67 0	1	... ...	... ...		,,
δ	043	,, ,,	90 0	,, ,,	90 0	1	... ...	... ...		,,
θ	054	57 39	90 0	58 0	90 0	1	... ...	... ...		,,
ξ	411	*	27 23½	63 7½	28 0	1	62 55–63 15	... ...		,,
ζ	522	,,	39 39½	,, ,,	40 0	1	,, ,,	... ...		,,
ω	211	,,	46 1	,, ,,	46 9	5	,, ,,	45 27–46 45		Small; images fair.
i	322	,,	54 6	,, ,,	54 9	10	,, ,,	53 57–54 20		,, ,,
o	111	,,	64 14½	,, ,,	64 17	6	,, ,,	64 9–64 28		,, ,,
ψ	344	,,	70 6½	,, ,,	70 30	1	,, ,,	... ...		Minute.
u	122	,,	76 26	,, ,,	76 31½	18	,, ,,	76 20–76 53		Large; images good.
χ	144	,,	83 7	,, ,,	82 45	1	,, ,,	... ...		Minute.
e	011	,,	90 0	,, ,,	90 0	7	,, ,,	... 90 4		Large; images fair.
ϖ	124	75 47	82 32	75 45	82 25	1	... ...	... ...		Small.
η	012	,, ,,	90 0	76 0	90 10	1	... ...	... ...		Minute.
κ	013	80 25	90 0	80 10	90 0	1	... ...	... ...		,,
λ	901	90 0	11 36	90 0	11 37	2	... 90 11	11 30, 11 44		,,
π	401	,, ,,	24 48½	,, ,,	25 9	3	... ,,	24 40–25 28		,,
τ	301	,, ,,	31 38½	,, ,,	31 35	6	... ,,	31 0–31 53		Small.
Π	502	,, ,,	36 29	,, ,,	36 48	1	... ,,	... ...		Minute.
ρ	201	,, ,,	42 45	,, ,,	42 41	4	... ,,	42 20–42 55		Small.
h	101	,, ,,	61 35½	,, ,,	61 35	10	... ,,	61 23–61 50		Minute.
g	102	,, ,,	74 52	,, ,,	75 20	2	... ,,	75 15, 75 35		,,
μ	104	,, ,,	82 18	,, ,,	82 36	1	... ,,	... ...		,,
c	001	,, ,,	90 0	,, ,,	90 0	5	... ,,	... 90 3		Large; image good.